Hewlett-Packard Company

TPC Benchmark™ C
Full Disclosure Report
for
HP ProLiant DL585 G7
using
Microsoft SQL Server 2005 Enterprise x64 Edition SP3
and
Windows Server 2008 R2 Enterprise Edition

Third Edition
Submitted for Review
June 21, 2010

Third Edition –June 2010

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Benchmark results are highly dependent upon workload, specific application requirements, and system design and implementation. Relative system performance will vary as a result of these and other factors. Therefore, TPC Benchmark C should not be used as a substitute for a specific customer application benchmark when critical capacity planning and/or product evaluation decisions are contemplated.

All performance data contained in this report were obtained in a rigorously controlled environment. Results obtained in other operating environments may vary significantly. HP does not warrant or represent that a user can or will achieve similar performance expressed in transactions per minute (tpmC) or normalized price/performance ($/tpmC). No warranty of system performance or price/performance is expressed or implied in this report.

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Preface

The TPC Benchmark C was developed by the Transaction Processing Performance Council (TPC). The TPC was founded to define transaction processing benchmarks and to disseminate objective, verifiable performance data to the industry. This full disclosure report is based on the TPC Benchmark C Standard Specifications Version 5.11

TPC Benchmark C Overview

The TPC describes this benchmark in Clause 0.1 of the specifications as follows:

TPC Benchmark™ C (TPC-C) is an OLTP workload. It is a mixture of read-only and update intensive transactions that simulate the activities found in complex OLTP application environments. It does so by exercising a breadth of system components associated with such environments, which are characterized by:

- The simultaneous execution of multiple transaction types that span a breadth of complexity
- On-line and deferred transaction execution modes
- Multiple on-line terminal sessions
- Moderate system and application execution time
- Significant disk input/output
- Transaction integrity (ACID properties)
- Non-uniform distribution of data access through primary and secondary keys
- Databases consisting of many tables with a wide variety of sizes, attributes, and relationships
- Contention on data access and update

The performance metric reported by TPC-C is a "business throughput" measuring the number of orders processed per minute. Multiple transactions are used to simulate the business activity of processing an order, and each transaction is subject to a response time constraint. The performance metric for this benchmark is expressed in transactions-per-minute-C (tpmC). To be compliant with the TPC-C standard, all references to tpmC results must include the tpmC rate, the associated price-per-tpmC, and the availability date of the priced configuration.

Although these specifications express implementation in terms of a relational data model with conventional locking scheme, the database may be implemented using any commercially available database management system (DBMS), database server, file system, or other data repository that provides a functionally equivalent implementation. The terms "table", "row", and "column" are used in this document only as examples of logical data structures.

TPC-C uses terminology and metrics that are similar to other benchmarks, originated by the TPC or others. Such similarity in terminology does not in any way imply that TPC-C results are comparable to other benchmarks. The only benchmark results comparable to TPC-C are other TPC-C results conformant with the same revision.

Despite the fact that this benchmark offers a rich environment that emulates many OLTP applications, this benchmark does not reflect the entire range of OLTP requirements. In addition, the extent to which a customer can achieve the results reported by a vendor is highly dependent on how closely TPC-C approximates the customer application. The relative performance of systems derived from this benchmark does not necessarily hold for other workloads or environments. Extrapolations to any other environment are not recommended.

Benchmark results are highly dependent upon workload, specific application requirements, and systems design and implementation. Relative system performance will vary as a result of these and other factors. Therefore, TPC-C should not be used as a substitute for a specific customer application benchmarking when critical capacity planning and/or product evaluation decisions are contemplated.

Abstract

Overview

This report documents the methodology and results of the TPC Benchmark C test conducted on the HP ProLiant DL585 G7. The operating system used for the benchmark was Windows Server 2008R2 Enterprise Edition. The DBMS used was Microsoft SQL Server 2005 Enterprise x64 Edition SP3.

TPC Benchmark C Metrics

The standard TPC Benchmark C metrics, tpmC (transactions per minute), price per tpmC (three year capital cost per measured tpmC), and the availability date are reported as:

1,193,472 tpmC
USD $0.68 per tpmC
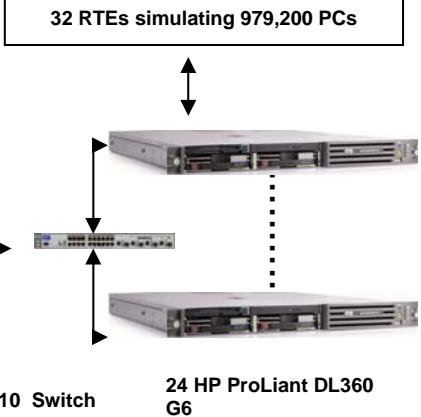
The availability date is September 1, 2010.

Standard and Executive Summary Statements

The following pages contain executive summary of results for this benchmark.

Auditor

The benchmark configuration, environment and methodology were audited by Lorna Livingtree of Performance Metrics, Inc. to verify compliance with the relevant TPC specifications.

Hewlett-Packard	HP ProLiant DL585G7 2.3 GHz 12MB L3		TPC-C Rev. 5.11 TPC-Pricing 1.5.0 TPC-Energy 1.1.1	
Company	C/S with 24 HP ProLiant DL360 G6		**Report Date: June 21, 2010**	

Total System Cost	TPC-C Throughput	Price/Performance	Availability Date	TPC-Energy Metric
USD $804,660	**1,193,472 tpmC**	**USD $0.68**	**Sept 1, 2010**	**5.93 watts/KtpmC**

Database Server Processors /Cores/Threads	Database Manager	Operating System	Other Software	Number of Users
4/48/48 AMD 2.3 GHz 12MB L3 cache	Microsoft SQL Server 2005 Enterprise x64 Edition SP3	Windows Server 2008 R2 Enterprise Edition	Microsoft Visual C++ Microsoft COM+	**979,200**

**HP ProLiant DL585G7 w/ 2.3 GHz/512GB RAM,
1SMART Array P410i SAS RAID Controller,
1SMART Array P812SAS RAID CHP StorageWorks
1 FC1242 Dual Channel 4Gb PCI-e HBA,
9 LSI 9200_8E HBA, and 2 X 146GB 15K SFF SAS Drives in internal bay**

32 RTEs simulating 979,200 PCs

**1 HP 5642 Rack containing: 9 X D2700 StorageWorks Enclosures with 20 X 120GB each and,
4 X MSA D2700 StorageWorks Enclosures containing 25 x 300GB 10K SFF SAS each
1 x MSA2324fc with 24 x 146GB 10K drives and,
2 x MSA 70 with 22 drives each**

HP ProCurve 2910 Switch

24 HP ProLiant DL360 G6

System Components	**Server**		**Each Client**	
	Quantity	Description	Quantity	Description
Processors/Cores/Threads	4/48/48	AMD 2.3GHz 12MB L3 cache	1/4/4	2.40 GHz Intel Xeon w/ 8MB L3 cache
Memory	512GB	(16x 16GB and 32x 8GB) DDR3	2GB	2048 MB
Disk Controllers	1 1 9 1	Smart P410i Controller Smart P812 Controller LSI 9200_8E HBA FC1242 Dual Channel 4Gb PCI-e HBA	1	Integrated Smart Array P410i Controller
Disk Drives	100 180 2 66	300GB 15K SFF SAS 6G 120 GB SSD 146 GB 15K SFF SAS 146 GB 15K SFF SAS	2	72 GB 15K SFF SAS
Total Storage		66,769.36 GB		72 GB

Hewlett-Packard	HP ProLiant DL585G7 2.3 GHz 12GB L3	TPC-C Rev. 5.11 TPC-Pricing 1.5.0 TPC-Energy 1.1.1
Company	C/S with 24 HP ProLiant DL360 G6	**Report Date: June 21, 2010**

Total System Cost	TPC-C Throughput	Price/Performance	Availability Date	TPC-Energy Metric
USD $804,660	**1,193,472 KtpmC**	**USD $0.68**	**September 1, 2010**	**5.93 watts/ KtpmC**

Numerical Quanties For Reported Energy Configuration:

REC Idle Power: 6694 watts

Average Power of REC: 7077 watts

	Secondary Metrics	Additional Numerical Quanties				
	Watts / KtpmC	Full Load Avg Watts	Full Load % of REC	Full Load Watt Mins.	Idle Avg. Watts	Idle % of REC
Database Server	0.80	950.80	13.4%	114,095	692.46	10.3%
Storage	1.75	2,084.47	29.5%	250,137	2,026.01	30.3%
Application Server	2.74	3,269.44	46.2%	392,333	3,203.36	47.9%
Miscellaneous	0.65	772.41	10.9%	92,689	772.59	11.5%
Total REC	5.93	7077	100%	849255	6694	100%

Lowest ambient temperature at air inlet: 20.56C

Items in Priced Configuration not in the Reported Energy Configuration:

None

Items in Reported Energy Configuration not in the Measured Energy Configuration:

25 HP LE1851w 18.5-Inch wide Monitor Part Number   NK033AA#ABA

22 HP ProLiant DL360 G6 Rack   Part Number   484184-B21

Hewlett-Packard	HP ProLiant DL585G7				TPC-C Rev. 5.11	
Company					Report Date	21-Jun-10
Description	Part Number	Brand	Unit Price	Qty	Extended Price	3 yr. Maint. Price
Server Hardware						
HP DL585R07 CTO Chassis Svr,HP NC382i nic,Smart Array P410i Controller	590480-B21	1	4,036	1	4,036	
HP DL585G7 6176SE FIO 2P Kit	601351-L21	1	3,600	1	3,600	
HP DL585G7 6176SE 2P Kit	601351-B21	1	3,599	1	3,599	
HP 16GB 4Rx4 PC3-8500R-7 Kit	593915-B21	1	1,549	16	24,784	
HP 8GB 2Rx4 PC3-10600R-9 Kit	593913-B21	1	509	32	16,288	
HP Smart Array P812/1G Flash Backed Cache Controller	462832-B21	1	649	1	649	
HP LE1851w 18.5-Inch wide Monitor	NK033AA#ABA	1	159	1	159	
HP PS/2 Keyboard And Mouse Bundle	RC464AA#ABA	1	39	1	39	
HP 5642 Pallet Unassembled Rack	358254-B21	1	865	1	865	
HP StorageWorks FC1242 Dual Channel 4Gb PCI-e HBA	AE312A	1	1,780	1	1,780	
2 m LC-LC Multi-Mode Fibre Channel Cable	221692-B21	1	75	2	150	
2 m LC-LC Multi-Mode Fibre Channel Cable (spares)	221692-B21	1	75	2		150
HP StorageWorks 2324fc G2 Dual Controller Modular Smart Array (SFF)	AJ797A	1	8,900	1	8,900	
HP 3y 4h 24x7 MSA2000 Array HWSupp ,MSA2000 Dual Controller	UJ675E	1	1,513	1		1,513
HP 300GB 6G SAS 10K SFF (2.5-inch) Dual Port Enterprise 3yr Warranty	507127-B21	1	519	100	51,900	
HP 120GB 3G SATA 2.5in MDL	572073-B21	1	2,659	180	478,620	
HP 146GB 6G SAS 15K SFF (2.5-inch)	512547-B21	1	499	66	32,934	
HP 146GB 6G SAS 15K SFF (2.5-inch)	512547-B21	1	499	2	998	
HP StorageWorks D2700 Disk Enclosure	AJ941A	1*	3,399	13	44,187	
HP 3y SupportPlus24 D2000 Enclosures,4h 24x7 onsite response	UQ105E	1	2,147	13		27,911
HP StorageWorks MSA 70 Disk Enclosure	418800-B21	1	3,199	2	6,398	
HP 3y 4h 24x7 MSA60/70 HW Support	UF303E	1	1,906	2		3,812
4-Hour On-site Service, 7-Day x 24-Hour Coverage, 3 Years , DL585	U4497E	1	698	1		698
LSI 9200_8e	LSI00188	4	328	9	2,952	
LSI 9200_8e (10% spares)	LSI00188	4	328	2		656
				Subtotal	682,838	34,740
Server Software						
Microsoft SQL Server 2005 Enterprise X64 Edition(per processor)	810-03134	2	23,432	4	93,728	Incl Below
Microsoft Visual C++ Standard Edition	254-00170	2	109	1	109	Incl Below
Microsoft Windows Server 2008 R2 Enterprise Edition	P72-04217	2	2,280	1	2,280	Incl Below
Microsoft Problem Resolution Services		2	259	1		259
				Subtotal	96,117	259
Client Hardware						
HP ProLiant DL360 G6 Rack CTO Chassis,NC382i Dual Port nic	484184-B21	1S	1,301	24	31,224	
HP E5530 DL360 G6 FIO Kit	505882-L21	1S	799	24	19,176	
HP 460W CS HE Power Supply Kit	503296-B21	1S	249	24	5,976	
HP 2GB 2Rx8 PC3-10600R-9 Kit	500656-B21	1S	120	24	2,880	
HP 72GB 15k 2.5 dual Port HP SAS Drive	418371-B21	1	379	48	18,192	
HP LE1851w 18.5-Inch wide Monitor	NK033AA#ABA	1	159	24	3,816	
HP PS/2 Keyboard And Mouse Bundle	RC464AA#ABA	1	39	24	936	
HP CP 3Y 4H 24x7 HW Entry300 4-Hour 24 Hour x 7 Day Coverage 3 Years	U4497E	1	698	24		16,752
				Subtotal	82,200	16,752
Client Software						
Windows Server 2008 R2 Standard Edition	P73-04165	2	711	24	17,064	Incl. Above
				Subtotal	17,064	0
User Connectivity						
HP ProCurve 2910al-48G Switch	J9147A#ABA	1	4,569	1	4,569	
HP ProCurve3 Yr 4 hr/24x7 Onsite	H2893E	1	1,307	1		1,307
CAT 6 7 Foot Pink Patch Cable	CB242-7PK	3	2	50	80	
CAT 6 7 Foot Pink Patch Cable (spares)	CB242-7PK	3	2	5		8
				Subtotal	4,649	1,307
Large Purchase and Net 30 discount (See Note 1)	16.0%	1			($122,665)	($8,343)
				Total	$760,203	$44,456

Prices used in TPC benchmarks reflect the actual prices a customer would pay for a one-time purchase of the stated components. Individually negotiated discounts are not permitted. Special prices based on assumptions about past or future purchases are not permitted. All discounts reflect standard pricing policies for the listed components. For complete details, see the pricing sections of the TPC benchmark pricing specifications. If you find that the stated prices are not available according to these terms, please inform the TPC at pricing@tpc.org. Thank you.

Three-Year Cost of Ownership: USD $804,660

tpmC Rating: 1,193,472

$ / tpmC: USD $0.68

Pricing: 1=HP Direct 800-203-6748 2= Microsoft 3= deepsurplus.com 4= Microland Electronics

Note 1 = Discount based on HP Direct guidence applies to all lines where pricing = 1 * SSD drive support in this enclosure will be available Sept 1 2010 see appendix F

Note 2= (S) One or more componenet of the measured configuration have been substituted in the priced configuration. See FDR for details.

Note 3 = The benchmark results were audited by Lorna Livingtree of Performance Metrics

One or more components of the measured configuration have been substituted in the Priced Configuration. See the FDR for details.

Numerical Quantities Summary

MQTH, Computed Maximum Qualified Throughput   **1,193,472 tpmC**

Response Times (in seconds)	Average	90%	Maximum
New-Order	0.70	1.69	37.83
Payment	0.73	1.82	38.28
Order-Status	0.69	1.66	36.75
Delivery (interactive portion)	0.33	0.64	25.31
Delivery (deferred portion)	0.12	0.22	5.07
Stock-Level	0.76	1.73	26.59
Menu	0.35	0.69	40.40

Transaction Mix, in percent of total transaction

New-Order			44.94%
Payment			43.03%
Order-Status			4.01%
Delivery			4.01%
Stock-Level			4.01%

Emulation Delay (in seconds)		Resp.Time	Menu
New-Order		0.10	0.10
Payment		0.10	0.10
Order-Status		0.10	0.10
Delivery (interactive)		0.10	0.10
Stock-Level		0.10	0.10

Keying/Think Times (in seconds)	Min.	Average	Max.
New-Order	18.02/0.00	18.03/12.06	18.20/120.53
Payment	3.02/0.00	3.03/12.06	3.20/120.53
Order-Status	2.02/0.00	2.03/10.06	2.20/100.53
Delivery (interactive)	2.02/0.00	2.03/5.07	2.14/50.53
Stock-Level	2.02/0.00	2.03/5.06	2.18/50.53

Test Duration

Ramp-up time	33 minutes
Measurement interval	120 minutes
Transactions (all types) completed during measurement interval	318,657,481
Ramp down time	3.49 minutes

Checkpointing

Number of checkpoints	4
Checkpoint interval	30 minutes

General Items

Test Sponsor

A statement identifying the benchmark sponsor(s) and other participating companies must be provided.

This benchmark was sponsored by Hewlett-Packard Company. The benchmark was developed and engineered by Hewlett-Packard Company. Testing took place at HP benchmarking laboratories in Houston, Texas.

Application Code and Definition Statements

The application program (as defined in clause 2.1.7) must be disclosed. This includes, but is not limited to, the code implementing the five transactions and the terminal input output functions.

Appendix A contains all source code implemented in this benchmark.

Parameter Settings

Settings must be provided for all customer-tunable parameters and options which have been changed from the defaults found in actual products, including by not limited to:

- *Database options*
- *Recover/commit options*
- *Consistency locking options*
- *Operating system and application configuration parameters*

This requirement can be satisfied by providing a full list of all parameters.

Appendix C contains the tunable parameters to for the database, the operating system, and the transaction monitor.

Configuration Items

Diagrams of both measured and priced configurations must be provided, accompanied by a description of the differences.

The configuration diagram for both the tested and priced systems are included on the following page.

Figure 1. Benchmarked Configuration

HP ProLiant DL585G7 w/ 2.3 GHz/512GB RAM,
1SMART Array P410i SAS RAID Controller,
1SMART Array P812SAS RAID CHP StorageWorks
1 FC1242 Dual Channel 4Gb PCI-e HBA,
LSI 9200_8E HBA, and 2 X 146GB 15K SFF SAS Drives in internal

9

32 RTEs simulating 979,200 PCs

1 HP 5642 Rack containing: 9 X D2700 StorageWorks Enclosures with 20 X
120GB each and,
4 X MSA D2700 StorageWorks Enclosures containing 25 x 300GB 10K SFF
SAS each
1 x MSA2324fc with 24 x 146GB 10K drives and,
2 x MSA 70 with 22 drives each

HP ProCurve 2910 Switch

2 HP ProLiant DL360 G6
22 HP ProLiant DL360

Figure 2. Priced Configuration

HP ProLiant DL585G7 w/ 2.3 GHz/512GB RAM,
1SMART Array P410i SAS RAID Controller,
1SMART Array P812SAS RAID CHP StorageWorks
1 FC1242 Dual Channel 4Gb PCI-e HBA,
LSI 9200_8E HBA, and 2 X 146GB 15K SFF SAS Drives in internal

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SAS each
1 x MSA2324fc with 24 x 146GB 10K drives and,
2 x MSA 70 with 22 drives each

HP ProCurve 2910 Switch

24 HP ProLiant DL360
G6

Clause 1 Related Items

Table Definitions
Listing must be provided for all table definition statements and all other statements used to set up the database.

Appendix B contains the code used to define and load the database tables.

Physical Organization of Database
The physical organization of tables and indices within the database must be disclosed.
The tested configuration consisted of 180 SSD drives at 120GB for database data, two 146GB drives for the operating system, 66 drives at 146GB for database log and 100 drives at 300 GB for backup and 60 day space. There were 180 SSD drives for database data on 9 LSI 9200-8e controllers connected to 9 D2700 storage boxes with 20 drives each, 100 x 300GB drives on one SMART P812 controller connected to 4 D2700 storage boxes for backup with 25 drives each, and 2 X 146GB drives on the SMART P410i controller for the operating system.

Benchmarked Configuration:

SMART-P400 Controller, Slot 0, Array A
LOGICAL DRIVE C: Total Capacity = 136.60 GB   RAID 0+1
Microsoft Windows Server 2008 R2 Enterprise Edition

LSI 9200_8E, Slot 1, disk 1-20
LOGICAL DRIVE C:\stk\stk1-20:   Total Capacity = 25.39 GB   RAID 0
    Stk_fg
LOGICAL DRIVE C:\cust\cust1-20:   Total Capacity = 18.55 GB   RAID 0
    Cust_fg
LOGICAL DRIVE C:\ol\ol1-20:   Total Capacity = 20.51 GB   RAID 0
    ol_fg
LOGICAL DRIVE C:\misc\misc1-20:   Total Capacity = 5.86 GB   RAID 0
    Misc_fg

LSI 9200_8E, Slot 2, disk 21-40
LOGICAL DRIVE C:\stk\stk21-40:   Total Capacity = 25.39 GB   RAID 0
    Stk_fg
LOGICAL DRIVE C:\cust\cust 21-40:   Total Capacity = 18.55 GB   RAID 0
    Cust_fg
LOGICAL DRIVE C:\ol\ol 21-40:   Total Capacity = 20.51 GB   RAID 0
    ol_fg
LOGICAL DRIVE C:\misc\misc 21-40:   Total Capacity = 5.86 GB   RAID 0
    Misc_fg

LSI 9200_8E, Slot 3, disk 41-60
LOGICAL DRIVE C:\stk\stk 41-60:   Total Capacity = 25.39 GB   RAID 0
    Stk_fg
LOGICAL DRIVE C:\cust\cust 41-60:   Total Capacity = 18.55 GB   RAID 0
    Cust_fg
LOGICAL DRIVE C:\ol\ol 41-60:   Total Capacity = 20.51 GB   RAID 0
    ol_fg
LOGICAL DRIVE C:\misc\misc 41-60:   Total Capacity = 5.86 GB   RAID 0
    Misc_fg

LSI 9200_8E, Slot 4, disk 61-80

LOGICAL DRIVE C:\stk\stk 61-80: Stk_fg	Total Capacity = 25.39 GB	RAID 0
LOGICAL DRIVE C:\cust\cust 61-80: Cust_fg	Total Capacity = 18.55 GB	RAID 0
LOGICAL DRIVE C:\ol\ol 61-80: ol_fg	Total Capacity = 20.51 GB	RAID 0
LOGICAL DRIVE C:\misc\misc 61-80: Misc_fg	Total Capacity = 5.86 GB	RAID 0

LSI 9200_8E, Slot 5, disk 81-100

LOGICAL DRIVE C:\stk\stk 81-100: Stk_fg	Total Capacity = 25.39 GB	RAID 0
LOGICAL DRIVE C:\cust\cust 81-100: Cust_fg	Total Capacity = 18.55 GB	RAID 0
LOGICAL DRIVE C:\ol\ol 81-100: ol_fg	Total Capacity = 20.51 GB	RAID 0
LOGICAL DRIVE C:\misc\misc 81-100: Misc_fg	Total Capacity = 5.86 GB	RAID 0

LSI 9200_8E, Slot 6, disk 101-120

LOGICAL DRIVE C:\stk\stk 101-120: Stk_fg	Total Capacity = 25.39 GB	RAID 0
LOGICAL DRIVE C:\cust\cust 101-120: Cust_fg	Total Capacity = 18.55 GB	RAID 0
LOGICAL DRIVE C:\ol\ol 101-120: ol_fg	Total Capacity = 20.51 GB	RAID 0
LOGICAL DRIVE C:\misc\misc 101-120 Misc_fg	Total Capacity = 5.86 GB	RAID 0

LSI 9200_8E, Slot 7, disk 121-100

LOGICAL DRIVE C:\stk\stk 121-140: Stk_fg	Total Capacity = 25.39 GB	RAID 0
LOGICAL DRIVE C:\cust\cust 121-140: Cust_fg	Total Capacity = 18.55 GB	RAID 0
LOGICAL DRIVE C:\ol\ol 121-140: ol_fg	Total Capacity = 20.51 GB	RAID 0
LOGICAL DRIVE C:\misc\misc 121-140: Misc_fg	Total Capacity = 5.86 GB	RAID 0

Slot 8 FC1242 Dual Channel 4Gb PCI-e HBA MSA 2324fc Controller A, VD1

LOGICAL DRIVE E: MSSQL_tpcc_log_1	Total Capacity = 1092.44 GB	RAID 10

Slot 8 FC1242 Dual Channel 4Gb PCI-e HBA MSA 2324fc Controller A, VD2

LOGICAL DRIVE F: MSSQL_tpcc_log_2	Total Capacity = 1092.44 GB	RAID 10

Slot 8 FC1242 Dual Channel 4Gb PCI-e HBA MSA 2324fc Controller B, VD3

LOGICAL DRIVE G: MSSQL_tpcc_log_3	Total Capacity = 1092.44 GB	RAID 10

Slot 8 FC1242 Dual Channel 4Gb PCI-e HBA MSA 2324fc Controller B, VD4

LOGICAL DRIVE H: MSSQL_tpcc_log_4	Total Capacity = 1092.44 GB	RAID 10

LSI 9200_8E, Slot 9, disk 141-160

LOGICAL DRIVE C:\stk\stk 141-160: Stk_fg	Total Capacity = 25.39 GB	RAID 0
LOGICAL DRIVE C:\cust\cust 141-160: Cust_fg	Total Capacity = 18.55 GB	RAID 0
LOGICAL DRIVE C:\ol\ol 141-160: ol_fg	Total Capacity = 20.51 GB	RAID 0
LOGICAL DRIVE C:\misc\misc 141-160: Misc_fg	Total Capacity = 5.86 GB	RAID 0

LSI 9200_8E, Slot 10, disk 121-180

LOGICAL DRIVE C:\stk\stk 161-180: Stk_fg	Total Capacity = 25.39 GB	RAID 0
LOGICAL DRIVE C:\cust\cust 161-180: Cust_fg	Total Capacity = 18.55 GB	RAID 0
LOGICAL DRIVE C:\ol\ol 161-180: ol_fg	Total Capacity = 20.51 GB	RAID 0
LOGICAL DRIVE C:\misc\misc 161-180: Misc_fg	Total Capacity = 5.86 GB	RAID 0

SMART-P812Controller, Slot 11, Array B

LOGICAL DRIVE T: Backup 1	Total Capacity = 2048.00GB	RAID 1+0
LOGICAL DRIVE U: Backup 2	Total Capacity = 2048.00GB	RAID 1+0
LOGICAL DRIVE V: Backup 3	Total Capacity = 2048.00GB	RAID 1+0
LOGICAL DRIVE W: Backup 4	Total Capacity = 2048.00GB	RAID 1+0
LOGICAL DRIVE X: Backup 5	Total Capacity = 2048.00GB	RAID 1+0
LOGICAL DRIVE Y: Backup 6	Total Capacity = 2048.00GB	RAID 1+0
LOGICAL DRIVE Z: Backup 7	Total Capacity = 1680.00GB	RAID 1+0

Priced Configuration vs. Measured Configuration:

The benchmarked configuration was run using 22 DL360G5/ 1.60GHz and 2 DL360G6 / 2.40GHz client systems. The priced configuration substituted 24 DL360G6 / 2.40GHz client systems. The substitution was verified in the HP ProLiant DL385G7 published TPC-C benchmark published 4/8/2010 available at tpc.org.

Insert and Delete Operations

It must be ascertained that insert and/or delete operations to any of the tables can occur concurrently with the TPC-C transaction mix. Furthermore, any restrictions in the SUT database implementation that precludes inserts beyond the limits

defined in Clause 1.4.11 must be disclosed. This includes the maximum number of rows that can be inserted and the minimum key value for these new rows.

All insert and delete functions were fully operational during the entire benchmark.

Partitioning

While there are a few restrictions placed upon horizontal or vertical partitioning of tables and rows in the TPC-C benchmark, any such partitioning must be disclosed.

No partitioning was used in this benchmark.

Replication, Duplication or Additions

Replication of tables, if used, must be disclosed. Additional and/or duplicated attributes in any table must be disclosed along with a statement on the impact on performance.

No replications, duplications or additional attributes were used in this benchmark.

Clause 2 Related Items

Random Number Generation
The method of verification for the random number generation must be described.

In the Benchcraft RTE from Microsoft, each driver engine uses an independent random number sequence. All of the users within a given driver draw from the same sequence.

The Benchcraft RTE computes random integers as described in "Random Numbers Generators: Good Ones Are Hard to Find." Communications of the ACM - October 1988 Volume 31 Number 10.

The seeds for each user were captured and verified by the auditor to be unique. In addition, the contents of the database were systematically searched, and randomly sampled by the auditor for patterns that would indicate the random number generator had affected any kind of a discernible pattern; none was found.

Input/Output Screen Layout
The actual layout of the terminal input/output screens must be disclosed.

All screen layouts followed the specifications exactly.

Priced Terminal Feature Verification
The method used to verify that the emulated terminals provide all the features described in Clause 2.2.2.4 must be explained. Although not specifically priced, the type and model of the terminals used for the demonstration in 8.1.3.3 must be disclosed and commercially available (including supporting software and maintenance).

The terminal attributes were verified by the auditor. The auditor manually exercised each specification on a representative HP ProLiant web server.

Presentation Manager or Intelligent Terminal
Any usage of presentation managers or intelligent terminals must be explained.

Application code running on the client machines implemented the TPC-C user interface. No presentation manager software or intelligent terminal features were used. The source code for the forms applications is listed in Appendix A.

Transaction Statistics

Table 2.1 lists the numerical quantities that Clauses 8.1.3.5 to 8.1.3.11 require.

Table 2.1 Transaction Statistics

Statistic		Value
New Order	Home warehouse order lines	99.00%
	Remote warehouse order lines	1.00%
	Rolled back transactions	1.00%
	Average items per order	10.00
Payment	Home warehouse payments	85.00%
	Remote warehouse payments	14.999%
	Accessed by last name	60.01%
Order Status	Accessed by last name	60.05%
Transaction Mix	New Order	44.94%
	Payment	43.03%
	Order status	4.01%
	Delivery	4.01%
	Stock level	4.01%

Queuing Mechanism

The queuing mechanism used to defer the execution of the Delivery transaction must be disclosed.

Microsoft COM+ on each client machine served as the queuing mechanism to the database. Each delivery request was submitted to Microsoft COM+ asynchronously with control being returned to the client process immediately and the deferred delivery part completing asynchronously.

The source code is listed in Appendix A.

Clause 3 Related Items

Transaction System Properties (ACID)

The results of the ACID tests must be disclosed along with a description of how the ACID requirements were met. This includes disclosing which case was followed for the execution of Isolation Test 7.

All ACID property tests were successful. The executions are described below.

Atomicity

The system under test must guarantee that the database transactions are atomic; the system will either perform all individual operations on the data or will assure that no partially completed operations leave any effects on the data.

Completed Transactions

A row was selected in a script from the warehouse, district and customer tables, and the balances noted. A payment transaction was started with the same warehouse, district and customer identifiers and a known amount. The payment transaction was committed and the rows were verified to contain correctly updated balances.

Aborted Transactions

A row was selected in a script from the warehouse, district and customer tables, and the balances noted. A payment transaction was started with the same warehouse, district and customer identifiers and a known amount. The payment transaction was rolled back and the rows were verified to contain the original balances.

Consistency

Consistency is the property of the application that requires any execution of a database transaction to take the database from one consistent state to another, assuming that the database is initially in a consistent state.

Consistency conditions one through four were tested using a script to issue queries to the database. The results of the queries verified that the database was consistent for all four tests.

A run was executed under full load lasting over two hours and included a checkpoint.

The script was executed again. The result of the same queries verified that the database remained consistent after the run.

Isolation

Sufficient conditions must be enabled at either the system or application level to ensure the required isolation defined above (clause 3.4.1) is obtained.

Isolation tests one through nine were executed using shell scripts to issue queries to the database. Each script included timestamps to demonstrate the concurrency of operations. The results of the queries were captured to files. The captured files were verified by the auditor to demonstrate the required isolation had been met.

In addition, the phantom tests and the stock level tests were executed and verified.

For Isolation test seven, case A was followed.

Durability

The tested system must guarantee durability: the ability to preserve the effects of committed transaction and insure database consistency after recovery from any one of the failures listed in Clause 3.5.3.

Durable Media Failure

Loss of Data and Log
This was verified in the HP ProLiant DL385G7 published 4/8/2010, and available at TPC.org.

Instantaneous Interruption and Loss of Memory

Because loss of power erases the contents of memory, the instantaneous interruption and the loss of memory tests were combined into a single test. This test was executed on a fully scaled database of 108000 warehouses, of which 97920 warehouses were used, under a full load of 979200 users. The following steps were executed:

- The total number of New Orders was determined by the sum of D_NEXT_O_ID of all rows in the DISTRICT table giving the beginning count.
- The RTE was started with 979200 users.
- The test was allowed to run for a minimum of 6 minutes.
- Pulling the power cords from the SUT induced system crash and loss of memory. No battery backup or Uninterruptible Power Supply (UPS) were used to preserve the contents of memory.
- The RTE was paused then stopped.
- Power was restored and the system restarted.
- Microsoft SQL Server was restarted and performed an automatic recovery.
- Consistency condition #3 was executed and verified.
- Step 1 was repeated and the difference between the first and second counts was noted.
- An RTE report was generated for the entire run time giving the number of NEW-ORDERS successfully returned to the RTE.
- The counts in step 9 and 10 were compared and the results verified that all committed transactions had been successfully recovered.
- Samples were taken from the RTE files and used to query the database to demonstrate successful transactions had corresponding rows in the ORDER table.

Clause 4 Related Items

Initial Cardinality of Tables

The cardinality (e.g. number of rows) of each table, as it existed at the start of the benchmark run, must be disclosed. If the database was over-scaled and inactive rows of the WAREHOUSE table were deleted, the cardinality of the WAREHOUSE table as initially configured and the number of rows deleted must be disclosed.

Table 4.1 Number of Rows for Server

Table	Cardinality as built
Warehouse	108000
District	1080000
Customer	3240000000
History	3240000000
Orders	3240000000
New Order	972000000
Order Line	32399889468
Stock	10800000000
Item	100,000
Unused Warehouses	10080

Database Layout

The distribution of tables and logs across all media must be explicitly depicted for tested and priced systems.

The benchmarked configuration used 180 SSD drives at 120GB for database data, two 146 GB SAS drives for the operating system, and 66 SAS drives at 146GB for database log and (100) 300GB drives for backup and 60 day space. Nine LSI 92000_8E connected to nine D2700 drive boxes 2 controller ports per D2700. Each controller was configured into individual drives. The SMART P410i controller was connected to the internal drive cage which contained 2 X 146GB SAS drives configured as a RAID 0+1 logical drive. One P812 was configured as RAID1+0 and connected 4 D2700 drive boxes for backup. A FC1242 Dual Channel 4Gb PCI-e HBA was connected to an MSA2324fc using both HBA ports and both controllers of the MSA 2324fc. The MSa2324fc cache configuration was set to fault tolerant active-active. This MSA2324fc contained 22 drives at 300GB and connected to two MSA 70 drive boxes each with 22 drives each at 146 GB for the transaction log. These were configured as 4 virtual disks at RAID 10.

Section 1.2 of this report details the distribution of database tables across all disks. The code that creates the file groups and tables is included in Appendix B.

Type of Database

A statement must be provided that describes:
* *The data model implemented by DBMS used (e.g. relational, network, hierarchical).*

- *The database interface (e.g. embedded, call level) and access language (e.g. SQL, DL/1, COBOL read/write used to implement the TPC-C transaction. If more than one interface/access language is used to implement TPC-C, each interface/access language must be described and a list of which interface/access language is used with which transaction type must be disclosed.*

Microsoft SQL Server 2005 Enterprise x64 Edition is a relational DBMS.

The interface used was Microsoft SQL Server stored procedures accessed with Remote Procedure Calls embedded in C code.

Database Mapping
The mapping of database partitions/replications must be explicitly described.

The database was not replicated.

60 Day Space
Details of the 60-day space computations along with proof that the database is configured to sustain 8 hours of growth for the dynamic tables (Order, Order-Line, and History) must be disclosed.

To calculate the space required to sustain the database log for 8 hours of growth at steady state, the following steps were followed:

- The free space on the log file was queried using *dbcc sqlperf(logspace)*.
- Transactions were run against the database with a full load of users.
- The free space was again queried using *dbcc sqlperf(logspace)*.
- The space used was calculated as the difference between the first and second query.
- The number of NEW-ORDERS was verified from the difference in the sum(d_next_o_id) taken from before and after the run.
- The space used was divided by the number of NEW-ORDERS giving a space used per NEW-ORDER transaction.
- The space used per transaction was multiplied by the measured tpmC rate times 480 minutes.

The same methodology was used to compute growth requirements for dynamic tables Order, Order-Line and History.

Details of both the 8-hour transaction log space requirements and the 60-day space requirements are shown in Appendix D.

Clause 5 Related Items

Throughput

Measured tpmC must be reported

Measured tpmC   1,193,472 tpmC
Price per tpmC   USD $0.68

Response Times

Ninetieth percentile, maximum and average response times must be reported for all transaction types as well as for the menu response time.

Table 5.2: Response Times

Type	Average	90th %	Maximum
New-Order	0.70	1.69	37.83
Payment	0.73	1.82	38.28
Order-Status	0.69	1.66	36.75
Interactive Delivery	0.33	0.64	25.31
Deferred Delivery	0.12	0.22	5.07
Stock-Level	0.76	1.73	26.59
Menu	0.35	0.69	40.40

Keying and Think Times

The minimum, the average, and the maximum keying and think times must be reported for each transaction type.

Table 5.3: Keying Times

Type	Minimum	Average	Maximum
New-Order	18.02	18.03	18.20
Payment	3.02	3.03	3.20
Order-Status	2.02	2.03	2. 20
Interactive Delivery	2.02	2.03	2. 14
Stock-Level	2.02	2.03	2. 18

Table 5.4: Think Times

Type	Minimum	Average	Maximum
New-Order	0.00	12.06	120.53
Payment	0.00	12.06	120.53
Order-Status	0.00	10.06	100.53
Interactive Delivery	0.00	5.07	50.53
Stock-Level	0.00	5.06	50.53

Response Time Frequency Distribution Curves and Other Graphs

Response Time frequency distribution curves (see Clause 5.6.1) must be reported for each transaction type.

The performance curve for response times versus throughput (see Clause 5.6.2) must be reported for the New-Order transaction.

Think Time frequency distribution curves (see Clause 5.6.3) must be reported for each transaction type.

Keying Time frequency distribution curves (see Clause 5.6.4) must be reported for each transaction type.

A graph of throughput versus elapsed time (see Clause 5.6.5) must be reported for the New-Order transaction.

Figure 3. New Order Response Time Distribution
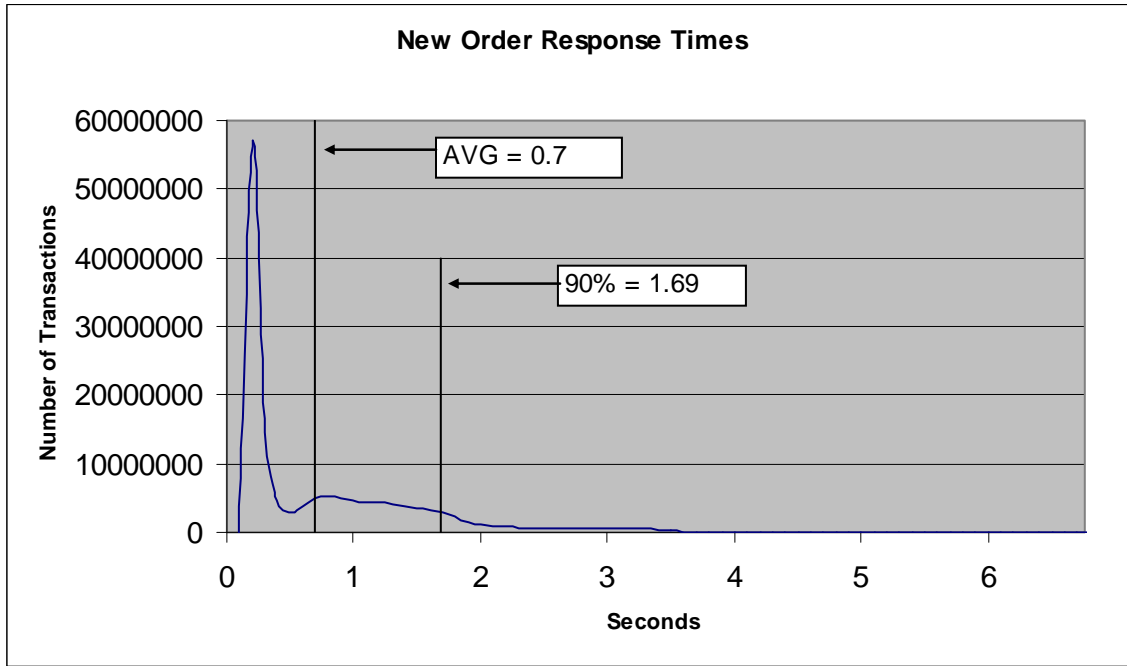
Figure 4. Payment Response Time Distribution
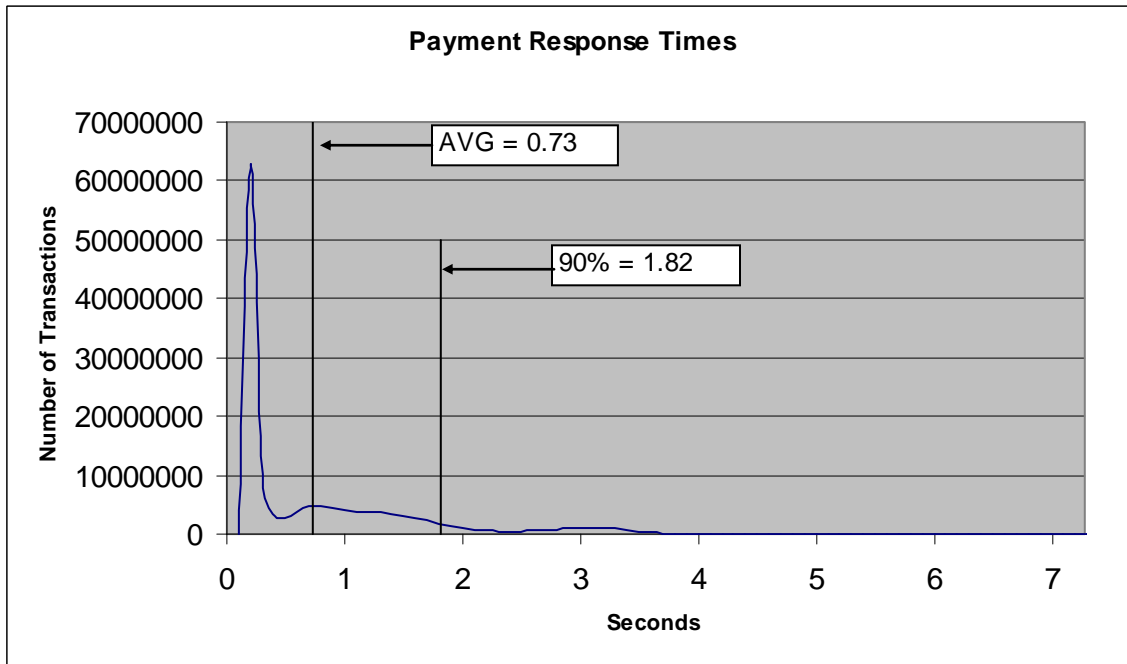
Figure 5. Order Status Response Time Distribution

Order Status Response Times

AVG = 0.69

90% = 1.66

(Y-axis: Number of Transactions, 0 to 6000000; X-axis: Seconds, 0 to 6)
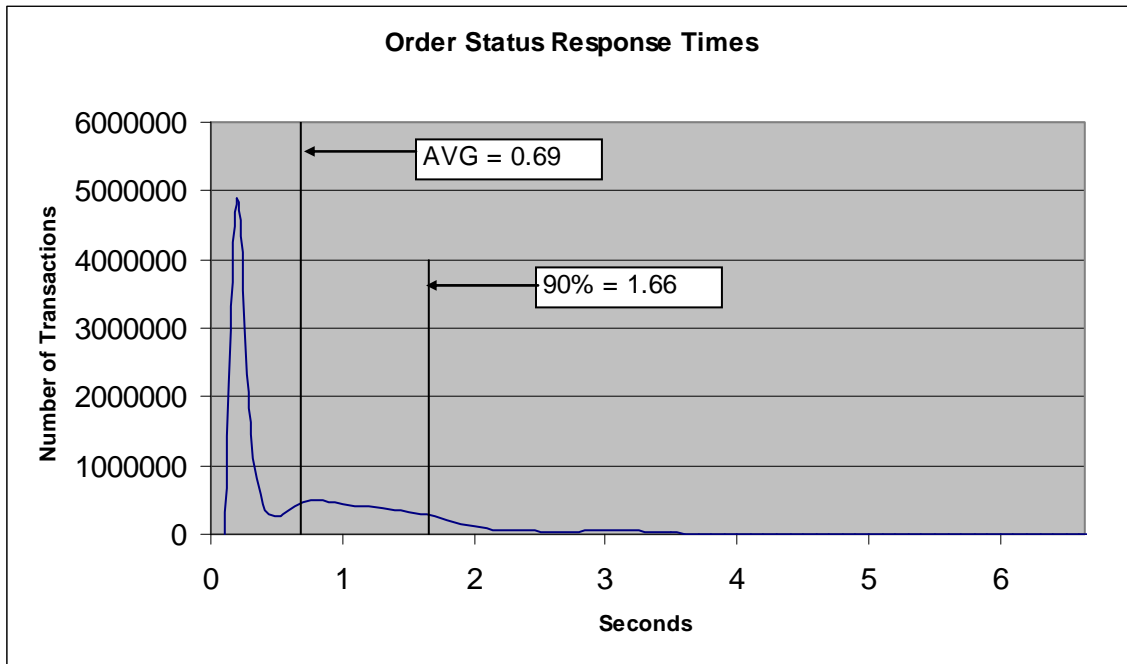
Figure 6. Delivery Response Time Distribution

Delivery Response Times

AVG = 0.33

90% = 0.64

(Y-axis: Number of Transactions, 0 to 9000000; X-axis: Seconds, 0 to 2.5)
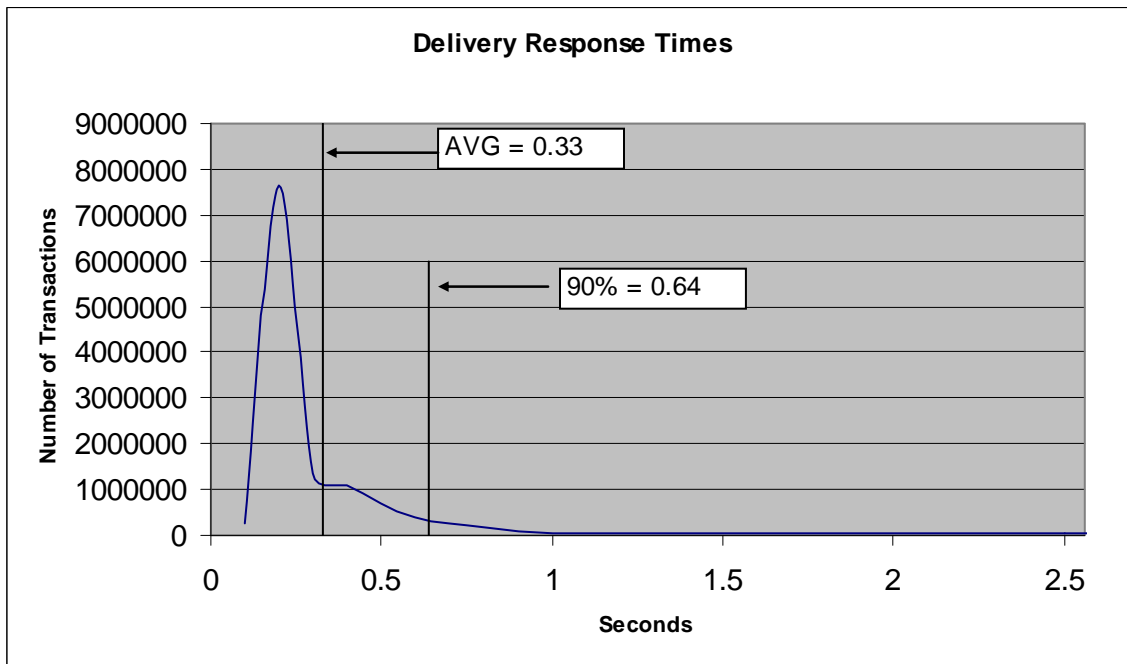
Figure 7. Stock Level Response Time Distribution

Stock Level Response Times

AVG = 0.76

90% = 1.73

Number of Transactions

Seconds
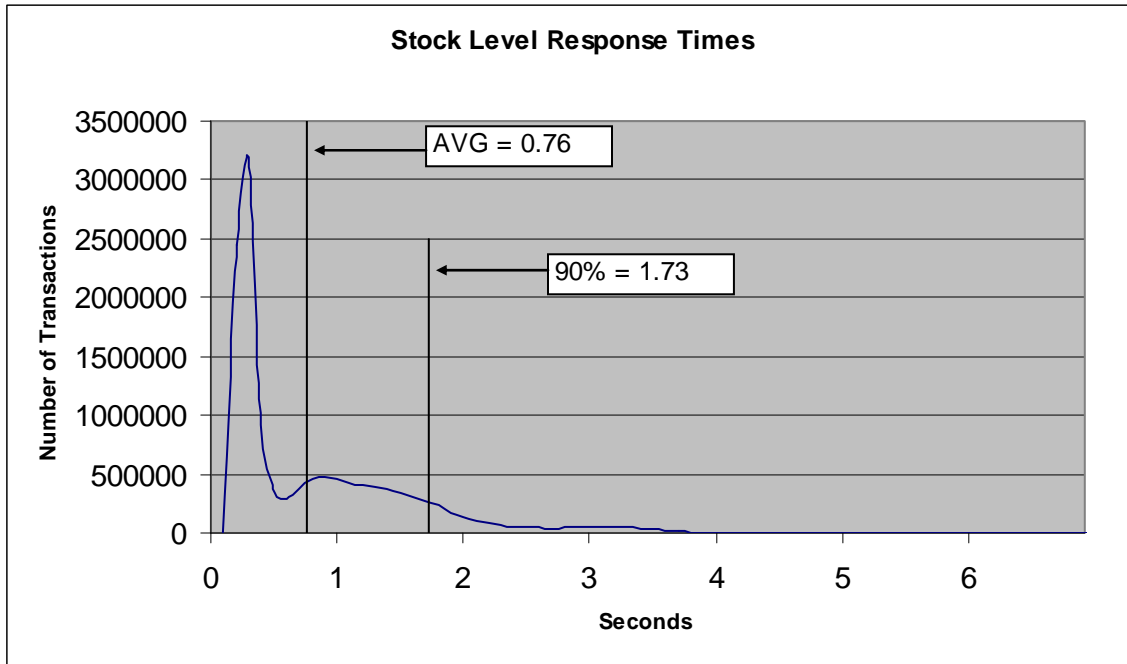
Figure 8. Response Time vs. Throughput

Response Time Versus Throughput

100%

50%

80%

90th Percentile Response Time (s)

New-Order Throughput (tx/min)
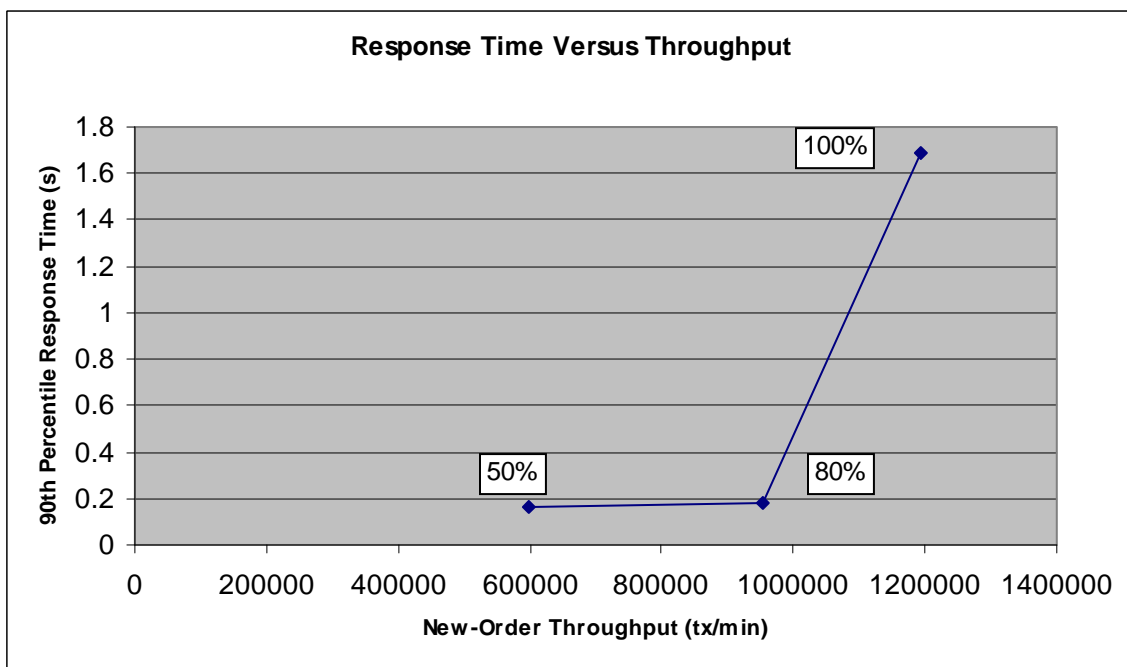
Figure 9. New Order Think Time Distribution

Figure 10. Throughput vs. Time Distribution
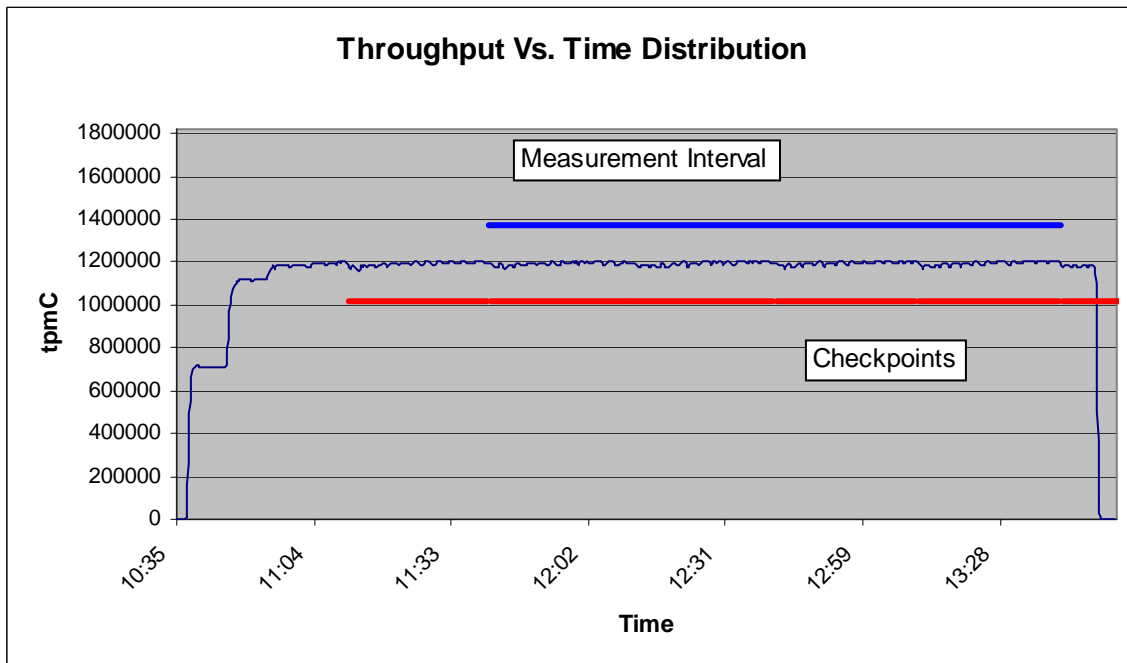
Steady State Determination

The method used to determine that the SUT had reached a steady state prior to commencing the measurement interval must be disclosed.

Steady state was determined using real time monitor utilities from the RTE. Steady state was further confirmed by the throughput data collected during the run and graphed in Figure 10.

Work Performed During Steady State

A description of how the work normally performed during a sustained test (for example checkpointing, writing redo/undo log records, etc.), actually occurred during the measurement interval must be reported.

The RTE generated the required input data to choose a transaction from the menu. This data was time stamped. The input screen for the requested transaction was returned and time stamped. The difference between these two timestamps was the menu response time. The RTE writes to the log file once per transaction on selective fields such as order id. There is one log file per driver engine.

The RTE generated the required input data for the chosen transaction. It waited to complete the minimum required key time before transmitting the input screen. The transmission was time stamped. The return of the screen with the required response data was time stamped. The difference between these two timestamps was the response time for that transaction.

The RTE then waited the required think time interval before repeating the process starting at selecting a transaction from the menu.

The RTE transmissions were sent to application processes running on the client machines through Ethernet LANs. These client application processes handled all screen I/O as well as all requests to the database on the server. The applications communicated with the database server over gigabit Ethernet LANs using ODBC and RPC calls.

To perform checkpoints at specific intervals, the SQL Server *recovery interval* was set to 32767 and a script was written to schedule multiple checkpoints at specific intervals. The script included a wait time between each checkpoint equal to 30 minutes. The measurement interval was 120 minutes. The checkpoint script was started manually after the RTE had all users logged in and the database had achieved steady state.

At each checkpoint, Microsoft SQL Server wrote to disk all memory pages that had been updated but not yet physically written to disk. The positioning of the measurement interval is depicted on the graph in Figure 9.

Measurement Period Duration

A statement of the duration of the measurement interval for the reported Maximum Qualified Throughput (tpmC) must be included.

The reported measured interval was exactly 120 minutes long.

Regulation of Transaction Mix

The method of regulation of the transaction mix (e.g., card decks or weighted random distribution) must be described. If weighted distribution is used and the RTE adjusts the weights associated with each transaction type, the maximum adjustments to the weight from the initial value must be disclosed.

The RTE was given a weighted random distribution, which was not adjusted during the run.

Transaction Statistics

The percentage of the total mix for each transaction type must be disclosed. The percentage of New-Order transactions rolled back as a result of invalid item number must be disclosed. The average number of order-lines entered per New-Order transaction must be disclosed. The percentage of remote order lines per New-Order transaction must be disclosed. The percentage of remote Payment transactions must be disclosed. The percentage of customer selections by customer last name in the Payment and Order-Status transactions must be disclosed. The percentage of Delivery transactions skipped due to there being fewer than necessary orders in the New-Order table must be disclosed.

Table 5.5: Transaction Statistics

Statistic		Value
New Order	Home warehouse order lines	99.00%
	Remote warehouse order lines	1.00%
	Rolled back transactions	1.00%
	Average items per order	10.00
Payment	Home warehouse payments	85.00%
	Remote warehouse payments	14.999%
	Accessed by last name	60.01%
Delivery	Skipped transactions (interactive)	0
	Skipped transactions (deferred)	0
Order Status	Accessed by last name	60.05%
Transaction Mix	New Order	44.94%
	Payment	43.03%
	Order status	4.01%
	Delivery	4.01%
	Stock level	4.01%

Checkpoint Count and Location
The number of checkpoints in the Measurement Interval, the time in seconds from the start of the Measurement Interval to the first checkpoint, and the Checkpoint Interval must be disclosed.

The initial checkpoint was started 34 minutes after the start of the ramp-up. Subsequent checkpoints occurred every 30 minutes. Each checkpoint in the measurement interval lasted 29 minutes and 10 seconds. The measurement interval contains four checkpoints.

Checkpoint Duration
The start time and duration in seconds of at least the four longest checkpoints during the Measurement Interval must be disclosed.

Checkpoint Start Time	Duration
11:41:51PM	29 minutes, 10 seconds
12:11:49PM	29 minutes, 10 seconds
12:41:46PM	29 minutes, 10 seconds
13:11:43PM	29 minutes, 10 seconds

Clause 6 Related Items

RTE Descriptions
If the RTE is commercially available, then its inputs must be specified. Otherwise, a description must be supplied of what inputs (e.g., scripts) to the RTE had been used.

The RTE used was Microsoft Benchcraft RTE. Benchcraft is a proprietary tool provided by Microsoft and is not commercially available. The RTE's input is listed in Appendix A.

Emulated Components
It must be demonstrated that the functionality and performance of the components being emulated in the Driver System are equivalent to the priced system. The results of the test described in Clause 6.6.3.4 must be disclosed.

The driver system consisted of 32 HP ProLiant servers. These driver machines emulated the users' web browsers.

Functional Diagrams
A complete functional diagram of both the benchmark configuration and the configuration of the proposed (target) system must be disclosed. A detailed list of all hardware and software functionality being performed on the Driver System and its interface to the SUT must be disclosed.

The driver system performed the data generation and input functions of the priced display device. It also captured the input and output data and timestamps for post-processing of the reported metrics. No other functionality was included on the driver system.

Section 1.4 of this report contains detailed diagrams of both the benchmark configuration and the priced configuration.

Networks
The network configuration of both the tested services and proposed (target) services that are being represented and a thorough explanation of exactly which parts of the proposed configuration are being replaced with the Driver System must be disclosed.

The bandwidth of the networks used in the tested/priced configuration must be disclosed.

In the tested configuration, 32 driver (RTE) machines were connected through a gigabit Ethernet switch to the client machines at 1Gbps, thus providing the path from the RTEs to the clients. The server (SUT) was connected to the clients through a gigabit Ethernet switch on a separate LAN.

The priced configuration was connected in the same manner as the tested configuration.

Operator Intervention
If the configuration requires operator intervention (see Clause 6.6.6), the mechanism and the frequency of this intervention must be disclosed.

This configuration does not require any operator intervention to sustain eight hours of the reported throughput.

Clause 7 Related Items

System Pricing

A detailed list of hardware and software used in the priced system must be reported. Each separately orderable item must have vendor part number, description, and release/revision level, and either general availability status or committed delivery data. If package-pricing is used, vendor part number of the package and a description uniquely identifying each of the components of the package must be disclosed. Pricing source and effective date(s) of price(s) must also be reported.

The total 3 year price of the entire configuration must be reported, including: hardware, software, and maintenance charges. Separate component pricing is recommended. The basis of all discounts used must be disclosed.

The details of the hardware and software are reported in the front of this report as part of the executive summary. All third party quotations are included at the end of this report as Appendix E.

Availability, Throughput, and Price Performance

The committed delivery date for general availability (availability date) of products used in the price calculation must be reported. When the priced system included products with different availability dates, the reported availability date for the priced system must be the date at which all components are committed to be available.

A statement of the measured tpmC as well as the respective calculations for the 5-year pricing, price/performance (price/tpmC), and the availability date must be included.

- **Maximum Qualified Throughput**   **1,193,472tpmC**
- **Price per tpmC**   **USD $0.68 per tpmC**
- **Availability**   **September 1, 2010**

Country Specific Pricing

Additional Clause 7 related items may be included in the Full Disclosure Report for each country specific priced configuration. Country specific pricing is subject to Clause 7.1.7

This system is being priced for the United States of America.

Usage Pricing

For any usage pricing, the sponsor must disclose:

- *Usage level at which the component was priced.*
- *A statement of the company policy allowing such pricing.*

The component pricing based on usage is shown below:
- 24 Microsoft Windows Server 2008 R2 Standard Edition
- 1 Microsoft Windows Server 2008 R2 Enterprise Edition
- 1 Microsoft SQL Server 2005 Enterprise x64 Edition (per processor) SP3
- 1 Microsoft Visual Studio Standard 2005
- HP Servers include 3 years of support.

Clause 9 Related Items

Auditor's Report

The auditor's name, address, phone number, and a copy of the auditor's attestation letter indicating compliance must be included in the Full Disclosure Report.

This implementation of the TPC Benchmark C was audited by Lorna Livingtree of Performance Metrics, Inc.

> Performance Metrics, Inc.
> PO Box 984
> Klamath CA 95548
> (phone)   707-482-0523
> (fax)   707-482-0575
> e-mail: lornaL@perfmetrics.com

Availability of the Full Disclosure Report

The Full Disclosure Report must be readily available to the public at a reasonable charge, similar to the charges for similar documents by the test sponsor. The report must be made available when results are made public. In order to use the phrase "TPC Benchmark™ C", the Full Disclosure Report must have been submitted to the TPC Administrator as well as written permission obtained to distribute same.

Requests for this TPC Benchmark C Full Disclosure Report should be sent to:

TPC
Presidio of San Francisco
Building 572B Ruger St. (surface)
P.O. Box 29920 (mail)
San Francisco, CA 94129-0920

        or

Hewlett-Packard Company
Database Performance Engineering
P.O. Box 692000
Houston, TX 77269-2000

Mr. David Adams
Database Performance Engineer
Hewlett-Packard Company
20555 SH 249
Houston, TX 77070

I have verified by remote the TPC Benchmark™ C for the following configuration:

Platform: HP ProLiant DL585G7

Database Manager: Microsoft SQL Server 2005 Enterprise X64 Edition SP3

Operating System: Microsoft Windows Server 2008 R2 Enterprise Edition

Transaction Monitor: Microsoft COM+

System Under Test:				
CPU's	Memory	Disks (total)	90% Response	TpmC
4 AMD 12 core @ 2.3 Ghz	Main: 512 GB	100 @ 300 GB 180 @ 120 GB 2 @ 146 GB	1.69	**1,193,472**
Clients: 22 DL360 G5				
1 Intel quad core @ 1.6 Ghz	1 GB	2 @ 72 GB	NA	**NA**

Clients: 2 DL360 G6				
1 Intel quad core @ 2.4 Ghz	2 GB	2 @ 72 GB	NA	**NA**

In my opinion, these performance results were produced in compliance with the TPC requirements for the benchmark. The following attributes of the benchmark were given special attention:

- The transactions were correctly implemented.
- The database files were properly sized.
- The database was properly scaled with 108,000 warehouses, of which 97,9200 were active during the measured interval.
- The ACID properties were successfully demonstrated on an identical configuration previously publish. The system loss test was repeated on this configuration and successfully recovered.
- Input data was generated according to the specified percentages.
- Eight hours of mirrored log space was present on the tested system.
- Eight hours of growth space for the dynamic tables was present on the tested system.
- The data for the 60 days space calculation was verified.
- The steady state portion of the test was 120 minutes.
- There was one complete checkpoint in steady state before the measured interval.

- There were 4 checkpoints started and completed inside the measured interval.
- The system pricing was checked for major components and maintenance.
- Third party quotes were verified for compliance.

Auditor Notes:

The DL360G5 client machines are no longer orderable. There were two DL360G6 clients present in the measured system. The throughput for each client machine was verified to comply with the pricing specification requirements for measured substitution. This substitution is compliant with the pricing and substitution rules.

Sincerely,

Lorna Livingtree

Lorna Livingtree, Certified Auditor

Appendix A:

Source Code

The client source code is listed below.

dlldata.c

```
/*********************************************************
*****
    DllData file -- generated by MIDL compiler

        DO NOT ALTER THIS FILE

    This file is regenerated by MIDL on every IDL file
compile.

    To completely reconstruct this file, delete it and
rerun MIDL
    on all the IDL files in this DLL, specifying this
file for the
    /dlldata command line option

*********************************************************
****/


#include <rpcproxy.h>

#ifdef __cplusplus
extern "C"   {
#endif

EXTERN_PROXY_FILE( tpcc_com_ps )


PROXYFILE_LIST_START
/* Start of list */
  REFERENCE_PROXY_FILE( tpcc_com_ps ),
/* End of list */
PROXYFILE_LIST_END


DLLDATA_ROUTINES( aProxyFileList, GET_DLL_CLSID )

#ifdef __cplusplus
}  /*extern "C" */
#endif

/* end of generated dlldata file */
```

error.h

```
/*      FILE:                   ERROR.H
 *                                       Microsoft
TPC-C Kit Ver. 4.69.000
 *                                       Copyright
Microsoft, 1999
 *           All Rights Reserved
 *
 *                                       Version
4.10.000 audited by Richard Gimarc, Performance
Metrics, 3/17/99
```

```
 *
 *       PURPOSE:  Header file for error exception
classes.
 *
 *  Change history:
 *                  4.20.000 - updated rev number to
match kit
 *                  4.21.000 - fixed bug: ~CBaseErr
needed to be declared virtual
 *                  4.69.000 - updated rev number to
match kit
 */

#pragma once

#ifndef _INC_STRING
            #include <string.h>
#endif

const int m_szMsg_size = 512;
const int m_szApp_size = 64;
const int m_szLoc_size = 64;

//error message structure used in ErrorText routines
typedef struct _SERRORMSG
{
        int             iError;
                        //error id of message
        char            szMsg[256];
                        //message to sent to browser
} SERRORMSG;

typedef enum _ErrorLevel
{
        ERR_FATAL_LEVEL                         =
1,
        ERR_WARNING_LEVEL           = 2,
        ERR_INFORMATION_LEVEL       = 3
} ErrorLevel;


#define ERR_TYPE_LOGIC
                                -1
            //logic error in program; internal error
#define ERR_SUCCESS
                                0
            //success (a non-error error)
#define ERR_BAD_ITEM_ID
                                1
            //expected abort record in txnRecord
#define ERR_TYPE_DELIVERY_POST
                                2
            //expected delivery post failed
#define   ERR_TYPE_WEBDLL
                                3
            //tpcc web generated error
#define   ERR_TYPE_SQL
                                4
            //sql server generated error
#define   ERR_TYPE_DBLIB
                                5
            //dblib generated error
```

```
#define    ERR_TYPE_ODBC
                                6
            //odbc generated error
#define ERR_TYPE_SOCKET
                                7
            //error on communication socket client rte
only
#define ERR_TYPE_DEADLOCK
                                8
            //dblib and odbc only deadlock condition
#define ERR_TYPE_COM
                                9
            //error from COM call
#define ERR_TYPE_TUXEDO
                                10
            //tuxedo error
#define ERR_TYPE_OS
                                11
            //operating system error
#define ERR_TYPE_MEMORY
                                12
            //memory allocation error
#define ERR_TYPE_TPCC_ODBC
                                13
            //error from tpcc odbc txn module
#define ERR_TYPE_TPCC_DBLIB
                                14
            //error from tpcc dblib txn module
#define ERR_TYPE_DELISRV
                                15
            //delivery server error
#define ERR_TYPE_TXNLOG
                                16
            //txn log error
#define ERR_TYPE_BCCONN
                                17
            //Benchcraft connection class
#define ERR_TYPE_TPCC_CONN
                                18
            //Benchcraft connection class
#define ERR_TYPE_ENCINA
                                19
            //Encina error
#define ERR_TYPE_COMPONENT
                                20
            //error from COM component
#define ERR_TYPE_RTE
                                21
            //Benchcraft rte
#define ERR_TYPE_AUTOMATION
                                22
            //Benchcraft automation errors
#define ERR_TYPE_DRIVER
                                23
            //Driver engine errors
#define ERR_TYPE_RTE_BASE
                                24
            //Framework errors
#define   ERR_BUF_OVERFLOW
                                25
            //Buffer overflow during receive
```

```
#define ERR_TYPE_SOAP_HTTP
                              26
        //HTTP/SOAP dll generated error
#define ERR_TYPE_OLEDB
                                        27
        //OLE-DB generated error
#define ERR_TYPE_TPCC_OLEDB
                              28
        //error from tpcc ole-db txn module
// TPC-W error types
#define ERR_TYPE_TPCW_CONN
                              50
        //Benchcraft connection class
#define ERR_TYPE_TPCW_HTML
                              51
        //error from TpcwHtml dll
#define ERR_TYPE_TPCW_USER
                              52
        //error from TPC-W user class
#define ERR_TYPE_TPCW_ENG_BASE
                              53
#define ERR_TYPE_TPCW_ENG_OS
                              54
#define ERR_TYPE_HTML_RESP
                              55
#define ERR_TYPE_TPCW_ODBC
                              56
#define ERR_TYPE_SCHANNEL
                              57
#define ERR_TYPE_THINK_LIST
                              58
//------ end TPC-W ----------
#define ERR_TYPE_XML_PROFILE
                              59
// TPC-E error types
#define ERR_TYPE_TPCE_CONN
                              60
        //TPC-E pipe connection errors
#define ERR_TYPE_TPCE_RTE
                              61
        //TPC-E Rte errors
#define ERR_TYPE_TPCE_ENG_BASE
                              62
        //Tpce Driver engine errors
#define ERR_TYPE_TPCE_ENG_OS
                              63               //Tpce Driver
engine system errors
//#define ERR_TYPE_TPCE_MEE_ENG_BASE
                              64               //Tpce MEE
Driver engine errors
//#define ERR_TYPE_TPCE_MEE_ENG_OS
                              65               //Tpce MEE
Driver engine system errors

#define ERR_INS_MEMORY
        "Insufficient Memory to continue."
#define ERR_UNKNOWN
        "Unknown error."
#define ERR_MSG_BUF_SIZE               512
#define INV_ERROR_CODE                          -1
#define ERR_INS_BUF_OVERFLOW    "Insufficient Buffer
size to receive HTML pages."
```

```
class CBaseErr
{
public:
        enum Action
        {
                eNone = 0
        };

        CBaseErr(LPCTSTR szLoc = NULL)
        {
                m_idMsg               =
GetLastError();      //take the error code
immediatelly before it is reset by other functions

                if (szLoc)
                {
                        m_szLoc = new
char[strlen(szLoc)+1/*m_szLoc_size*/];
                                strcpy(m_szLoc, szLoc);
                }
                else
                        m_szLoc   = NULL;

                m_szApp               = new
char[m_szApp_size];

                GetModuleFileName(GetModuleHandle(NULL),
m_szApp, m_szApp_size);
        }


        CBaseErr(int idMsg, LPCTSTR szLoc = NULL)
        {
                m_idMsg               = idMsg;

                if (szLoc)
                {
                        m_szLoc = new
char[strlen(szLoc)+1/*m_szLoc_size*/];
                                strcpy(m_szLoc, szLoc);
                }
                else
                        m_szLoc   = NULL;

                m_szApp               = new
char[m_szApp_size];

                GetModuleFileName(GetModuleHandle(NULL),
m_szApp, m_szApp_size);
        }

        virtual ~CBaseErr(void)
        {
                if (m_szApp)
                        delete [] m_szApp;
                if (m_szLoc)
                        delete [] m_szLoc;
```

```
        };

        virtual void Draw(HWND hwnd, LPCTSTR szStr
= NULL)
        {
                int                 j = 0;
                char        szTmp[512];

                if (szStr)
                        j = wsprintf(szTmp,
"%s\n",szStr);
                        if (ErrorNum() != INV_ERROR_CODE)
                        j += wsprintf(szTmp+j,
"Error = %d\n", ErrorNum());
                        if (m_szLoc)
                        j += wsprintf(szTmp+j,
"Location = %s\n", GetLocation());

                        j += wsprintf(szTmp+j, "%s\n",
ErrorText());

                        MessageBox(hwnd, szTmp, m_szApp,
MB_OK);
        }

        char *GetApp(void) { return m_szApp; }
        char *GetLocation(void) { return m_szLoc; }
        virtual int ErrorNum() { return m_idMsg; }


        virtual int ErrorType() = 0;  // a value
which distinguishes the kind of error that occurred
        virtual char *ErrorTypeStr() = 0; // text
representation of the error type
        virtual char *ErrorText() = 0; // a string
(i.e., human readable) representation of the error
        virtual int ErrorAction() { return eNone; }
        // the function call that caused the error

protected:
        char        *m_szApp;
        char        *m_szLoc; // code location where
the error occurred
        int                 m_idMsg;

        //short   m_errType;
};

class CSocketErr : public CBaseErr
{
public:
        enum Action
        {
                eNone = 0,
                eSend,
                eSocket,
                eBind,
                eConnect,
                eListen,
                eHost,
                eRecv,
```

```cpp
            eGetHostByName,
            eWSACreateEvent,
            eWSASend,
            eWSAGetOverlappedResult,
            eWSARecv,
            eWSAWaitForMultipleEvents,
            eWSAStartup,
            eWSAResetEvent,
            eWSAEnumNetworkEvents,
            eWSAEventSelect,
            eSelect,
            eAccept,
            eNonRetryable
        };

        CSocketErr(Action eAction, LPCTSTR
szLocation = NULL);

        ~CSocketErr()
        {
                if (m_szErrorText != NULL)
                        delete []
m_szErrorText;
        };

        Action    m_eAction;
        char      *m_szErrorText;

        int                ErrorType() { return
ERR_TYPE_SOCKET;};
        char*      ErrorTypeStr() { return "SOCKET";
}
        char*      ErrorText(void);
        int                ErrorAction() { return
(int)m_eAction; }

};

class CSystemErr : public CBaseErr
{
public:
        enum Action
        {
                eNone = 0,
                eTransactNamedPipe,
                eWaitNamedPipe,
                eSetNamedPipeHandleState,
                eCreateFile,
                eCreateProcess,
                eCallNamedPipe,
                eCreateEvent,
                eCreateThread,
                eVirtualAlloc,
                eReadFile = 10,
                eWriteFile,
                eMapViewOfFile,
                eCreateFileMapping,
                eInitializeSecurityDescriptor,
                eSetSecurityDescriptorDacl,
                eCreateNamedPipe,
                eConnectNamedPipe,
                eWaitForSingleObject,
                eRegOpenKeyEx,

                eRegQueryValueEx = 20,
                ebeginthread,
                eRegEnumValue,
                eRegSetValueEx,
                eRegCreateKeyEx,
                eWaitForMultipleObjects,
                eRegisterClassEx,
                eCreateWindow,
                eCreateSemaphore,
                eReleaseSemaphore,
                eFSeek,
                eFRead,
                eFWrite,
                eTmpFile,
                eSetFilePointer,
                eNew,
                eCloseHandle,
                eGetOverlappedResult
        };

                        CSystemErr(Action
eAction, LPCTSTR szLocation);
                        CSystemErr(int iError,
Action eAction, LPCTSTR szLocation);
                int             ErrorType() { return
ERR_TYPE_OS;};
                char*   ErrorTypeStr() { return "SYSTEM";
}
                char    *ErrorText(void);
                int             ErrorAction() { return
(int)m_eAction; }
                void    Draw(HWND hwnd, LPCTSTR szStr =
NULL);

                Action  m_eAction;
private:
                char m_szMsg[ERR_MSG_BUF_SIZE];
};

class CMemoryErr : public CBaseErr
{
public:
        CMemoryErr();

        int                ErrorType() {return
ERR_TYPE_MEMORY;}
        char*      ErrorTypeStr() { return "OUT OF
MEMORY"; }
        char*      ErrorText() {return
ERR_INS_MEMORY;}
};


class CBufferOverflowErr : public CBaseErr
{
        public:
        CBufferOverflowErr(int,LPTSTR);

        int                ErrorType() {return
ERR_BUF_OVERFLOW;}
        char*      ErrorTypeStr() { return "BUFFER
OVERFLOW"; }

                char*      ErrorText() {return
ERR_INS_BUF_OVERFLOW;}
};

// Exception type for XML profiles
class CXMLProfileErr : public CBaseErr
{
        public:
                enum Action
                {
                        LoadProfile = 1,
                        LoadSchema,
                        ValidateProfile,
                        SaveProfile,
                        LoadFromXML,
                        SaveToXML,

                ApplyProcessingInstruction,
                        ApplyAttribute,
                        ApplyNode
                };

                CXMLProfileErr(Action eAction,
int eCode, LPCTSTR szLocation)
                {
                        m_eAction = eAction;
                        m_eCode = eCode;
                        m_bOverload = true;
                };
                CXMLProfileErr(Action eAction,
int eCode, LPCTSTR szLocation, char * szMsg)
                {
                        m_eAction = eAction;
                        m_eCode = eCode;
                        strcpy(m_szMsg, szMsg);
                        m_bOverload = false;
                };

                virtual int
        ErrorType() { return
ERR_TYPE_XML_PROFILE;};
                virtual char
        *ErrorTypeStr() { return "XML PROFILE"; };
                virtual char        *ErrorText();

                virtual int
        ErrorCode() { return m_eCode; };
                int
        ErrorAction() { return (int)m_eAction; }
                //virtual void        Draw(HWND
hwnd, LPCTSTR szStr = NULL)
                //{
                //              ::MessageBox(hwnd,
szStr, m_szLoc, MB_OK);
                //};
                private:
                        char
        m_szMsg[ERR_MSG_BUF_SIZE];
                        LPCTSTR m_szLoc;
                        int                m_eCode;
                        bool       m_bOverload;
                        Action     m_eAction;
```

install.c

```
/*      FILE:            INSTALL.C
*                                Microsoft
TPC-C Kit Ver. 4.69.000
*                                Copyright
Microsoft, 2008, 2009
*           All Rights Reserved
*
*                                not audited
*
*      PURPOSE:  Automated installation
application for TPC-C Web Kit
*      Contact:  Charles Levine
(clevine@microsoft.com)
*
*  Change history:
*               4.20.000 - added COM installation
steps
*      4.50.000 - added IIS6 configuration options
*               4.51.000 - added routines to copy
Visual Studio runtime module (MSVCR70.DLL)
*                                to
SystemRoot\System32
*               4.69.000 - added IIS7 suppport
and Windows Server 2008 R2 support
*/

#include <windows.h>
#include <direct.h>
#include <io.h>
#include <stdlib.h>
#include <tchar.h>
#include <stdio.h>
#include <commctrl.h>
#include "..\..\common\src\ReadRegistry.h"
#include <process.h>

#include "resource.h"

#define  WM_INITTEXT            WM_USER+100

HICON             hIcon;
HINSTANCE hInst;

DWORD                     versionExeMS;
DWORD                     versionExeLS;
DWORD                     versionExeMM;
DWORD                     versionDllMS;
DWORD                     versionDllLS;

// TPC-C registry settings
TPCCREGISTRYDATA    Reg;

static   int             iPoolThreadLimit;
static   int             iMaxPoolThreads;
static   int             iThreadTimeout;
```

```
static   int             iListenBackLog;
static   int             iAcceptExOutstanding;
static   int             iUriEnableCache;
static   int             iUriScavengerPeriod;
static   int             iMaxConnections;

static   int             iIISMajorVersion;
static   int             iNumberOfProcessors;

static   int             iMaxPhysicalMemory;
                         //max physical memory in MB
static   char    szLastFileName[64];            //
last file we worked on (for error reporting)


BOOL     CALLBACK  LicenseDlgProc(HWND hwnd, UINT
uMsg, WPARAM wParam, LPARAM lParam);
BOOL     CALLBACK  UpdatedDlgProc(HWND hwnd, UINT
uMsg, WPARAM wParam, LPARAM lParam);
BOOL     CALLBACK  MainDlgProc(HWND hwnd, UINT uMsg,
WPARAM wParam, LPARAM lParam);
BOOL     CALLBACK  CopyDlgProc(HWND hwnd, UINT uMsg,
WPARAM wParam, LPARAM lParam);
static   void            ProcessOK(HWND hwnd,
char *szDllPath, char *szWindowsPath);
static   void
ReadRegistrySettings(void);
static   void
WriteRegistrySettings(char *szDllPath);
static   BOOL            RegisterDLL(char
*szFileName);
static   int
CopyFiles(HWND hDlg, char *szDllPath, char
*szWindowsPath);
static   BOOL            GetInstallPath(char
*szDllPath);
static   BOOL
GetWindowsInstallPath(char *szWindowsPath);
static   void            GetVersionInfo(char
*szDLLPath, char *szExePath);
static   BOOL
CheckWWWebService(void);
static   BOOL
StartWWWebService(void);
static   BOOL            StopWWWebService(void);
static   void            UpdateDialog(HWND
hDlg);
static   void            ConfigureIIS6(HWND
hwnd, HWND hDlg);
static   void            ConfigureIIS7(HWND
hwnd, HWND hDlg);

SYSTEM_INFO siSysInfo;

BOOL install_com(char *szDllPath);

#include "..\..\common\src\ReadRegistry.cpp"

int WINAPI WinMain( HINSTANCE hInstance, HINSTANCE
hPrevInstance, LPSTR lpCmdLine, int nCmdShow )
{
        int iRc;
```

```
        hInst = hInstance;

        InitCommonControls();

        hIcon = LoadIcon(hInstance,
MAKEINTRESOURCE(IDI_ICON1));

        iRc = DialogBox(hInstance,
MAKEINTRESOURCE(IDD_DIALOG4), GetDesktopWindow(),
LicenseDlgProc);
        if ( iRc )
        {
                iRc = DialogBox(hInstance,
MAKEINTRESOURCE(IDD_DIALOG1), GetDesktopWindow(),
MainDlgProc);
                if ( iRc )
                {

DialogBoxParam(hInstance,
MAKEINTRESOURCE(IDD_DIALOG2), GetDesktopWindow(),
UpdatedDlgProc, (LPARAM)iRc);
                }
        }

        DestroyIcon(hIcon);
        return 0;
}

BOOL CALLBACK LicenseDlgProc(HWND hwnd, UINT uMsg,
WPARAM wParam, LPARAM lParam)
{
        HGLOBAL                   hRes;
        HRSRC                     hResInfo;
        BYTE                      *pSrc, *pDst;
        DWORD                     dwSize;
        static HFONT      hFont;

        switch(uMsg)
        {
                case WM_INITDIALOG:
                        hFont = CreateFont(-12,
0, 0, 0, 400, 0, 0, 0, 0, 0, 0, 0, 0, "Arial");
                        SendMessage(
GetDlgItem(hwnd, IDR_LICENSE1), WM_SETFONT,
(WPARAM)hFont, MAKELPARAM(0, 0) );
                        PostMessage(hwnd,
WM_INITTEXT, (WPARAM)0, (LPARAM)0);
                        return TRUE;
                case WM_INITTEXT:
                        hResInfo =
FindResource(hInst, MAKEINTRESOURCE(IDR_LICENSE1),
"LICENSE");
                        dwSize =
SizeofResource(hInst, hResInfo);
                        hRes =
LoadResource(hInst, hResInfo );
                        pSrc = (BYTE
*)LockResource(hRes);
                        pDst = (unsigned char
*)malloc(dwSize+1);
                        if ( pDst )
                        {
```

```
                                memcpy(pDst,
pSrc, dwSize);
                                pDst[dwSize]
= 0;

        SetDlgItemText(hwnd, IDC_LICENSE, (const
char *)pDst);

                                free(pDst);
                        }
                        else

        SetDlgItemText(hwnd, IDC_LICENSE, (const
char *)pSrc);
                        return TRUE;
                case WM_DESTROY:
                        DeleteObject(hFont);
                        return TRUE;
                case WM_COMMAND:
                        if ( wParam == IDOK )

        EndDialog(hwnd, TRUE);
                        if ( wParam == IDCANCEL
)

        EndDialog(hwnd, FALSE);
                default:
                        break;
        }
        return FALSE;
}

BOOL CALLBACK UpdatedDlgProc(HWND hwnd, UINT uMsg,
WPARAM wParam, LPARAM lParam)
{
        switch(uMsg)
        {
                case WM_INITDIALOG:
                        switch(lParam)
                        {
                                case 1:
                                case 2:

        SetDlgItemText(hwnd, IDC_RESULTS, "TPC-C
Web Client Installed");

        break;

                        }
                        return TRUE;
                case WM_COMMAND:
                        if ( wParam == IDOK )

        EndDialog(hwnd, TRUE);
                        break;
                default:
                        break;
        }
        return FALSE;
}

BOOL CALLBACK MainDlgProc(HWND hwnd, UINT uMsg,
WPARAM wParam, LPARAM lParam)
{
        PAINTSTRUCT             ps;
```

```
        MEMORYSTATUS         memoryStatus;
        OSVERSIONINFO        VI;
        char
        szTmp[MAX_PATH];
        static char
        szDllPath[MAX_PATH];
        static char
        szWindowsPath[MAX_PATH];
        static char
        szExePath[MAX_PATH];

        switch(uMsg)
        {
                case WM_INITDIALOG:

        GlobalMemoryStatus(&memoryStatus);
                        iMaxPhysicalMemory  =
(memoryStatus.dwTotalPhys/ 1048576);

                        if (
GetWindowsInstallPath(szWindowsPath) )
                        {

        MessageBox(hwnd, "Error: Cannot determine
Windows System Root.", NULL, MB_ICONSTOP | MB_OK);

        EndDialog(hwnd, FALSE);
                                return TRUE;
                        }

                        if (
GetInstallPath(szDllPath) )
                        {

        MessageBox(hwnd, "Error internet service
inetsrv is not installed.", NULL, MB_ICONSTOP |
MB_OK);

        EndDialog(hwnd, FALSE);
                                return TRUE;
                        }

                        // set default values
                        ZeroMemory( &Reg,
sizeof(Reg) );

                        Reg.dwNumberOfDeliveryThreads = 4;
                        Reg.dwMaxConnections =
100;

                        Reg.dwMaxPendingDeliveries   = 100;
                        Reg.eDB_Protocol =
ODBC;

                        Reg.eTxnMon = None;
                        strcpy(Reg.szDbServer,
"");
                        strcpy(Reg.szDbName,
"tpcc");
                        strcpy(Reg.szDbUser,
"sa");

        strcpy(Reg.szDbPassword,      "");
```

```
                        iPoolThreadLimit =
iMaxPhysicalMemory * 2;

                        iThreadTimeout = 86400;
                        iListenBackLog = 15;
                        iAcceptExOutstanding =
40;

        ReadTPCCRegistrySettings( &Reg );
                        ReadRegistrySettings();

                        // copy the hardware
information to the SYSTEM_INFO structure

        GetSystemInfo(&siSysInfo);
                        // store the number of
processors on this system
                        iNumberOfProcessors =
siSysInfo.dwNumberOfProcessors;

        GetModuleFileName(hInst, szExePath,
sizeof(szExePath));

        GetVersionInfo(szDllPath, szExePath);

                        wsprintf(szTmp,
"Version %d.%2.2d.%3.3d", versionExeMS, versionExeMM,
versionExeLS);
                        SetDlgItemText(hwnd,
IDC_VERSION, szTmp);

                        SetDlgItemText(hwnd,
IDC_PATH, szDllPath);

                        SetDlgItemText(hwnd,
ED_DB_SERVER, Reg.szDbServer);
                        SetDlgItemText(hwnd,
ED_DB_USER_ID, Reg.szDbUser);
                        SetDlgItemText(hwnd,
ED_DB_PASSWORD, Reg.szDbPassword);
                        SetDlgItemText(hwnd,
ED_DB_NAME, Reg.szDbName);

                        SetDlgItemInt(hwnd,
ED_THREADS, Reg.dwNumberOfDeliveryThreads, FALSE);
                        SetDlgItemInt(hwnd,
ED_MAXCONNECTION, Reg.dwMaxConnections, FALSE);
                        SetDlgItemInt(hwnd,
ED_MAXDELIVERIES, Reg.dwMaxPendingDeliveries, FALSE);
                        SetDlgItemInt(hwnd,
ED_IIS_MAX_THEAD_POOL_LIMIT, iPoolThreadLimit,
FALSE);
                        SetDlgItemInt(hwnd,
ED_IIS_THREAD_TIMEOUT, iThreadTimeout, FALSE);
                        SetDlgItemInt(hwnd,
ED_IIS_LISTEN_BACKLOG, iListenBackLog, FALSE);
                        SetDlgItemInt(hwnd,
ED_WEB_SERVICE_BACKLOG_QUEUE_SIZE,
iAcceptExOutstanding, FALSE);

                        // check OS version
level for COM.  Must be at least Windows 2000
```

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```
                        VI.dwOSVersionInfoSize
= sizeof(VI);
                        GetVersionEx( &VI );
                        if (VI.dwMajorVersion <
5)
                        {
                                HWND hDlg =
GetDlgItem( hwnd, IDC_TM_MTS );
                                EnableWindow(
hDlg, 0 );        // disable COM option
                                if
(Reg.eTxnMon == COM)

        Reg.eTxnMon = None;
                        }
                        CheckDlgButton(hwnd,
IDC_TM_NONE,   0);
                        CheckDlgButton(hwnd,
IDC_TM_MTS,    0);
                        switch (Reg.eTxnMon)
                        {
                        case None:

        CheckDlgButton(hwnd, IDC_TM_NONE,   1);
                                break;
                        case COM:

        CheckDlgButton(hwnd, IDC_TM_MTS,       1);
                                break;
                        }

                        return TRUE;
                case WM_PAINT:
                        if ( IsIconic(hwnd) )
                        {

        BeginPaint(hwnd, &ps);

        DrawIcon(ps.hdc, 0, 0, hIcon);

        EndPaint(hwnd, &ps);
                                return TRUE;
                        }
                        break;
                case WM_COMMAND:
                        if ( HIWORD(wParam) ==
BN_CLICKED )
                        {
                                switch(
LOWORD(wParam) )
                                {

        case IDOK:

        ProcessOK(hwnd, szDllPath, szWindowsPath);

        return TRUE;

        case IDCANCEL:

        EndDialog(hwnd, FALSE);
```

```
                        return TRUE;

                default:

                        return FALSE;
                                }

                        break;
                        default:
                                break;
                }
                return FALSE;
}

static void ProcessOK(HWND hwnd, char *szDllPath,
char *szWindowsPath)
{
        int            d;
        HWND           hDlg;
        int            rc;
        BOOL           bSvcRunning;

        char           szFullName[MAX_PATH];
        char           szErrTxt[128];

        // Check whether Service Pack 1 has been
installed if
        // running on Windows Server 2003. The RTM
version has
        // a limitation on the number of concurrent
HTTP connections.
        //
        OSVERSIONINFOEX               VersionInfo;

        VersionInfo.dwOSVersionInfoSize =
sizeof(OSVERSIONINFOEX);
        if
(GetVersionEx((LPOSVERSIONINFO)&VersionInfo))
        {
                        if (VersionInfo.dwMajorVersion ==
5 &&     // Windows 2000/2003 Server?

                        VersionInfo.dwMinorVersion == 2 &&        //
Windows 2003 Server?

                        VersionInfo.wServicePackMajor == 0)    //
Service Pack installed?
                        {
                                TCHAR szMsg[MAX_PATH];

                                _sntprintf(szMsg,
sizeof(szMsg),
                                                "Warning:
running on Windows Server 2003 without at least
Service Pack 1\n"
                                                "limits the
number of concurrent HTTP connections to around
8000.");
                                MessageBox(hwnd, szMsg,
_T("Service Pack not Installed"), MB_ICONEXCLAMATION
| MB_OK);
                        }
```

```
        }

        // read settings from dialog
        Reg.dwNumberOfDeliveryThreads  =
GetDlgItemInt(hwnd, ED_THREADS, &d, FALSE);
        Reg.dwMaxConnections = GetDlgItemInt(hwnd,
ED_MAXCONNECTION, &d, FALSE);
        Reg.dwMaxPendingDeliveries =
GetDlgItemInt(hwnd, ED_MAXDELIVERIES, &d, FALSE);

        GetDlgItemText(hwnd, ED_DB_SERVER,
Reg.szDbServer, sizeof(Reg.szDbServer));
        GetDlgItemText(hwnd, ED_DB_USER_ID,
Reg.szDbUser, sizeof(Reg.szDbUser));
        GetDlgItemText(hwnd, ED_DB_PASSWORD,
Reg.szDbPassword, sizeof(Reg.szDbPassword));
        GetDlgItemText(hwnd, ED_DB_NAME,
Reg.szDbName, sizeof(Reg.szDbName));

        if ( IsDlgButtonChecked(hwnd, IDC_TM_NONE)
)
                Reg.eTxnMon = None;
        else if ( IsDlgButtonChecked(hwnd,
IDC_TM_MTS) )
                Reg.eTxnMon = COM;

        iPoolThreadLimit = GetDlgItemInt(hwnd,
ED_IIS_MAX_THEAD_POOL_LIMIT, &d, FALSE);
        iThreadTimeout = GetDlgItemInt(hwnd,
ED_IIS_THREAD_TIMEOUT,        &d, FALSE);
        iListenBackLog = GetDlgItemInt(hwnd,
ED_IIS_LISTEN_BACKLOG, &d, FALSE);
        iAcceptExOutstanding = GetDlgItemInt(hwnd,
ED_WEB_SERVICE_BACKLOG_QUEUE_SIZE, &d, FALSE);

        ShowWindow(hwnd, SW_HIDE);
        hDlg = CreateDialog(hInst,
MAKEINTRESOURCE(IDD_DIALOG3), hwnd, CopyDlgProc);
        ShowWindow(hDlg, SW_SHOWNA);
        UpdateDialog(hDlg);

        // check to see if the web services are
running
        bSvcRunning = CheckWWWebService();
        if ( bSvcRunning )
        {
                SetDlgItemText(hDlg, IDC_STATUS,
"Stopping Web Service.");
                SendDlgItemMessage(hDlg,
IDC_PROGRESS1, PBM_STEPIT, 0, 0);
                UpdateDialog(hDlg);

                StopWWWebService();
                SendDlgItemMessage(hDlg,
IDC_PROGRESS1, PBM_STEPIT, 0, 0);
                UpdateDialog(hDlg);
        }

        // write binaries to inetpub\wwwroot
        rc = CopyFiles(hDlg, szDllPath,
szWindowsPath);
        if ( !rc )
```

```
                {                                                        return;                                         // since IIS6 handles
                        ShowWindow(hwnd, SW_SHOWNA);               }                                       the pool thread parameters differently, we need to
                        DestroyWindow(hDlg);                                                               fill in the dialog
                        strcpy( szErrTxt, "Error(s)          // if using COM                                                 // with the
occured when creating " );                              if (Reg.eTxnMon == COM)                     MaxPoolThreads rather thatn PoolThreadLimit
                        strcat( szErrTxt, szLastFileName    {                                                           // for ease of coding,
);                                                              SetDlgItemText(hDlg, IDC_STATUS,         we are just going to stuff the value into
                        MessageBox(hwnd, szErrTxt, NULL,    "Configuring COM.");                         iPoolThreadLimit
MB_ICONSTOP | MB_OK);                                          SendDlgItemMessage(hDlg,                         size = sizeof(iPoolThreadLimit);
                        EndDialog(hwnd, 0);                 IDC_PROGRESS1, PBM_STEPIT, 0, 0);                        if (
                        return;                                        UpdateDialog(hDlg);              RegQueryValueEx(hKey, "MaxPoolThreads", 0, &type,
                }                                                                                        (char *)&iPoolThreadLimit, &size) == ERROR_SUCCESS )
                                                                       if (install_com(szDllPath))                      if ( !iPoolThreadLimit
        // while we have the web services shutdown,                    {                                )
check to see if this                                                           ShowWindow(hwnd,
        // is IIS6.  If it is, then call                    SW_SHOWNA);                                         iPoolThreadLimit =  iMaxPhysicalMemory * 2;
ConfigureIIS6                                                                   DestroyWindow(hDlg);                     }
        if ( iIISMajorVersion == 6)                                            strcpy( szErrTxt,                 else
        {                                                   "Error occured when configuring COM settings." );     {
                ConfigureIIS6(hwnd, hDlg);                                     MessageBox(hwnd,                                  size =
        }                                                   szErrTxt, NULL, MB_ICONSTOP | MB_OK);               sizeof(iPoolThreadLimit);
                                                                               EndDialog(hwnd, 0);                      if (
        // while we have the web services shutdown,                            return;                          RegQueryValueEx(hKey, "MaxPoolThreads", 0, &type,
check to see if this                                                   }                                        (char *)&iPoolThreadLimit, &size) == ERROR_SUCCESS )
        // is IIS7.  If it is, then call                           }                                                            if ( !iPoolThreadLimit
ConfigureIIS6                                                                                            )
        if ( iIISMajorVersion == 7)                                Sleep(100);
        {                                                                                                            iPoolThreadLimit =  iMaxPhysicalMemory * 2;
                ConfigureIIS7(hwnd, hDlg);                         ShowWindow(hwnd, SW_SHOWNA);                      }
        }                                                          DestroyWindow(hDlg);
                                                                                                                     size = sizeof(iThreadTimeout);
        //if we stopped service restart it.                        EndDialog(hwnd, rc);                             if ( RegQueryValueEx(hKey,
        if ( bSvcRunning )                                         return;                                  "ThreadTimeout", 0, &type, (char *)&iThreadTimeout,
        {                                                   }                                               &size) == ERROR_SUCCESS )
                SetDlgItemText(hDlg, IDC_STATUS,                                                                      if ( !iThreadTimeout )
"Starting Web Service.");                                   static void ReadRegistrySettings(void)
                SendDlgItemMessage(hDlg,                    {                                                       iThreadTimeout = 86400;
IDC_PROGRESS1, PBM_STEPIT, 0, 0);                                  HKEY       hKey;
                UpdateDialog(hDlg);                                DWORD      size;                                 size = sizeof(iListenBackLog);
                StartWWWebService();                               DWORD      type;                                 if ( RegQueryValueEx(hKey,
        }                                                                                                   "ListenBackLog", 0, &type, (char *)&iListenBackLog,
                                                                   if ( RegOpenKeyEx(HKEY_LOCAL_MACHINE,    &size) == ERROR_SUCCESS )
        // update registry                                  "SOFTWARE\\Microsoft\\InetStp", 0, KEY_READ, &hKey)             if ( !iListenBackLog )
        SetDlgItemText(hDlg, IDC_STATUS, "Updating          == ERROR_SUCCESS )
Registry.");                                                       {                                                iListenBackLog = 15;
        SendDlgItemMessage(hDlg, IDC_PROGRESS1,                            size = sizeof(iIISMajorVersion);
PBM_STEPIT, 0, 0);                                                         if ( RegQueryValueEx(hKey,                RegCloseKey(hKey);
        UpdateDialog(hDlg);                                 "MajorVersion", 0, &type, (char *)&iIISMajorVersion,        }
        WriteRegistrySettings(szDllPath);                   &size) == ERROR_SUCCESS )
                                                                                    if ( !iIISMajorVersion   if ( RegOpenKeyEx(HKEY_LOCAL_MACHINE,
        // register com proxy stub                          )                                               "SYSTEM\\CurrentControlSet\\Services\\W3SVC\\Paramete
        strcpy(szFullName, szDllPath);                                                                      rs", 0, KEY_READ, &hKey) == ERROR_SUCCESS )
        strcat(szFullName, "tpcc_com_ps.dll");                             iIISMajorVersion = 5;                    {
        if (!RegisterDLL(szFullName))                              }                                                       size =
        {                                                                                                   sizeof(iAcceptExOutstanding);
                ShowWindow(hwnd, SW_SHOWNA);                       if ( RegOpenKeyEx(HKEY_LOCAL_MACHINE,            if ( RegQueryValueEx(hKey,
                DestroyWindow(hDlg);                        "SYSTEM\\CurrentControlSet\\Services\\Inetinfo\\Param  "AcceptExOutstanding", 0, &type, (char
                strcpy( szErrTxt, "Error occured            eters", 0, KEY_READ, &hKey) == ERROR_SUCCESS )        *)&iAcceptExOutstanding, &size) == ERROR_SUCCESS )
when registering " );                                              {                                                       if (
                strcat( szErrTxt, szFullName );                            if ( iIISMajorVersion == 6)      !iAcceptExOutstanding )
                MessageBox(hwnd, szErrTxt, NULL,                           {
MB_ICONSTOP | MB_OK);                                                                                           iAcceptExOutstanding = 40;
                EndDialog(hwnd, 0);
```

```
            RegCloseKey(hKey);
        }
        if ( RegOpenKeyEx(HKEY_LOCAL_MACHINE,
"SYSTEM\\CurrentControlSet\\Services\\HTTP\\Parameter
s", 0, KEY_READ, &hKey) == ERROR_SUCCESS )
        {
            size = sizeof(iUriEnableCache);
            if ( RegQueryValueEx(hKey,
"UriEnableCache", 0, &type, (char *)&iUriEnableCache,
&size) == ERROR_SUCCESS )
                    if ( !iUriEnableCache )

            iUriEnableCache = 0;

            size =
sizeof(iUriScavengerPeriod);
            if ( RegQueryValueEx(hKey,
"UriScavengerPeriod", 0, &type, (char
*)&iUriScavengerPeriod, &size) == ERROR_SUCCESS )
                    if (
!iUriScavengerPeriod )

            iUriScavengerPeriod = 10800;

            size = sizeof(iMaxConnections);
            if ( RegQueryValueEx(hKey,
"MaxConnections", 0, &type, (char *)&iMaxConnections,
&size) == ERROR_SUCCESS )
                    if ( !iMaxConnections )

            iMaxConnections = 100000;

            RegCloseKey(hKey);
        }
}


static void WriteRegistrySettings(char *szDllPath)
{
        HKEY        hKey;
        DWORD       dwDisposition;
        char        szTmp[MAX_PATH];
        char        *ptr;
        int             iRc;

        if ( RegCreateKeyEx(HKEY_LOCAL_MACHINE,
"SOFTWARE\\Microsoft\\TPCC", 0, NULL,
REG_OPTION_NON_VOLATILE, KEY_ALL_ACCESS, NULL, &hKey,
&dwDisposition) == ERROR_SUCCESS )
        {
            strcpy(szTmp, szDllPath);
            ptr = strstr(szTmp, "tpcc");
            if ( ptr )
                    *ptr = 0;

            RegSetValueEx(hKey, "Path", 0,
REG_SZ, szTmp, strlen(szTmp)+1);

            RegSetValueEx(hKey,
"NumberOfDeliveryThreads", 0, REG_DWORD, (char
*)&Reg.dwNumberOfDeliveryThreads,
sizeof(Reg.dwNumberOfDeliveryThreads));
```

```
            RegSetValueEx(hKey,
"MaxConnections", 0, REG_DWORD, (char
*)&Reg.dwMaxConnections,
sizeof(Reg.dwMaxConnections));
            RegSetValueEx(hKey,
"MaxPendingDeliveries", 0, REG_DWORD, (char
*)&Reg.dwMaxPendingDeliveries,
sizeof(Reg.dwMaxPendingDeliveries));

            RegSetValueEx(hKey,
"DB_Protocol", 0, REG_SZ,
szDBNames[Reg.eDB_Protocol],
strlen(szDBNames[Reg.eDB_Protocol])+1);
            RegSetValueEx(hKey, "TxnMonitor",
0, REG_SZ, szTxnMonNames[Reg.eTxnMon],
strlen(szTxnMonNames[Reg.eTxnMon])+1);

            RegSetValueEx(hKey, "DbServer",
0, REG_SZ, Reg.szDbServer, strlen(Reg.szDbServer)+1);
            RegSetValueEx(hKey, "DbName", 0,
REG_SZ, Reg.szDbName, strlen(Reg.szDbName)+1);
            RegSetValueEx(hKey, "DbUser", 0,
REG_SZ, Reg.szDbUser, strlen(Reg.szDbUser)+1);
            RegSetValueEx(hKey, "DbPassword",
0, REG_SZ, Reg.szDbPassword,
strlen(Reg.szDbPassword)+1);

            strcpy(szTmp, "YES");
            RegSetValueEx(hKey,
"COM_SinglePool", 0, REG_SZ, szTmp, strlen(szTmp)+1);

            RegFlushKey(hKey);
            RegCloseKey(hKey);
        }

        if (
(iRc=RegCreateKeyEx(HKEY_LOCAL_MACHINE,
"SYSTEM\\CurrentControlSet\\Services\\Inetinfo\\Param
eters", 0, NULL, REG_OPTION_NON_VOLATILE,
KEY_ALL_ACCESS, NULL, &hKey, &dwDisposition)) ==
ERROR_SUCCESS )
        {
            // if this is IIS6, then we need
to treat the PoolThreadLimit differently
            // if IIS6, then PoolThreadLimit
is the maximum number of threads for the entire
system.
            // IIS6 added MaxPoolThreads
which controls the number of threads per processor.
For IIS6
            // we will set MaxPoolThreads to
the value the user proivided in the dialog and then
set
            // PoolThreadLimit to
MaxPoolThreads * number of processors on this system
            if ( iIISMajorVersion == 6 )
            {
                    iMaxPoolThreads =
iPoolThreadLimit;
                    iPoolThreadLimit =
iMaxPoolThreads * iNumberOfProcessors;
```

```
            RegSetValueEx(hKey,
"PoolThreadLimit", 0, REG_DWORD, (char
*)&iPoolThreadLimit, sizeof(iPoolThreadLimit));
            RegSetValueEx(hKey,
"MaxPoolThreads", 0, REG_DWORD, (char
*)&iMaxPoolThreads, sizeof(iMaxPoolThreads));
            }
            else
            {
                    RegSetValueEx(hKey,
"PoolThreadLimit", 0, REG_DWORD, (char
*)&iPoolThreadLimit, sizeof(iPoolThreadLimit));
            }

            RegSetValueEx(hKey,
"ThreadTimeout", 0, REG_DWORD, (char
*)&iThreadTimeout, sizeof(iThreadTimeout));
            RegSetValueEx(hKey,
"ListenBackLog", 0, REG_DWORD, (char
*)&iListenBackLog, sizeof(iListenBackLog));

            RegFlushKey(hKey);
            RegCloseKey(hKey);
        }

        if (
(iRc=RegCreateKeyEx(HKEY_LOCAL_MACHINE,
"SYSTEM\\CurrentControlSet\\Services\\W3SVC\\Paramete
rs", 0, NULL, REG_OPTION_NON_VOLATILE,
KEY_ALL_ACCESS, NULL, &hKey, &dwDisposition)) ==
ERROR_SUCCESS )
        {
            RegSetValueEx(hKey,
"AcceptExOutstanding", 0, REG_DWORD, (char
*)&iAcceptExOutstanding,
sizeof(iAcceptExOutstanding));

            RegFlushKey(hKey);
            RegCloseKey(hKey);
        }

        return;
}

BOOL CALLBACK CopyDlgProc(HWND hwnd, UINT uMsg,
WPARAM wParam, LPARAM lParam)
{
        if ( uMsg == WM_INITDIALOG )
        {
            SendDlgItemMessage(hwnd,
IDC_PROGRESS1, PBM_SETRANGE, 0, MAKELPARAM(0, 13));
            SendDlgItemMessage(hwnd,
IDC_PROGRESS1, PBM_SETSTEP, (WPARAM)1, 0);
                    return TRUE;
        }
        return FALSE;
}

BOOL RegisterDLL(char *szFileName)
{
        HINSTANCE hLib;
        FARPROC            lpDllEntryPoint;
```

```
            hLib = LoadLibrary(szFileName);
            if ( hLib == NULL )
                    return FALSE;
            // Find the entry point.
            lpDllEntryPoint = GetProcAddress(hLib,
"DllRegisterServer");
            if (lpDllEntryPoint != NULL)
            {
                    return ((*lpDllEntryPoint)() ==
S_OK);
            }
            else
                    return FALSE;        //unable to
locate entry point
}

BOOL FileFromResource( char *szResourceName, int
iResourceId, char *szDllPath, char *szFileName )
{
            HGLOBAL                       hDLL;
            HRSRC                         hResInfo;
            HANDLE                        hFile;
            DWORD                         dwSize;
            BYTE                          *pSrc;
            DWORD                         d;
            char
szFullName[MAX_PATH];

            hResInfo = FindResource(hInst,
MAKEINTRESOURCE(iResourceId), szResourceName);

            strcpy(szFullName, szDllPath);
            strcat(szFullName, szFileName);

            dwSize = SizeofResource(hInst, hResInfo);
            hDLL = LoadResource(hInst, hResInfo );
            pSrc = (BYTE *)LockResource(hDLL);
            //remove(szFullName);

            hFile = CreateFile(szFullName,
GENERIC_WRITE, 0, NULL, CREATE_ALWAYS,
FILE_ATTRIBUTE_NORMAL, NULL);
            if (hFile == INVALID_HANDLE_VALUE)
            {
                    DWORD dwError = GetLastError();
                    return FALSE;
            }

            if ( !WriteFile(hFile, pSrc, dwSize, &d,
NULL) )
                    return FALSE;

            CloseHandle(hFile);

            UnlockResource(hDLL);
            FreeResource(hDLL);
            return TRUE;
}

static int CopyFiles(HWND hDlg, char *szDllPath, char
*szWindowsPath)
{

            SetDlgItemText(hDlg, IDC_STATUS, "Copying
Files...");
            SendDlgItemMessage(hDlg, IDC_PROGRESS1,
PBM_STEPIT, 0, 0);
            UpdateDialog(hDlg);

            // install TPCC.DLL
            strcpy( szLastFileName, "tpcc.dll" );
            if (!FileFromResource( "TPCCDLL",
IDR_TPCCDLL, szDllPath, szLastFileName ))
                    return 0;
            SendDlgItemMessage(hDlg, IDC_PROGRESS1,
PBM_STEPIT, 0, 0);
            UpdateDialog(hDlg);

            // install MSVCR71.DLL
            strcpy( szLastFileName, "msvcr71.dll" );
            if (!FileFromResource( "MSVCR71",
IDR_MSVCR71, szWindowsPath, szLastFileName ))
                    return 0;
            SendDlgItemMessage(hDlg, IDC_PROGRESS1,
PBM_STEPIT, 0, 0);
            UpdateDialog(hDlg);

            // install tpcc_odbc.dll
            strcpy( szLastFileName, "tpcc_odbc.dll" );
            if (!FileFromResource( "ODBC_DLL",
IDR_ODBC_DLL, szDllPath, szLastFileName ))
                    return 0;
            SendDlgItemMessage(hDlg, IDC_PROGRESS1,
PBM_STEPIT, 0, 0);
            UpdateDialog(hDlg);

            // install tpcc_com.dll
            strcpy( szLastFileName, "tpcc_com.dll" );
            if (!FileFromResource( "COM_DLL",
IDR_COM_DLL, szDllPath, szLastFileName ))
                    return 0;
            SendDlgItemMessage(hDlg, IDC_PROGRESS1,
PBM_STEPIT, 0, 0);
            UpdateDialog(hDlg);

            // install tpcc_com_all.tlb
            strcpy( szLastFileName, "tpcc_com_all.tlb"
);
            if (!FileFromResource( "COM_TYPLIB",
IDR_COMTYPLIB_DLL, szDllPath, szLastFileName ))
                    return 0;
            SendDlgItemMessage(hDlg, IDC_PROGRESS1,
PBM_STEPIT, 0, 0);
            UpdateDialog(hDlg);

            // install tpcc_com_ps.dll
            strcpy( szLastFileName, "tpcc_com_ps.dll"
);
            if (!FileFromResource( "COM_PS_DLL",
IDR_COMPS_DLL, szDllPath, szLastFileName ))
                    return 0;
            SendDlgItemMessage(hDlg, IDC_PROGRESS1,
PBM_STEPIT, 0, 0);
            UpdateDialog(hDlg);

            // install tpcc_com_all.dll
            strcpy( szLastFileName, "tpcc_com_all.dll"
);
            if (!FileFromResource( "COM_ALL_DLL",
IDR_COMALL_DLL, szDllPath, szLastFileName ))
                    return 0;
            SendDlgItemMessage(hDlg, IDC_PROGRESS1,
PBM_STEPIT, 0, 0);
            UpdateDialog(hDlg);

            SendDlgItemMessage(hDlg, IDC_PROGRESS1,
PBM_STEPIT, 0, 0);
            UpdateDialog(hDlg);

            return 1;
}

static BOOL GetInstallPath(char *szDllPath)
{
      HKEY  hKey;
            BYTE      szData[MAX_PATH];
            DWORD     sv;
            BOOL      bRc;
            int       len;
            int       iRc;

            // Registry key
HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\InetStp\PathWWW
Root is used to find the
            // IIS default web site directory and
determine that IIS is installed.

            szDllPath[0] = 0;
            bRc = TRUE;
            if ( RegOpenKeyEx(HKEY_LOCAL_MACHINE,
"SOFTWARE\\Microsoft\\InetStp", 0, KEY_ALL_ACCESS,
&hKey) == ERROR_SUCCESS )
            {
                    sv = sizeof(szData);
                    iRc = RegQueryValueEx( hKey,
"PathWWWRoot", NULL, NULL, szData, &sv );  // used by
IIS 5.0 & 6.0
                    if (iRc == ERROR_SUCCESS)
                    {
                            len =
ExpandEnvironmentStrings(szData, szDllPath,
MAX_PATH);
                            if (len < MAX_PATH)
                            {
                                    if (
szDllPath[len-2] != '\\' )
                                    {

      szDllPath[len-1] = '\\';

      szDllPath[len] = 0;
                                    }
                                    bRc = FALSE;
                            }
                    }

                    RegCloseKey(hKey);
```

```
        }

        return bRc;
}

static BOOL GetWindowsInstallPath(char
*szWindowsPath)
{
    HKEY    hKey;
        BYTE        szData[MAX_PATH];
        DWORD       sv;
        BOOL        bRc;
        int              len;
        int              iRc;


        // Registry key
HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Windows
NT\CurrentVersion\SystemRoot is used to find the
        // system root to install the VC70 DLL.

        szWindowsPath[0] = 0;
        bRc = TRUE;
        if ( RegOpenKeyEx(HKEY_LOCAL_MACHINE,
"SOFTWARE\\Microsoft\\Windows NT\\CurrentVersion", 0,
KEY_ALL_ACCESS, &hKey) == ERROR_SUCCESS )
        {
                sv = sizeof(szData);
                iRc = RegQueryValueEx( hKey,
"SystemRoot", NULL, NULL, szData, &sv );
                if (iRc == ERROR_SUCCESS)
                {
                        bRc = FALSE;
                        strcpy(szWindowsPath,
szData);
                        len =
strlen(szWindowsPath);
                        if ( szWindowsPath[len-
1] != '\\' )
                        {

        szWindowsPath[len] = '\\';

        szWindowsPath[len+1] = 0;
                        }
                        // now append the path
to SYSTEM32
                        strcat(szWindowsPath,
"SYSTEM32\\");
                }

                RegCloseKey(hKey);
        }

        return bRc;
}
static void GetVersionInfo(char *szDLLPath, char
*szExePath)
{
        DWORD                              d;
        DWORD
        dwSize;
```

```
        DWORD
        dwBytes;
        char
        *ptr;
        VS_FIXEDFILEINFO    *vs;

        versionDllMS = 0;
        versionDllLS = 0;
        if ( _access(szDLLPath, 00) == 0 )
        {
                dwSize =
GetFileVersionInfoSize(szDLLPath, &d);
                if ( dwSize )
                {
                        ptr = (char
*)malloc(dwSize);

        GetFileVersionInfo(szDLLPath, 0, dwSize,
ptr);
                        VerQueryValue(ptr,
"\\",&vs, &dwBytes);
                        versionDllMS = vs-
>dwProductVersionMS;
                        versionDllLS = vs-
>dwProductVersionLS;
                        free(ptr);
                }
        }

        versionExeMS = 0x7FFF;
        versionExeLS = 0x7FFF;
        dwSize = GetFileVersionInfoSize(szExePath,
&d);
        if ( dwSize )
        {
                ptr = (char *)malloc(dwSize);
                GetFileVersionInfo(szExePath, 0,
dwSize, ptr);
                VerQueryValue(ptr, "\\",&vs,
&dwBytes);

                versionExeMS = vs-
>dwProductVersionMS;
                versionExeLS = LOWORD(vs-
>dwProductVersionLS);
                versionExeMM = HIWORD(vs-
>dwProductVersionLS);
                free(ptr);
        }
        return;
}
static BOOL CheckWWWebService(void)
{
        SC_HANDLE           schSCManager;
        SC_HANDLE           schService;
        SERVICE_STATUS      ssStatus;

        schSCManager = OpenSCManager(NULL, NULL,
SC_MANAGER_ALL_ACCESS);
        schService = OpenService(schSCManager,
TEXT("W3SVC"), SERVICE_ALL_ACCESS);
        if (schService == NULL)
```

```
                return FALSE;

        if (! QueryServiceStatus(schService,
&ssStatus) )
                goto ServiceNotRunning;

        if ( !ControlService(schService,
SERVICE_CONTROL_STOP, &ssStatus) )
                goto ServiceNotRunning;
        //start Service pending, Check the status
until the service is running.
        if (! QueryServiceStatus(schService,
&ssStatus) )
                goto ServiceNotRunning;

        CloseServiceHandle(schService);
        return TRUE;

ServiceNotRunning:

        CloseServiceHandle(schService);
        return FALSE;
}

static BOOL StartWWWebService(void)
{
        SC_HANDLE           schSCManager;
        SC_HANDLE           schService;
        SERVICE_STATUS      ssStatus;
        DWORD
        dwOldCheckPoint;

        schSCManager = OpenSCManager(NULL, NULL,
SC_MANAGER_ALL_ACCESS);
        schService = OpenService(schSCManager,
TEXT("W3SVC"), SERVICE_ALL_ACCESS);
        if (schService == NULL)
                return FALSE;

        if (! StartService(schService, 0, NULL) )
                goto StartWWWebErr;
        //start Service pending, Check the status
until the service is running.
        if (! QueryServiceStatus(schService,
&ssStatus) )
                goto StartWWWebErr;
        while( ssStatus.dwCurrentState !=
SERVICE_RUNNING)
        {
                dwOldCheckPoint =
ssStatus.dwCheckPoint;
                //Save the current checkpoint.
                Sleep(ssStatus.dwWaitHint);

                //Wait for the specified interval.
                if (
!QueryServiceStatus(schService, &ssStatus) )
                //Check the status again.
                        break;
                if (dwOldCheckPoint >=
ssStatus.dwCheckPoint)                 //Break if
the checkpoint has not been incremented.
```

```
                        break;
            }

            if (ssStatus.dwCurrentState ==
SERVICE_RUNNING)
                        goto StartWWWebErr;

            CloseServiceHandle(schService);
            return TRUE;

StartWWWebErr:
            CloseServiceHandle(schService);
            return FALSE;
}

static BOOL StopWWWebService(void)
{
            SC_HANDLE           schSCManager;
            SC_HANDLE           schService;
            SERVICE_STATUS      ssStatus;
            DWORD
            dwOldCheckPoint;

            schSCManager = OpenSCManager(NULL, NULL,
SC_MANAGER_ALL_ACCESS);
            //schService = OpenService(schSCManager,
TEXT("W3SVC"), SERVICE_ALL_ACCESS);
            schService = OpenService(schSCManager,
TEXT("IISADMIN"), SERVICE_ALL_ACCESS);
            if (schService == NULL)
                        return FALSE;

            if (! QueryServiceStatus(schService,
&ssStatus) )
                        goto StopWWWebErr;

            if ( !ControlService(schService,
SERVICE_CONTROL_STOP, &ssStatus) )
                        goto StopWWWebErr;
            //start Service pending, Check the status
until the service is running.
            if (! QueryServiceStatus(schService,
&ssStatus) )
                        goto StopWWWebErr;
            while( ssStatus.dwCurrentState ==
SERVICE_RUNNING)
            {

                        dwOldCheckPoint =
ssStatus.dwCheckPoint;
                        //Save the current checkpoint.
                        Sleep(ssStatus.dwWaitHint);

            //Wait for the specified interval.
                        if (
!QueryServiceStatus(schService, &ssStatus) )
                        //Check the status again.
                                    break;
                        if (dwOldCheckPoint >=
ssStatus.dwCheckPoint)            //Break if
the checkpoint has not been incremented.
                                    break;
            }
```

```
            if (ssStatus.dwCurrentState ==
SERVICE_RUNNING)
                        goto StopWWWebErr;

            CloseServiceHandle(schService);
            return TRUE;

StopWWWebErr:
            CloseServiceHandle(schService);
            return FALSE;
}

static void UpdateDialog(HWND hDlg)
{
            MSG msg;

            UpdateWindow(hDlg);
            while( PeekMessage(&msg, hDlg, 0, 0,
PM_REMOVE) )
            {
                        TranslateMessage(&msg);
                        DispatchMessage(&msg);
            }
            Sleep(250);
            return;
}

static void ConfigureIIS6(HWND hwnd, HWND hDlg)
{
            int                 irc;
            char        szErrTxt[128];
            FILE        *fErrorFile;

            SetDlgItemText(hDlg, IDC_STATUS,
"Configuring IIS6...");
            //SendDlgItemMessage(hDlg, IDC_PROGRESS1,
PBM_STEPIT, 0, 0);
            UpdateDialog(hDlg);

            irc = system("IIS6_CONFIG.CMD");

            // since the return code from the command
file is always 1,
            // check to see if the file iis6_config.err
exists
            // if it does, then something hosed
            fErrorFile = fopen("IIS6_CONFIG.err","r");
            if ( fErrorFile != NULL )
            {
                        ShowWindow(hwnd, SW_SHOWNA);
                        DestroyWindow(hDlg);
                        strcpy( szErrTxt, "IIS6
configuration error." );
                        strcat( szErrTxt, "Check
iis6_config.err" );
                        MessageBox(hwnd, szErrTxt, NULL,
MB_ICONSTOP | MB_OK);
                        EndDialog(hwnd, 0);
                        return;
            }
}
```

```
static void ConfigureIIS7(HWND hwnd, HWND hDlg)
{
            int                 irc;
            char        szErrTxt[128];
            FILE        *fErrorFile;

            SetDlgItemText(hDlg, IDC_STATUS,
"Installing VS Modules...");
            UpdateDialog(hDlg);

            if ( access( "%SystemRoot%\\System32", 0)
== 0 )
            {

            CopyFile("..\\VS_Modules\\ATL71.DLL",
"%SystemRoot%\\System32", 0);

            CopyFile("..\\VS_Modules\\MSVCR71D.DLL",
"%SystemRoot%\\System32", 0);

            CopyFile("..\\VS_Modules\\MSVCP71D.DLL",
"%SystemRoot%\\System32", 0);
            }

            if ( access( "%SystemRoot%\\SysWOW64", 0)
== 0 )
            {

            CopyFile("..\\VS_Modules\\ATL71.DLL",
"%SystemRoot%\\SysWOW64", 0);

            CopyFile("..\\VS_Modules\\MSVCR71D.DLL",
"%SystemRoot%\\SysWOW64", 0);

            CopyFile("..\\VS_Modules\\MSVCP71D.DLL",
"%SystemRoot%\\SysWOW64", 0);
            }
            SetDlgItemText(hDlg, IDC_STATUS,
"Configuring IIS7...");
            //SendDlgItemMessage(hDlg, IDC_PROGRESS1,
PBM_STEPIT, 0, 0);
            UpdateDialog(hDlg);

            irc = system("IIS7_CONFIG.CMD");

            // since the return code from the command
file is always 1,
            // check to see if the file iis6_config.err
exists
            // if it does, then something hosed
            fErrorFile = fopen("IIS7_CONFIG.err","r");
            if ( fErrorFile != NULL )
            {
                        ShowWindow(hwnd, SW_SHOWNA);
                        DestroyWindow(hDlg);
                        strcpy( szErrTxt, "IIS7
configuration error." );
                        strcat( szErrTxt, "Check
iis7_config.err" );
                        MessageBox(hwnd, szErrTxt, NULL,
MB_ICONSTOP | MB_OK);
                        EndDialog(hwnd, 0);
```

```
                    return;
          }
}
```

install.h

```
//{{NO_DEPENDENCIES}}
// Microsoft Developer Studio generated include file.
// Used by install.rc
//

#define IDD_DIALOG1                        101
#define IDI_ICON1                          102
#define IDR_TPCCDLL                        103
#define IDD_DIALOG2                        105
#define IDI_ICON2                          106
#define IDR_DELIVERY                       107
#define IDD_DIALOG3                        108

#define BN_LOG
          1001
#define ED_KEEP
          1002
#define ED_THREADS
          1003
#define ED_THREADS2
          1004
#define IDC_PATH
          1007
#define IDC_VERSION
          1009
#define IDC_RESULTS
          1010
#define IDC_PROGRESS1
          1011
#define IDC_STATUS
          1012
#define IDC_BUTTON1
          1013
#define ED_MAXCONNECTION
          1014
#define ED_IIS_MAX_THEAD_POOL_LIMIT
          1015
#define ED_WEB_SERVICE_BACKLOG_QUEUE_SIZE
          1017
#define ED_IIS_THREAD_TIMEOUT
          1018
#define ED_IIS_LISTEN_BACKLOG
          1019
#define IDC_ODBC
          1022
#define IDC_CONNECT_POOL
          1023
#define ED_USER_CONNECT_DELAY_TIME
          1024

// Next default values for new objects
//
```

install.rc

```
// Microsoft Visual C++ generated resource script.
//
#include "resource.h"

#define APSTUDIO_READONLY_SYMBOLS
/////////////////////////////////////////////////////////
///////////////////////
//
// Generated from the TEXTINCLUDE 2 resource.
//
#include "afxres.h"

/////////////////////////////////////////////////////////
///////////////////////
#undef APSTUDIO_READONLY_SYMBOLS

/////////////////////////////////////////////////////////
///////////////////////
// English (U.S.) resources

#if !defined(AFX_RESOURCE_DLL) ||
defined(AFX_TARG_ENU)
#ifdef _WIN32
LANGUAGE LANG_ENGLISH, SUBLANG_ENGLISH_US
#pragma code_page(1252)
#endif //_WIN32

/////////////////////////////////////////////////////////
///////////////////////
//
// Dialog
//

IDD_DIALOG1 DIALOGEX 0, 0, 219, 324
STYLE DS_SETFONT | DS_MODALFRAME | DS_CENTER |
WS_MINIMIZEBOX | WS_POPUP |
    WS_CAPTION | WS_SYSMENU
CAPTION "TPC-C Web Client Installation Utility"
FONT 8, "MS Sans Serif", 0, 0, 0x1
BEGIN
    EDITTEXT          ED_THREADS,164,45,34,12,ES_RIGHT
| ES_NUMBER,
                      WS_EX_RTLREADING
    EDITTEXT
ED_MAXDELIVERIES,164,59,34,12,ES_RIGHT | ES_NUMBER,
                      WS_EX_RTLREADING
    EDITTEXT
ED_MAXCONNECTION,164,73,34,12,ES_RIGHT | ES_NUMBER,
                      WS_EX_RTLREADING
    CONTROL
"None",IDC_TM_NONE,"Button",BS_AUTORADIOBUTTON |
                      WS_GROUP |
WS_TABSTOP,43,104,33,10
    CONTROL
"COM",IDC_TM_MTS,"Button",BS_AUTORADIOBUTTON |
                      WS_TABSTOP,94,104,32,10
    EDITTEXT
ED_DB_SERVER,131,145,67,12,ES_AUTOHSCROLL
```

```
    EDITTEXT
ED_DB_USER_ID,131,158,67,12,ES_AUTOHSCROLL
    EDITTEXT
ED_DB_PASSWORD,131,171,67,12,ES_AUTOHSCROLL
    EDITTEXT
ED_DB_NAME,131,184,67,12,ES_AUTOHSCROLL
    EDITTEXT
ED_IIS_MAX_THEAD_POOL_LIMIT,164,226,34,12,ES_RIGHT |
                  ES_NUMBER,WS_EX_RTLREADING
    EDITTEXT
ED_WEB_SERVICE_BACKLOG_QUEUE_SIZE,164,240,34,12,ES_RI
GHT |
                  ES_NUMBER,WS_EX_RTLREADING
    EDITTEXT
ED_IIS_THREAD_TIMEOUT,164,254,34,12,ES_RIGHT |
ES_NUMBER,
                  WS_EX_RTLREADING
    EDITTEXT
ED_IIS_LISTEN_BACKLOG,164,268,34,12,ES_RIGHT |
ES_NUMBER,
                  WS_EX_RTLREADING
    DEFPUSHBUTTON     "OK",IDOK,53,296,50,14
    PUSHBUTTON        "Cancel",IDCANCEL,119,296,50,14
    EDITTEXT
IDC_PATH,106,26,91,13,ES_AUTOHSCROLL | ES_READONLY
    LTEXT             "Number of Delivery
Threads:",IDC_STATIC,35,45,115,12
    LTEXT             "Max Number of
Connections:",IDC_STATIC,35,73,115,12
    RTEXT             "Version
4.11",IDC_VERSION,120,4,89,9
    LTEXT             "IIS Max Thread Pool
Limit:",IDC_STATIC,36,226,115,12
    LTEXT             "Web Service Backlog Queue
Size:",IDC_STATIC,36,240,115,
                  12
    LTEXT             "IIS Thread Timeout
(seconds):",IDC_STATIC,36,254,115,12
    LTEXT             "IIS Listen
Backlog:",IDC_STATIC,36,270,115,10
    LTEXT             "Installation
directory:",IDC_STATIC,35,29,71,10
    GROUPBOX          "Transaction
Monitor",IDC_STATIC,33,90,165,33
    LTEXT             "Server
Name:",IDC_STATIC,35,148,56,8
    LTEXT             "User ID:",IDC_STATIC,35,161,60,8
    LTEXT             "User
Password:",IDC_STATIC,35,174,83,8
    LTEXT             "Database
Name:",IDC_STATIC,35,187,54,8
    GROUPBOX          "SQL Server Connection
Properties",IDC_STATIC,22,132,187,
                  74
    GROUPBOX          "Web Client
Properties",IDC_STATIC,22,15,187,113
    GROUPBOX          "IIS
Settings",IDC_STATIC,22,210,187,79
    LTEXT             "Max Pending
Deliveries:",IDC_STATIC,35,59,115,12
END

IDD_DIALOG2 DIALOGEX 0, 0, 117, 62
```

```
STYLE DS_SETFONT | DS_SETFOREGROUND | DS_3DLOOK |        BOTTOMMARGIN, 318              // Icon with lowest ID value placed first to ensure
DS_CENTER | WS_POPUP |                              END                             application icon
     WS_BORDER                                                                     // remains consistent on all systems.
EXSTYLE WS_EX_STATICEDGE                                IDD_DIALOG2, DIALOG         IDI_ICON1               ICON
FONT 12, "MS Sans Serif", 0, 0, 0x1                     BEGIN                       "icon1.ico"
BEGIN                                                       LEFTMARGIN, 7           IDI_ICON2               ICON
    DEFPUSHBUTTON   "OK",IDOK,33,45,50,9                     RIGHTMARGIN, 109       "icon2.ico"
    CTEXT           "HTML TPC-C Installation                TOPMARGIN, 7
Successfull",IDC_RESULTS,7,22,                              BOTTOMMARGIN, 54        /////////////////////////////////////////////////////
                102,18,0,WS_EX_CLIENTEDGE            END                             /////////////////////////
    ICON                                                                           //
IDI_ICON2,IDC_STATIC,50,7,18,20,SS_REALSIZEIMAGE,       IDD_DIALOG3, DIALOG         // TPCCDLL
                WS_EX_TRANSPARENT                       BEGIN                       //
                                                            LEFTMARGIN, 7
END                                                         RIGHTMARGIN, 84         IDR_TPCCDLL             TPCCDLL
                                                            TOPMARGIN, 7            "..\\..\\isapi_dll\\bin\\tpcc.dll"
IDD_DIALOG3 DIALOG  0, 0, 91, 40                            BOTTOMMARGIN, 33
STYLE DS_SYSMODAL | DS_SETFONT | DS_MODALFRAME |        END                         /////////////////////////////////////////////////////
DS_3DLOOK | DS_CENTER |                                                             /////////////////////////
     WS_CAPTION                                         IDD_DIALOG4, DIALOG         //
CAPTION "Installing TPC-C Web Client"                   BEGIN                       // Version
FONT 12, "Arial Black"                                      LEFTMARGIN, 7           //
BEGIN                                                       RIGHTMARGIN, 278
    CONTROL                                                 TOPMARGIN, 7            VS_VERSION_INFO VERSIONINFO
"Progress1",IDC_PROGRESS1,"msctls_progress32",WS_BORD       BOTTOMMARGIN, 195        FILEVERSION 0,4,69,0
ER,                                                     END                          PRODUCTVERSION 0,4,69,0
                7,20,77,13                          END                              FILEFLAGSMASK 0x3fL
    CTEXT                                           #endif    // APSTUDIO_INVOKED   #ifdef _DEBUG
"Static",IDC_STATUS,7,7,77,12,SS_SUNKEN                                              FILEFLAGS 0x1L
END                                                                                 #else
                                                    #ifdef APSTUDIO_INVOKED          FILEFLAGS 0x0L
IDD_DIALOG4 DIALOG  0, 0, 291, 202                  /////////////////////////////////////////////////////   #endif
STYLE DS_SETFONT | DS_MODALFRAME | DS_CENTER |      /////////////////////////        FILEOS 0x40004L
WS_POPUP | WS_CAPTION |                             //                               FILETYPE 0x1L
     WS_SYSMENU                                     // TEXTINCLUDE                    FILESUBTYPE 0x0L
CAPTION "Client End User License"                   //                              BEGIN
FONT 8, "MS Sans Serif"                                                                 BLOCK "StringFileInfo"
BEGIN                                               1 TEXTINCLUDE                        BEGIN
    EDITTEXT                                        BEGIN                                   BLOCK "040904b0"
IDC_LICENSE,7,7,271,167,ES_MULTILINE | ES_AUTOVSCROLL   "resource.h\0"                     BEGIN
|                                                   END                                         VALUE "Comments", "TPC-C Web Client
                ES_AUTOHSCROLL | ES_READONLY |                                      Installer"
WS_VSCROLL | WS_HSCROLL                             2 TEXTINCLUDE                                VALUE "CompanyName", "Microsoft"
    DEFPUSHBUTTON   "I &Agree",IDOK,87,181,50,14    BEGIN                                       VALUE "FileDescription", "install"
    PUSHBUTTON      "&Cancel",IDCANCEL,153,181,50,14    "#include ""afxres.h""\r\n"              VALUE "FileVersion", "0, 4, 69, 0"
END                                                     "\0"                                    VALUE "InternalName", "install"
                                                    END                                         VALUE "LegalCopyright", "Copyright ¬
                                                                                   1999"
/////////////////////////////////////////////////////   3 TEXTINCLUDE                          VALUE "OriginalFilename", "install.exe"
/////////////////////////                           BEGIN                                       VALUE "ProductName", "Microsoft install"
//                                                      "\r\n"                                  VALUE "ProductVersion", "0, 4, 69, 0"
// DESIGNINFO                                           "\0"                                END
//                                                  END                                     END
                                                                                        BLOCK "VarFileInfo"
#ifdef APSTUDIO_INVOKED                             #endif    // APSTUDIO_INVOKED           BEGIN
GUIDELINES DESIGNINFO                                                                        VALUE "Translation", 0x409, 1200
BEGIN                                                                                    END
    IDD_DIALOG1, DIALOG                             /////////////////////////////////////////////////////   END
    BEGIN                                           /////////////////////////
        LEFTMARGIN, 22                              //                              /////////////////////////////////////////////////////
        RIGHTMARGIN, 209                            // Icon                         /////////////////////////
        VERTGUIDE, 35                               //                              //
        VERTGUIDE, 198
        TOPMARGIN, 4
```

```
// LICENSE
//

IDR_LICENSE1            LICENSE
"license.txt"

/////////////////////////////////////////////////
//////////////////////
//
// ODBC_DLL
//

IDR_ODBC_DLL           ODBC_DLL
"..\\..\\db_odbc_dll\\bin\\Release\\tpcc_odbc.dll"

/////////////////////////////////////////////////
//////////////////////
//
// COM_DLL
//

IDR_COM_DLL            COM_DLL
"..\\..\\tm_com_dll\\bin\\tpcc_com.dll"

/////////////////////////////////////////////////
//////////////////////
//
// COM_PS_DLL
//

IDR_COMPS_DLL          COM_PS_DLL
"..\\..\\tpcc_com_ps\\bin\\tpcc_com_ps.dll"

/////////////////////////////////////////////////
//////////////////////
//
// COM_ALL_DLL
//

IDR_COMALL_DLL         COM_ALL_DLL
"..\\..\\tpcc_com_all\\bin\\tpcc_com_all.dll"

/////////////////////////////////////////////////
//////////////////////
//
// COM_TYPLIB
//

IDR_COMTYPLIB_DLL      COM_TYPLIB
"..\\..\\tpcc_com_all\\src\\tpcc_com_all.tlb"

/////////////////////////////////////////////////
//////////////////////
//
// MSVCR71
//

IDR_MSVCR71            MSVCR71
"C:\\WINDOWS\\system32\\msvcr71.dll"
#endif    // English (U.S.) resources
/////////////////////////////////////////////////
//////////////////////
```

```
#ifndef APSTUDIO_INVOKED
/////////////////////////////////////////////////
//////////////////////
//
// Generated from the TEXTINCLUDE 3 resource.
//


/////////////////////////////////////////////////
//////////////////////
#endif    // not APSTUDIO_INVOKED
```

install_com.cpp

```
/*        FILE:               INSTALL_COM.CPP
 *                                   Microsoft
TPC-C Kit Ver. 4.69.000
 *                                   Copyright
Microsoft, 2008, 2009
 *            All Rights Reserved
 *
 *                                   not audited
 *
 *        PURPOSE:  installation code for COM
application for TPC-C Web Kit
 *        Contact:  Charles Levine
(clevine@microsoft.com)
 *
 *   Change history:
 *               4.20.000 - first version
 */

#define _WIN32_WINNT 0x0500

#include <comdef.h>
#include <comadmin.h>
#include <stdio.h>
#include <tchar.h>

extern "C"
{
        BOOL install_com(char *szDllPath);
}

BOOL install_com(char *szDllPath)
{
        ICOMAdminCatalog*  pCOMAdminCat = NULL;
        ICatalogCollection* pCatalogCollectionApp
= NULL;
        ICatalogCollection* pCatalogCollectionCo
= NULL;
        ICatalogCollection* pCatalogCollectionItf
= NULL;
        ICatalogCollection*
        pCatalogCollectionMethod = NULL;
```

```
        ICatalogObject*
        pCatalogObjectApp     = NULL;
        ICatalogObject*
        pCatalogObjectCo      = NULL;
        ICatalogObject*
        pCatalogObjectItf     = NULL;
        ICatalogObject*
        pCatalogObjectMethod = NULL;

        _bstr_t
        bstrTemp, bstrTemp2, bstrTemp3, bstrTemp4;
        _bstr_t
        bstrDllPath = szDllPath;
        _variant_t
        vTmp, vKey;
        long
        lActProp, lCount, lCountCo, lCountItf,
lCountMethod;
        bool
        bTmp;

        CoInitializeEx(NULL, COINIT_MULTITHREADED);

        HRESULT hr =
CoCreateInstance(CLSID_COMAdminCatalog,

                                      NULL,

        CLSCTX_INPROC_SERVER,

        IID_ICOMAdminCatalog,

                                      (void**)
&pCOMAdminCat);

        if (!SUCCEEDED(hr)) goto Error;

        bstrTemp = "Applications";

        // Attempt to connect to "Applications" in
the Catalog
        hr = pCOMAdminCat->GetCollection(bstrTemp,

                                      (IDispatch**)
&pCatalogCollectionApp);
        if (!SUCCEEDED(hr)) goto Error;

        // Attempt to load the "Applications"
collection
        hr = pCatalogCollectionApp->Populate();
        if (!SUCCEEDED(hr)) goto Error;

        hr = pCatalogCollectionApp-
>get_Count(&lCount);
        if (!SUCCEEDED(hr)) goto Error;

        // iterate through applications to delete
existing "TPC-C" application (if any)
        while (lCount > 0)
        {
```

```
        hr = pCatalogCollectionApp-
>get_Item(lCount - 1, (IDispatch**)
&pCatalogObjectApp);
            if (!SUCCEEDED(hr)) goto Error;

        hr = pCatalogObjectApp-
>get_Name(&vTmp);
            if (!SUCCEEDED(hr)) goto Error;

            if (wcscmp(vTmp.bstrVal, L"TPC-
C"))
            {
                    lCount--;
                    continue;
            }
            else
            {
                    hr =
pCatalogCollectionApp->Remove(lCount - 1);
                    if (!SUCCEEDED(hr))
goto Error;
                    break;
            }
        }

        hr = pCatalogCollectionApp-
>SaveChanges(&lActProp);
        if (!SUCCEEDED(hr)) goto Error;

        // add the new application
        hr = pCatalogCollectionApp-
>Add((IDispatch**) &pCatalogObjectApp);
        if (!SUCCEEDED(hr)) goto Error;

        // set properties
        bstrTemp = "Name";
        vTmp = "TPC-C";
        hr = pCatalogObjectApp->put_Value(bstrTemp,
vTmp);
        if (!SUCCEEDED(hr)) goto Error;

        // set as a library (in process)
application
        bstrTemp = "Activation";
        lActProp = COMAdminActivationInproc;
        vTmp = lActProp;
        hr = pCatalogObjectApp->put_Value(bstrTemp,
vTmp);
        if (!SUCCEEDED(hr)) goto Error;

        // set security level to process
        bstrTemp = "AccessChecksLevel";
        lActProp =
COMAdminAccessChecksApplicationLevel;
        vTmp = lActProp;
        hr = pCatalogObjectApp->put_Value(bstrTemp,
vTmp);
        if (!SUCCEEDED(hr)) goto Error;

        // save key to get the Components
collection later
        hr = pCatalogObjectApp->get_Key(&vKey);
        if (!SUCCEEDED(hr)) goto Error;
```

```
        // save changes (app creation) so component
installation will work
        hr = pCatalogCollectionApp-
>SaveChanges(&lActProp);
        if (!SUCCEEDED(hr)) goto Error;

        pCatalogObjectApp->Release();
        pCatalogObjectApp = NULL;

        bstrTemp  = "TPC-C";
                    // app name
        bstrTemp2 =          bstrDllPath +
"tpcc_com_all.dll";         // DLL
        bstrTemp3 =          bstrDllPath +
"tpcc_com_all.tlb";         // type library (TLB)
        bstrTemp4 =          bstrDllPath +
"tpcc_com_ps.dll";          // proxy/stub dll

        hr = pCOMAdminCat-
>InstallComponent(bstrTemp,

            bstrTemp2,

            bstrTemp3,

            bstrTemp4);
        if (!SUCCEEDED(hr)) goto Error;

        bstrTemp = "Components";
        hr = pCatalogCollectionApp-
>GetCollection(bstrTemp, vKey, (IDispatch**)
&pCatalogCollectionCo);
        if (!SUCCEEDED(hr)) goto Error;

        hr = pCatalogCollectionCo->Populate();
        if (!SUCCEEDED(hr)) goto Error;

        hr = pCatalogCollectionCo-
>get_Count(&lCountCo);
        if (!SUCCEEDED(hr)) goto Error;

        // iterate through components in
application and set the properties
        while (lCountCo > 0)
        {
                hr = pCatalogCollectionCo-
>get_Item(lCountCo - 1, (IDispatch**)
&pCatalogObjectCo);
                if (!SUCCEEDED(hr)) goto Error;

                // used for debugging (view the
name)
                hr = pCatalogObjectCo-
>get_Name(&vTmp);
                if (!SUCCEEDED(hr)) goto Error;

                bstrTemp = "ConstructionEnabled";
                bTmp = TRUE;
```

```
                vTmp = bTmp;
                hr = pCatalogObjectCo-
>put_Value(bstrTemp, vTmp);
                if (!SUCCEEDED(hr)) goto Error;

                bstrTemp = "ConstructorString";
                bstrTemp2 = "dummy string (do not
remove)";
                vTmp = bstrTemp2;
                hr = pCatalogObjectCo-
>put_Value(bstrTemp, vTmp);
                if (!SUCCEEDED(hr)) goto Error;

                bstrTemp =
"JustInTimeActivation";
                bTmp = TRUE;
                vTmp = bTmp;
                hr = pCatalogObjectCo-
>put_Value(bstrTemp, vTmp);
                if (!SUCCEEDED(hr)) goto Error;

                bstrTemp = "MaxPoolSize";
                vTmp.Clear();         // clear
variant so it isn't stored as a bool (_variant_t
feature)
                vTmp = (long)30;
                hr = pCatalogObjectCo-
>put_Value(bstrTemp, vTmp);
                if (!SUCCEEDED(hr)) goto Error;

                bstrTemp =
"ObjectPoolingEnabled";
                bTmp = TRUE;
                vTmp = bTmp;
                hr = pCatalogObjectCo-
>put_Value(bstrTemp, vTmp);
                if (!SUCCEEDED(hr)) goto Error;

                // save key to get the
InterfacesForComponent collection
                hr = pCatalogObjectCo-
>get_Key(&vKey);
                if (!SUCCEEDED(hr)) goto Error;

                bstrTemp =
"InterfacesForComponent";
                hr = pCatalogCollectionCo-
>GetCollection(bstrTemp, vKey, (IDispatch**)
&pCatalogCollectionItf);
                if (!SUCCEEDED(hr)) goto Error;

                hr = pCatalogCollectionItf-
>Populate();
                if (!SUCCEEDED(hr)) goto Error;

                hr = pCatalogCollectionItf-
>get_Count(&lCountItf);
                if (!SUCCEEDED(hr)) goto Error;

                // iterate through interfaces in
component
```

```
        while (lCountItf > 0)
        {
                hr =
pCatalogCollectionItf->get_Item(lCountItf - 1,
(IDispatch**) &pCatalogObjectItf);
                if (!SUCCEEDED(hr))
goto Error;

                // save key to get the
MethodsForInterface collection
                hr = pCatalogObjectItf-
>get_Key(&vKey);
                if (!SUCCEEDED(hr))
goto Error;

                bstrTemp =
"MethodsForInterface";
                hr =
pCatalogCollectionItf->GetCollection(bstrTemp, vKey,
(IDispatch**) &pCatalogCollectionMethod);
                if (!SUCCEEDED(hr))
goto Error;

                hr =
pCatalogCollectionMethod->Populate();
                if (!SUCCEEDED(hr))
goto Error;

                hr =
pCatalogCollectionMethod->get_Count(&lCountMethod);
                if (!SUCCEEDED(hr))
goto Error;

                // iterate through
methods of interface
                while (lCountMethod >
0)
                {
                        hr =
pCatalogCollectionMethod->get_Item(lCountMethod - 1,
(IDispatch**) &pCatalogObjectMethod);
                        if
(!SUCCEEDED(hr)) goto Error;

                        bstrTemp =
"AutoComplete";
                        bTmp = TRUE;
                        vTmp = bTmp;
                        hr =
pCatalogObjectMethod->put_Value(bstrTemp, vTmp);
                        if
(!SUCCEEDED(hr)) goto Error;

        pCatalogObjectMethod->Release();

        pCatalogObjectMethod = NULL;

                        lCountMethod-
-;
                }
                // save changes
```

```
                hr =
pCatalogCollectionMethod->SaveChanges(&lActProp);
                        if (!SUCCEEDED(hr))
goto Error;

                        pCatalogObjectItf-
>Release();
                        pCatalogObjectItf =
NULL;

                        lCountItf--;
                }

                pCatalogObjectCo->Release();
                pCatalogObjectCo = NULL;

                lCountCo--;
        }

        // save changes
        hr = pCatalogCollectionCo-
>SaveChanges(&lActProp);
        if (!SUCCEEDED(hr)) goto Error;

        pCatalogCollectionApp->Release();
        pCatalogCollectionApp = NULL;

        pCatalogCollectionCo->Release();
        pCatalogCollectionCo = NULL;

        pCatalogCollectionItf->Release();
        pCatalogCollectionItf = NULL;

        pCatalogCollectionMethod->Release();
        pCatalogCollectionMethod = NULL;

Error:
        CoUninitialize();

        if (!SUCCEEDED(hr))
        {
                LPTSTR lpBuf;
                DWORD dwRes =
FormatMessage(FORMAT_MESSAGE_ALLOCATE_BUFFER |
FORMAT_MESSAGE_FROM_SYSTEM,

                                        NULL,

                                        hr,

                MAKELANGID(LANG_NEUTRAL, SUBLANG_DEFAULT),

                                        (LPTSTR)
&lpBuf,

                                        0,

                                        NULL);
```

```
//              _tprintf(__T("Error adding
components.  HRESULT: 0x%x\n%s"), hr, lpBuf);
                return TRUE;
        }
        else
                return FALSE;
}
```

---

license.txt

END-USER LICENSE AGREEMENT FOR
MICROSOFT TPC-C BENCHMARK KIT

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Methods.h

```
/*       FILE:              METHODS.H
 *                              Microsoft
TPC-C Kit Ver. 4.69.000
 *                              Copyright
Microsoft, 1999
 *          All Rights Reserved
 *
 *                              not yet
audited
 *
 *       PURPOSE:  Header file for COM components.
 *
 *  Change history:
 *               4.20.000 - first version
 *               4.69.000 - updated rev number to
match kit
 */


enum COMPONENT_ERROR
{
        ERR_MISSING_REGISTRY_ENTRIES = 1,
        ERR_LOADDLL_FAILED,
        ERR_GETPROCADDR_FAILED,
        ERR_UNKNOWN_DB_PROTOCOL,
        ERR_MEM_ALLOC_FAILED
};

class CCOMPONENT_ERR : public CBaseErr
{
        public:
                CCOMPONENT_ERR(COMPONENT_ERROR
Err)
                {
                        m_Error = Err;
                        m_szTextDetail = NULL;
                        m_SystemErr = 0;
                        m_szErrorText = NULL;
                };
```

```
                CCOMPONENT_ERR(COMPONENT_ERROR
Err, char *szTextDetail, DWORD dwSystemErr)
                {
                        m_Error = Err;
                        m_szTextDetail = new
char[strlen(szTextDetail)+1];
                        strcpy( m_szTextDetail,
szTextDetail );
                        m_SystemErr =
dwSystemErr;
                        m_szErrorText = NULL;
                };

                ~CCOMPONENT_ERR()
                {
                        if (m_szTextDetail !=
NULL)
                                delete []
m_szTextDetail;
                        if (m_szErrorText !=
NULL)
                                delete []
m_szErrorText;
                };

                COMPONENT_ERROR    m_Error;
                char
*m_szTextDetail;
                char
*m_szErrorText;
                DWORD
m_SystemErr;

                int ErrorType() {return
ERR_TYPE_COMPONENT;};
                char *ErrorTypeStr() { return
"COMPONENT"; }
                int ErrorNum() {return m_Error;};
                char *ErrorText();
};

static void WriteMessageToEventLog(LPTSTR lpszMsg);


//////////////////////////////////////////////////////
////////////////////////
// CTPCC_Common
class CTPCC_Common :
        public ITPCC,
        public IObjectControl,
        public IObjectConstruct,
        public
CComObjectRootEx<CComSingleThreadModel>
{
public:
BEGIN_COM_MAP(CTPCC_Common)
        COM_INTERFACE_ENTRY(ITPCC)
        COM_INTERFACE_ENTRY(IObjectControl)
        COM_INTERFACE_ENTRY(IObjectConstruct)
END_COM_MAP()
```

```
        CTPCC_Common();
        ~CTPCC_Common();
// ITPCC
public:
        HRESULT __stdcall NewOrder(
        VARIANT txn_in, VARIANT* txn_out);
        HRESULT __stdcall Payment(
        VARIANT txn_in, VARIANT* txn_out);
        HRESULT __stdcall Delivery(
        VARIANT txn_in, VARIANT* txn_out) {return
E_NOTIMPL;}
        HRESULT __stdcall StockLevel( VARIANT
txn_in, VARIANT* txn_out);
        HRESULT __stdcall OrderStatus(
        VARIANT txn_in, VARIANT* txn_out);

        HRESULT __stdcall CallSetComplete();

// IObjectControl
        STDMETHODIMP_(BOOL) CanBePooled() { return
m_bCanBePooled; }
        STDMETHODIMP Activate() { return S_OK; }
        // we don't support COM Services
transactions (no enlistment)
        STDMETHODIMP_(void) Deactivate() { /*
nothing to do */ }

// IObjectConstruct
        STDMETHODIMP Construct(IDispatch * pUnk);

        // helper methods
private:
        BOOL            m_bCanBePooled;
        CTPCC_BASE        *m_pTxn;

        struct COM_DATA
        {
                int retval;
                int error;
                union
                {
                        NEW_ORDER_DATA
NewOrder;
                        PAYMENT_DATA
Payment;
                        DELIVERY_DATA
Delivery;
                        STOCK_LEVEL_DATA
StockLevel;
                        ORDER_STATUS_DATA
OrderStatus;
                } u;
        };
};

//////////////////////////////////////////////////////
////////////////////////
// CTPCC
class CTPCC :
        public CTPCC_Common,
        public CComCoClass<CTPCC, &CLSID_TPCC>
```

```
{
public:
DECLARE_REGISTRY_RESOURCEID(IDR_TPCC)

BEGIN_COM_MAP(CTPCC)
        //COM_INTERFACE_ENTRY2(IUnknown,
CComObjectRootEx<CComSingleThreadModel>)
        COM_INTERFACE_ENTRY2(IUnknown, ITPCC)
        COM_INTERFACE_ENTRY_CHAIN(CTPCC_Common)
END_COM_MAP()

};


///////////////////////////////////////////////
//////////////////////
// CNewOrder
class CNewOrder :
        public CTPCC_Common,
        public CComCoClass<CNewOrder,
&CLSID_NewOrder>
{
public:
DECLARE_REGISTRY_RESOURCEID(IDR_NEWORDER)

BEGIN_COM_MAP(CNewOrder)
//        COM_INTERFACE_ENTRY2(IUnknown,
CComObjectRootEx)
        COM_INTERFACE_ENTRY2(IUnknown, ITPCC)
        COM_INTERFACE_ENTRY_CHAIN(CTPCC_Common)
END_COM_MAP()

// ITPCC
public:
//        HRESULT __stdcall NewOrder(
        VARIANT txn_in, VARIANT* txn_out) {return
E_NOTIMPL;}
        HRESULT __stdcall Payment(
        VARIANT txn_in, VARIANT* txn_out) {return
E_NOTIMPL;}
        HRESULT __stdcall StockLevel( VARIANT
txn_in, VARIANT* txn_out) {return E_NOTIMPL;}
        HRESULT __stdcall OrderStatus(
        VARIANT txn_in, VARIANT* txn_out) {return
E_NOTIMPL;}
};


        ///////////////////////////////////////
//////////////////////////////
// COrderStatus
class COrderStatus :
        public CTPCC_Common,
        public CComCoClass<COrderStatus,
&CLSID_OrderStatus>
{
public:
DECLARE_REGISTRY_RESOURCEID(IDR_ORDERSTATUS)

BEGIN_COM_MAP(COrderStatus)
//        COM_INTERFACE_ENTRY2(IUnknown,
CComObjectRootEx)
        COM_INTERFACE_ENTRY2(IUnknown, ITPCC)
```

```
        COM_INTERFACE_ENTRY_CHAIN(CTPCC_Common)
END_COM_MAP()

// ITPCC
public:
        HRESULT __stdcall NewOrder(
        VARIANT txn_in, VARIANT* txn_out) {return
E_NOTIMPL;}
        HRESULT __stdcall Payment(
        VARIANT txn_in, VARIANT* txn_out) {return
E_NOTIMPL;}
        HRESULT __stdcall StockLevel( VARIANT
txn_in, VARIANT* txn_out) {return E_NOTIMPL;}
//        HRESULT __stdcall OrderStatus(
        VARIANT txn_in, VARIANT* txn_out) {return
E_NOTIMPL;}
};


///////////////////////////////////////////////
//////////////////////
// CPayment
class CPayment :
        public CTPCC_Common,
        public CComCoClass<CPayment,
&CLSID_Payment>
{
public:
DECLARE_REGISTRY_RESOURCEID(IDR_PAYMENT)

BEGIN_COM_MAP(CPayment)
//        COM_INTERFACE_ENTRY2(IUnknown,
CComObjectRootEx)
        COM_INTERFACE_ENTRY2(IUnknown, ITPCC)
        COM_INTERFACE_ENTRY_CHAIN(CTPCC_Common)
END_COM_MAP()

// ITPCC
public:
        HRESULT __stdcall NewOrder(
        VARIANT txn_in, VARIANT* txn_out) {return
E_NOTIMPL;}
//        HRESULT __stdcall Payment(
        VARIANT txn_in, VARIANT* txn_out) {return
E_NOTIMPL;}
        HRESULT __stdcall StockLevel( VARIANT
txn_in, VARIANT* txn_out) {return E_NOTIMPL;}
        HRESULT __stdcall OrderStatus(
        VARIANT txn_in, VARIANT* txn_out) {return
E_NOTIMPL;}
};


///////////////////////////////////////////////
//////////////////////
// CStockLevel
class CStockLevel :
        public CTPCC_Common,
        public CComCoClass<CStockLevel,
&CLSID_StockLevel>
{
public:
DECLARE_REGISTRY_RESOURCEID(IDR_STOCKLEVEL)
```

```
BEGIN_COM_MAP(CStockLevel)
//        COM_INTERFACE_ENTRY2(IUnknown,
CComObjectRootEx)
        COM_INTERFACE_ENTRY2(IUnknown, ITPCC)
        COM_INTERFACE_ENTRY_CHAIN(CTPCC_Common)
END_COM_MAP()

// ITPCC
public:
        HRESULT __stdcall NewOrder(
        VARIANT txn_in, VARIANT* txn_out) {return
E_NOTIMPL;}
        HRESULT __stdcall Payment(
        VARIANT txn_in, VARIANT* txn_out) {return
E_NOTIMPL;}
//        HRESULT __stdcall StockLevel( VARIANT
txn_in, VARIANT* txn_out) {return E_NOTIMPL;}
        HRESULT __stdcall OrderStatus(
        VARIANT txn_in, VARIANT* txn_out) {return
E_NOTIMPL;}
};
```

null-txns.sql

```
----------------------------------------------------
-------------
--
--
--  File:   NULL-TXNS.SQL
--
--        Microsoft TPC-C Benchmark Kit Ver. 4.68
--
--        Copyright Microsoft, 2006
--
--
--
--        This script will create stored procs
which     --
--        accept the same parameters and return
correctly   --
--        formed results sets to match the standard
TPC-C    --
--        stored procs.  Of course, the advantage
is that   --
--        these stored procs place almost no load
on        --
--        SQL Server and do not require a database.
--
--
--
--        Interface Level:    4.10.000
--
--
--
----------------------------------------------------
-------------
USE tpcc
GO
```

```
IF EXISTS ( SELECT name FROM sysobjects WHERE name =
'tpcc_delivery' )
    DROP PROCEDURE tpcc_delivery
GO
IF EXISTS ( SELECT name FROM sysobjects WHERE name =
'tpcc_neworder' )
    DROP PROCEDURE tpcc_neworder
GO
IF EXISTS ( SELECT name FROM sysobjects WHERE name =
'tpcc_orderstatus' )
    DROP PROCEDURE tpcc_orderstatus
GO
IF EXISTS ( SELECT name FROM sysobjects WHERE name =
'tpcc_payment' )
    DROP PROCEDURE tpcc_payment
GO
IF EXISTS ( SELECT name FROM sysobjects WHERE name =
'tpcc_stocklevel' )
    DROP PROCEDURE tpcc_stocklevel
GO
IF EXISTS ( SELECT name FROM sysobjects WHERE name =
'tpcc_version' )
    DROP PROCEDURE tpcc_version
GO
IF EXISTS ( SELECT name FROM sysobjects WHERE name =
'order_line_null' )
    DROP PROCEDURE order_line_null
GO

CREATE PROCEDURE    tpcc_delivery
                    @w_id            int,

                    @o_carrier_id    smallint

AS

DECLARE @d_id       tinyint,
        @o_id       int,
        @c_id       int,
        @total      numeric(12,2),
        @oid1       int,
        @oid2       int,
        @oid3       int,
        @oid4       int,
        @oid5       int,
        @oid6       int,
        @oid7       int,
        @oid8       int,
        @oid9       int,
        @oid10      int,
        @delaytime  varchar(30)

-------------------------------------------------
-- uniform random delay of 0 - 1 second; avg = 0.50
-------------------------------------------------
SELECT @delaytime = '00:00:0' +
CAST(CAST((RAND()*1.00) AS decimal(4,3)) AS char(5))

WAITFOR delay @delaytime

SELECT  3001, 3001, 3001, 3001, 3001, 3001, 3001,
3001, 3001, 3001
GO
```

```
CREATE PROCEDURE    tpcc_neworder
                    @w_id           int,
                    @d_id           tinyint,
                    @c_id           int,
                    @o_ol_cnt       tinyint,
                    @o_all_local    tinyint,
                    @i_id1  int = 0, @s_w_id1 int
= 0, @ol_qty1 smallint = 0,
                    @i_id2  int = 0, @s_w_id2 int
= 0, @ol_qty2 smallint = 0,
                    @i_id3  int = 0, @s_w_id3 int
= 0, @ol_qty3 smallint = 0,
                    @i_id4  int = 0, @s_w_id4 int
= 0, @ol_qty4 smallint = 0,
                    @i_id5  int = 0, @s_w_id5 int
= 0, @ol_qty5 smallint = 0,
                    @i_id6  int = 0, @s_w_id6 int
= 0, @ol_qty6 smallint = 0,
                    @i_id7  int = 0, @s_w_id7 int
= 0, @ol_qty7 smallint = 0,
                    @i_id8  int = 0, @s_w_id8 int
= 0, @ol_qty8 smallint = 0,
                    @i_id9  int = 0, @s_w_id9 int
= 0, @ol_qty9 smallint = 0,
                    @i_id10 int = 0, @s_w_id10
int = 0, @ol_qty10 smallint = 0,
                    @i_id11 int = 0, @s_w_id11
int = 0, @ol_qty11 smallint = 0,
                    @i_id12 int = 0, @s_w_id12
int = 0, @ol_qty12 smallint = 0,
                    @i_id13 int = 0, @s_w_id13
int = 0, @ol_qty13 smallint = 0,
                    @i_id14 int = 0, @s_w_id14
int = 0, @ol_qty14 smallint = 0,
                    @i_id15 int = 0, @s_w_id15
int = 0, @ol_qty15 smallint = 0


AS
DECLARE @w_tax          numeric(4,4),
        @d_tax          numeric(4,4),
        @c_last         char(16),
        @c_credit       char(2),
        @c_discount     numeric(4,4),
        @i_price        numeric(5,2),
        @i_name         char(24),
        @o_entry_d      datetime,
        @li_no          int,
        @o_id           int,
        @commit_flag    tinyint,
        @li_id          int,
        @li_qty         smallint,
        @delaytime      varchar(30)

BEGIN
    -------------------------------------------------
    ---
    -- uniform random delay of 0 - 0.6 second; avg =
0.3
    -------------------------------------------------
    ---
```

```
SELECT  @delaytime = '00:00:0' +
CAST(CAST((RAND()*0.60) AS decimal(4,3)) AS char(5))

    WAITFOR delay @delaytime

    ---------------------
    -- process orderlines
    ---------------------
SELECT  @commit_flag    = 1,
        @li_no          = 0

    WHILE (@li_no < @o_ol_cnt)
    BEGIN
        SELECT  @li_id  = CASE @li_no
                            WHEN  1 THEN @i_id1
                            WHEN  2 THEN @i_id2
                            WHEN  3 THEN @i_id3
                            WHEN  4 THEN @i_id4
                            WHEN  5 THEN @i_id5
                            WHEN  6 THEN @i_id6
                            WHEN  7 THEN @i_id7
                            WHEN  8 THEN @i_id8
                            WHEN  9 THEN @i_id9
                            WHEN 10 THEN @i_id10
                            WHEN 11 THEN @i_id11
                            WHEN 12 THEN @i_id12
                            WHEN 13 THEN @i_id13
                            WHEN 14 THEN @i_id14
                            WHEN 15 THEN @i_id15
                          END

        SELECT  @li_no      = @li_no + 1


        SELECT  @i_price    = 23.45, @li_qty = @li_no

        IF (@li_id = 999999)
        BEGIN
            SELECT  '',0,'',0,0

            SELECT  @commit_flag = 0
        END
        ELSE
        BEGIN
            SELECT  'Item Name blah',
                    17,
                    'G',
                    @i_price,
                    @i_price * @li_qty
        END
    END

    ------------------------------
    -- return order data to client
    ------------------------------
SELECT  @w_tax      = 0.1234,
        @d_tax      = 0.0987,
        @o_id       = 3001,
        @c_last     = 'BAROUGHTABLE',
        @c_discount = 0.2198,
        @c_credit   = 'GC',
        @o_entry_d  = GETDATE()
```

```
        SELECT  @w_tax,                                    @o_entry_d,                       SELECT  @screen_data    = ''
                @d_tax,                                     @o_carrier_id,
                @o_id,                                      @c_balance,                       ------------------------------------------
                @c_last,                                    @o_id                             -- get customer info and update balances
                @c_discount,                        GO                                        ------------------------------------------
                @c_credit,                                                                    SELECT  @d_street_1 = 'rqSHHakqyV',
                @o_entry_d,                         CREATE PROCEDURE    tpcc_payment                  @d_street_2 = 'zZ98nW3BR2s',
                @commit_flag                                          @w_id      int,                 @d_city    = 'ArNr4GNFV9',
                                                                      @c_w_id    int,                 @d_state   = 'aV',
END                                                                   @h_amount  numeric(6,2),        @d_zip     = '453511111'
GO                                                                    @d_id      tinyint,
                                                                      @c_d_id    tinyint,       ---------------------------------------------
CREATE PROCEDURE    tpcc_orderstatus                                  @c_id      int,           -- get warehouse data and update year-to-date
                    @w_id       int,                                  @c_last    char(16) = ''  ---------------------------------------------
                    @d_id       tinyint,                                                        SELECT  @w_street_1 = 'rqSHHakqyV',
                                                   AS                                                  @w_street_2 = 'zZ98nW3BR2s',
                                                   DECLARE @w_street_1    char(20),                    @w_city    = 'ArNr4GNFV9',
                    @c_id       int,                       @w_street_2    char(20),                    @w_state   = 'aV',
                    @c_last     char(16) = ''               @w_city        char(20),                   @w_zip     = '453511111'
                                                           @w_state       char(2),
                                                           @w_zip         char(9),             SELECT  @c_id           = 123,
AS                                                         @w_name        char(10),                    @c_balance     = -10000.00,
DECLARE @c_balance       numeric(12,2),                    @d_street_1    char(20),                   @c_first       = 'KmR03Xureb',
        @c_first         char(16),                         @d_street_2    char(20),                   @c_middle      = 'OE',
        @c_middle        char(2),                          @d_city        char(20),                   @c_last        = 'BAROUGHTBAR',
        @o_id            int,                              @d_state       char(2),                    @c_street_1    = 'QpGdOHjv8mR9vNI8V',
        @o_entry_d       datetime,                         @d_zip         char(9),                    @c_street_2    = 'dzKoCObBqbC3yu',
        @o_carrier_id    smallint,                         @d_name        char(10),                   @c_city        = 'zAKZXdC037FQxq',
        @ol_cnt          smallint,                         @c_first       char(16),                   @c_state       = 'QA',
        @delaytime       varchar(30)                       @c_middle      char(2),                    @c_zip         = '700311111',
                                                           @c_street_1    char(20),                   @c_phone       = '2967264064528555',
-------------------------------------------------          @c_street_2    char(20),                   @c_credit      = 'GC',
-- uniform random delay of 0 - 0.2 second; avg = 0.1       @c_city        char(20),                   @c_credit_lim  = 50000.00,
-------------------------------------------------          @c_state       char(2),                    @c_discount    = 0.3069,
SELECT  @delaytime = '00:00:0' +                           @c_zip         char(9),                    @c_since       = GETDATE(),
CAST(CAST((RAND()*0.20) AS decimal(4,3)) AS char(5))       @c_phone       char(16),                   @datetime      = GETDATE()
                                                           @c_since       datetime,
WAITFOR delay @delaytime                                   @c_credit      char(2),              -----------------------
                                                           @c_credit_lim  numeric(12,2),        -- return data to client
SELECT  @c_id       = 113,                                 @c_balance     numeric(12,2),        -----------------------
        @c_balance  = -10.00,                              @c_discount    numeric(4,4),         SELECT  @c_id,
        @c_first    = '8YCodgytqCj8',                      @data          char(500),                    @c_last,
        @c_middle   = 'OE',                                @c_data        char(500),                    @datetime,
        @c_last     = 'OUGHTOUGHTABLE',                    @datetime      datetime,                     @w_street_1,
        @o_id       = 3456,                                @w_ytd         numeric(12,2),                @w_street_2,
        @o_entry_d = GETDATE(),                            @d_ytd         numeric(12,2),                @w_city,
        @o_carrier_id   = 1                                @cnt           smallint,                     @w_state,
                                                           @val           smallint,                     @w_zip,
SELECT  @ol_cnt = (RAND() * 11) + 5                        @screen_data          char(200),             @d_street_1,
                                                           @d_id_local    tinyint,                      @d_street_2,
SET     ROWCOUNT @ol_cnt                                   @w_id_local    int,                          @d_city,
                                                           @c_id_local    int,                          @d_state,
SELECT  ol_supply_w_id,                                    @delaytime     varchar(30)                   @d_zip,
        ol_i_id,                                                                                        @c_first,
        ol_quantity,                               -------------------------------------------------    @c_middle,
        ol_amount,                                 -- uniform random delay of 0 - 0.3 second; avg = 0.15 @c_street_1,
        ol_delivery_d                              -------------------------------------------------    @c_street_2,
FROM    order_line_null                            SELECT  @delaytime = '00:00:0' +                     @c_city,
                                                   CAST(CAST((RAND()*0.20) AS decimal(4,3)) AS char(5)) @c_state,
SELECT  @c_id,                                                                                          @c_zip,
        @c_last,                                   WAITFOR delay @delaytime                             @c_phone,
        @c_first,                                                                                       @c_since,
        @c_middle,                                                                                      @c_credit,
```

```
            @c_credit_lim,
            @c_discount,
            @c_balance,
            @screen_data
GO

CREATE PROCEDURE    tpcc_stocklevel
                        @w_id         int,
                        @d_id         tinyint,
                        @threshhold   smallint

AS
DECLARE @delaytime  varchar(30)

---------------------------------------------------
-- uniform random delay of 0 - 3.6 second; avg = 1.8
---------------------------------------------------
SELECT @delaytime = '00:00:0' +
CAST(CAST((RAND()*0.20) AS decimal(4,3)) AS char(5))

WAITFOR delay @delaytime

SELECT  49
GO

CREATE PROCEDURE tpcc_version

AS
DECLARE @version    char(8)

BEGIN
    SELECT  @version = '4.10.000'

    SELECT  @version AS 'Version'
END
GO

CREATE TABLE    order_line_null (
                            [ol_i_id] [int]
NOT NULL ,
                            [ol_supply_w_id]
[int] NOT NULL ,
                            [ol_delivery_d]
[datetime] NOT NULL ,
                            [ol_quantity]
[smallint] NOT NULL ,
                            [ol_amount]
[numeric](6, 2) NOT NULL
) ON [PRIMARY]
GO

INSERT INTO order_line_null VALUES ( 101, 1,
GETDATE(), 1, 123.45 )
INSERT INTO order_line_null VALUES ( 102, 1,
GETDATE(), 2, 123.45 )
INSERT INTO order_line_null VALUES ( 103, 1,
GETDATE(), 3, 123.45 )
INSERT INTO order_line_null VALUES ( 104, 1,
GETDATE(), 4, 123.45 )
INSERT INTO order_line_null VALUES ( 105, 1,
GETDATE(), 5, 123.45 )
INSERT INTO order_line_null VALUES ( 106, 1,
GETDATE(), 1, 123.45 )
```

```
INSERT INTO order_line_null VALUES ( 107, 1,
GETDATE(), 2, 123.45 )
INSERT INTO order_line_null VALUES ( 108, 1,
GETDATE(), 3, 123.45 )
INSERT INTO order_line_null VALUES ( 109, 1,
GETDATE(), 4, 123.45 )
INSERT INTO order_line_null VALUES ( 110, 1,
GETDATE(), 5, 123.45 )
INSERT INTO order_line_null VALUES ( 111, 1,
GETDATE(), 1, 123.45 )
INSERT INTO order_line_null VALUES ( 112, 1,
GETDATE(), 2, 123.45 )
INSERT INTO order_line_null VALUES ( 113, 1,
GETDATE(), 3, 123.45 )
INSERT INTO order_line_null VALUES ( 114, 1,
GETDATE(), 4, 123.45 )
INSERT INTO order_line_null VALUES ( 115, 1,
GETDATE(), 5, 123.45 )
GO
```

RCa03544

```
#line
1"C:\\temp\\MSTPCC.442\\WEBCLNT\\install\\src\\instal
l.rc"
#line 1
//Microsoft Developer Studio generated resource
script.
//
#include "resource.h"
#line 5
#define APSTUDIO_READONLY_SYMBOLS
/////////////////////////////////////////////////
////////////////////////
//
// Generated from the TEXTINCLUDE 2 resource.
//
#include "afxres.h"
#line 12
/////////////////////////////////////////////////
////////////////////////
#undef APSTUDIO_READONLY_SYMBOLS
#line 15
/////////////////////////////////////////////////
////////////////////////
// English (U.S.) resources
#line 18
#if !defined(AFX_RESOURCE_DLL) ||
defined(AFX_TARG_ENU)
#ifdef _WIN32
LANGUAGE LANG_ENGLISH, SUBLANG_ENGLISH_US
#pragma code_page(1252)
#endif //_WIN32
#line 24
/////////////////////////////////////////////////
////////////////////////
//
// Dialog
//
#line 29
```

```
IDD_DIALOG1 DIALOGEX 0, 0, 219, 351
STYLE DS_MODALFRAME | DS_CENTER | WS_MINIMIZEBOX |
WS_POPUP | WS_CAPTION |
WS_SYSMENU
CAPTION "TPC-C Web Client Installation Utility"
FONT 8, "MS Sans Serif"
BEGIN
EDITTEXT        ED_THREADS,164,45,34,12,ES_RIGHT |
ES_NUMBER,
WS_EX_RTLREADING
EDITTEXT
ED_MAXDELIVERIES,164,59,34,12,ES_RIGHT | ES_NUMBER,
WS_EX_RTLREADING
EDITTEXT
ED_MAXCONNECTION,164,73,34,12,ES_RIGHT | ES_NUMBER,
WS_EX_RTLREADING
CONTROL
"None",IDC_TM_NONE,"Button",BS_AUTORADIOBUTTON |
WS_GROUP | WS_TABSTOP,43,100,33,10
CONTROL
"COM",IDC_TM_MTS,"Button",BS_AUTORADIOBUTTON |
WS_TABSTOP,43,113,32,10
CONTROL
"TUXEDO",IDC_TM_TUXEDO,"Button",BS_AUTORADIOBUTTON |
WS_TABSTOP,106,100,46,10
CONTROL
"ENCINA",IDC_TM_ENCINA,"Button",BS_AUTORADIOBUTTON |
WS_DISABLED | WS_TABSTOP,106,113,43,10
EDITTEXT
ED_DB_SERVER,131,152,67,12,ES_AUTOHSCROLL
EDITTEXT
ED_DB_USER_ID,131,165,67,12,ES_AUTOHSCROLL
EDITTEXT
ED_DB_PASSWORD,131,178,67,12,ES_AUTOHSCROLL
EDITTEXT
ED_DB_NAME,131,191,67,12,ES_AUTOHSCROLL
CONTROL
"DBLIB",IDC_DBLIB,"Button",BS_AUTORADIOBUTTON |
WS_GROUP |
WS_TABSTOP,45,219,39,12
CONTROL
"ODBC",IDC_ODBC,"Button",BS_AUTORADIOBUTTON |
WS_TABSTOP,
91,219,39,12
EDITTEXT
ED_IIS_MAX_THEAD_POOL_LIMIT,164,263,34,12,ES_RIGHT |
ES_NUMBER,WS_EX_RTLREADING
EDITTEXT
ED_WEB_SERVICE_BACKLOG_QUEUE_SIZE,164,277,34,12,ES_RI
GHT |
ES_NUMBER,WS_EX_RTLREADING
EDITTEXT
ED_IIS_THREAD_TIMEOUT,164,291,34,12,ES_RIGHT |
ES_NUMBER,
WS_EX_RTLREADING
EDITTEXT
ED_IIS_LISTEN_BACKLOG,164,305,34,12,ES_RIGHT |
ES_NUMBER,
WS_EX_RTLREADING
DEFPUSHBUTTON   "OK",IDOK,53,331,50,14
PUSHBUTTON      "Cancel",IDCANCEL,119,331,50,14
EDITTEXT        IDC_PATH,106,26,91,13,ES_AUTOHSCROLL
| ES_READONLY
```

```
LTEXT           "Number of Delivery
Threads:",IDC_STATIC,35,45,115,12
LTEXT           "Max Number of
Connections:",IDC_STATIC,35,73,115,12
RTEXT           "Version 4.11",IDC_VERSION,120,4,89,9
LTEXT           "IIS Max Thread Pool
Limit:",IDC_STATIC,36,263,115,12
LTEXT           "Web Service Backlog Queue
Size:",IDC_STATIC,36,277,115,
12
LTEXT           "IIS Thread Timeout
(seconds):",IDC_STATIC,36,291,115,12
LTEXT           "IIS Listen
Backlog:",IDC_STATIC,36,307,115,10
GROUPBOX        "Database
Interface",IDC_STATIC,35,208,163,27,WS_GROUP
LTEXT           "Installation
directory:",IDC_STATIC,35,29,71,10
GROUPBOX        "Transaction
Monitor",IDC_STATIC,33,90,165,37
LTEXT           "Server Name:",IDC_STATIC,35,155,56,8
LTEXT           "User ID:",IDC_STATIC,35,168,60,8
LTEXT           "User
Password:",IDC_STATIC,35,181,83,8
LTEXT           "Database
Name:",IDC_STATIC,35,194,54,8
GROUPBOX        "SQL Server Connection
Properties",IDC_STATIC,22,139,187,
102
GROUPBOX        "Web Client
Properties",IDC_STATIC,22,15,187,118
GROUPBOX        "IIS
Settings",IDC_STATIC,22,247,187,79
LTEXT           "Max Pending
Deliveries:",IDC_STATIC,35,59,115,12
END
#line 90
IDD_DIALOG2 DIALOGEX 0, 0, 117, 62
STYLE DS_SETFOREGROUND | DS_3DLOOK | DS_CENTER |
WS_POPUP | WS_BORDER
EXSTYLE WS_EX_STATICEDGE
FONT 12, "MS Sans Serif", 0, 0, 0x1
BEGIN
DEFPUSHBUTTON   "OK",IDOK,33,45,50,9
CTEXT           "HTML TPC-C Installation
Successfull",IDC_RESULTS,7,22,
102,18,0,WS_EX_CLIENTEDGE
ICON
IDI_ICON2,IDC_STATIC,50,7,18,20,SS_REALSIZEIMAGE,
WS_EX_TRANSPARENT
END
#line 102
IDD_DIALOG3 DIALOG DISCARDABLE  0, 0, 91, 40
STYLE DS_SYSMODAL | DS_MODALFRAME | DS_3DLOOK |
DS_CENTER | WS_CAPTION
CAPTION "Installing TPC-C Web Client"
FONT 12, "Arial Black"
BEGIN
CONTROL
"Progress1",IDC_PROGRESS1,"msctls_progress32",WS_BORD
ER,
7,20,77,13
```

```
CTEXT
"Static",IDC_STATUS,7,7,77,12,SS_SUNKEN
END
#line 112
IDD_DIALOG4 DIALOG DISCARDABLE  0, 0, 291, 202
STYLE DS_MODALFRAME | DS_CENTER | WS_POPUP |
WS_CAPTION | WS_SYSMENU
CAPTION "Client End User License"
FONT 8, "MS Sans Serif"
BEGIN
EDITTEXT        IDC_LICENSE,7,7,271,167,ES_MULTILINE
| ES_AUTOVSCROLL |
ES_AUTOHSCROLL | ES_READONLY | WS_VSCROLL |
WS_HSCROLL
DEFPUSHBUTTON   "I &Agree",IDOK,87,181,50,14
PUSHBUTTON      "&Cancel",IDCANCEL,153,181,50,14
END
#line 124
/////////////////////////////////////////////////////
/////////////////////////
//
// DESIGNINFO
//
#line 129
#ifdef APSTUDIO_INVOKED
GUIDELINES DESIGNINFO DISCARDABLE
BEGIN
IDD_DIALOG1, DIALOG
BEGIN
LEFTMARGIN, 22
RIGHTMARGIN, 209
VERTGUIDE, 35
VERTGUIDE, 198
TOPMARGIN, 4
BOTTOMMARGIN, 345
END
#line 142
IDD_DIALOG2, DIALOG
BEGIN
LEFTMARGIN, 7
RIGHTMARGIN, 109
TOPMARGIN, 7
BOTTOMMARGIN, 54
END
#line 150
IDD_DIALOG3, DIALOG
BEGIN
LEFTMARGIN, 7
RIGHTMARGIN, 84
TOPMARGIN, 7
BOTTOMMARGIN, 33
END
#line 158
IDD_DIALOG4, DIALOG
BEGIN
LEFTMARGIN, 7
RIGHTMARGIN, 278
TOPMARGIN, 7
BOTTOMMARGIN, 195
END
END
#endif    // APSTUDIO_INVOKED
#line 169
```

```
#ifdef APSTUDIO_INVOKED
/////////////////////////////////////////////////////
/////////////////////////
//
// TEXTINCLUDE
//
#line 175
1 TEXTINCLUDE DISCARDABLE
BEGIN
"resource.h\0"
END
#line 180
2 TEXTINCLUDE DISCARDABLE
BEGIN
"#include ""afxres.h""\r\n"
"\0"
END
#line 186
3 TEXTINCLUDE DISCARDABLE
BEGIN
"\r\n"
"\0"
END
#line 192
#endif    // APSTUDIO_INVOKED
#line 195
/////////////////////////////////////////////////////
/////////////////////////
//
// Icon
//
#line 200
// Icon with lowest ID value placed first to ensure
application icon
// remains consistent on all systems.
IDI_ICON1           ICON    DISCARDABLE
"icon1.ico"
IDI_ICON2           ICON    DISCARDABLE
"icon2.ico"
#line 205
/////////////////////////////////////////////////////
/////////////////////////
//
// TPCCDLL
//
#line 210
IDR_TPCCDLL         TPCCDLL DISCARDABLE
"..\\..\\isapi_dll\\bin\\tpcc.dll"
#line 212
#ifndef _MAC
/////////////////////////////////////////////////////
/////////////////////////
//
// Version
//
#line 218
VS_VERSION_INFO VERSIONINFO
FILEVERSION 0,4,20,0
PRODUCTVERSION 0,4,20,0
FILEFLAGSMASK 0x3fL
#ifdef _DEBUG
FILEFLAGS 0x1L
#else
```

```
FILEFLAGS 0x0L
#endif
FILEOS 0x40004L
FILETYPE 0x1L
FILESUBTYPE 0x0L
BEGIN
BLOCK "StringFileInfo"
BEGIN
BLOCK "040904b0"
BEGIN
VALUE "Comments", "TPC-C Web Client Installer\0"
VALUE "CompanyName", "Microsoft\0"
VALUE "FileDescription", "install\0"
VALUE "FileVersion", "0, 4, 20, 0\0"
VALUE "InternalName", "install\0"
VALUE "LegalCopyright", "Copyright ¬ 1999\0"
VALUE "OriginalFilename", "install.exe\0"
VALUE "ProductName", "Microsoft install\0"
VALUE "ProductVersion", "0, 4, 20, 0\0"
END
END
BLOCK "VarFileInfo"
BEGIN
VALUE "Translation", 0x409, 1200
END
END
#line 252
#endif    // !_MAC
#line 255
/////////////////////////////////////////////////
////////////////////////
//
// LICENSE
//
#line 260
IDR_LICENSE1          LICENSE DISCARDABLE
"license.txt"
#line 262
/////////////////////////////////////////////////
////////////////////////
//
// DBLIB_DLL
//
#line 267
IDR_DBLIB_DLL        DBLIB_DLL DISCARDABLE
"..\\..\\db_dblib_dll\\bin\\tpcc_dblib.dll"
#line 269
/////////////////////////////////////////////////
////////////////////////
//
// ODBC_DLL
//
#line 274
IDR_ODBC_DLL         ODBC_DLL DISCARDABLE
"..\\..\\db_odbc_dll\\bin\\tpcc_odbc.dll"
#line 276
/////////////////////////////////////////////////
////////////////////////
//
// TUXEDO_APP
//
#line 281
```

```
IDR_TUXEDO_APP          TUXEDO_APP DISCARDABLE
"..\\..\\tuxapp\\bin\\tuxapp.exe"
#line 283
/////////////////////////////////////////////////
////////////////////////
//
// TUXEDO_DLL
//
#line 288
IDR_TUXEDO_DLL         TUXEDO_DLL DISCARDABLE
"..\\..\\tm_tuxedo_dll\\bin\\tpcc_tuxedo.dll"
#line 290
/////////////////////////////////////////////////
////////////////////////
//
// COM_DLL
//
#line 295
IDR_COM_DLL           COM_DLL DISCARDABLE
"..\\..\\tm_com_dll\\bin\\tpcc_com.dll"
#line 297
/////////////////////////////////////////////////
////////////////////////
//
// COM_PS_DLL
//
#line 302
IDR_COMPS_DLL         COM_PS_DLL DISCARDABLE
"..\\..\\tpcc_com_ps\\bin\\tpcc_com_ps.dll"
#line 304
/////////////////////////////////////////////////
////////////////////////
//
// COM_ALL_DLL
//
#line 309
IDR_COMALL_DLL        COM_ALL_DLL DISCARDABLE
"..\\..\\tpcc_com_all\\bin\\tpcc_com_all.dll"
#line 311
/////////////////////////////////////////////////
////////////////////////
//
// COM_TYPLIB
//
#line 316
IDR_COMTYPLIB_DLL     COM_TYPLIB DISCARDABLE
"..\\..\\tpcc_com_all\\src\\tpcc_com_all.tlb"
#line 318
#endif    // English (U.S.) resources
/////////////////////////////////////////////////
////////////////////////
#line 323
#ifndef APSTUDIO_INVOKED
/////////////////////////////////////////////////
////////////////////////
//
// Generated from the TEXTINCLUDE 3 resource.
//
#line 330
/////////////////////////////////////////////////
////////////////////////
#endif    // not APSTUDIO_INVOKED
```

ReadRegistry.cpp

```
/*       FILE:              READREGISTRY.CPP
 *                                 Microsoft
TPC-C Kit Ver. 4.20.000
 *                                 Copyright
Microsoft, 1999
 *          All Rights Reserved
 *
 *                                 not yet
audited
 *
 *      PURPOSE:  Implementation for TPC-C class.
 *      Contact:  Charles Levine
(clevine@microsoft.com)
 *
 *  Change history:
 *          4.20.000 - first version
 */


/* FUNCTION: ReadTPCCRegistrySettings
 *
 * PURPOSE:        This function reads the NT
registry for startup parameters. There parameters are
 *                  under the TPCC key.
 *
 * RETURNS         FALSE = no errors
 *                  TRUE  = error reading
registry
 */
BOOL ReadTPCCRegistrySettings( TPCCREGISTRYDATA *pReg
)
{
        HKEY      hKey;
        DWORD     size;
        DWORD     type;
        DWORD     dwTmp;
        char      szTmp[256];

        if ( RegOpenKeyEx(HKEY_LOCAL_MACHINE,
"SOFTWARE\\Microsoft\\TPCC", 0, KEY_READ, &hKey) !=
ERROR_SUCCESS )
                return TRUE;

        // determine database protocol to use;
always has to be ODBC
        pReg->eDB_Protocol = ODBC;
        size = sizeof(szTmp);
        //if ( RegQueryValueEx(hKey, "DB_Protocol",
0, &type, (BYTE *)&szTmp, &size) == ERROR_SUCCESS )
        //{
                //if ( !stricmp(szTmp,
szDBNames[ODBC]) )
                //      pReg->eDB_Protocol =
ODBC;
        //}

        pReg->eTxnMon = None;
        // determine txn monitor to use; may be
either COM, or blank
```

```
        size = sizeof(szTmp);
        if ( RegQueryValueEx(hKey, "TxnMonitor", 0,
&type, (BYTE *)&szTmp, &size) == ERROR_SUCCESS )
        {
                if ( !stricmp(szTmp,
szTxnMonNames[COM]) )
                        pReg->eTxnMon = COM;
        }

        pReg->bCOM_SinglePool = FALSE;
        size = sizeof(szTmp);
        if ( RegQueryValueEx(hKey,
"COM_SinglePool", 0, &type, (BYTE *)&szTmp, &size) ==
ERROR_SUCCESS )
        {
                if ( !stricmp(szTmp, "YES") )
                        pReg->bCOM_SinglePool =
TRUE;
        }

        pReg->dwMaxConnections = 0;
        size = sizeof(dwTmp);
        if ( ( RegQueryValueEx(hKey,
"MaxConnections", 0, &type, (LPBYTE)&dwTmp, &size) ==
ERROR_SUCCESS )
                && (type == REG_DWORD) )
                pReg->dwMaxConnections = dwTmp;

        pReg->dwMaxPendingDeliveries = 0;
        size = sizeof(dwTmp);
        if ( ( RegQueryValueEx(hKey,
"MaxPendingDeliveries", 0, &type, (LPBYTE)&dwTmp,
&size) == ERROR_SUCCESS )
                && (type == REG_DWORD) )
                pReg->dwMaxPendingDeliveries =
dwTmp;

        pReg->dwNumberOfDeliveryThreads = 0;
        size = sizeof(dwTmp);
        if ( ( RegQueryValueEx(hKey,
"NumberOfDeliveryThreads", 0, &type, (LPBYTE)&dwTmp,
&size) == ERROR_SUCCESS )
                && (type == REG_DWORD) )
                pReg->dwNumberOfDeliveryThreads =
dwTmp;

        size = sizeof( pReg->szPath );
        if ( RegQueryValueEx(hKey, "Path", 0,
&type, (BYTE *)&pReg->szPath, &size) != ERROR_SUCCESS
)
                pReg->szPath[0] = 0;

        size = sizeof( pReg->szDbServer );
        if ( RegQueryValueEx(hKey, "DbServer", 0,
&type, (BYTE *)&pReg->szDbServer, &size) !=
ERROR_SUCCESS )
                pReg->szDbServer[0] = 0;

        size = sizeof( pReg->szDbName );
        if ( RegQueryValueEx(hKey, "DbName", 0,
&type, (BYTE *)&pReg->szDbName, &size) !=
ERROR_SUCCESS )
                pReg->szDbName[0] = 0;
```

```
        size = sizeof( pReg->szDbUser );
        if ( RegQueryValueEx(hKey, "DbUser", 0,
&type, (BYTE *)&pReg->szDbUser, &size) !=
ERROR_SUCCESS )
                pReg->szDbUser[0] = 0;

        size = sizeof( pReg->szDbPassword );
        if ( RegQueryValueEx(hKey, "DbPassword", 0,
&type, (BYTE *)&pReg->szDbPassword, &size) !=
ERROR_SUCCESS )
                pReg->szDbPassword[0] = 0;

        size = sizeof( pReg->szSPPrefix );
        if ( RegQueryValueExW(hKey, L"SPPrefix", 0,
&type, (BYTE *)&pReg->szSPPrefix, &size) !=
ERROR_SUCCESS )
                pReg->szSPPrefix[0] = L'\0';

        pReg->dwConnectDelay = 0;
        size = sizeof(dwTmp);
        if ( ( RegQueryValueEx(hKey,
"ConnectDelay", 0, &type, (LPBYTE)&dwTmp, &size) ==
ERROR_SUCCESS )
                && (type == REG_DWORD) )
                pReg->dwConnectDelay = dwTmp;

        pReg->bCallNoDuplicatesNewOrder = FALSE;
        size = sizeof(dwTmp);
        if ( ( RegQueryValueEx(hKey,
"CallNoDuplicatesNewOrder", 0, &type, (LPBYTE)&dwTmp,
&size) == ERROR_SUCCESS )
                && (type == REG_DWORD) )
                pReg->bCallNoDuplicatesNewOrder =
dwTmp;

        RegCloseKey(hKey);

        return FALSE;
}
```

ReadRegistry.h

```
/*      FILE:                   ReadRegistry.h
 *                                      Microsoft
TPC-C Kit Ver. 4.69.000
 *                                      Copyright
Microsoft, 1999
 *              All Rights Reserved
 *
 *                                      not audited
 *
 *      PURPOSE: Header for registry related code.
 *
 *  Change history:
 *              4.20.000 - first version
 *              4.69.000 - updated rev number to
match kit
 */
```

```
enum DBPROTOCOL { Unspecified, ODBC };
const char *szDBNames[] = { "Unspecified", "ODBC" };

enum TXNMON { None, COM };
const char *szTxnMonNames[] = { "NONE", "COM" };

//This structure defines the data necessary to keep
distinct for each terminal or client connection.
typedef struct _TPCCREGISTRYDATA
{
        enum DBPROTOCOL eDB_Protocol;
        enum TXNMON eTxnMon;
        BOOL bCOM_SinglePool;
        DWORD dwMaxConnections;
        DWORD dwMaxPendingDeliveries;
        DWORD dwNumberOfDeliveryThreads;
        char szPath[128];
        char szDbServer[32];
        char szDbName[32];
        char szDbUser[32];
        char szDbPassword[32];
        wchar_t szSPPrefix[32];
        //tpcc_odbc.dll stored procedures prefix
        DWORD dwConnectDelay;           // delay in
ms to use in pacing connection open and close
        BOOL bCallNoDuplicatesNewOrder;         //
whether to check for non-duplicate item ids and call
a different New Order SP
} TPCCREGISTRYDATA, *PTPCCREGISTRYDATA;

BOOL ReadTPCCRegistrySettings( TPCCREGISTRYDATA *pReg
);
```

resource.h

```
//{{NO_DEPENDENCIES}}
// Microsoft Visual C++ generated include file.
// Used by install.rc
//
#define IDD_DIALOG1                     101
#define IDI_ICON1                       102
#define IDR_TPCCDLL                     103
#define IDD_DIALOG2                     105
#define IDI_ICON2                       106
#define IDR_DELIVERY                    107
#define IDD_DIALOG3                     108
#define IDR_LICENSE1                    112
#define IDD_DIALOG4                     113
#define IDR_TPCCOBJ1                    117
#define IDR_TPCCSTUB1                   118
#define IDR_ODBC_DLL                    123
#define IDR_COM_DLL                     126
#define IDR_COMPS_DLL                   127
#define IDR_COMALL_DLL                  128
#define IDR_COMTYPLIB_DLL               129
#define IDR_MSVCR71                     130
#define BN_LOG                          1001
#define ED_KEEP                         1002
#define ED_THREADS                      1003
#define ED_THREADS2                     1004
```

```
#define IDC_PATH                           1007
#define IDC_VERSION                        1009
#define IDC_RESULTS                        1010
#define IDC_PROGRESS1                      1011
#define IDC_STATUS                         1012
#define IDC_BUTTON1                        1013
#define ED_MAXCONNECTION                   1014
#define ED_IIS_MAX_THEAD_POOL_LIMIT        1015
#define ED_MAXDELIVERIES                   1016
#define ED_WEB_SERVICE_BACKLOG_QUEUE_SIZE  1017
#define ED_IIS_THREAD_TIMEOUT              1018
#define ED_IIS_LISTEN_BACKLOG              1019
#define IDC_DBLIB                          1021
#define IDC_LICENSE                        1022
#define IDC_ODBC                           1022
#define IDC_CONNECT_POOL                   1023
#define ED_DB_SERVER                       1023
#define ED_USER_CONNECT_DELAY_TIME         1024
#define ED_DB_USER_ID                      1024
#define IDC_MTS                            1025
#define IDC_TM_MTS                         1025
#define IDC_TM_TUXEDO                      1026
#define IDC_TM_NONE                        1027
#define ED_DB_PASSWORD                     1028
#define ED_DB_NAME                         1029
#define IDC_TM_ENCINA                      1030

// Next default values for new objects
//
#ifdef APSTUDIO_INVOKED
#ifndef APSTUDIO_READONLY_SYMBOLS
#define _APS_NEXT_RESOURCE_VALUE     131
#define _APS_NEXT_COMMAND_VALUE      40001
#define _APS_NEXT_CONTROL_VALUE      1031
#define _APS_NEXT_SYMED_VALUE        101
#endif
#endif
```

resource_.h

```
//{{NO_DEPENDENCIES}}
// Microsoft Developer Studio generated include file.
// Used by tpcc.rc
//
#define IDD_DIALOG1                  101

// Next default values for new objects
//
#ifdef APSTUDIO_INVOKED
#ifndef APSTUDIO_READONLY_SYMBOLS
#define _APS_NEXT_RESOURCE_VALUE     102
#define _APS_NEXT_COMMAND_VALUE      40001
#define _APS_NEXT_CONTROL_VALUE      1000
#define _APS_NEXT_SYMED_VALUE        101
#endif
#endif
```

rtetime.h

```
/* FILE: rtetime.h : header file
 * Copyright 1997 Microsoft Corp., All rights
reserved.
 *
 * Source code licensed to Tandem Computers  for
Internal
 * use only.  Redistribution of source or object
files or
 * any derivative works is prohibited. By agreement,
this
 * notice may not be removed.
 *
 * Authors: Charles Levine, Philip Durr
 *                      Microsoft Corp.
 *
 */

//FILE: RTETIME.H

#define   MAX_JULIAN_TIME
          0x7FFFFFFFFFFFFFFF
#define JULIAN_TIME __int64
#define   TC_TIME              DWORD
extern "C"
{
BOOL              InitJulianTime(LPSYSTEMTIME
lpInitTime);
JULIAN_TIME       GetJulianTime(void);
DWORD             MyTickCount(void);
void              GetJulianAndTC(JULIAN_TIME
*pJulian, DWORD *pTC);
JULIAN_TIME       ConvertTo64BitTime(int iYear, int
iMonth, int iDay, int iHour, int iMinute, int
iSecond);
JULIAN_TIME       Get64BitTime(LPSYSTEMTIME
lpInitTime);
int                       JulianDay( int yr, int
mm, int dd );
void              JulianToTime(JULIAN_TIME
julianTS, int* yr, int* mm, int* dd, int *hh, int
*mi, int *ss );
void              JulianToCalendar( int day, int*
yr, int* mm, int* dd );
}
```

spinlock.h

```
/*        FILE: SPINLOCK.H
 *
 * Copyright 1997 Microsoft Corp., All rights
reserved.
 *
 * Source code licensed to Tandem Computers  for
Internal
 * use only.  Redistribution of source or object
files or
```

```
 * any derivative works is prohibited. By agreement,
this
 * notice may not be removed.
 *
 * Authors: Mike Parkes, Charles Levine, Philip Durr
 *                      Microsoft Corp.
 */

#ifndef _INC_Spinlock

        const LONG LockClosed        = 1;
        const LONG LockOpen          = 0;

        /*********************************************
*********************
        *
        *    Spinlock and Semaphore locking.
        *
        *    This class provides a very
conservative locking scheme.
        *    The assumption behind the code is that
locks will be
        *    held for a very short time.  When a
lock is taken a memory
        *    location is exchanged.  All other
threads that want this
        *    lock wait by spinning and sometimes
sleeping on a semaphore
        *    until it becomes free again.  The only
other choice is not
        *    to wait at all and move on to do
something else.  This
        *    module should normally be used in
conjunction with cache
        *    aligned memory in minimize cache line
misses.
        *
        ****************************************************
*********/

        class Spinlock
        {
                // Private data.
                HANDLE
Semaphore;
                volatile LONG
m_Spinlock;
                volatile LONG
Waiting;

                #ifdef _DEBUG
                        // Counters for
debugging builds.
                        volatile LONG
        TotalLocks;
                        volatile LONG
        TotalSleeps;
                        volatile LONG
        TotalSpins;
                        volatile LONG
        TotalWaits;
                #endif
```

```cpp
        public:
                // Public functions.
                Spinlock( void );

                inline BOOL ClaimLock(
BOOL Wait = TRUE );
                inline void
ReleaseLock( void );
                ~Spinlock( void );
                // Disabled operations.
                Spinlock( const
Spinlock & Copy );
                void operator=( const
Spinlock & Copy );

        private:
                // Private functions.
                inline BOOL
ClaimSpinlock( volatile LONG *sl );
                void WaitForLock( void
);
                void WakeAllSleepers(
void );
        };

        /****************************************
*********************
         *
         *   A guaranteed atomic exchange.
         *
         *   An attempt is made to claim the
Spinlock.  This action is
         *   guaranteed to be atomic.
         *
*******************************************************
*********/

        inline BOOL Spinlock::ClaimSpinlock(
volatile LONG *Spinlock )
        {
                #ifdef _DEBUG
                        InterlockedIncrement(
(LPLONG) & TotalLocks );
                #endif
                return ( ((*Spinlock) ==
LockOpen) && (InterlockedExchange( (LPLONG)Spinlock,
LockClosed ) == LockOpen) );
        }

        /****************************************
*********
         *
         *   Claim the Spinlock.
         *
         *   Claim the lock if available else wait
or exit.
         *
****************************************************/
```

```cpp
        inline BOOL Spinlock::ClaimLock( BOOL Wait
)
        {
                if ( ! ClaimSpinlock( (volatile
LONG*) & m_Spinlock ) )
                {
                        if ( Wait )
WaitForLock();
                        return Wait;
                }
                return TRUE;
        }

        /*******************************************
**************
         *
         *   Release the Spinlock.
         *
         *   Release the lock and if needed wakeup
any sleepers.
         *
*******************************************************
***/

        inline void Spinlock::ReleaseLock( void )
        {
                m_Spinlock = LockOpen;
                if ( Waiting > 0 )
                        WakeAllSleepers();
        }

        #define _INC_Spinlock

#endif
```

tpcc.cpp

```cpp
/*      FILE:           TPCC.C
 *                              Microsoft
TPC-C Kit Ver. 4.69.000
 *                              Copyright
Microsoft, 1999
 *              All Rights Reserved
 *
 *                              Version
4.10.000 audited by Richard Gimarc, Performance
Metrics, 3/17/99
 *
 *      PURPOSE:  Main module for TPCC.DLL which is
an ISAPI service dll.
 *      Contact:  Charles Levine
(clevine@microsoft.com)
 *
 *  Change history:
 *                      4.20.000 - reworked error
handling; added options for COM and Encina txn
monitors
```

```cpp
 *                      4.69.000 - updated rev number to
match kit
 */

#include <windows.h>
#include <process.h>
#include <tchar.h>
#include <stdio.h>
#include <stdarg.h>
#include <malloc.h>
#include <stdlib.h>
#include <string.h>
#include <time.h>
#include <sys\timeb.h>
#include <io.h>
#include <assert.h>

#include <sqltypes.h>

#ifdef ICECAP
#include <icapexp.h>
#endif

#include "..\..\common\src\trans.h"
        //tpckit transaction header contains
definations of structures specific to TPC-C
#include "..\..\common\src\error.h"
#include "..\..\common\src\txn_base.h"
#include "..\..\common\src\ReadRegistry.h"

#include "..\..\common\txnlog\include\rtetime.h"
#include "..\..\common\txnlog\include\spinlock.h"
#include "..\..\common\txnlog\include\txnlog.h"

// Database layer includes
#include "..\..\db_odbc_dll\src\tpcc_odbc.h"
        // ODBC implementation of TPC-C txns

// Txn monitor layer includes
#include "..\..\tm_com_dll\src\tpcc_com.h"
                // COM Services implementation on
TPC-C txns

#include "httpext.h"
        //ISAPI DLL information header
#include "tpcc.h"
        //this dlls specific structure, value e.t.
header.


#define   LEN_ERR_STRING       256

// defines for Make<Txn>Form calls to distinguish
input and output flavors
#define   OUTPUT_FORM          0
#define INPUT_FORM 1

char
        szMyComputerName[MAX_COMPUTERNAME_LENGTH+1]
;

//Terminal client id structure
TERM      Term = { 0, 0, 0, NULL };
```

HP TPC-C FULL DISCLOSURE REPORT

```
// The WEBCLIENT_VERSION string specifies the version
level of this web client interface.
// The RTE must be synchronized with the interface
level on login, otherwise the login
// will fail.  This is a sanity check to catch
problems resulting from mismatched versions
// of the RTE and web client.
#define WEBCLIENT_VERSION "420"

static   CRITICAL_SECTION
         TermCriticalSection;

static  HINSTANCE hLibInstanceTm = NULL;
static  HINSTANCE hLibInstanceDb = NULL;

TYPE_CTPCC_ODBC          *pCTPCC_ODBC_new;
TYPE_CTPCC_COM           *pCTPCC_COM_new;

// For deferred Delivery txns:

CTxnLog
         *txnDelilog = NULL;
         //used to log delivery transaction
information

HANDLE
         hWorkerSemaphore   = INVALID_HANDLE_VALUE;
HANDLE
         hDoneEvent                      =
INVALID_HANDLE_VALUE;
HANDLE
         *pDeliHandles           = NULL;

// configuration settings from registry
TPCCREGISTRYDATA            Reg;


DWORD
         dwNumDeliveryThreads = 4;
CRITICAL_SECTION            DelBuffCriticalSection;
                //critical section for delivery
transactions cache
DELIVERY_TRANSACTION        *pDelBuff
         = NULL;
DWORD
         dwDelBuffSize              = 100;
         // size of circular buffer for delivery
txns
DWORD
         dwDelBuffFreeCount;
         // number of buffers free
DWORD
         dwDelBuffBusyIndex  = 0;           //
index position of entry waiting to be delivered
DWORD
         dwDelBuffFreeIndex  = 0;           //
index position of unused entry

// Critical section to synchronize connection open
and close.
//
CRITICAL_SECTION hConnectCriticalSection;


#include "..\..\common\src\ReadRegistry.cpp"

/* FUNCTION: DllMain
 *
 * PURPOSE:           This function is the entry point
for the DLL.  This implementation is based on the
 *                             fact that
DLL_PROCESS_ATTACH is only called from the inet
service once.
 *
 * ARGUMENTS:        HANDLE     hModule
                        module handle
 *                                       DWORD
            ul_reason_for_call  reason for call
 *                                       LPVOID
            lpReserved
            reserved for future use
 *
 * RETURNS:                     BOOL     FALSE
                        errors occured in
initialization
 *
 *                     TRUE                        DLL
successfully initialized
 */
BOOL APIENTRY DllMain(HANDLE hModule, DWORD
ul_reason_for_call, LPVOID lpReserved)
{
            DWORD  i;
            char szEvent[LEN_ERR_STRING] = "\0";
            char szLogFile[128];
            char szDllName[128];

// debugging....
// DebugBreak();

            try
            {
                        switch( ul_reason_for_call )
                        {
                                    case
DLL_PROCESS_ATTACH:
                                    {
                        DWORD dwSize = MAX_COMPUTERNAME_LENGTH+1;

                        GetComputerName(szMyComputerName, &dwSize);

                        szMyComputerName[dwSize] = 0;
                                    }


                        DisableThreadLibraryCalls((HMODULE)hModule)
;

                        InitializeCriticalSection(&TermCriticalSect
ion);

                                                if (
ReadTPCCRegistrySettings( &Reg ) )


            throw new CWEBCLNT_ERR(
ERR_MISSING_REGISTRY_ENTRIES );

                                                        dwDelBuffSize
= min( Reg.dwMaxPendingDeliveries, 10000 );  // min
with 10000 as a sanity constraint

            dwNumDeliveryThreads = min(
Reg.dwNumberOfDeliveryThreads, 100 );  // min with
100 as a sanity constraint

                                                        TermInit();

                                                        if
(Reg.eTxnMon == COM)
                                                        {

            strcpy( szDllName, Reg.szPath );

            strcat( szDllName, "tpcc_com.dll");

            hLibInstanceTm = LoadLibrary( szDllName );
                                                        if
(hLibInstanceTm == NULL)

            throw new CWEBCLNT_ERR( ERR_LOADDLL_FAILED,
szDllName, GetLastError() );
                                                            //
get function pointer to wrapper for class constructor

            pCTPCC_COM_new = (TYPE_CTPCC_COM*)
GetProcAddress(hLibInstanceTm,"CTPCC_COM_new");
                                                        if
(pCTPCC_COM_new == NULL)

            throw new CWEBCLNT_ERR(
ERR_GETPROCADDR_FAILED, szDllName, GetLastError() );
                                                        }
                                                        // load DLL
for database connection
                                                        if
((Reg.eTxnMon == None) || (dwNumDeliveryThreads > 0))
                                                        {
                                                        if
(Reg.eDB_Protocol == ODBC)
                                                        {

            strcpy( szDllName, Reg.szPath );

            strcat( szDllName, "tpcc_odbc.dll");

            hLibInstanceDb = LoadLibrary( szDllName );

            if (hLibInstanceDb == NULL)

                        throw new CWEBCLNT_ERR(
ERR_LOADDLL_FAILED, szDllName, GetLastError() );
```

```
        // get function pointer to wrapper for
class constructor

        pCTPCC_ODBC_new = (TYPE_CTPCC_ODBC*)
GetProcAddress(hLibInstanceDb,"CTPCC_ODBC_new");

        if (pCTPCC_ODBC_new == NULL)

                throw new CWEBCLNT_ERR(
ERR_GETPROCADDR_FAILED, szDllName, GetLastError() );

                }
        }
                // Check
whether Service Pack 1 has been installed if
                // running on
Windows Server 2003. The RTM version has
                // a
limitation on concurrent HTTP connections.
                //

        OSVERSIONINFOEX         VersionInfo;

        VersionInfo.dwOSVersionInfoSize =
sizeof(OSVERSIONINFOEX);
                if
(GetVersionEx((LPOSVERSIONINFO)&VersionInfo))
                {
                        if
(VersionInfo.dwMajorVersion == 5 &&     // Windows
2000/2003 Server?

        VersionInfo.dwMinorVersion == 2 &&      //
Windows 2003 Server?

        VersionInfo.wServicePackMajor == 0)     //
Service Pack installed?
                        {

        TCHAR szMsg[256];

        _sntprintf(szMsg, sizeof(szMsg),

                        "\nRunning on
Windows Server 2003 without at least Service Pack
1\n"

                        "limits the
number of concurrent HTTP connections to around
8000");

        // Use event logging to log the error.

        //

        HANDLE  hEventSource =
RegisterEventSource(NULL, TEXT("TPCC.DLL"));

        LPTSTR  lpszStrings[1] = { szMsg };

        if (hEventSource != NULL)

        {

                ReportEvent(hEventSource, //
handle of event source

                        EVENTLOG_WARNING_TYPE,
// event type

                        0,
// event category

                        0,
// event ID

                        NULL,
// current user's SID

                        1,
// strings in lpszStrings

                        0,
// no bytes of raw data

                        (LPCTSTR *)lpszStrings,
// array of error strings

                        NULL);
// no raw data

                (VOID)
DeregisterEventSource(hEventSource);

        }
        }
                        if
(dwNumDeliveryThreads)
                        {
                                //
Initialize delivery delay critical section
                                //

        InitializeCriticalSection(&hConnectCritical
Section);

                                //
for deferred delivery txns:

                hDoneEvent = CreateEvent( NULL, TRUE /*
manual reset */, FALSE /* initially not signalled */,
NULL );

        InitializeCriticalSection(&DelBuffCriticalS
ection);

        hWorkerSemaphore = CreateSemaphore( NULL,
0, dwDelBuffSize, NULL );

        dwDelBuffFreeCount = dwDelBuffSize;

        InitJulianTime(NULL);

                                //
create unique log file name based on delilog-yymmdd-
hhmm.log

        SYSTEMTIME Time;

        GetLocalTime( &Time );

        wsprintf( szLogFile, "%sdelivery-
%2.2d%2.2d%2.2d-%2.2d%2.2d-%2.2ds%2.2dms.log",

        Reg.szPath, Time.wYear % 100, Time.wMonth,
Time.wDay, Time.wHour, Time.wMinute, Time.wSecond,
Time.wMilliseconds );

        txnDelilog = new CTxnLog(szLogFile,
TXN_LOG_WRITE);

        //write event into txn log for START

        txnDelilog-
>WriteCtrlRecToLog(TXN_EVENT_START, szMyComputerName,
sizeof(szMyComputerName));

                                //
allocate structures for delivery buffers and thread
mgmt

        pDeliHandles = new
HANDLE[dwNumDeliveryThreads];

        pDelBuff = new
DELIVERY_TRANSACTION[dwDelBuffSize];
                                //
launch DeliveryWorkerThread to perform actual
delivery txns

        for(i=0; i<dwNumDeliveryThreads; i++)
                                {

        pDeliHandles[i] = (HANDLE) _beginthread(
DeliveryWorkerThread, 0, NULL );

        if (pDeliHandles[i] ==
INVALID_HANDLE_VALUE)

                throw new CWEBCLNT_ERR(
ERR_DELIVERY_THREAD_FAILED );
                                }
                                }
```

```
                                break;
                    case
DLL_PROCESS_DETACH:
                          if
(dwNumDeliveryThreads)
                          {
                                if
(txnDelilog != NULL)
                                {

        //write event into txn log for STOP

        txnDelilog-
>WriteCtrlRecToLog(TXN_EVENT_STOP, szMyComputerName,
sizeof(szMyComputerName));

        // This will do a clean shutdown of the
delivery log file

        CTxnLog   *txnDelilogLocal = txnDelilog;

        txnDelilog= NULL;

        delete txnDelilogLocal;
                                }

        delete [] pDeliHandles;

        delete [] pDelBuff;

        CloseHandle( hWorkerSemaphore );

        CloseHandle( hDoneEvent );

        DeleteCriticalSection(&DelBuffCriticalSecti
on);
                                    //
Delete delivery delay critical section
                                    //
        DeleteCriticalSection(&hConnectCriticalSect
ion);
                          }

        DeleteCriticalSection(&TermCriticalSection)
;
                                if
(hLibInstanceTm != NULL)

        FreeLibrary( hLibInstanceTm );

        hLibInstanceTm = NULL;
                                if
(hLibInstanceDb != NULL)
```

```
        FreeLibrary( hLibInstanceDb );

        hLibInstanceDb = NULL;

                                Sleep(500);
                                break;

                default:
                                /* nothing
*/;
                    }
            }
            catch (CBaseErr *e)
            {
                    TCHAR szMsg[256];

                    _sntprintf(szMsg, sizeof(szMsg),
"%s error, code %d: %s",
                                    e-
>ErrorTypeStr(), e->ErrorNum(), e->ErrorText());
                    WriteMessageToEventLog( szMsg );
                    delete e;
                    TerminateExtension(0);
                    return FALSE;
            }
            catch (...)
            {

                    WriteMessageToEventLog(TEXT("Unhandled
exception.  DLL could not load."));
                    TerminateExtension(0);
                    return FALSE;
            }

            return TRUE;
}


/* FUNCTION: GetExtensionVersion
 *
 * PURPOSE:        This function is called by the
inet service when the DLL is first loaded.
 *
 * ARGUMENTS:      HSE_VERSION_INFO  *pVer
                   passed in structure in which to place
expected version number.
 *
 * RETURNS:                  TRUE      inet service
expected return value.
 */
BOOL WINAPI GetExtensionVersion(HSE_VERSION_INFO
*pVer)
{
            pVer->dwExtensionVersion =
MAKELONG(HSE_VERSION_MINOR, HSE_VERSION_MAJOR);
            lstrcpyn(pVer->lpszExtensionDesc, "TPC-C
Server.", HSE_MAX_EXT_DLL_NAME_LEN);

            return TRUE;
}
```

```
/* FUNCTION: TerminateExtension
 *
 * PURPOSE:        This function is called by the
inet service when the DLL is about to be unloaded.
 *                      Release all resources
in anticipation of being unloaded.
 *
 * RETURNS:                  TRUE      inet service
expected return value.
 */

BOOL WINAPI TerminateExtension( DWORD dwFlags )
{
            if (pDeliHandles)
            {
                    SetEvent( hDoneEvent );
                    for(DWORD i=0;
i<dwNumDeliveryThreads; i++)
                            WaitForSingleObject(
pDeliHandles[i], INFINITE );
            }

            TermDeleteAll();
            return TRUE;
}


/* FUNCTION: HttpExtensionProc
 *
 * PURPOSE:        This function is the main entry
point for the TPCC DLL. The internet service
 *                      calls this function
passing in the http string.
 *
 * ARGUMENTS:      EXTENSION_CONTROL_BLOCK
          *pECB     structure pointer to passed in
internet
 *
                   service information.
 *
 * RETURNS:                  DWORD
          HSE_STATUS_SUCCESS
                   connection can be dropped if
error
 *
          HSE_STATUS_SUCCESS_AND_KEEP_CONN
          keep connect valid comment sent
 *
 * COMMENTS:       None
 *
 */

DWORD WINAPI
HttpExtensionProc(EXTENSION_CONTROL_BLOCK *pECB)
{
            int                   TermId,
iSyncId;
            char              szBuffer[4096];

            int                   lpbSize;
            static char       szHeader[] = "200 Ok";
```

```
        DWORD           dwSize = 6;
        // initial value is strlen(szHeader)
        char            szHeader1[4096];
        DWORD           dwAddr;   // used to
store Win32 exception address
        LPEXCEPTION_POINTERS
pExceptionInfo;       // pointer to Win32
exception info


#ifdef ICECAP
        StartCAP();
#endif

        // Use structured exception handling for
Win32 exceptions
        //
        __try
        {
                ProcessCommand(pECB, szBuffer,
TermId, iSyncId);
        }
        __except (        pExceptionInfo =
GetExceptionInformation(), // can call
GetExceptionInformation only in filter (not handler)
                          dwAddr =
(DWORD)pExceptionInfo->ExceptionRecord-
>ExceptionAddress,  // save the address

        EXCEPTION_EXECUTE_HANDLER)    // handle all
exceptions
        {
                char
szMsg[512];
                int
iLen;

                MEMORY_BASIC_INFORMATION mbi ;
                VirtualQuery( (void*)dwAddr,
&mbi, sizeof( mbi ) ) ;
                DWORD hInstance =
(DWORD)mbi.AllocationBase ;

                iLen = wsprintf(szMsg,
TEXT("Unhandled exception (%#x) in Web Client's
HttpExtensionProc. "
                                "Occured at
address %#x, base %#x, tpcc_com.dll at %#x, tpcc.dll
at %#x, tpcc_com_all.dll at %#x"),

        GetExceptionCode(), dwAddr, hInstance,

        GetModuleHandle("tpcc_com.dll"),
GetModuleHandle("tpcc.dll"),
GetModuleHandle("tpcc_com_all.dll"));

                if (txnDelilog != NULL)
                {
                        txnDelilog-
>WriteCtrlRecToLog(TXN_EVENT_WARNING, szMsg, iLen +
1);

                }

                ErrorForm( pECB, ERR_TYPE_WEBDLL,
GetExceptionCode(), TermId, iSyncId, szMsg, szBuffer
);
        }
#ifdef ICECAP
        StopCAP();
#endif

        lpbSize = strlen(szBuffer);
        dwSize += lpbSize;
        dwSize += wsprintf(szHeader1,
                        "Content-Type:
text/html\r\n"
                        "Content-Length:
%d\r\n"
                        "Connection: Keep-
Alive\r\n\r\n" , lpbSize);
        strcat( szHeader1, szBuffer );

        (*pECB->ServerSupportFunction)(pECB-
>ConnID, HSE_REQ_SEND_RESPONSE_HEADER, szHeader,
(LPDWORD) &dwSize, (LPDWORD)szHeader1);

        //finish up and keep connection
        pECB->dwHttpStatusCode = 200;
        return HSE_STATUS_SUCCESS_AND_KEEP_CONN;
}

/* FUNCTION: ProcessCommand
 *
 * PURPOSE:      This function parses the commands
from the driver and executes corresponding
transactions.
 *
 * ARGUMENTS:      EXTENSION_CONTROL_BLOCK
              *pECB      structure pointer to passed in
internet
 *
                    service information.
 *
 * RETURNS:            None (outputs into the
szBuffer parameter).
 *
 * COMMENTS:      Separated from HttpExtensionProc
to be able to use structured exception handling in
 *
        HttpExtensionProc (cannot mix C++ and Win32
exceptions in one functions).
 *
 */
void ProcessCommand(EXTENSION_CONTROL_BLOCK *pECB,
char* szBuffer, int& TermId, int& iSyncId)
{
        int                    iCmd, FormId;

        try
        {
                //process http query
                ProcessQueryString(pECB, &iCmd,
&FormId, &TermId, &iSyncId);

                if (TermId != 0)
                {
                        if ( TermId < 0 ||
TermId >= Term.iNumEntries ||
Term.pClientData[TermId].iNextFree != -1 )
                        {
                                //
debugging...
                                char
szTmp[128];
                                wsprintf(
szTmp, "Invalid term ID; TermId = %d", TermId );

        WriteMessageToEventLog( szTmp );
                                throw new
CWEBCLNT_ERR( ERR_INVALID_TERMID );
                        }

                        //must have a valid
syncid here since termid is valid
                        if (iSyncId !=
Term.pClientData[TermId].iSyncId)
                                throw new
CWEBCLNT_ERR( ERR_INVALID_SYNC_CONNECTION );

                        //set use time
                Term.pClientData[TermId].iTickCount =
GetTickCount();
                }

                switch(iCmd)
                {
                case 0:
                        WelcomeForm(pECB,
szBuffer);
                        break;
                case 1:
                        switch( FormId )
                        {
                        case WELCOME_FORM:
                        case MAIN_MENU_FORM:
                                break;
                        case NEW_ORDER_FORM:

        ProcessNewOrderForm(pECB, TermId,
szBuffer);
                                break;
                        case PAYMENT_FORM:

        ProcessPaymentForm(pECB, TermId, szBuffer);
                                break;
                        case DELIVERY_FORM:

        ProcessDeliveryForm(pECB, TermId,
szBuffer);
                                break;
                        case ORDER_STATUS_FORM:

        ProcessOrderStatusForm(pECB, TermId,
szBuffer);
```

```
                        break;
                case STOCK_LEVEL_FORM:

        ProcessStockLevelForm(pECB, TermId,
szBuffer);
                                break;
                }
                        break;
                case 2:
                        // new-order selected
from menu; display new-order input form

        MakeNewOrderForm(TermId, NULL, INPUT_FORM,
szBuffer);
                        break;
                case 3:
                        // payment selected
from menu; display payment input form
                        MakePaymentForm(TermId,
NULL, INPUT_FORM, szBuffer);
                        break;
                case 4:
                        // delivery selected
from menu; display delivery input form

        MakeDeliveryForm(TermId, NULL, INPUT_FORM,
szBuffer);
                        break;
                case 5:
                        // order-status
selected from menu; display order-status input form

        MakeOrderStatusForm(TermId, NULL,
INPUT_FORM, szBuffer);
                        break;
                case 6:
                        // stock-level selected
from menu; display stock-level input form

        MakeStockLevelForm(TermId, NULL,
INPUT_FORM, szBuffer);
                        break;
                case 7:
                        // ExitCmd
                        TermDelete(TermId);
                        WelcomeForm(pECB,
szBuffer);
                        break;
                case 8:
                        SubmitCmd(pECB,
szBuffer);
                        break;
                case 9:
                        // menu

        MakeMainMenuForm(TermId,
Term.pClientData[TermId].iSyncId, szBuffer);
                        break;
                case 10:
                        // CMD=Clear
                        // resets all
connections; should only be used when no other
connections are active
```

```
                        TermDeleteAll();
                        TermInit();
                        WelcomeForm(pECB,
szBuffer);
                        break;
                case 11: // CMD=Stats
                        StatsCmd(pECB,
szBuffer);
                        break;
                }
        }
        catch (CBaseErr *e)
        {
                        ErrorForm( pECB, e->ErrorType(),
e->ErrorNum(), TermId, iSyncId, e->ErrorText(),
szBuffer );
                        delete e;
        }
}

void WriteMessageToEventLog(LPTSTR lpszMsg)
{
    TCHAR   szMsg[256];
    HANDLE  hEventSource;
    LPTSTR  lpszStrings[2];

    // Use event logging to log the error.
    //
    hEventSource = RegisterEventSource(NULL,
TEXT("TPCC.DLL"));

    _stprintf(szMsg, TEXT("Error in TPCC.DLL: "));
    lpszStrings[0] = szMsg;
    lpszStrings[1] = lpszMsg;

    if (hEventSource != NULL)
        {
        ReportEvent(hEventSource, // handle of event
source
            EVENTLOG_ERROR_TYPE,  // event type
            0,                    // event category
            0,                    // event ID
            NULL,                 // current user's
SID
            2,                    // strings in
lpszStrings
            0,                    // no bytes of raw
data
            (LPCTSTR *)lpszStrings,    // array of
error strings
            NULL);                // no raw data

        (VOID) DeregisterEventSource(hEventSource);
    }
}


/* FUNCTION: DeliveryWorkerThread
 *
 * PURPOSE:       This function processes deferred
delivery txns.  There are typically several
```

```
 *                           threads running this
routine.  The number of threads is determined by an
entry
 *                           read from the registry.
The thread waits for work by waiting on semaphore.
 *               When a delivery txn is
posted, the semaphore is released.  After processing
 *                   the delivery txn,
information is logged to record the txn status and
execution
 *                           time.
 */

/*static*/ void DeliveryWorkerThread(void *ptr)
{
        CTPCC_BASE                  *pTxn = NULL;

        DELIVERY_TRANSACTION
        delivery;
        PDELIVERY_DATA
        pDeliveryData;
        TXN_RECORD_TPCC_DELIV_DEF   txnDeliRec;

        DWORD
        index;
        HANDLE
        handles[2];

        SYSTEMTIME                  trans_end;
                //delivery transaction finished
time
        SYSTEMTIME                  trans_start;
        //delivery transaction start time

        assert(txnDelilog != NULL);

        try
        {
                if (Reg.eDB_Protocol == ODBC)
                {
                        if (Reg.dwConnectDelay
> 0)
                        {
                                //
Synchronize connect (for VIA)
                                //

        EnterCriticalSection(&hConnectCriticalSecti
on);

        Sleep(Reg.dwConnectDelay);

        LeaveCriticalSection(&hConnectCriticalSecti
on);
                        }

                        pTxn = pCTPCC_ODBC_new(
Reg.szDbServer, Reg.szDbUser, Reg.szDbPassword,

        szMyComputerName, Reg.szDbName,
```

```
            Reg.szSPPrefix,
Reg.bCallNoDuplicatesNewOrder );

                }
                pDeliveryData = pTxn-
>BuffAddr_Delivery();
            }
            catch (CBaseErr *e)
            {
                char szTmp[1024];
                wsprintf( szTmp, "Error in
Delivery Txn thread.  Could not connect to database.
"
                                    "%s.
Server=%s, User=%s, Password=%s, Database=%s",
                                    e-
>ErrorText(), Reg.szDbServer, Reg.szDbUser,
Reg.szDbPassword, Reg.szDbName );
                WriteMessageToEventLog( szTmp );
                delete e;
                goto ErrorExit;
            }
            catch (...)
            {
            WriteMessageToEventLog(TEXT("Unhandled
exception caught in DeliveryWorkerThread."));
                goto ErrorExit;
            }

            while (TRUE)
            {
                try
                {
                    //while delivery thread
running, i.e. user has not requested termination
                    while (TRUE)
                    {
                        // need to
wait for multiple objects: program exit or worker
semaphore;
                        handles[0] =
hDoneEvent;
                        handles[1] =
hWorkerSemaphore;
                        index =
WaitForMultipleObjects( 2, &handles[0], FALSE,
INFINITE );
                        if (index ==
WAIT_OBJECT_0)
        goto ErrorExit;

    ZeroMemory(&txnDeliRec,
sizeof(txnDeliRec));

                txnDeliRec.TxnType =
TXN_REC_TYPE_TPCC_DELIV_DEF;

                                // make a
local copy of current entry from delivery buffer and
increment buffer index
                        EnterCriticalSection(&DelBuffCriticalSectio
n);
                                        delivery =
*(pDelBuff+dwDelBuffBusyIndex);

                        dwDelBuffFreeCount++;

                        dwDelBuffBusyIndex++;
                                        if
(dwDelBuffBusyIndex == dwDelBuffSize)   // wrap-
around if at end of buffer

                        dwDelBuffBusyIndex = 0;

                        LeaveCriticalSection(&DelBuffCriticalSectio
n);

                    pDeliveryData->w_id = delivery.w_id;

                    pDeliveryData->o_carrier_id =
delivery.o_carrier_id;

                    txnDeliRec.w_id = pDeliveryData->w_id;

                    txnDeliRec.o_carrier_id = pDeliveryData-
>o_carrier_id;

                    txnDeliRec.TxnStartT0 =
Get64BitTime(&delivery.queue);

                                        GetLocalTime(
&trans_start );
                                        pTxn-
>Delivery();
                                        GetLocalTime(
&trans_end );

                                        //log txn
                    txnDeliRec.TxnStatus = ERR_SUCCESS;
                                        for (int i=0;
i<10; i++)
                    txnDeliRec.o_id[i] = pDeliveryData-
>o_id[i];

                    txnDeliRec.DeltaT4 =
(int)(Get64BitTime(&trans_end) -
txnDeliRec.TxnStartT0);

                    txnDeliRec.DeltaTxnExec =
(int)(Get64BitTime(&trans_end) -
Get64BitTime(&trans_start));

                                        if
(txnDelilog != NULL)

                    txnDelilog->WriteToLog(&txnDeliRec);
                    }
                }
                catch (CBaseErr *e)
                {
                    char szTmp[1024];
                    wsprintf( szTmp, "%s
Error (code %d) in Delivery Txn thread. %s",
e->ErrorTypeStr(), e->ErrorNum(), e->ErrorText() );
                    WriteMessageToEventLog(
szTmp );

                    // log the error txn
                    txnDeliRec.TxnStatus =
e->ErrorType();
                    if (txnDelilog != NULL)
                        txnDelilog-
>WriteToLog(&txnDeliRec);

                    delete e;
                }
                catch (...)
                {
                    // unhandled exception;
shouldn't happen; not much we can do...

            WriteMessageToEventLog(TEXT("Unhandled
exception caught in DeliveryWorkerThread."));
                }
ErrorExit:
        if (Reg.dwConnectDelay > 0)
        {
            // Synchronize disconnect (for
VIA)
            //
        EnterCriticalSection(&hConnectCriticalSecti
on);

            Sleep(Reg.dwConnectDelay);
        }

        delete pTxn;

        if (Reg.dwConnectDelay > 0)
        {
            // Synchronize disconnect (for
VIA)
            //
        LeaveCriticalSection(&hConnectCriticalSecti
on);
        }

        _endthread();
}

/* FUNCTION: PostDeliveryInfo
 *
```

```
 * PURPOSE:        This function enters the delivery
txn into the deferred delivery buffer.
 *
 * RETURNS:                BOOL      FALSE
        delivery information posted successfully
 *
        TRUE      error cannot post delivery info
 */

BOOL PostDeliveryInfo(long w_id, short o_carrier_id)
{
        BOOL bError;

        EnterCriticalSection(&DelBuffCriticalSectio
n);
        if (dwDelBuffFreeCount > 0)
        {
                bError = FALSE;
                (pDelBuff+dwDelBuffFreeIndex)-
>w_id                   = w_id;
                (pDelBuff+dwDelBuffFreeIndex)-
>o_carrier_id        = o_carrier_id;

        GetLocalTime(&(pDelBuff+dwDelBuffFreeIndex)
->queue);

                dwDelBuffFreeCount--;
                dwDelBuffFreeIndex++;
                if (dwDelBuffFreeIndex ==
dwDelBuffSize)
                        dwDelBuffFreeIndex = 0;
                // wrap-around if at end of
buffer
        }
        else
                // No free buffers.  Return an
error, which indicates that the delivery buffer is
full.
                // Most likely, the number of
delivery worker threads needs to be increased to keep
up
                // with the txn rate.
                bError = TRUE;
        LeaveCriticalSection(&DelBuffCriticalSectio
n);

        if (!bError)
                // increment worker semaphore to
wake up a worker thread
                ReleaseSemaphore(
hWorkerSemaphore, 1, NULL );

        return bError;
}

/* FUNCTION: ProcessQueryString
 *
 * PURPOSE:        This function extracts the
relevent information out of the http command passed
in from
 *                        the browser.
 *
```

```
 * COMMENTS:        If this is the initial connection
i.e. client is at welcome screen then
 *                                there will
not be a terminal id or current form id.  If this is
the case
 *                                then the
pTermid and pFormid return values are undefined.
 */

void ProcessQueryString(EXTENSION_CONTROL_BLOCK
*pECB, int *pCmd, int *pFormId, int *pTermId, int
*pSyncId)
{
        char *ptr = pECB->lpszQueryString;
        char szBuffer[25];
        int i;

        //allowable client command strings i.e.
CMD=command
        static char *szCmds[] =
        {
                        "Process", "..NewOrder..",
"..Payment..", "..Delivery..", "..Order-Status..",
"..Stock-Level..",
                        "..Exit..", "Submit", "Menu",
"Clear", "Stats", ""
        };

        *pCmd       = 0;              // default is
the login screen
        *pTermId = 0;

        // if no params (i.e., empty query string),
then return login screen
        if (strlen(pECB->lpszQueryString) == 0)
                return;

        // parse FORMID, TERMID, and SYNCID
        *pFormId = GetIntKeyValue(&ptr, "FORMID",
NO_ERR, NO_ERR);
        *pTermId = GetIntKeyValue(&ptr, "TERMID",
NO_ERR, NO_ERR);
        *pSyncId = GetIntKeyValue(&ptr, "SYNCID",
NO_ERR, NO_ERR);

        // parse CMD
        GetKeyValue(&ptr, "CMD", szBuffer,
sizeof(szBuffer), ERR_COMMAND_UNDEFINED);

        // see which command it matches
        for(i=0; ; i++)
        {
                if (szCmds[i][0] == 0)
                        // no more; no match;
return error
                        throw new CWEBCLNT_ERR(
ERR_COMMAND_UNDEFINED );
                if ( !strcmp(szCmds[i], szBuffer)
)
                {
                        *pCmd = i+1;
                        break;
                }
        }
```

```
        }
}

/* FUNCTION: void WelcomeForm
 *
 */

void WelcomeForm(EXTENSION_CONTROL_BLOCK *pECB, char
*szBuffer)
{
        char szTmp[1024];

        //welcome to tpc-c html form buffer, this
is first form client sees.
        strcpy( szBuffer,
        "<HTML><HEAD><TITLE>TPC-C Web
Client</TITLE></HEAD><BODY>"

        "<B><BIG>Microsoft TPC-C Web Client (ver
4.69)</BIG></B> <BR> <BR>"

        "<font face=\"Courier New\"><PRE>"

        "Compiled: "__DATE__", "__TIME__" <BR>"

        "Source:   "__FILE__" ("__TIMESTAMP__")
<BR>"

        "</PRE></font>"

        "<FORM ACTION=\"tpcc.dll\" METHOD=\"GET\">"

        "<INPUT TYPE=\"hidden\" NAME=\"STATUSID\"
VALUE=\"0\">"

        "<INPUT TYPE=\"hidden\" NAME=\"ERROR\"
VALUE=\"0\">"

        "<INPUT TYPE=\"hidden\" NAME=\"FORMID\"
VALUE=\"1\">"

        "<INPUT TYPE=\"hidden\" NAME=\"TERMID\"
VALUE=\"0\">"

        "<INPUT TYPE=\"hidden\" NAME=\"SYNCID\"
VALUE=\"0\">"

        "<INPUT TYPE=\"hidden\" NAME=\"VERSION\"
VALUE=\"" WEBCLIENT_VERSION "\">"
                                );

        sprintf( szTmp,     "Configuration
Settings: <BR><font face=\"Courier New\"
color=\"blue\"><PRE>"

        "Txn Monitor            = <B>%s</B><BR>"

        "Database protocol      = <B>%s</B><BR>"

        "Max Connections        = <B>%d</B><BR>"
                                        "#
of Delivery Threads  = <B>%d</B><BR>"
```

```c
                "Max Pending Deliveries = <B>%d</B><BR>"
                    ,
szTxnMonNames[Reg.eTxnMon],
szDBNames[Reg.eDB_Protocol],
                            Reg.dwMaxConnections,
dwNumDeliveryThreads, dwDelBuffSize );
        strcat( szBuffer, szTmp);

        if (Reg.eTxnMon == COM)
        {
                sprintf( szTmp,    "COM Single
Pool        = <B>%s</B><BR>",
                            Reg.bCOM_SinglePool ?
"YES" : "NO" );
                strcat( szBuffer, szTmp);
        }
        strcat( szBuffer, "</PRE></font>");

        if (Reg.eTxnMon == None)
                // connection options may be
specified when not using a txn monitor
                sprintf( szTmp,    "Please enter
your database options for this connection:<BR>"

                "<font face=\"Courier New\"
color=\"blue\"><PRE>"

                "DB Server    = <INPUT NAME=\"db_server\"
SIZE=20 VALUE=\"%s\"><BR>"

                "DB User ID   = <INPUT NAME=\"db_user\"
SIZE=20 VALUE=\"%s\"><BR>"

                "DB Password  = <INPUT NAME=\"db_passwd\"
SIZE=20 VALUE=\"%s\"><BR>"

                "DB Name      = <INPUT NAME=\"db_name\"
SIZE=20 VALUE=\"%s\"><BR>"

                "</PRE></font>"
                    ,
Reg.szDbServer, Reg.szDbUser, Reg.szDbPassword,
Reg.szDbName );
        else
                // if using a txn monitor,
connection options are determined from registry;
can't
                // set per user.  show options
fyi
                sprintf( szTmp,    "Database
options which will be used by the transaction
monitor:<BR>"

                "<font face=\"Courier New\"
color=\"blue\"><PRE>"

                "DB Server          = <B>%s</B><BR>"

                "DB User ID         = <B>%s</B><BR>"

                "DB Password        = <B>%s</B><BR>"

                "DB Name            = <B>%s</B><BR>"

                "</PRE></font>"
                    ,
Reg.szDbServer, Reg.szDbUser, Reg.szDbPassword,
Reg.szDbName );
        strcat( szBuffer, szTmp);

        sprintf( szTmp,    "Please enter your
Warehouse and District for this session:<BR>"

                "<font face=\"Courier New\"
color=\"blue\"><PRE>" );
        strcat( szBuffer, szTmp);
        strcat( szBuffer,    "Warehouse ID = <INPUT
NAME=\"w_id\" SIZE=6><BR>"

                "District ID  = <INPUT NAME=\"d_id\"
SIZE=2><BR>"

                "</PRE></font><HR>"

                "<INPUT TYPE=\"submit\" NAME=\"CMD\"
VALUE=\"Submit\">"

                "</FORM></BODY></HTML>");
}

/* FUNCTION: SubmitCmd
 *
 * PURPOSE:        This function allocated a new
terminal id in the Term structure array.
 *
 */

void SubmitCmd(EXTENSION_CONTROL_BLOCK *pECB, char
*szBuffer)
{
        int             iNewTerm;
        char       *ptr = pECB->lpszQueryString;

        char       szVersion[32]      = { 0 };
        char       szServer[32]       = { 0 };
        char       szUser[32]                =
"sa";
        char       szPassword[32]     = { 0 };
        char       szDatabase[32]     = "tpcc";

        // validate version field; the version
field ensures that the RTE is synchronized with the
web client
        GetKeyValue(&ptr, "VERSION", szVersion,
sizeof(szVersion), ERR_VERSION_MISMATCH);
        if ( strcmp( szVersion, WEBCLIENT_VERSION )
)
                throw new CWEBCLNT_ERR(
ERR_VERSION_MISMATCH );

        if (Reg.eTxnMon == None)
        {
                // parse Server name
                GetKeyValue(&ptr, "db_server",
szServer, sizeof(szServer), ERR_NO_SERVER_SPECIFIED);
                // parse User name
                GetKeyValue(&ptr, "db_user",
szUser, sizeof(szUser), NO_ERR);
                // parse Password
                GetKeyValue(&ptr, "db_passwd",
szPassword, sizeof(szPassword), NO_ERR);
                // parse Database name
                GetKeyValue(&ptr, "db_name",
szDatabase, sizeof(szDatabase), NO_ERR);
        }

        // parse warehouse ID
        int w_id = GetIntKeyValue(&ptr, "w_id",
ERR_HTML_ILL_FORMED, ERR_W_ID_INVALID);
        if ( w_id < 1 )
                throw new CWEBCLNT_ERR(
ERR_W_ID_INVALID );

        // parse district ID
        int d_id = GetIntKeyValue(&ptr, "d_id",
ERR_HTML_ILL_FORMED, ERR_D_ID_INVALID);
        if ( d_id < 1 || d_id > 10 )
                throw new CWEBCLNT_ERR(
ERR_D_ID_INVALID );

        iNewTerm = TermAdd();

        Term.pClientData[iNewTerm].w_id = w_id;
        Term.pClientData[iNewTerm].d_id = d_id;

        try
        {
                if (Reg.eTxnMon == COM)

        Term.pClientData[iNewTerm].pTxn =
pCTPCC_COM_new( Reg.bCOM_SinglePool );
                else if (Reg.eDB_Protocol ==
ODBC)

        Term.pClientData[iNewTerm].pTxn =
pCTPCC_ODBC_new(    szServer, szUser, szPassword,
szMyComputerName,


        szDatabase, Reg.szSPPrefix,


        Reg.bCallNoDuplicatesNewOrder );
        }
        catch (...)
        {
                TermDelete(iNewTerm);
                throw;                // pass
exception upward
        }

        MakeMainMenuForm(iNewTerm,
Term.pClientData[iNewTerm].iSyncId, szBuffer);
```

```
}

/* FUNCTION: StatsCmd
 *
 * PURPOSE:         This function returns to the
browser the total number of active terminal ids.
 *                          This routine is for
development/debugging purposes.
 *
 */

void StatsCmd(EXTENSION_CONTROL_BLOCK *pECB, char
*szBuffer)
{
        int i;
        int      iTotal;

        EnterCriticalSection(&TermCriticalSection);

        iTotal = 0;
        for(i=0; i<Term.iNumEntries; i++)
        {
                if (Term.pClientData[i].iNextFree
== -1)
                        iTotal++;
        }

        LeaveCriticalSection(&TermCriticalSection);

        wsprintf( szBuffer,

        "<HTML><HEAD><TITLE>TPC-C Web Client
Stats</TITLE></HEAD>"
                          "<BODY><B><BIG> Total
Active Connections: %d </BIG></B><BR></BODY></HTML>"
                          , iTotal );
}

char *CWEBCLNT_ERR::ErrorText()
{
        static SERRORMSG errorMsgs[] =
        {
                {          ERR_COMMAND_UNDEFINED,

        "Command undefined."

                                            },
                {          ERR_D_ID_INVALID,

        "Invalid District ID Must be 1 to 10."

                },
                {
ERR_DELIVERY_CARRIER_ID_RANGE,
                    "Delivery Carrier ID out of range
must be 1 - 10."
                },
                {
ERR_DELIVERY_CARRIER_INVALID,
                    "Delivery Carrier ID invalid must be
numeric 1 - 10."                          },
                {
ERR_DELIVERY_MISSING_OCD_KEY,
```

```
        "Delivery missing Carrier ID key \"OCD*\"."

                },
                {
ERR_DELIVERY_THREAD_FAILED,
                    "Could not start delivery worker
thread."
                },
                {            ERR_GETPROCADDR_FAILED,

        "Could not map proc in DLL.  GetProcAddr
error.  DLL="                           },
                {            ERR_HTML_ILL_FORMED,

        "Required key field is missing from HTML
string."                                },
                {
ERR_INVALID_SYNC_CONNECTION,
                "Invalid Terminal Sync ID."

                                    },
                {            ERR_INVALID_TERMID,

        "Invalid Terminal ID."

                                        },
                {            ERR_LOADDLL_FAILED,

        "Load of DLL failed.  DLL="

                                    },
                {
ERR_MAX_CONNECTIONS_EXCEEDED,
                "No connections available.  Max Connections
is probably too low."    },
                {
ERR_MISSING_REGISTRY_ENTRIES,
                "Required registry entries are missing.
Rerun INSTALL to correct."    },
                {
ERR_NEWORDER_CUSTOMER_INVALID,
                        "New Order customer id invalid
data type, range = 1 to 3000."                  },
                {
ERR_NEWORDER_CUSTOMER_KEY,
                        "New Order missing Customer key
\"CID*\"."
                                },
                {
ERR_NEWORDER_DISTRICT_INVALID,
                        "New Order District ID Invalid
range 1 - 10."
                },
                {
ERR_NEWORDER_FORM_MISSING_DID,
                        "New Order missing District key
\"DID*\"."
                                },
                {
ERR_NEWORDER_ITEMID_INVALID,
                        "New Order Item Id is wrong data type, must
be numeric."                            },
```

```
                {
        ERR_NEWORDER_ITEMID_RANGE,
                        "New Order Item Id is out of
range. Range = 1 to 999999."                    },
                {
ERR_NEWORDER_ITEMID_WITHOUT_SUPPW,
                "New Order Item_Id field entered without a
corresponding Supp_W."          },
                {
ERR_NEWORDER_MISSING_IID_KEY,
                "New Order missing Item Id key \"IID*\"."

                                },
                {
ERR_NEWORDER_MISSING_QTY_KEY,
                "New Order Missing Qty key \"Qty##*\"."

                                },
                {
ERR_NEWORDER_MISSING_SUPPW_KEY,
                        "New Order missing Supp_W key
\"SP##*\"."
                                },
                {
ERR_NEWORDER_NOITEMS_ENTERED,
                "New Order No order lines entered."

                                },
                {
ERR_NEWORDER_QTY_INVALID,
                        "New Order Qty invalid must be
numeric range 1 - 99."
        },
                {            ERR_NEWORDER_QTY_RANGE,

        "New Order Qty is out of range. Range = 1
to 99."                                 },
                {
ERR_NEWORDER_QTY_WITHOUT_SUPPW,
                        "New Order Qty field entered
without a corresponding Supp_W."        },
                {
ERR_NEWORDER_SUPPW_INVALID,
                        "New Order Supp_W invalid data
type must be numeric."
        },
                {
ERR_NO_SERVER_SPECIFIED,
                        "No Server name specified."

                                            },
                {
ERR_ORDERSTATUS_CID_AND_CLT,
                "Order Status Only Customer ID or Last Name
may be entered, not both."    },
                {
ERR_ORDERSTATUS_CID_INVALID,
                "Order Status Customer ID invalid, range
must be numeric 1 - 3000."    },
                {
ERR_ORDERSTATUS_CLT_RANGE,
                        "Order Status Customer last name
longer than 16 characters."                  },
```

```
                {
        ERR_ORDERSTATUS_DID_INVALID,
        "Order Status District invalid, value must
be numeric 1 - 10."         },
                {
        ERR_ORDERSTATUS_MISSING_CID_CLT,
        "Order Status Either Customer ID or Last
Name must be entered."                  },
                {
        ERR_ORDERSTATUS_MISSING_CID_KEY,
        "Order Status missing Customer key
\"CID*\"."
                },
                {
        ERR_ORDERSTATUS_MISSING_CLT_KEY,
        "Order Status missing Customer Last Name
key \"CLT*\"."                          },
                {
        ERR_ORDERSTATUS_MISSING_DID_KEY,
        "Order Status missing District key
\"DID*\"."
                },
                {
        ERR_PAYMENT_CDI_INVALID,
                "Payment Customer district
invalid must be numeric."
        },
                {
        ERR_PAYMENT_CID_AND_CLT,
                "Payment Only Customer ID or Last
Name may be entered, not both."         },
                {
        ERR_PAYMENT_CUSTOMER_INVALID,
                "Payment Customer data type invalid, must
be numeric."                            },
                {
        ERR_PAYMENT_CWI_INVALID,
                "Payment Customer Warehouse
invalid, must be numeric."
        },
                {
        ERR_PAYMENT_DISTRICT_INVALID,
        "Payment District ID is invalid, must be 1
- 10."                                  },
                {
        ERR_PAYMENT_HAM_INVALID,
                "Payment Amount invalid data type
must be numeric."
        },
                {       ERR_PAYMENT_HAM_RANGE,

        "Payment Amount out of range, 0 - 9999.99."

                },
                {
        ERR_PAYMENT_LAST_NAME_TO_LONG,
                "Payment Customer last name
longer than 16 characters."
        },
                {
        ERR_PAYMENT_MISSING_CDI_KEY,
        "Payment missing Customer district key
\"CDI*\"."
                },
                {
        ERR_PAYMENT_MISSING_CID_CLT,
        "Payment Either Customer ID or Last Name
must be entered."                       },
                {
        ERR_PAYMENT_MISSING_CID_KEY,
        "Payment missing Customer Key \"CID*\"."

                },
                {
        ERR_PAYMENT_MISSING_CLT_KEY,
        "Payment missing Customer Last Name key
\"CLT*\"."
                },
                {
        ERR_PAYMENT_MISSING_CWI_KEY,
        "Payment missing Customer Warehouse key
\"CWI*\"."
                },
                {
        ERR_PAYMENT_MISSING_DID_KEY,
        "Payment missing District Key \"DID*\"."

                },
                {
        ERR_PAYMENT_MISSING_HAM_KEY,
        "Payment missing Amount key \"HAM*\"."

                },
                {
        ERR_STOCKLEVEL_MISSING_THRESHOLD_KEY,
        "Stock Level; missing Threshold key
\"TT*\"."
                },
                {
        ERR_STOCKLEVEL_THRESHOLD_INVALID,
        "Stock Level; Threshold value must be in
the range = 1 - 99."                    },
                {
        ERR_STOCKLEVEL_THRESHOLD_RANGE,
        "Stock Level Threshold out of
range, range must be 1 - 99."           },
                {               ERR_VERSION_MISMATCH,

        "Invalid version field.  RTE and Web Client
are probably out of sync." },
                {               ERR_W_ID_INVALID,

        "Invalid Warehouse ID."

                                                },
                {               0,

                                ""

                }
        };

        char szTmp[256];
        int i = 0;
```

```
        while (TRUE)
        {
                if (errorMsgs[i].szMsg[0] == 0)
                {
                        strcpy( szTmp, "Unknown
error number." );
                        break;
                }
                if (m_Error ==
errorMsgs[i].iError)
                {
                        strcpy( szTmp,
errorMsgs[i].szMsg );
                        break;
                }
                i++;
        }

        if (m_szTextDetail)
                strcat( szTmp, m_szTextDetail );
        if (m_SystemErr)
                wsprintf( szTmp+strlen(szTmp), "
Error=%d", m_SystemErr );

        m_szErrorText = new char[strlen(szTmp)+1];
        strcpy( m_szErrorText, szTmp );
        return m_szErrorText;

}

/* FUNCTION: GetKeyValue
 *
 * PURPOSE:        This function parses a http
formatted string for specific key values.
 *
 * ARGUMENTS:      char
        *pQueryString       http string from client
browser
 *                              char        key
value to look for
 *                      *pValue
        character array into which to place key's
value
 *                              int
                iMax
        maximum length of key value array.
 *                              WEBERROR
        err
        error value to throw
 *
 * RETURNS:                nothing.
 *
 * ERROR:          if (the pKey value is not found)
then
 *                              if
(err == 0)
 *
        return (empty string)
 *
        else
```

```
 *
        throw CWEBCLNT_ERR(err)
 *
 * COMMENTS:        http keys are formatted either
KEY=value& or KEY=value\0. This DLL formats
 *                              TPC-C input
fields in such a manner that the keys can be
extracted in the
 *                              above manner.
 */

void GetKeyValue(char **pQueryString, char *pKey,
char *pValue, int iMax, WEBERROR err)
{
        char *ptr;

        if ( !(ptr=strstr(*pQueryString, pKey)) )
                goto ErrorExit;
        ptr += strlen(pKey);
        if ( *ptr != '=' )
                goto ErrorExit;
        ptr++;

        iMax--;  // one position is for terminating
null
        while( *ptr && *ptr != '&' && iMax)
        {
                *pValue++ = *ptr++;
                iMax--;
        }
        *pValue = 0;  // terminating null

        *pQueryString = ptr;
        return;

ErrorExit:
        if (err != NO_ERR)
                throw new CWEBCLNT_ERR( err );
        *pValue = 0;  // return empty result string
}

/* FUNCTION: GetIntKeyValue
 *
 * PURPOSE:        This function parses a http
formatted string for a specific key value.
 *
 * ARGUMENTS:        char
        *pQueryString        http string from client
browser
 *                              char
        *pKey                        key
value to look for
 *                              WEBERROR
        NoKeyErr                error value to throw if
key not found
 *                              WEBERROR
        NotIntErr                error value to throw if
value not numeric
 *
 * RETURNS:                integer
 *
 * ERROR:          if (the pKey value is not found)
then
```

```
 *                                          if
(NoKeyErr != NO_ERR)
 *
 *                throw CWEBCLNT_ERR(err)
 *
 *                else
 *
 *                return 0
 *                                          else if (non-
numeric char found) then
 *                                          if
(NotIntErr != NO_ERR) then
 *
 *                throw CWEBCLNT_ERR(err)
 *
 *                else
 *
 *                return 0
 *
 * COMMENTS:        http keys are formatted either
KEY=value& or KEY=value\0. This DLL formats
 *                              TPC-C input
fields in such a manner that the keys can be
extracted in the
 *                              above manner.
 */

int GetIntKeyValue(char **pQueryString, char *pKey,
WEBERROR NoKeyErr, WEBERROR NotIntErr)
{
        char *ptr0;
        char *ptr;

        if ( !(ptr=strstr(*pQueryString, pKey)) )
                goto ErrorNoKey;
        ptr += strlen(pKey);
        if ( *ptr != '=' )
                goto ErrorNoKey;
        ptr++;

        ptr0 = ptr;                // remember
starting point
        // scan string until a terminator (null or
&) or a non-digit
        while( *ptr && *ptr != '&' && isdigit(*ptr)
)
                ptr++;

        // make sure we stopped scanning for the
right reason
        if ((ptr0 == ptr) || (*ptr && *ptr != '&'))
        {
                if (NotIntErr != NO_ERR)
                        throw new CWEBCLNT_ERR(
NoKeyErr );
                return 0;
        }

        *pQueryString = ptr;
        return atoi(ptr0);

ErrorNoKey:
        if (NoKeyErr != NO_ERR)
```

```
                throw new CWEBCLNT_ERR( NoKeyErr
);
        return 0;
}

/* FUNCTION: TermInit
 *
 * PURPOSE:        This function initializes the
client terminal structure; it is called when the
TPCC.DLL
 *                              is first loaded by the
inet service.
 *
 */

void TermInit(void)
{
        EnterCriticalSection(&TermCriticalSection);

        Term.iMasterSyncId  = 1;
        Term.iNumEntries        =
Reg.dwMaxConnections+1;

        Term.pClientData    = NULL;
        Term.pClientData        =
(PCLIENTDATA)malloc(Term.iNumEntries *
sizeof(CLIENTDATA));
        if (Term.pClientData == NULL)
        {
        LeaveCriticalSection(&TermCriticalSection);
                throw new CWEBCLNT_ERR(
ERR_MEM_ALLOC_FAILED );
        }

        ZeroMemory( Term.pClientData,
Term.iNumEntries * sizeof(CLIENTDATA) );

        Term.iFreeList                =
Term.iNumEntries-1;
        // build free list
        // note: Term.pClientData[0].iNextFree gets
set to -1, which marks it as "in use".
        //        This is intentional, as the zero
entry is used as an anchor and never
        //        allocated as an actual
terminal.
        for(int i=0; i<Term.iNumEntries; i++)
                Term.pClientData[i].iNextFree =
i-1;

        LeaveCriticalSection(&TermCriticalSection);
}

/* FUNCTION: TermDeleteAll
 *
 * PURPOSE:        This function frees allocated
resources associated with the terminal structure.
 *
 * ARGUMENTS:      none
 *
 * RETURNS:                None
 *
```

```c
 * COMMENTS:       This function is called only when
the inet service unloads the TPCC.DLL
 *
 */

void TermDeleteAll(void)
{
        EnterCriticalSection(&TermCriticalSection);

        for(int i=1; i<Term.iNumEntries; i++)
        {
                if (Term.pClientData[i].iNextFree
== -1)
                        delete
Term.pClientData[i].pTxn;
        }

        Term.iFreeList          = 0;
        Term.iNumEntries   = 0;
        if ( Term.pClientData )
                free(Term.pClientData);
        Term.pClientData    = NULL;

        LeaveCriticalSection(&TermCriticalSection);
}

/* FUNCTION: TermAdd
 *
 * PURPOSE:        This function assigns a terminal
id which is used to identify a client browser.
 *
 * RETURNS:                  int
        assigned terminal id
 *
 */

int TermAdd(void)
{
        DWORD       i;
        int                iNewTerm, iTickCount;

        if (Term.iNumEntries == 0)
                return -1;

        EnterCriticalSection(&TermCriticalSection);
        if (Term.iFreeList != 0)
        {       // position is available
                iNewTerm = Term.iFreeList;
                Term.iFreeList =
Term.pClientData[iNewTerm].iNextFree;

                Term.pClientData[iNewTerm].iNextFree = -1;
// indicates this position is in use
        }
        else
        {       // no open slots, so find the
slot that hasn't been used in the longest time and
reuse it
                for(iNewTerm=1, i=1,
iTickCount=0x7FFFFFFF; i<Reg.dwMaxConnections; i++)
                {
                        if (iTickCount >
Term.pClientData[i].iTickCount)
```

```c
                        {
                                iTickCount =
Term.pClientData[i].iTickCount;
                                iNewTerm = i;
                        }
                }
                // if oldest term is less than
one minute old, it probably means that more
connections
                // are being attempted than were
specified as "Max Connections" at install.  In this
case,
                // do not bump existing
connection; instead, return error to requestor.
                if ((GetTickCount() - iTickCount)
< 60000)
                {
                        LeaveCriticalSection(&TermCriticalSection);
                        throw new CWEBCLNT_ERR(
ERR_MAX_CONNECTIONS_EXCEEDED );
                }
        }

        Term.pClientData[iNewTerm].iTickCount =
GetTickCount();
        Term.pClientData[iNewTerm].iSyncId =
Term.iMasterSyncId++;
        Term.pClientData[iNewTerm].pTxn = NULL;

        LeaveCriticalSection(&TermCriticalSection);
        return iNewTerm;
}

/* FUNCTION: TermDelete
 *
 * PURPOSE:        This function makes a terminal
entry in the Term array available for reuse.
 *
 * ARGUMENTS:       int
                          id
                Terminal id of client exiting
 *
 */

void TermDelete(int id)
{
        if ( id > 0 && id < Term.iNumEntries )
        {
                delete Term.pClientData[id].pTxn;

                // put onto free list

                EnterCriticalSection(&TermCriticalSection);

                Term.pClientData[id].iNextFree =
Term.iFreeList;
                Term.iFreeList = id;

                LeaveCriticalSection(&TermCriticalSection);
        }
}
```

```c
/* FUNCTION: MakeErrorForm
 */

void ErrorForm(EXTENSION_CONTROL_BLOCK *pECB, int
iType, int iErrorNum, int iTermId, int iSyncId, char
*szErrorText, char *szBuffer )
{
        wsprintf(szBuffer,
                "<HTML><HEAD><TITLE>TPC-C
Error</TITLE></HEAD><BODY>"
                "<FORM ACTION=\"tpcc.dll\"
METHOD=\"GET\">"
                "<INPUT TYPE=\"hidden\"
NAME=\"STATUSID\" VALUE=\"%d\">"
                "<INPUT TYPE=\"hidden\"
NAME=\"ERROR\" VALUE=\"%d\">"
                "<INPUT TYPE=\"hidden\"
NAME=\"FORMID\" VALUE=\"%d\">"
                "<INPUT TYPE=\"hidden\"
NAME=\"TERMID\" VALUE=\"%d\">"
                "<INPUT TYPE=\"hidden\"
NAME=\"SYNCID\" VALUE=\"%d\">"
                "<BOLD>An Error
Occurred</BOLD><BR><BR>"
                "%s"
                "<BR><BR><HR>"
                "<INPUT TYPE=\"submit\"
NAME=\"CMD\" VALUE=\"..NewOrder..\">"
                "<INPUT TYPE=\"submit\"
NAME=\"CMD\" VALUE=\"..Payment..\">"
                "<INPUT TYPE=\"submit\"
NAME=\"CMD\" VALUE=\"..Delivery..\">"
                "<INPUT TYPE=\"submit\"
NAME=\"CMD\" VALUE=\"..Order-Status..\">"
                "<INPUT TYPE=\"submit\"
NAME=\"CMD\" VALUE=\"..Stock-Level..\">"
                "<INPUT TYPE=\"submit\"
NAME=\"CMD\" VALUE=\"..Exit..\">"
                "</FORM></BODY></HTML>"
                , iType, iErrorNum,
MAIN_MENU_FORM, iTermId, iSyncId, szErrorText );
}

/* FUNCTION: MakeMainMenuForm
 */

void MakeMainMenuForm(int iTermId, int iSyncId, char
*szForm)
{
        wsprintf(szForm,
                "<HTML><HEAD><TITLE>TPC-C Main
Menu</TITLE></HEAD><BODY>"
                "Select Desired
Transaction.<BR><HR>"
                "<FORM ACTION=\"tpcc.dll\"
METHOD=\"GET\">"
                "<INPUT TYPE=\"hidden\"
NAME=\"STATUSID\" VALUE=\"0\">"
                "<INPUT TYPE=\"hidden\"
NAME=\"ERROR\" VALUE=\"0\">"
```

```c
                "<INPUT TYPE=\"hidden\"
NAME=\"FORMID\" VALUE=\"%d\">"
                "<INPUT TYPE=\"hidden\"
NAME=\"TERMID\" VALUE=\"%d\">"
                "<INPUT TYPE=\"hidden\"
NAME=\"SYNCID\" VALUE=\"%d\">"
                "<INPUT TYPE=\"submit\"
NAME=\"CMD\" VALUE=\"..NewOrder..\">"
                "<INPUT TYPE=\"submit\"
NAME=\"CMD\" VALUE=\"..Payment..\">"
                "<INPUT TYPE=\"submit\"
NAME=\"CMD\" VALUE=\"..Delivery..\">"
                "<INPUT TYPE=\"submit\"
NAME=\"CMD\" VALUE=\"..Order-Status..\">"
                "<INPUT TYPE=\"submit\"
NAME=\"CMD\" VALUE=\"..Stock-Level..\">"
                "<INPUT TYPE=\"submit\"
NAME=\"CMD\" VALUE=\"..Exit..\">"
                "</FORM></BODY></HTML>"
                , MAIN_MENU_FORM, iTermId,
iSyncId);
}

/* FUNCTION: MakeStockLevelForm
 *
 * PURPOSE:       This function constructs the
Stock Level HTML page.
 *
 * COMMENTS:      The internal client buffer is
created when the terminal id is assigned and should
not
 *                             be freed
except when the client terminal id is no longer
needed.
 */

void MakeStockLevelForm(int iTermId, STOCK_LEVEL_DATA
*pStockLevelData, BOOL bInput, char *szForm)
{
        int       c;

        c = wsprintf(szForm,
                "<HTML><HEAD><TITLE>TPC-C Stock
Level</TITLE></HEAD><FORM ACTION=\"tpcc.dll\"
METHOD=\"GET\">"
                "<INPUT TYPE=\"hidden\"
NAME=\"STATUSID\" VALUE=\"0\">"
                "<INPUT TYPE=\"hidden\"
NAME=\"ERROR\" VALUE=\"0\">"
                "<INPUT TYPE=\"hidden\"
NAME=\"FORMID\" VALUE=\"%d\">"
                "<INPUT TYPE=\"hidden\"
NAME=\"TERMID\" VALUE=\"%d\">"
                "<INPUT TYPE=\"hidden\"
NAME=\"SYNCID\" VALUE=\"%d\">"
                "<PRE><font face=\"Courier\">
Stock-Level<BR>"
                "Warehouse: %6.6d    District:
%2.2d<BR> <BR>",
                STOCK_LEVEL_FORM, iTermId,
Term.pClientData[iTermId].iSyncId,
                Term.pClientData[iTermId].w_id,
Term.pClientData[iTermId].d_id);
```

```c
        if ( bInput )
        {
                strcpy(szForm+c,
                        "Stock Level Threshold:
<INPUT NAME=\"TT*\" SIZE=2><BR> <BR>"
                        "low stock:
</font><BR> <BR> <BR> <BR> <BR> <BR> <BR> <BR>
<BR>"
                        " <BR> <BR> <BR> <BR>
<BR> <BR> <BR></PRE><HR>"
                        "<INPUT TYPE=\"submit\"
NAME=\"CMD\" VALUE=\"Process\">"
                        "<INPUT TYPE=\"submit\"
NAME=\"CMD\" VALUE=\"Menu\">"
                        "</FORM></HTML>" );
        }
        else
        {
                wsprintf(szForm+c,
                        "Stock Level Threshold:
%2.2d<BR> <BR>"
                        "low stock:
%3.3d</font> <BR> <BR> <BR> <BR> <BR> <BR> <BR>
<BR>"
                        " <BR> <BR> <BR> <BR>
<BR> <BR> <BR></PRE><HR>"
                        "<INPUT TYPE=\"submit\"
NAME=\"CMD\" VALUE=\"..NewOrder..\">"
                        "<INPUT TYPE=\"submit\"
NAME=\"CMD\" VALUE=\"..Payment..\">"
                        "<INPUT TYPE=\"submit\"
NAME=\"CMD\" VALUE=\"..Delivery..\">"
                        "<INPUT TYPE=\"submit\"
NAME=\"CMD\" VALUE=\"..Order-Status..\">"
                        "<INPUT TYPE=\"submit\"
NAME=\"CMD\" VALUE=\"..Stock-Level..\">"
                        "<INPUT TYPE=\"submit\"
NAME=\"CMD\" VALUE=\"..Exit..\">"
                        "</FORM></HTML>"
                        , pStockLevelData-
>threshold, pStockLevelData->low_stock);
        }
}

/* FUNCTION: MakeNewOrderForm
 *
 * COMMENTS:      The internal client buffer is
created when the terminal id is assigned and should
not
 *                             be freed
except when the client terminal id is no longer
needed.
 */

void MakeNewOrderForm(int iTermId, NEW_ORDER_DATA
*pNewOrderData, BOOL bInput, char *szForm)
{
        int       i, c;
        BOOL      bValid;
        static    char szBR[] = " <BR> <BR> <BR>
<BR> <BR> <BR> <BR> <BR> <BR> <BR> <BR>
<BR> <BR>";
```

```c
        if (!bInput)
                assert( pNewOrderData-
>exec_status_code == eOK || pNewOrderData-
>exec_status_code == eInvalidItem );

        bValid = (bInput || (pNewOrderData-
>exec_status_code == eOK));

        c = wsprintf(szForm,
                "<HTML><HEAD><TITLE>TPC-C New
Order</TITLE></HEAD><BODY>"
                "<FORM ACTION=\"tpcc.dll\"
METHOD=\"GET\">"
                "<INPUT TYPE=\"hidden\"
NAME=\"STATUSID\" VALUE=\"%d\">"
                "<INPUT TYPE=\"hidden\"
NAME=\"ERROR\" VALUE=\"0\">"
                "<INPUT TYPE=\"hidden\"
NAME=\"FORMID\" VALUE=\"%d\">"
                "<INPUT TYPE=\"hidden\"
NAME=\"TERMID\" VALUE=\"%d\">"
                "<INPUT TYPE=\"hidden\"
NAME=\"SYNCID\" VALUE=\"%d\">"
                "<PRE><font face=\"Courier\">
New Order<BR>"
                , bValid ? 0 : ERR_BAD_ITEM_ID,
NEW_ORDER_FORM, iTermId,
Term.pClientData[iTermId].iSyncId);

        if ( bInput )
        {
                c += wsprintf(szForm+c,
"Warehouse: %6.6d  ", Term.pClientData[iTermId].w_id
);

                strcpy( szForm+c,
                        "District: <INPUT
NAME=\"DID*\" SIZE=1>
Date:<BR>"
                        "Customer: <INPUT
NAME=\"CID*\" SIZE=4>   Name:
Credit:      %Disc:<BR>"
                        "Order Number:
Number of Lines:         W_tax:          D_tax:<BR>
<BR>"
                        " Supp_W  Item_Id  Item
Name          Qty  Stock  B/G  Price
Amount<BR>"
                        " <INPUT
NAME=\"SP00*\" SIZE=4>  <INPUT NAME=\"IID00*\"
SIZE=6>              <INPUT
NAME=\"Qty00*\" SIZE=1><BR>"
                        " <INPUT
NAME=\"SP01*\" SIZE=4>  <INPUT NAME=\"IID01*\"
SIZE=6>              <INPUT
NAME=\"Qty01*\" SIZE=1><BR>"
                        " <INPUT
NAME=\"SP02*\" SIZE=4>  <INPUT NAME=\"IID02*\"
SIZE=6>              <INPUT
NAME=\"Qty02*\" SIZE=1><BR>"
                        " <INPUT
NAME=\"SP03*\" SIZE=4>  <INPUT NAME=\"IID03*\"
```

```
SIZE=6>                        <INPUT
NAME=\"Qty03*\" SIZE=1><BR>"
                    "   <INPUT
NAME=\"SP04*\" SIZE=4>  <INPUT NAME=\"IID04*\"
SIZE=6>                        <INPUT
NAME=\"Qty04*\" SIZE=1><BR>"
                    "   <INPUT
NAME=\"SP05*\" SIZE=4>  <INPUT NAME=\"IID05*\"
SIZE=6>                        <INPUT
NAME=\"Qty05*\" SIZE=1><BR>"
                    "   <INPUT
NAME=\"SP06*\" SIZE=4>  <INPUT NAME=\"IID06*\"
SIZE=6>                        <INPUT
NAME=\"Qty06*\" SIZE=1><BR>"
                    "   <INPUT
NAME=\"SP07*\" SIZE=4>  <INPUT NAME=\"IID07*\"
SIZE=6>                        <INPUT
NAME=\"Qty07*\" SIZE=1><BR>"
                    "   <INPUT
NAME=\"SP08*\" SIZE=4>  <INPUT NAME=\"IID08*\"
SIZE=6>                        <INPUT
NAME=\"Qty08*\" SIZE=1><BR>"
                    "   <INPUT
NAME=\"SP09*\" SIZE=4>  <INPUT NAME=\"IID09*\"
SIZE=6>                        <INPUT
NAME=\"Qty09*\" SIZE=1><BR>"
                    "   <INPUT
NAME=\"SP10*\" SIZE=4>  <INPUT NAME=\"IID10*\"
SIZE=6>                        <INPUT
NAME=\"Qty10*\" SIZE=1><BR>"
                    "   <INPUT
NAME=\"SP11*\" SIZE=4>  <INPUT NAME=\"IID11*\"
SIZE=6>                        <INPUT
NAME=\"Qty11*\" SIZE=1><BR>"
                    "   <INPUT
NAME=\"SP12*\" SIZE=4>  <INPUT NAME=\"IID12*\"
SIZE=6>                        <INPUT
NAME=\"Qty12*\" SIZE=1><BR>"
                    "   <INPUT
NAME=\"SP13*\" SIZE=4>  <INPUT NAME=\"IID13*\"
SIZE=6>                        <INPUT
NAME=\"Qty13*\" SIZE=1><BR>"
                    "   <INPUT
NAME=\"SP14*\" SIZE=4>  <INPUT NAME=\"IID14*\"
SIZE=6>                        <INPUT
NAME=\"Qty14*\" SIZE=1><BR>"
                    "Execution Status:
Total:<BR>"
                    "</font></PRE><HR>"
                    "<INPUT TYPE=\"submit\"
NAME=\"CMD\" VALUE=\"Process\">"
                    "<INPUT TYPE=\"submit\"
NAME=\"CMD\" VALUE=\"Menu\">"
                    "</FORM></HTML>"
                    );
        }
        else
        {
                c += wsprintf(szForm+c,
"Warehouse: %6.6d    District: %2.2d
Date: ",
                    pNewOrderData->w_id,
                    pNewOrderData->d_id);
```

```
            if ( bValid )
            {
                    c += wsprintf(szForm+c,
"%2.2d-%2.2d-%4.4d %2.2d:%2.2d:%2.2d",

                    pNewOrderData->o_entry_d.day,

                    pNewOrderData->o_entry_d.month,

                    pNewOrderData->o_entry_d.year,

                    pNewOrderData->o_entry_d.hour,

                    pNewOrderData->o_entry_d.minute,

                    pNewOrderData->o_entry_d.second);
            }
            c += wsprintf(szForm+c,
"<BR>Customer: %4.4d   Name: %-16s   Credit: %-2s
",
                    pNewOrderData->c_id,
pNewOrderData->c_last, pNewOrderData->c_credit);
            if ( bValid )
            {
                    c += sprintf(szForm+c,

"%%Disc: %5.2f              <BR>"

"Order Number: %8.8d  Number of Lines:
%2.2d       W_tax: %5.2f  D_tax: %5.2f <BR> <BR>"

" Supp_W  Item_Id  Item Name
Qty  Stock  B/G Price    Amount<BR>",
                    100.0*pNewOrderData->c_discount,

                    pNewOrderData->o_id,

                    pNewOrderData->o_ol_cnt,
                                    100.0 *
pNewOrderData->w_tax,
                                    100.0 *
pNewOrderData->d_tax);

                    for(i=0;
i<pNewOrderData->o_ol_cnt; i++)
                    {
                            c +=
sprintf(szForm+c, "%6.6d    %6.6d   %-24s  %2.2d
%3.3d    %1.1s  $%6.2f $%7.2f  <BR>",

                    pNewOrderData->OL[i].ol_supply_w_id,

                    pNewOrderData->OL[i].ol_i_id,

                    pNewOrderData->OL[i].ol_i_name,

                    pNewOrderData->OL[i].ol_quantity,

                    pNewOrderData->OL[i].ol_stock,
```

```
                    pNewOrderData->OL[i].ol_brand_generic,

                    pNewOrderData->OL[i].ol_i_price,

                    pNewOrderData->OL[i].ol_amount );
                    }
            }
            else
            {
                    c += wsprintf(szForm+c,
                            "%Disc:<BR>"
                            "Order
Number: %8.8d  Number of Lines:        W_tax:
D_tax:<BR> <BR>"
                            " Supp_W
Item_Id  Item Name              Qty  Stock  B/G
Price    Amount<BR>"
                            ,
pNewOrderData->o_id);

                    i = 0;
            }
            strncpy( szForm+c, szBR, (15-i)*5
);
            c += (15-i)*5;

            if ( bValid )
                    c += sprintf(szForm+c,
"Execution Status: Transaction commited.
Total: $%8.2f ",

                    pNewOrderData->total_amount);
            else
                    c += wsprintf(szForm+c,
"Execution Status: Item number is not valid.
Total:");

            strcpy(szForm+c,
"
<BR></font></PRE><HR>"
                    "<INPUT TYPE=\"submit\"
NAME=\"CMD\" VALUE=\"..NewOrder..\">"
                    "<INPUT TYPE=\"submit\"
NAME=\"CMD\" VALUE=\"..Payment..\">"
                    "<INPUT TYPE=\"submit\"
NAME=\"CMD\" VALUE=\"..Delivery..\">"
                    "<INPUT TYPE=\"submit\"
NAME=\"CMD\" VALUE=\"..Order-Status..\">"
                    "<INPUT TYPE=\"submit\"
NAME=\"CMD\" VALUE=\"..Stock-Level..\">"
                    "<INPUT TYPE=\"submit\"
NAME=\"CMD\" VALUE=\"..Exit..\">"
                    "</FORM></HTML>"
                    );
        }
}

/* FUNCTION: MakePaymentForm
 *
```

```
 * COMMENTS:        The internal client buffer is
created when the terminal id is assigned and should
not
 *                                be freed
except when the client terminal id is no longer
needed.
 */

void MakePaymentForm(int iTermId, PAYMENT_DATA
*pPaymentData, BOOL bInput, char *szForm)
{
        int c;

        c = wsprintf(szForm,
                "<HTML><HEAD><TITLE>TPC-C
Payment</TITLE></HEAD><BODY>"
                "<FORM ACTION=\"tpcc.dll\"
METHOD=\"GET\">"
                "<INPUT TYPE=\"hidden\"
NAME=\"STATUSID\" VALUE=\"0\">"
                "<INPUT TYPE=\"hidden\"
NAME=\"ERROR\" VALUE=\"0\">"
                "<INPUT TYPE=\"hidden\"
NAME=\"FORMID\" VALUE=\"%d\">"
                "<INPUT TYPE=\"hidden\"
NAME=\"TERMID\" VALUE=\"%d\">"
                "<INPUT TYPE=\"hidden\"
NAME=\"SYNCID\" VALUE=\"%d\">"
                "<PRE><font face=\"Courier\">
Payment<BR>"
                "Date: "
                , PAYMENT_FORM, iTermId,
Term.pClientData[iTermId].iSyncId);

        if ( !bInput )
        {
                c += wsprintf(szForm+c, "%2.2d-
%2.2d-%4.4d %2.2d:%2.2d:%2.2d",
                        pPaymentData-
>h_date.day,
                        pPaymentData-
>h_date.month,
                        pPaymentData-
>h_date.year,
                        pPaymentData-
>h_date.hour,
                        pPaymentData-
>h_date.minute,
                        pPaymentData-
>h_date.second);
        }

        if ( bInput )
        {
                c += wsprintf(szForm+c,
                        "<BR> <BR>Warehouse:
%6.6d"
                        "
District: <INPUT NAME=\"DID*\" SIZE=1><BR> <BR> <BR>
<BR> <BR>"
                        "Customer: <INPUT
NAME=\"CID*\" SIZE=4>"
```

```
                        "Cust-Warehouse: <INPUT
NAME=\"CWI*\" SIZE=4>  "
                        "Cust-District: <INPUT
NAME=\"CDI*\" SIZE=1><BR>"
                        "Name:
<INPUT NAME=\"CLT*\" SIZE=16>
Since:<BR>"
                        "
Credit:<BR>"
                        "
Disc:<BR>"
                        "
Phone:<BR> <BR>"
                        "Amount Paid:
$<INPUT NAME=\"HAM*\" SIZE=7>     New Cust-
Balance:<BR>"
                        "Credit Limit:<BR>
<BR>Cust-Data: <BR> <BR> <BR> <BR>
<BR></font></PRE><HR>"
                        "<INPUT TYPE=\"submit\"
NAME=\"CMD\" VALUE=\"Process\"><INPUT TYPE=\"submit\"
NAME=\"CMD\" VALUE=\"Menu\">"
                        "</BODY></FORM></HTML>"
                        ,
Term.pClientData[iTermId].w_id);
        }
        else
        {
                c += wsprintf(szForm+c,
                        "<BR> <BR>Warehouse:
%6.6d                   District: %2.2d<BR>"
                        "%-20s
%-20s<BR>"
                        "%-20s
%-20s<BR>"
                        "%-20s %-2s %5.5s-%4.4s
%-20s %-2s %5.5s-%4.4s<BR> <BR>"
                        "Customer: %4.4d  Cust-
Warehouse: %6.6d  Cust-District: %2.2d<BR>"
                        "Name:   %-16s %-2s %-
16s      Since:  %2.2d-%2.2d-%4.4d<BR>"
                        "              %-20s
Credit: %-2s<BR>"
                        ,
Term.pClientData[iTermId].w_id, pPaymentData->d_id
                        , pPaymentData-
>w_street_1, pPaymentData->d_street_1
                        , pPaymentData-
>w_street_2, pPaymentData->d_street_2
                        , pPaymentData->w_city,
pPaymentData->w_state, pPaymentData->w_zip,
pPaymentData->w_zip+5
                        , pPaymentData->d_city,
pPaymentData->d_state, pPaymentData->d_zip,
pPaymentData->d_zip+5
                        , pPaymentData->c_id,
pPaymentData->c_w_id,       pPaymentData->c_d_id
                        , pPaymentData-
>c_first, pPaymentData->c_middle, pPaymentData-
>c_last
```

```
                        , pPaymentData-
>c_since.day, pPaymentData->c_since.month,
        pPaymentData->c_since.year
                        , pPaymentData-
>c_street_1, pPaymentData->c_credit
                                );

                c += sprintf(szForm+c,
                        "              %-20s
%%Disc:  %5.2f<BR>",
                        pPaymentData-
>c_street_2, 100.0*pPaymentData->c_discount);

                c += wsprintf(szForm+c,
                        "              %-20s %-2s
%5.5s-%4.4s        Phone:  %6.6s-%3.3s-%3.3s-%4.4s<BR>
<BR>",
                        pPaymentData->c_city,
pPaymentData->c_state, pPaymentData->c_zip,
pPaymentData->c_zip+5,
                        pPaymentData->c_phone,
pPaymentData->c_phone+6, pPaymentData->c_phone+9,
pPaymentData->c_phone+12 );

                c += sprintf(szForm+c,
                        "Amount Paid:
$%7.2f     New Cust-Balance: $%14.2f<BR>"
                        "Credit Limit:
$%13.2f<BR> <BR>"
                        , pPaymentData-
>h_amount, pPaymentData->c_balance
                        , pPaymentData-
>c_credit_lim
                                );

                if ( pPaymentData->c_credit[0] ==
'B' && pPaymentData->c_credit[1] == 'C' )
                        c += wsprintf(szForm+c,

        "Cust-Data: %-50.50s<BR>           %-
50.50s<BR>           %-50.50s<BR>           %-
50.50s<BR>",

        pPaymentData->c_data, pPaymentData-
>c_data+50, pPaymentData->c_data+100, pPaymentData-
>c_data+150 );
                else
                        strcpy(szForm+c, "Cust-
Data: <BR> <BR> <BR> <BR>");

                strcat(szForm,       "
<BR></font></PRE><HR>"

        "<INPUT TYPE=\"submit\" NAME=\"CMD\"
VALUE=\"..NewOrder..\">"

        "<INPUT TYPE=\"submit\" NAME=\"CMD\"
VALUE=\"..Payment..\">"

        "<INPUT TYPE=\"submit\" NAME=\"CMD\"
VALUE=\"..Delivery..\">"
```

```
          "<INPUT TYPE=\"submit\" NAME=\"CMD\"
VALUE=\"..Order-Status..\">"

          "<INPUT TYPE=\"submit\" NAME=\"CMD\"
VALUE=\"..Stock-Level..\">"

          "<INPUT TYPE=\"submit\" NAME=\"CMD\"
VALUE=\"..Exit..\">"

          "</BODY></FORM></HTML>");
     }

}

/* FUNCTION: MakeOrderStatusForm
 *
 * COMMENTS:       The internal client buffer is
created when the terminal id is assigned and should
not
 *                               be freed
except when the client terminal id is no longer
needed.
 */

void MakeOrderStatusForm(int iTermId,
ORDER_STATUS_DATA *pOrderStatusData, BOOL bInput,
char *szForm)
{
     int              i, c;
     static char szBR[] = " <BR> <BR> <BR> <BR>
<BR> <BR> <BR> <BR> <BR> <BR> <BR> <BR> <BR>
<BR>";

     c = wsprintf(szForm,
          "<HTML><HEAD><TITLE>TPC-C Order-
Status</TITLE></HEAD><BODY>"
          "<FORM ACTION=\"tpcc.dll\"
METHOD=\"GET\">"
          "<INPUT TYPE=\"hidden\"
NAME=\"STATUSID\" VALUE=\"0\">"
          "<INPUT TYPE=\"hidden\"
NAME=\"ERROR\" VALUE=\"0\">"
          "<INPUT TYPE=\"hidden\"
NAME=\"FORMID\" VALUE=\"%d\">"
          "<INPUT TYPE=\"hidden\"
NAME=\"TERMID\" VALUE=\"%d\">"
          "<INPUT TYPE=\"hidden\"
NAME=\"SYNCID\" VALUE=\"%d\">"
          "<PRE><font face=\"Courier\">
Order-Status<BR>"
          "Warehouse: %6.6d   ",
          ORDER_STATUS_FORM, iTermId,
Term.pClientData[iTermId].iSyncId,
Term.pClientData[iTermId].w_id);

     if ( bInput )
     {
          strcpy(szForm+c,
               "District: <INPUT
NAME=\"DID*\" SIZE=1><BR>"
```

```
          "Customer: <INPUT
NAME=\"CID*\" SIZE=4>   Name:
<INPUT NAME=\"CLT*\" SIZE=23><BR>"
          "Cust-Balance:<BR>
<BR>"
          "Order-Number:
Entry-Date:             Carrier-
Number:<BR>"
          "Supply-W    Item-Id
Qty    Amount     Delivery-Date<BR> <BR> <BR> <BR>
<BR>"
          " <BR> <BR> <BR> <BR>
<BR> <BR> <BR> <BR> <BR> <BR> <BR></font></PRE>"
          "<HR><INPUT
TYPE=\"submit\" NAME=\"CMD\" VALUE=\"Process\"><INPUT
TYPE=\"submit\" NAME=\"CMD\" VALUE=\"Menu\">"
          "</BODY></FORM></HTML>"
     );
     }
     else
     {
          c += wsprintf(szForm+c,
               "District: %2.2d<BR>"
               "Customer: %4.4d
Name: %-16s %-2s %-16s<BR>",
               pOrderStatusData->d_id,
pOrderStatusData->c_id,
               pOrderStatusData-
>c_first, pOrderStatusData->c_middle,
pOrderStatusData->c_last);

          c += sprintf(szForm+c, "Cust-
Balance: $%9.2f<BR> <BR>",
               pOrderStatusData-
>c_balance);

          c += wsprintf(szForm+c,
               "Order-Number: %8.8d
Entry-Date: %2.2d-%2.2d-%4.4d %2.2d:%2.2d:%2.2d
Carrier-Number: %2.2d<BR>"
               "Supply-W     Item-Id
Qty    Amount     Delivery-Date<BR>",
               pOrderStatusData->o_id,
               pOrderStatusData-
>o_entry_d.day,
               pOrderStatusData-
>o_entry_d.month,
               pOrderStatusData-
>o_entry_d.year,
               pOrderStatusData-
>o_entry_d.hour,
               pOrderStatusData-
>o_entry_d.minute,
               pOrderStatusData-
>o_entry_d.second,
               pOrderStatusData-
>o_carrier_id);

          for(i=0; i< pOrderStatusData-
>o_ol_cnt; i++)
          {
```

```
               c += sprintf(szForm+c,
" %6.6d     %6.6d     %2.2d    $%8.2f     %2.2d-
%2.2d-%4.4d<BR>",

               pOrderStatusData->OL[i].ol_supply_w_id,

               pOrderStatusData->OL[i].ol_i_id,

               pOrderStatusData->OL[i].ol_quantity,

               pOrderStatusData->OL[i].ol_amount,

               pOrderStatusData->OL[i].ol_delivery_d.day,

               pOrderStatusData-
>OL[i].ol_delivery_d.month,

               pOrderStatusData-
>OL[i].ol_delivery_d.year);
          }

          strncpy( szForm+c, szBR, (15-i)*5
);
          c += (15-i)*5;

          strcpy(szForm+c,

     "</font></PRE><HR><INPUT TYPE=\"submit\"
NAME=\"CMD\" VALUE=\"..NewOrder..\">"
               "<INPUT TYPE=\"submit\"
NAME=\"CMD\" VALUE=\"..Payment..\">"
               "<INPUT TYPE=\"submit\"
NAME=\"CMD\" VALUE=\"..Delivery..\">"
               "<INPUT TYPE=\"submit\"
NAME=\"CMD\" VALUE=\"..Order-Status..\">"
               "<INPUT TYPE=\"submit\"
NAME=\"CMD\" VALUE=\"..Stock-Level..\">"
               "<INPUT TYPE=\"submit\"
NAME=\"CMD\" VALUE=\"..Exit..\">"
               "</BODY></FORM></HTML>"
     );
     }
}

/* FUNCTION: MakeDeliveryForm
 *
 * COMMENTS:       The internal client buffer is
created when the terminal id is assigned and should
not
 *                               be freed
except when the client terminal id is no longer
needed.
 */

void MakeDeliveryForm(int iTermId, DELIVERY_DATA
*pDeliveryData, BOOL bInput, char *szForm)
{
     int         c;

     c = wsprintf(szForm,
          "<HTML><HEAD><TITLE>TPC-C
Delivery</TITLE></HEAD><BODY>"
```

```
                "<FORM ACTION=\"tpcc.dll\"
METHOD=\"GET\">"
                "<INPUT TYPE=\"hidden\"
NAME=\"STATUSID\" VALUE=\"%d\">"
                "<INPUT TYPE=\"hidden\"
NAME=\"ERROR\" VALUE=\"0\">"
                "<INPUT TYPE=\"hidden\"
NAME=\"FORMID\" VALUE=\"%d\">"
                "<INPUT TYPE=\"hidden\"
NAME=\"TERMID\" VALUE=\"%d\">"
                "<INPUT TYPE=\"hidden\"
NAME=\"SYNCID\" VALUE=\"%d\">"
                "<PRE><font face=\"Courier\">
Delivery<BR>"
                "Warehouse: %6.6d<BR> <BR>",
                (!bInput && (pDeliveryData-
>exec_status_code != eOK)) ? ERR_TYPE_DELIVERY_POST :
0,
                DELIVERY_FORM, iTermId,
Term.pClientData[iTermId].iSyncId,
Term.pClientData[iTermId].w_id);

        if ( bInput )
        {
                strcpy( szForm+c,
                "Carrier Number: <INPUT
NAME=\"OCD*\" SIZE=1<BR> <BR>"
                "Execution Status: <BR>
<BR> <BR> <BR> <BR> <BR> <BR>"
                " <BR> <BR> <BR> <BR>
<BR> <BR> <BR> <BR> </PRE><HR>"
                "<INPUT TYPE=\"submit\"
NAME=\"CMD\" VALUE=\"Process\">"
                "<INPUT TYPE=\"submit\"
NAME=\"CMD\" VALUE=\"Menu\">"
                "</BODY></FORM></HTML>"
);
        }
        else
        {
                wsprintf( szForm+c,
                "Carrier Number:
%2.2d<BR> <BR>"
                "Execution Status: %s
<BR> <BR> <BR> <BR> <BR> <BR> <BR>"
                " <BR> <BR> <BR> <BR>
<BR> <BR> <BR> <BR> </font></PRE>"
                "<HR><INPUT
TYPE=\"submit\" NAME=\"CMD\" VALUE=\"..NewOrder..\">"
                "<INPUT TYPE=\"submit\"
NAME=\"CMD\" VALUE=\"..Payment..\">"
                "<INPUT TYPE=\"submit\"
NAME=\"CMD\" VALUE=\"..Delivery..\">"
                "<INPUT TYPE=\"submit\"
NAME=\"CMD\" VALUE=\"..Order-Status..\">"
                "<INPUT TYPE=\"submit\"
NAME=\"CMD\" VALUE=\"..Stock-Level..\">"
                "<INPUT TYPE=\"submit\"
NAME=\"CMD\" VALUE=\"..Exit..\">"
                "</BODY></FORM></HTML>"
                , pDeliveryData-
>o_carrier_id,
```

```
                (pDeliveryData-
>exec_status_code == eOK) ? "Delivery has been
queued." : "Delivery Post Failed      "
                );
        }
}

/* FUNCTION: ProcessNewOrderForm
 *
 * PURPOSE:         This function gets and validates
the input data from the new order form
 *                          filling in the required
input variables. it then calls the SQLNewOrder
 *                          transaction, constructs
the output form and writes it back to client
 *                          browser.
 */

void ProcessNewOrderForm(EXTENSION_CONTROL_BLOCK
        *pECB, int iTermId, char *szBuffer)
{
        PNEW_ORDER_DATA          pNewOrder;

        pNewOrder = Term.pClientData[iTermId].pTxn-
>BuffAddr_NewOrder();

        ZeroMemory(pNewOrder,
sizeof(NEW_ORDER_DATA));
        pNewOrder->w_id =
Term.pClientData[iTermId].w_id;
        GetNewOrderData(pECB->lpszQueryString,
pNewOrder);

        Term.pClientData[iTermId].pTxn->NewOrder();

        pNewOrder = Term.pClientData[iTermId].pTxn-
>BuffAddr_NewOrder();
        MakeNewOrderForm(iTermId, pNewOrder,
OUTPUT_FORM, szBuffer );
}

/* FUNCTION: void ProcessPaymentForm
 *
 * PURPOSE:         This function gets and validates
the input data from the payment form
 *                          filling in the required
input variables. It then calls the SQLPayment
 *                          transaction, constructs
the output form and writes it back to client
 *                          browser.
 *
 * ARGUMENTS:       EXTENSION_CONTROL_BLOCK
            *pECB   passed in structure pointer from
inetsrv.
 *                                int
            iTermId   client browser terminal id
 *
 */
void ProcessPaymentForm(EXTENSION_CONTROL_BLOCK
*pECB, int iTermId, char *szBuffer)
{
```

```
        PPAYMENT_DATA         pPayment;

        pPayment = Term.pClientData[iTermId].pTxn-
>BuffAddr_Payment();
        ZeroMemory(pPayment, sizeof(PAYMENT_DATA));
        pPayment->w_id =
Term.pClientData[iTermId].w_id;
        GetPaymentData(pECB->lpszQueryString,
pPayment);

        Term.pClientData[iTermId].pTxn->Payment();

        pPayment = Term.pClientData[iTermId].pTxn-
>BuffAddr_Payment();
        MakePaymentForm(iTermId, pPayment,
OUTPUT_FORM, szBuffer);
}

/* FUNCTION: ProcessOrderStatusForm
 *
 * PURPOSE:         This function gets and validates
the input data from the Order Status
 *                   form filling in the
required input variables. It then calls the
 *                   SQLOrderStatus
transaction, constructs the output form and writes it
 *                   back to client browser.
 *
 * ARGUMENTS:       EXTENSION_CONTROL_BLOCK
            *pECB   passed in structure pointer from
inetsrv.
 *                                int
            iTermId   client browser terminal id
 *
 */

void ProcessOrderStatusForm(EXTENSION_CONTROL_BLOCK
*pECB, int iTermId, char *szBuffer)
{
        PORDER_STATUS_DATA   pOrderStatus;

        pOrderStatus =
Term.pClientData[iTermId].pTxn-
>BuffAddr_OrderStatus();
        ZeroMemory(pOrderStatus,
sizeof(ORDER_STATUS_DATA));
        pOrderStatus->w_id =
Term.pClientData[iTermId].w_id;
        GetOrderStatusData(pECB->lpszQueryString,
pOrderStatus);

        Term.pClientData[iTermId].pTxn-
>OrderStatus();

        pOrderStatus =
Term.pClientData[iTermId].pTxn-
>BuffAddr_OrderStatus();
        MakeOrderStatusForm(iTermId, pOrderStatus,
OUTPUT_FORM, szBuffer);
}

/* FUNCTION: ProcessDeliveryForm
```

```
 *
 * PURPOSE:         This function gets and validates
the input data from the delivery form
 *                         filling in the required
input variables. It then calls the PostDeliveryInfo
 *                         Api, The client is then
informed that the transaction has been posted.
 *
 * ARGUMENTS:         EXTENSION_CONTROL_BLOCK
 *         *pECB    passed in structure pointer from
inetsrv.
 *                                 int
         iTermId    client browser terminal id
 *
 */

void ProcessDeliveryForm(EXTENSION_CONTROL_BLOCK
*pECB, int iTermId, char *szBuffer)
{
        char      *ptr = pECB->lpszQueryString;

        PDELIVERY_DATA      pDelivery;

        pDelivery = Term.pClientData[iTermId].pTxn-
>BuffAddr_Delivery();
        ZeroMemory(pDelivery,
sizeof(DELIVERY_DATA));
        pDelivery->w_id =
Term.pClientData[iTermId].w_id;

        pDelivery->o_carrier_id     =
GetIntKeyValue(&ptr, "OCD*",
ERR_DELIVERY_MISSING_OCD_KEY,
ERR_DELIVERY_CARRIER_INVALID);
        if ( pDelivery->o_carrier_id > 10 ||
pDelivery->o_carrier_id < 1 )
                throw new CWEBCLNT_ERR(
ERR_DELIVERY_CARRIER_ID_RANGE );

        if (dwNumDeliveryThreads)
        {
                //post delivery info
                if ( PostDeliveryInfo(pDelivery-
>w_id, pDelivery->o_carrier_id) )
                        pDelivery-
>exec_status_code = eDeliveryFailed;
                else
                        pDelivery-
>exec_status_code = eOK;
        }
        else // delivery is done synchronously if
no delivery threads configured
                Term.pClientData[iTermId].pTxn-
>Delivery();

        pDelivery = Term.pClientData[iTermId].pTxn-
>BuffAddr_Delivery();
        MakeDeliveryForm(iTermId, pDelivery,
OUTPUT_FORM, szBuffer);
}

/* FUNCTION: ProcessStockLevelForm
```

```
 *
 * PURPOSE:         This function gets and validates
the input data from the Stock Level
 *                         form filling in the
required input variables. It then calls the
 *                         SQLStockLevel
transaction, constructs the output form and writes it
 *                         back to client browser.
 *
 * ARGUMENTS:         EXTENSION_CONTROL_BLOCK
 *         *pECB    passed in structure pointer from
inetsrv.
 *                                 int
         iTermId    client browser terminal id
 *
 */

void ProcessStockLevelForm(EXTENSION_CONTROL_BLOCK
*pECB, int iTermId, char *szBuffer)
{
        char               *ptr = pECB-
>lpszQueryString;

        PSTOCK_LEVEL_DATA    pStockLevel;

        pStockLevel =
Term.pClientData[iTermId].pTxn-
>BuffAddr_StockLevel();
        ZeroMemory( pStockLevel,
sizeof(STOCK_LEVEL_DATA) );

        pStockLevel->w_id =
Term.pClientData[iTermId].w_id;
        pStockLevel->d_id =
Term.pClientData[iTermId].d_id;

        pStockLevel->threshold =
GetIntKeyValue(&ptr, "TT*",
ERR_STOCKLEVEL_MISSING_THRESHOLD_KEY,
ERR_STOCKLEVEL_THRESHOLD_INVALID);
        if ( pStockLevel->threshold >= 100 ||
pStockLevel->threshold < 0 )
                throw new CWEBCLNT_ERR(
ERR_STOCKLEVEL_THRESHOLD_RANGE );

        Term.pClientData[iTermId].pTxn-
>StockLevel();

        pStockLevel =
Term.pClientData[iTermId].pTxn-
>BuffAddr_StockLevel();
        MakeStockLevelForm(iTermId, pStockLevel,
OUTPUT_FORM, szBuffer);
}

/* FUNCTION: GetNewOrderData
 *
 * PURPOSE:         This function extracts and
validates the new order form data from an http
command string.
 *
```

```
 * ARGUMENTS:      LPSTR
        lpszQueryString            client
browser http command string
 *
        NEW_ORDER_DATA      *pNewOrderData
        pointer to new order data structure
 *
 */

void GetNewOrderData(LPSTR lpszQueryString,
NEW_ORDER_DATA *pNewOrderData)
{
        char      szTmp[26];
        int       i;
        short     items;
        int               ol_i_id, ol_quantity;
        char      *ptr = lpszQueryString;

        static char szSP[MAX_OL_NEW_ORDER_ITEMS][6]
=
               { "SP00*", "SP01*", "SP02*",
"SP03*", "SP04*",
               "SP05*", "SP06*", "SP07*",
"SP08*", "SP09*",
               "SP10*", "SP11*", "SP12*",
"SP13*", "SP14*" };
        static char
szIID[MAX_OL_NEW_ORDER_ITEMS][7] =
               { "IID00*", "IID01*", "IID02*",
"IID03*", "IID04*",
               "IID05*", "IID06*", "IID07*",
"IID08*", "IID09*",
               "IID10*", "IID11*", "IID12*",
"IID13*", "IID14*" };
        static char
szQty[MAX_OL_NEW_ORDER_ITEMS][7] =
               { "Qty00*", "Qty01*", "Qty02*",
"Qty03*", "Qty04*",
               "Qty05*", "Qty06*", "Qty07*",
"Qty08*", "Qty09*",
               "Qty10*", "Qty11*", "Qty12*",
"Qty13*", "Qty14*" };

        pNewOrderData->d_id = GetIntKeyValue(&ptr,
"DID*", ERR_NEWORDER_FORM_MISSING_DID,
ERR_NEWORDER_DISTRICT_INVALID);
        pNewOrderData->c_id = GetIntKeyValue(&ptr,
"CID*", ERR_NEWORDER_CUSTOMER_KEY,
ERR_NEWORDER_CUSTOMER_INVALID);

        for(i=0, items=0; i<MAX_OL_NEW_ORDER_ITEMS;
i++)
        {
                GetKeyValue(&ptr, szSP[i], szTmp,
sizeof(szTmp), ERR_NEWORDER_MISSING_SUPPW_KEY);
                if ( szTmp[0] )
                {
                        if ( !IsNumeric(szTmp)
)
                                throw new
CWEBCLNT_ERR( ERR_NEWORDER_SUPPW_INVALID );
                        pNewOrderData-
>OL[items].ol_supply_w_id = atoi(szTmp);
```

```
                    ol_i_id =
pNewOrderData->OL[items].ol_i_id =

        GetIntKeyValue(&ptr, szIID[i],
ERR_NEWORDER_MISSING_IID_KEY,
ERR_NEWORDER_ITEMID_INVALID);
                        if ( ol_i_id > 999999
|| ol_i_id < 1 )
                                throw new
CWEBCLNT_ERR( ERR_NEWORDER_ITEMID_RANGE );

                    ol_quantity =
pNewOrderData->OL[items].ol_quantity =

        GetIntKeyValue(&ptr, szQty[i],
ERR_NEWORDER_MISSING_QTY_KEY,
ERR_NEWORDER_QTY_INVALID);
                        if ( ol_quantity > 99
|| ol_quantity < 1 )
                                throw new
CWEBCLNT_ERR( ERR_NEWORDER_QTY_RANGE );

                        items++;
                }
                else
                {       // nothing entered for
supply warehouse, so item id and qty must also be
blank
                        GetKeyValue(&ptr,
szIID[i], szTmp, sizeof(szTmp),
ERR_NEWORDER_MISSING_IID_KEY);
                        if ( szTmp[0] )
                                throw new
CWEBCLNT_ERR( ERR_NEWORDER_ITEMID_WITHOUT_SUPPW );

                        GetKeyValue(&ptr,
szQty[i], szTmp, sizeof(szTmp),
ERR_NEWORDER_MISSING_QTY_KEY);
                        if ( szTmp[0] )
                                throw new
CWEBCLNT_ERR( ERR_NEWORDER_QTY_WITHOUT_SUPPW );
                }
        }
        if ( items == 0 )
                throw new CWEBCLNT_ERR(
ERR_NEWORDER_NOITEMS_ENTERED );

        pNewOrderData->o_ol_cnt = items;
}

/* FUNCTION: GetPaymentData
 *
 * PURPOSE:        This function extracts and
validates the payment form data from an http command
string.
 *
 * ARGUMENTS:      LPSTR
        lpszQueryString                 client
browser http command string
 *                                      PAYMENT_DATA
        *pPaymentData                   pointer to
payment data structure

 */
void GetPaymentData(LPSTR lpszQueryString,
PAYMENT_DATA *pPaymentData)
{
        char    szTmp[26];
        char    *ptr = lpszQueryString;
        BOOL    bCustIdBlank;
        int     iLen;

        pPaymentData->d_id = GetIntKeyValue(&ptr,
"DID*", ERR_PAYMENT_MISSING_DID_KEY,
ERR_PAYMENT_DISTRICT_INVALID);

        GetKeyValue(&ptr, "CID*", szTmp,
sizeof(szTmp), ERR_PAYMENT_MISSING_CID_KEY);
        if ( szTmp[0] == 0 )
        {
                bCustIdBlank = TRUE;
                pPaymentData->c_id = 0;
        }
        else
        {       // parse customer id and verify
that last name was NOT entered
                bCustIdBlank = FALSE;
                if ( !IsNumeric(szTmp) )
                        throw new CWEBCLNT_ERR(
ERR_PAYMENT_CUSTOMER_INVALID );
                pPaymentData->c_id = atoi(szTmp);
        }

        pPaymentData->c_w_id = GetIntKeyValue(&ptr,
"CWI*", ERR_PAYMENT_MISSING_CWI_KEY,
ERR_PAYMENT_CWI_INVALID);
        pPaymentData->c_d_id = GetIntKeyValue(&ptr,
"CDI*", ERR_PAYMENT_MISSING_CDI_KEY,
ERR_PAYMENT_CDI_INVALID);

        if ( bCustIdBlank )
        {       // customer id is blank, so last
name must be entered
                GetKeyValue(&ptr, "CLT*", szTmp,
sizeof(szTmp), ERR_PAYMENT_MISSING_CLT_KEY);
                if ( szTmp[0] == 0 )
                        throw new CWEBCLNT_ERR(
ERR_PAYMENT_MISSING_CID_CLT );

                _strupr( szTmp );
                if ( strlen(szTmp) >
LAST_NAME_LEN )
                        throw new CWEBCLNT_ERR(
ERR_PAYMENT_LAST_NAME_TO_LONG );

                strcpy(pPaymentData->c_last,
szTmp);
                // pad with spaces so that the
client layer doesn't have to do it
                // before passing parameters to
stored procedure
                iLen = strlen(pPaymentData-
>c_last);
                memset(pPaymentData->c_last +
iLen, ' ', LAST_NAME_LEN - iLen);

                pPaymentData-
>c_last[LAST_NAME_LEN] = 0;
        }
        else
        {       // parse customer id and verify
that last name was NOT entered
                GetKeyValue(&ptr, "CLT*", szTmp,
sizeof(szTmp), ERR_PAYMENT_MISSING_CLT_KEY);
                if ( szTmp[0] != 0 )
                        throw new CWEBCLNT_ERR(
ERR_PAYMENT_CID_AND_CLT );
        }

        GetKeyValue(&ptr, "HAM*", szTmp,
sizeof(szTmp), ERR_PAYMENT_MISSING_HAM_KEY);
        if (!IsDecimal(szTmp))
                throw new CWEBCLNT_ERR(
ERR_PAYMENT_HAM_INVALID );
        pPaymentData->h_amount = atof(szTmp);
        if ( pPaymentData->h_amount >= 10000.00 ||
pPaymentData->h_amount < 0 )
                throw new CWEBCLNT_ERR(
ERR_PAYMENT_HAM_RANGE );
}

/* FUNCTION: GetOrderStatusData
 *
 * PURPOSE:        This function extracts and
validates the payment form data from an http command
string.
 *
 */
void GetOrderStatusData(LPSTR lpszQueryString,
ORDER_STATUS_DATA *pOrderStatusData)
{
        char    szTmp[26];
        char    *ptr = lpszQueryString;
        int     iLen;

        pOrderStatusData->d_id =
GetIntKeyValue(&ptr, "DID*",
ERR_ORDERSTATUS_MISSING_DID_KEY,
ERR_ORDERSTATUS_DID_INVALID);

        GetKeyValue(&ptr, "CID*", szTmp,
sizeof(szTmp), ERR_ORDERSTATUS_MISSING_CID_KEY);
        if ( szTmp[0] == 0 )
        {       // customer id is blank, so last
name must be entered
                pOrderStatusData->c_id = 0;
                GetKeyValue(&ptr, "CLT*", szTmp,
sizeof(szTmp), ERR_ORDERSTATUS_MISSING_CLT_KEY);
                if ( szTmp[0] == 0 )
                        throw new CWEBCLNT_ERR(
ERR_ORDERSTATUS_MISSING_CID_CLT );

                _strupr( szTmp );
                if ( strlen(szTmp) >
LAST_NAME_LEN )
                        throw new CWEBCLNT_ERR(
ERR_ORDERSTATUS_CLT_RANGE );
```

```
                strcpy(pOrderStatusData->c_last,
szTmp);
                // pad with spaces so that the
client layer doesn't have to do it
                // before passing parameters to
stored procedure
                iLen = strlen(pOrderStatusData-
>c_last);
                memset(pOrderStatusData->c_last +
iLen, ' ', LAST_NAME_LEN - iLen);
                pOrderStatusData-
>c_last[LAST_NAME_LEN] = 0;
        }
        else
        {        // parse customer id and verify
that last name was NOT entered
                if ( !IsNumeric(szTmp) )
                        throw new CWEBCLNT_ERR(
ERR_ORDERSTATUS_CID_INVALID );
                pOrderStatusData->c_id =
atoi(szTmp);
                GetKeyValue(&ptr, "CLT*", szTmp,
sizeof(szTmp), ERR_ORDERSTATUS_MISSING_CLT_KEY);
                if ( szTmp[0] != 0 )
                        throw new CWEBCLNT_ERR(
ERR_ORDERSTATUS_CID_AND_CLT );
        }

}

/* FUNCTION: BOOL IsNumeric(char *ptr)
 *
 * PURPOSE:       This function determines if a
string is numeric. It fails if any characters other
 *                       than numeric and null
terminator are present.
 *
 * ARGUMENTS:       char
 *       *ptr       pointer to string to check.
 *
 * RETURNS:                BOOL       FALSE       if
string is not all numeric
 *
 *        TRUE        if string contains only numeric
characters i.e. '0' - '9'
 */

BOOL IsNumeric(char *ptr)
{
        if ( *ptr == 0 )
                return FALSE;

        while( *ptr && isdigit(*ptr) )
                ptr++;
        return ( !*ptr );
}

/* FUNCTION: BOOL IsDecimal(char *ptr)
 *
 * PURPOSE:       This function determines if a
string is a non-negative decimal value.
 *        It fails if any characters other than a
series of numbers followed by
```

```
 *                         a decimal point,
another series of numbers, and a null terminator are
present.
 *
 * ARGUMENTS:       char
 *       *ptr       pointer to string to check.
 *
 * RETURNS:                BOOL       FALSE       if
string is not a valid non-negative decimal value
 *
 *        TRUE       if string is OK
 */

BOOL IsDecimal(char *ptr)
{
        char *dotptr;
        BOOL  bValid;

        if ( *ptr == 0 )
                return FALSE;

        // find decimal point
        dotptr = strchr( ptr, '.' );
        if (dotptr == NULL)
                // no decimal point, so just
check for numeric
                return IsNumeric(ptr);
        *dotptr = 0;  // temporarily replace
decimal with a terminator

        if ( *ptr != 0 )
                bValid = IsNumeric(ptr);
        // string starts with decimal point
        else if (*(dotptr+1) == 0)
                return FALSE;  // nothing but a
decimal point is bad
        else
                bValid = TRUE;

        if (*(dotptr+1) != 0)
                // check text after decimal point
                bValid &= IsNumeric(dotptr+1);

        *dotptr = '.';  // replace decimal point
        return bValid;
}
```

tpcc.def

```
LIBRARY TPCC.DLL

EXPORTS

        GetExtensionVersion @1
        HttpExtensionProc   @2
        TerminateExtension  @3
```

tpcc.h

```
/*       FILE:               TPCC.H
 *                                    Microsoft
TPC-C Kit Ver. 4.69.000
 *                                    Copyright
Microsoft, 1999
 *        All Rights Reserved
 *
 *                                    Version
4.10.000 audited by Richard Gimarc, Performance
Metrics, 3/17/99
 *
 *        PURPOSE:  Header file for ISAPI TPCC.DLL,
defines structures and functions used in the isapi
tpcc.dll.
 *
 */

//VERSION RESOURCE DEFINES
#define _APS_NEXT_RESOURCE_VALUE
                101
#define _APS_NEXT_COMMAND_VALUE
                40001
#define _APS_NEXT_CONTROL_VALUE
                1000
#define _APS_NEXT_SYMED_VALUE
                101

#define TP_MAX_RETRIES
                                50


//note that the welcome form must be processed first
as terminal ids assigned here, once the
//terminal id is assigned then the forms can be
processed in any order.
#define WELCOME_FORM
                1
        //beginning form no term id assigned, form
id
#define MAIN_MENU_FORM
                2
        //term id assigned main menu form id
#define NEW_ORDER_FORM
                3
        //new order form id
#define PAYMENT_FORM
                4
        //payment form id
#define DELIVERY_FORM
                5
        //delivery form id
#define ORDER_STATUS_FORM
                6              //order
status id
#define STOCK_LEVEL_FORM
                7              //stock level
form id
```

```
//This macro is used to prevent the compiler error
unused formal parameter
#define UNUSEDPARAM(x) (x = x)


//This structure defines the data necessary to keep
distinct for each terminal or client connection.
typedef struct _CLIENTDATA
{
        int                     iNextFree;
                                //index of
next free element or -1 if this entry in use.
        int                     w_id;
                                //warehouse
id assigned at welcome form
        int                     d_id;
                                //district id
assigned at welcome form

        int                     iSyncId;
                        //syncronization id
        int                     iTickCount;
                                //time of
last access;

        CTPCC_BASE      *pTxn;

} CLIENTDATA, *PCLIENTDATA;


//This structure is used to define the operational
interface for terminal id support
typedef struct _TERM
{
        int                     iNumEntries;

        //total allocated terminal array entries
        int                     iFreeList;

        //next available terminal array element or
-1 if none
        int
        iMasterSyncId;
                //syncronization id
        CLIENTDATA       *pClientData;
                                //pointer to
allocated client data
} TERM;

typedef TERM *PTERM;
                                //pointer to
terminal structure type


        enum WEBERROR
        {
                NO_ERR,
                ERR_COMMAND_UNDEFINED,
                ERR_D_ID_INVALID,
                ERR_DELIVERY_CARRIER_ID_RANGE,
                ERR_DELIVERY_CARRIER_INVALID,
                ERR_DELIVERY_MISSING_OCD_KEY,
                ERR_DELIVERY_THREAD_FAILED,
```

```
                ERR_GETPROCADDR_FAILED,
                ERR_HTML_ILL_FORMED,
                ERR_INVALID_SYNC_CONNECTION,
                ERR_INVALID_TERMID,
                ERR_LOADDLL_FAILED,
                ERR_MAX_CONNECTIONS_EXCEEDED,
                ERR_MEM_ALLOC_FAILED,
                ERR_MISSING_REGISTRY_ENTRIES,
                ERR_NEWORDER_CUSTOMER_INVALID,
                ERR_NEWORDER_CUSTOMER_KEY,
                ERR_NEWORDER_DISTRICT_INVALID,
                ERR_NEWORDER_FORM_MISSING_DID,
                ERR_NEWORDER_ITEMID_INVALID,
                ERR_NEWORDER_ITEMID_RANGE,

ERR_NEWORDER_ITEMID_WITHOUT_SUPPW,
                ERR_NEWORDER_MISSING_IID_KEY,
                ERR_NEWORDER_MISSING_QTY_KEY,
                ERR_NEWORDER_MISSING_SUPPW_KEY,
                ERR_NEWORDER_NOITEMS_ENTERED,
                ERR_NEWORDER_QTY_INVALID,
                ERR_NEWORDER_QTY_RANGE,
                ERR_NEWORDER_QTY_WITHOUT_SUPPW,
                ERR_NEWORDER_SUPPW_INVALID,
                ERR_NO_SERVER_SPECIFIED,
                ERR_ORDERSTATUS_CID_AND_CLT,
                ERR_ORDERSTATUS_CID_INVALID,
                ERR_ORDERSTATUS_CLT_RANGE,
                ERR_ORDERSTATUS_DID_INVALID,
                ERR_ORDERSTATUS_MISSING_CID_CLT,
                ERR_ORDERSTATUS_MISSING_CID_KEY,
                ERR_ORDERSTATUS_MISSING_CLT_KEY,
                ERR_ORDERSTATUS_MISSING_DID_KEY,
                ERR_PAYMENT_CDI_INVALID,
                ERR_PAYMENT_CID_AND_CLT,
                ERR_PAYMENT_CUSTOMER_INVALID,
                ERR_PAYMENT_CWI_INVALID,
                ERR_PAYMENT_DISTRICT_INVALID,
                ERR_PAYMENT_HAM_INVALID,
                ERR_PAYMENT_HAM_RANGE,
                ERR_PAYMENT_LAST_NAME_TO_LONG,
                ERR_PAYMENT_MISSING_CDI_KEY,
                ERR_PAYMENT_MISSING_CID_CLT,
                ERR_PAYMENT_MISSING_CID_KEY,
                ERR_PAYMENT_MISSING_CLT,
                ERR_PAYMENT_MISSING_CLT_KEY,
                ERR_PAYMENT_MISSING_CWI_KEY,
                ERR_PAYMENT_MISSING_DID_KEY,
                ERR_PAYMENT_MISSING_HAM_KEY,

        ERR_STOCKLEVEL_MISSING_THRESHOLD_KEY,
                ERR_STOCKLEVEL_THRESHOLD_INVALID,
                ERR_STOCKLEVEL_THRESHOLD_RANGE,
                ERR_VERSION_MISMATCH,
                ERR_W_ID_INVALID
        };

class CWEBCLNT_ERR : public CBaseErr
{
        public:

                CWEBCLNT_ERR(WEBERROR Err)
                {
```

```
                        m_Error = Err;
                        m_szTextDetail = NULL;
                        m_SystemErr = 0;
                        m_szErrorText = NULL;
                };

                CWEBCLNT_ERR(WEBERROR Err, char
*szTextDetail, DWORD dwSystemErr)
                {
                        m_Error = Err;
                        m_szTextDetail = new
char[strlen(szTextDetail)+1];
                        strcpy( m_szTextDetail,
szTextDetail );
                        m_SystemErr =
dwSystemErr;
                        m_szErrorText = NULL;
                };

                ~CWEBCLNT_ERR()
                {
                        if (m_szTextDetail !=
NULL)
                                delete []
m_szTextDetail;
                        if (m_szErrorText !=
NULL)
                                delete []
m_szErrorText;
                };

                WEBERROR  m_Error;
                char
        *m_szTextDetail;    //
                char
        *m_szErrorText;
                DWORD           m_SystemErr;

                int ErrorType() {return
ERR_TYPE_WEBDLL;};
                char *ErrorTypeStr() { return
"WEBCLIENT"; }
                int ErrorNum() {return m_Error;};
                char *ErrorText();

};

//These constants have already been defined in
engstut.h, but since we do
//not want to include it in the delisrv executable
#define   TXN_EVENT_START         2
#define   TXN_EVENT_STOP          4
#define TXN_EVENT_WARNING      6
        //used to record a warning into the log

//function prototypes

BOOL APIENTRY DllMain(HANDLE hModule, DWORD
ul_reason_for_call, LPVOID lpReserved);
void WriteMessageToEventLog(LPTSTR lpszMsg);
void ProcessQueryString(EXTENSION_CONTROL_BLOCK
*pECB, int *pCmd, int *pFormId, int *pTermId, int
*pSyncId);
```

```
void WelcomeForm(EXTENSION_CONTROL_BLOCK *pECB, char
*szBuffer);
void SubmitCmd(EXTENSION_CONTROL_BLOCK *pECB, char
*szBuffer);
void BeginCmd(EXTENSION_CONTROL_BLOCK *pECB, int
iFormId, int iTermId);
void ProcessCmd(EXTENSION_CONTROL_BLOCK *pECB, int
iFormId, int iTermId);
void StatsCmd(EXTENSION_CONTROL_BLOCK *pECB, char
*szBuffer);
void ErrorMessage(EXTENSION_CONTROL_BLOCK *pECB, int
iError, int iErrorType, char *szMsg, int iTermId);
void GetKeyValue(char **pQueryString, char *pKey,
char *pValue, int iMax, WEBERROR err);
int  GetIntKeyValue(char **pQueryString, char *pKey,
WEBERROR NoKeyErr, WEBERROR NotIntErr);
void TermInit(void);
void TermDeleteAll(void);
int  TermAdd(void);
void TermDelete(int id);
void ErrorForm(EXTENSION_CONTROL_BLOCK *pECB, int
iType, int iErrorNum, int iTermId, int iSyncId, char
*szErrorText, char *szBuffer );
void MakeMainMenuForm(int iTermId, int iSyncId, char
*szForm);
void MakeStockLevelForm(int iTermId, STOCK_LEVEL_DATA
*pStockLevelData, BOOL bInput, char *szForm);
void MakeNewOrderForm(int iTermId, NEW_ORDER_DATA
*pNewOrderData, BOOL bInput, char *szForm);
void MakePaymentForm(int iTermId, PAYMENT_DATA
*pPaymentData, BOOL bInput, char *szForm);
void MakeOrderStatusForm(int iTermId,
ORDER_STATUS_DATA *pOrderStatusData, BOOL bInput,
char *szForm);
void MakeDeliveryForm(int iTermId, DELIVERY_DATA
*pDeliveryData, BOOL bInput, char *szForm);
void ProcessNewOrderForm(EXTENSION_CONTROL_BLOCK
        *pECB, int iTermId, char *szBuffer);
void ProcessPaymentForm(EXTENSION_CONTROL_BLOCK
*pECB, int iTermId, char *szBuffer);
void ProcessOrderStatusForm(EXTENSION_CONTROL_BLOCK
*pECB, int iTermId, char *szBuffer);
void ProcessDeliveryForm(EXTENSION_CONTROL_BLOCK
*pECB, int iTermId, char *szBuffer);
void ProcessStockLevelForm(EXTENSION_CONTROL_BLOCK
*pECB, int iTermId, char *szBuffer);
void GetNewOrderData(LPSTR lpszQueryString,
NEW_ORDER_DATA *pNewOrderData);
void GetPaymentData(LPSTR lpszQueryString,
PAYMENT_DATA *pPaymentData);
void GetOrderStatusData(LPSTR lpszQueryString,
ORDER_STATUS_DATA *pOrderStatusData);
BOOL PostDeliveryInfo(long w_id, short o_carrier_id);
BOOL IsNumeric(char *ptr);
BOOL IsDecimal(char *ptr);
void DeliveryWorkerThread(void *ptr);
// Separate function to be able to use Win32
exception handling in
// HttpExtensionProc.
void ProcessCommand(EXTENSION_CONTROL_BLOCK *pECB,
char* szBuffer, int& TermId, int& iSyncId);
```

tpcc.rc

```
//Microsoft Developer Studio generated resource
script.
//
#include "resource.h"

#define APSTUDIO_READONLY_SYMBOLS
/////////////////////////////////////////////////////
////////////////////////
//
// Generated from the TEXTINCLUDE 2 resource.
//
#include "afxres.h"


/////////////////////////////////////////////////////
////////////////////////
#undef APSTUDIO_READONLY_SYMBOLS

/////////////////////////////////////////////////////
////////////////////////
// English (U.S.) resources

#if !defined(AFX_RESOURCE_DLL) ||
defined(AFX_TARG_ENU)
#ifdef _WIN32
LANGUAGE LANG_ENGLISH, SUBLANG_ENGLISH_US
#pragma code_page(1252)
#endif //_WIN32

#ifndef _MAC
/////////////////////////////////////////////////////
////////////////////////
//
// Version
//

VS_VERSION_INFO VERSIONINFO
 FILEVERSION 0,4,0,0
 PRODUCTVERSION 0,4,0,0
 FILEFLAGSMASK 0x3fL
#ifdef _DEBUG
 FILEFLAGS 0x1L
#else
 FILEFLAGS 0x0L
#endif
 FILEOS 0x40004L
 FILETYPE 0x2L
 FILESUBTYPE 0x0L
BEGIN
    BLOCK "StringFileInfo"
    BEGIN
        BLOCK "040904b0"
        BEGIN
            VALUE "Comments", "TPC-C HTML DLL
Server\0"
            VALUE "CompanyName", "Microsoft\0"
            VALUE "FileDescription", "TPC-C HTML DLL
Server\0"
            VALUE "FileVersion", "0, 4, 0, 0\0"
            VALUE "InternalName", "tpcc\0"
```

```
            VALUE "LegalCopyright", "Copyright ¬
1997\0"
            VALUE "OriginalFilename", "tpcc.dll\0"
            VALUE "ProductName", "Microsoft tpcc\0"
            VALUE "ProductVersion", "0, 4, 0, 0\0"
        END
    END
    BLOCK "VarFileInfo"
    BEGIN
        VALUE "Translation", 0x409, 1200
    END
END

#endif    // !_MAC


#ifdef APSTUDIO_INVOKED
/////////////////////////////////////////////////////
////////////////////////
//
// TEXTINCLUDE
//

1 TEXTINCLUDE DISCARDABLE
BEGIN
    "resource.h\0"
END

2 TEXTINCLUDE DISCARDABLE
BEGIN
    "#include ""afxres.h""\r\n"
    "\0"
END

3 TEXTINCLUDE DISCARDABLE
BEGIN
    "\r\n"
    "\0"
END

#endif    // APSTUDIO_INVOKED


/////////////////////////////////////////////////////
////////////////////////
//
// Dialog
//

IDD_DIALOG1 DIALOG DISCARDABLE  0, 0, 186, 95
STYLE DS_MODALFRAME | WS_POPUP | WS_CAPTION |
WS_SYSMENU
CAPTION "Dialog"
FONT 8, "MS Sans Serif"
BEGIN
    DEFPUSHBUTTON    "OK",IDOK,129,7,50,14
    PUSHBUTTON       "Cancel",IDCANCEL,129,24,50,14
END


/////////////////////////////////////////////////////
////////////////////////
//
```

```
// DESIGNINFO
//

#ifdef APSTUDIO_INVOKED
GUIDELINES DESIGNINFO DISCARDABLE
BEGIN
    IDD_DIALOG1, DIALOG
    BEGIN
        LEFTMARGIN, 7
        RIGHTMARGIN, 179
        TOPMARGIN, 7
        BOTTOMMARGIN, 88
    END
END
#endif    // APSTUDIO_INVOKED

#endif    // English (U.S.) resources
//////////////////////////////////////////////////////
//////////////////////////


#ifndef APSTUDIO_INVOKED
//////////////////////////////////////////////////////
//////////////////////////
//
// Generated from the TEXTINCLUDE 3 resource.
//


//////////////////////////////////////////////////////
//////////////////////////
#endif    // not APSTUDIO_INVOKED
```

tpcc_com.cpp

```
/*      FILE:           TPCC_COM.CPP
 *                                       Microsoft
TPC-C Kit Ver. 4.69.000
 *                                       Copyright
Microsoft, 1999
 *          All Rights Reserved
 *
 *                                       not yet
audited
 *
 *      PURPOSE: Source file for TPC-C COM+ class
implementation.
 *      Contact: Charles Levine
(clevine@microsoft.com)
 *
 *  Change history:
 *              4.20.000 - first version
 *              4.69.000 - updated rev number to
match kit
 */

// needed for CoinitializeEx
#define _WIN32_WINNT 0x0400
```

```
#include <windows.h>

// need to declare functions for export
#define DllDecl __declspec( dllexport )

#include "..\..\common\src\trans.h"
            //tpckit transaction header contains
definations of structures specific to TPC-C
#include "..\..\common\src\error.h"
#include "..\..\common\src\txn_base.h"
#include "..\..\common\src\tpcc_com_errorcode.h"
#include "tpcc_com.h"

#include "..\..\tpcc_com_ps\src\tpcc_com_ps_i.c"
#include "..\..\tpcc_com_all\src\tpcc_com_all_i.c"

// wrapper routine for class constructor
__declspec(dllexport) CTPCC_COM* CTPCC_COM_new(BOOL
bSinglePool)
{
        return new CTPCC_COM(bSinglePool);
}

CTPCC_COM::CTPCC_COM(BOOL bSinglePool)
{
        HRESULT hr = NULL;
        long lRet = 0;
        ULONG ulTmpSize = 0;

        m_pTxn                  = NULL;
        m_pNewOrder             = NULL;
        m_pPayment              = NULL;
        m_pStockLevel     = NULL;
        m_pOrderStatus    = NULL;

        m_bSinglePool     = bSinglePool;

        ulTmpSize = (ULONG) sizeof(COM_DATA);
        VariantInit(&m_vTxn);
        m_vTxn.vt = VT_SAFEARRAY;

        m_vTxn.parray =
SafeArrayCreateVector(VT_UI1, ulTmpSize, ulTmpSize);
        if (!m_vTxn.parray)
                throw new CCOMERR( E_FAIL );

        memset((void*)m_vTxn.parray-
>pvData,0,ulTmpSize);
        m_pTxn = (COM_DATA*)m_vTxn.parray->pvData;

        hr = CoInitializeEx(NULL,
COINIT_MULTITHREADED);
        if (FAILED(hr))
        {
                throw new CCOMERR( hr );
        }
        // create components
        if (m_bSinglePool)
        {
```

```
                hr = CoCreateInstance(CLSID_TPCC,
NULL, CLSCTX_SERVER, IID_ITPCC, (void
**)&m_pNewOrder);
                if (FAILED(hr))
                        throw new CCOMERR(hr);

                // all txns will use same
component
                m_pPayment = m_pNewOrder;
                m_pStockLevel = m_pNewOrder;
                m_pOrderStatus = m_pNewOrder;
        }
        else
        {
                // use different components for
each txn

                hr =
CoCreateInstance(CLSID_NewOrder, NULL, CLSCTX_SERVER,
IID_ITPCC, (void **)&m_pNewOrder);
                if (FAILED(hr))
                        throw new CCOMERR(hr);

                hr =
CoCreateInstance(CLSID_Payment, NULL, CLSCTX_SERVER,
IID_ITPCC, (void **)&m_pPayment);
                if (FAILED(hr))
                        throw new CCOMERR(hr);

                hr =
CoCreateInstance(CLSID_StockLevel, NULL,
CLSCTX_SERVER, IID_ITPCC, (void **)&m_pStockLevel);
                if (FAILED(hr))
                        throw new CCOMERR(hr);

                hr =
CoCreateInstance(CLSID_OrderStatus, NULL,
CLSCTX_SERVER, IID_ITPCC, (void **)&m_pOrderStatus);
                if (FAILED(hr))
                        throw new CCOMERR(hr);
        }

        // call setcomplete to release each
component back into pool
        hr = m_pNewOrder->CallSetComplete();
        if (FAILED(hr))
                throw new CCOMERR(hr);

        if (!m_bSinglePool)
        {
                hr = m_pPayment-
>CallSetComplete();
                if (FAILED(hr))
                        throw new CCOMERR(hr);

                hr = m_pStockLevel-
>CallSetComplete();
                if (FAILED(hr))
                        throw new CCOMERR(hr);

                hr = m_pOrderStatus-
>CallSetComplete();
                if (FAILED(hr))
```

```
                throw new CCOMERR(hr);
        }
}

CTPCC_COM::~CTPCC_COM()
{
        if (m_pTxn)
                SafeArrayDestroy(m_vTxn.parray);

        ReleaseInterface(m_pNewOrder);
        if (!m_bSinglePool)
        {
                ReleaseInterface(m_pPayment);
                ReleaseInterface(m_pStockLevel);
                ReleaseInterface(m_pOrderStatus);
        }
        CoUninitialize();
}

void CTPCC_COM::NewOrder()
{
        VARIANT              vTxn_out;

        HRESULT hr = m_pNewOrder->NewOrder(m_vTxn,
&vTxn_out);

        if (FAILED(hr) && hr != E_TPCCCOM)
                throw new CCOMERR( hr );       //
COM call didn't succeed and there is no output
structure

        memcpy(m_pTxn, (void *)vTxn_out.parray-
>pvData,vTxn_out.parray->rgsabound[0].cElements);
        hr = SafeArrayDestroy(vTxn_out.parray);
        if (hr != S_OK)
                throw new CCOMERR( hr );

        if ( m_pTxn->ErrorType != ERR_SUCCESS )
                throw new CCOMERR( m_pTxn-
>ErrorType, m_pTxn->error );
}

void CTPCC_COM::Payment()
{
        VARIANT              vTxn_out;

        HRESULT hr = m_pPayment->Payment(m_vTxn,
&vTxn_out);

        if (FAILED(hr) && hr != E_TPCCCOM)
                throw new CCOMERR( hr );       //
COM call didn't succeed and there is no output
structure

        memcpy(m_pTxn, (void *)vTxn_out.parray-
>pvData,vTxn_out.parray->rgsabound[0].cElements);
        hr = SafeArrayDestroy(vTxn_out.parray);
        if (hr != S_OK)
                throw new CCOMERR( hr );

        if ( m_pTxn->ErrorType != ERR_SUCCESS )
                throw new CCOMERR( m_pTxn-
>ErrorType, m_pTxn->error );
```

```
}

void CTPCC_COM::StockLevel()
{
        VARIANT              vTxn_out;

        HRESULT hr = m_pStockLevel-
>StockLevel(m_vTxn, &vTxn_out);

        if (FAILED(hr) && hr != E_TPCCCOM)
                throw new CCOMERR( hr );       //
COM call didn't succeed and there is no output
structure

        memcpy(m_pTxn, (void *)vTxn_out.parray-
>pvData,vTxn_out.parray->rgsabound[0].cElements);
        hr = SafeArrayDestroy(vTxn_out.parray);
        if (hr != S_OK)
                throw new CCOMERR( hr );

        if ( m_pTxn->ErrorType != ERR_SUCCESS )
                throw new CCOMERR( m_pTxn-
>ErrorType, m_pTxn->error );
}

void CTPCC_COM::OrderStatus()
{
        VARIANT              vTxn_out;

        HRESULT hr = m_pOrderStatus-
>OrderStatus(m_vTxn, &vTxn_out);

        if (FAILED(hr) && hr != E_TPCCCOM)
                throw new CCOMERR( hr );       //
COM call didn't succeed and there is no output
structure

        memcpy(m_pTxn, (void *)vTxn_out.parray-
>pvData,vTxn_out.parray->rgsabound[0].cElements);
        hr = SafeArrayDestroy(vTxn_out.parray);
        if (hr != S_OK)
                throw new CCOMERR( hr );

        if ( m_pTxn->ErrorType != ERR_SUCCESS )
                throw new CCOMERR( m_pTxn-
>ErrorType, m_pTxn->error );
}
```

tpcc_com.h

```
/*      FILE:              TPCC_COM.H
 *                                 Microsoft
TPC-C Kit Ver. 4.69.000
 *                                 Copyright
Microsoft, 1999
 *         All Rights Reserved
 *
 *                                 not yet
audited
 *
```

```
 *      PURPOSE:  Header file for TPC-C COM+ class
implementation.
 *
 *  Change history:
 *              4.20.000 - first version
 *              4.69.000 - updated rev number to
match kit
 */

#pragma once

#include <stdio.h>
#include "..\..\tpcc_com_ps\src\tpcc_com_ps.h"

// need to declare functions for import, unless
define has already been created
// by the DLL's .cpp module for export.
#ifndef DllDecl
#define DllDecl  __declspec( dllimport )
#endif

class CCOMERR : public CBaseErr
{
        private:
                char m_szErrorText[64];

        public:
                // use this interface for genuine
COM errors
                CCOMERR( HRESULT hr )
                {
                        m_hr = hr;
                        m_iErrorType = 0;
                        m_iError = 0;
                }

                // use this interface to
impersonate a non-COM error type
                CCOMERR( int iErrorType, int
iError )
                {
                        m_iErrorType =
iErrorType;
                        m_iError = iError;
                        m_hr = S_OK;
                }

                int              m_hr;
                int              m_iErrorType;
                int              m_iError;

                // A CCOMERR class can
impersonate another class, which happens if the error
                // was not actually a COM
Services error, but was simply transmitted back via
COM.
                int ErrorType()
                {
                        if (m_iErrorType == 0)
                                return
ERR_TYPE_COM;
                        else
```

```
                                    return
m_iErrorType;
            }

            char *ErrorTypeStr() { return
"COM"; }

            int ErrorNum()
            {
                    if (m_iErrorType == 0)
                            return m_hr;
            // return COM error
                    else
                            return
m_iError; // return impersonated error
            }

            char *ErrorText()
            {
                    if (m_hr == S_OK)
                            sprintf(
m_szErrorText, "Error: Class %d, error # %d",
m_iErrorType, m_iError );
                    else
                            sprintf(
m_szErrorText, "Error: COM HRESULT %x", m_hr );
                    return m_szErrorText;
            }
};

class DllDecl CTPCC_COM : public CTPCC_BASE
{
        private:
            BOOL m_bSinglePool;

            // COM Interface pointers
            ITPCC*
m_pNewOrder;
            ITPCC*
m_pPayment;
            ITPCC*
m_pStockLevel;
            ITPCC*
m_pOrderStatus;

            struct COM_DATA
            {
                    int ErrorType;
                    int error;
                    union
                    {

NEW_ORDER_DATA              NewOrder;
                            PAYMENT_DATA
Payment;
                            DELIVERY_DATA
Delivery;

STOCK_LEVEL_DATA    StockLevel;

ORDER_STATUS_DATA   OrderStatus;
                    } u;
            } *m_pTxn;
```

```
                    VARIANT m_vTxn;
            public:
                    CTPCC_COM(BOOL bSinglePool);
                    ~CTPCC_COM(void);

                    inline PNEW_ORDER_DATA
BuffAddr_NewOrder()          { return
&m_pTxn->u.NewOrder;   };
                    inline PPAYMENT_DATA
BuffAddr_Payment()           { return
&m_pTxn->u.Payment;    };
                    inline PDELIVERY_DATA
BuffAddr_Delivery()          { return
&m_pTxn->u.Delivery;   };
                    inline PSTOCK_LEVEL_DATA
BuffAddr_StockLevel()        { return
&m_pTxn->u.StockLevel; };
                    inline PORDER_STATUS_DATA
BuffAddr_OrderStatus()       { return
&m_pTxn->u.OrderStatus; };

                    void NewOrder            ();
                    void Payment             ();
                    void StockLevel          ();
                    void OrderStatus    ();
                    void Delivery            ()
{ throw new CCOMERR(E_NOTIMPL); }  // not supported

};


inline void ReleaseInterface(IUnknown *pUnk)
{
            if (pUnk)
            {
                    pUnk->Release();
                    pUnk = NULL;
            }
}


// wrapper routine for class constructor
extern "C" __declspec(dllexport) CTPCC_COM*
CTPCC_COM_new(BOOL);


typedef CTPCC_COM* (TYPE_CTPCC_COM)(BOOL);
```

tpcc_com_all.cpp

```
/*      FILE:               TPCC_COM_ALL.CPP
 *                                      Microsoft
TPC-C Kit Ver. 4.69.000
 *                                      Copyright
Microsoft, 1999
 *              All Rights Reserved
 *
```

```
 *                                      Version
4.10.000 audited by Richard Gimarc, Performance
Metrics, 3/17/99
 *
 *      PURPOSE:  Implementation for TPC-C class.
 *      Contact:  Charles Levine
(clevine@microsoft.com)
 *
 *  Change history:
 *              4.20.000 - updated rev number to
match kit
 *              4.69.000 - updated rev number to
match kit
 */

#define STRICT
#define _WIN32_WINNT 0x0400
#define _ATL_APARTMENT_THREADED

#include <stdio.h>
#include <atlbase.h>
//You may derive a class from CComModule and use it
if you want to override
//something, but do not change the name of _Module
extern CComModule _Module;

#include <atlcom.h>
#include <initguid.h>
#include <transact.h>
//#include <atlimpl.cpp>
#include <comsvcs.h>

#include <sqltypes.h>
#include <sql.h>
#include <sqlext.h>

#include "tpcc_com_ps.h"
#include "..\..\common\src\trans.h"
                            //tpckit transaction
header contains definations of structures specific to
TPC-C
#include "..\..\common\src\txn_base.h"
#include "..\..\common\src\error.h"
#include "..\..\common\src\ReadRegistry.h"
#include "..\..\common\src\tpcc_com_errorcode.h"
#include "..\..\db_odbc_dll\src\tpcc_odbc.h"
            // ODBC implementation of TPC-C txns

#include "resource.h"
#include "tpcc_com_all.h"
#include "tpcc_com_all_i.c"
#include "Methods.h"
#include "..\..\tpcc_com_ps\src\tpcc_com_ps_i.c"
#include "..\..\common\src\ReadRegistry.cpp"

CComModule _Module;

BEGIN_OBJECT_MAP(ObjectMap)
        OBJECT_ENTRY(CLSID_TPCC, CTPCC)
        OBJECT_ENTRY(CLSID_NewOrder, CNewOrder)
        OBJECT_ENTRY(CLSID_OrderStatus,
COrderStatus)
        OBJECT_ENTRY(CLSID_Payment, CPayment)
```

```
        OBJECT_ENTRY(CLSID_StockLevel, CStockLevel)
END_OBJECT_MAP()


// configuration settings from registry
TPCCREGISTRYDATA    Reg;
char
        szMyComputerName[MAX_COMPUTERNAME_LENGTH+1]
;

static  HINSTANCE hLibInstanceDb = NULL;

TYPE_CTPCC_ODBC            *pCTPCC_ODBC_new;

// Critical section to synchronize connection open
and close.
//
CRITICAL_SECTION hConnectCriticalSection;

///////////////////////////////////////////////////
/////////////////////////
// DLL Entry Point

extern "C"
BOOL WINAPI DllMain(HINSTANCE hInstance, DWORD
dwReason, LPVOID /*lpReserved*/)
{
        char szDllName[128];

        try
        {
                if (dwReason ==
DLL_PROCESS_ATTACH)
                {
                        _Module.Init(ObjectMap,
hInstance);

        DisableThreadLibraryCalls(hInstance);

                        DWORD dwSize =
MAX_COMPUTERNAME_LENGTH+1;

        GetComputerName(szMyComputerName, &dwSize);

        szMyComputerName[dwSize] = 0;

                        if (
ReadTPCCRegistrySettings( &Reg ) )
                                        throw new
CCOMPONENT_ERR( ERR_MISSING_REGISTRY_ENTRIES );

                        if (Reg.eDB_Protocol ==
ODBC)
                        {
                                        strcpy(
szDllName, Reg.szPath );
                                        strcat(
szDllName, "tpcc_odbc.dll");

        hLibInstanceDb = LoadLibrary( szDllName );
                                        if
(hLibInstanceDb == NULL)
```

```
                throw new CCOMPONENT_ERR(
ERR_LOADDLL_FAILED, szDllName, GetLastError() );
                                        // get
function pointer to wrapper for class constructor

        pCTPCC_ODBC_new = (TYPE_CTPCC_ODBC*)
GetProcAddress(hLibInstanceDb,"CTPCC_ODBC_new");
                                        if
(pCTPCC_ODBC_new == NULL)

                throw new CCOMPONENT_ERR(
ERR_GETPROCADDR_FAILED, szDllName, GetLastError() );
                        }
                        else
                                        throw new
CCOMPONENT_ERR( ERR_UNKNOWN_DB_PROTOCOL );

                        if (Reg.dwConnectDelay
> 0)
                        {

        InitializeCriticalSection(&hConnectCritical
Section);
                        }

                }
                else if (dwReason ==
DLL_PROCESS_DETACH)
                                _Module.Term();

        }
        catch (CBaseErr *e)
        {
                TCHAR szMsg[256];

                _sntprintf(szMsg, sizeof(szMsg),
"%s error, code %d: %s",
                                        e-
>ErrorTypeStr(), e->ErrorNum(), e->ErrorText());
                WriteMessageToEventLog( szMsg );

                delete e;
                return FALSE;
        }
        catch (...)
        {

        WriteMessageToEventLog(TEXT("Unhandled
exception in object DllMain"));
                return FALSE;
        }

        return TRUE;       // OK
}

///////////////////////////////////////////////////
/////////////////////////
// Used to determine whether the DLL can be unloaded
by OLE

STDAPI DllCanUnloadNow(void)
```

```
{
        return (_Module.GetLockCount()==0) ? S_OK :
S_FALSE;
}

///////////////////////////////////////////////////
/////////////////////////
// Returns a class factory to create an object of the
requested type
STDAPI DllGetClassObject(REFCLSID rclsid, REFIID
riid, LPVOID* ppv)
{
        return _Module.GetClassObject(rclsid, riid,
ppv);
}

///////////////////////////////////////////////////
/////////////////////////
// DllRegisterServer - Adds entries to the system
registry

STDAPI DllRegisterServer(void)
{
        // registers object, typelib and all
interfaces in typelib
        return _Module.RegisterServer(TRUE);
}

///////////////////////////////////////////////////
/////////////////////////
// DllUnregisterServer - Removes entries from the
system registry

STDAPI DllUnregisterServer(void)
{
        _Module.UnregisterServer();
        return S_OK;
}


static void WriteMessageToEventLog(LPTSTR lpszMsg)
{
    TCHAR  szMsg[256];
    HANDLE hEventSource;
    LPTSTR lpszStrings[2];

    // Use event logging to log the error.
    //
    hEventSource = RegisterEventSource(NULL,
TEXT("tpcc_com_all.dll"));

    _stprintf(szMsg, TEXT("Error in COM+ TPC-C
Component: "));
    lpszStrings[0] = szMsg;
    lpszStrings[1] = lpszMsg;

    if (hEventSource != NULL)
        {
        ReportEvent(hEventSource, // handle of event
source
            EVENTLOG_ERROR_TYPE, // event type
            0,                   // event category
```

```
        0,                      // event ID
        NULL,                   // current user's
SID
        2,                      // strings in
lpszStrings
        0,                      // no bytes of raw
data
        (LPCTSTR *)lpszStrings,    // array of
error strings
        NULL);                  // no raw data

    (VOID) DeregisterEventSource(hEventSource);
  }
}

inline void ReleaseInterface(IUnknown *pUnk)
{
        if (pUnk)
        {
                pUnk->Release();
                pUnk = NULL;
        }
}

/* FUNCTION: CCOMPONENT_ERR::ErrorText
 *
 */

char* CCOMPONENT_ERR::ErrorText(void)
{
        static SERRORMSG errorMsgs[] =
        {
                { ERR_MISSING_REGISTRY_ENTRIES,
        "Required entries missing from registry."
                                },
                { ERR_LOADDLL_FAILED,
        "Load of DLL failed.  DLL="

                },
                { ERR_GETPROCADDR_FAILED,
        "Could not map proc in DLL.  GetProcAddr
error.  DLL="          },
                { ERR_UNKNOWN_DB_PROTOCOL,
        "Unknown database protocol specified in
registry."             },
                { 0,
                                ""


                }
        };

        char szTmp[256];
        int i = 0;
        while (TRUE)
        {
                if (errorMsgs[i].szMsg[0] == 0)
                {
                        strcpy( szTmp, "Unknown
error number." );
                        break;
                }
```

```
                if (m_Error ==
errorMsgs[i].iError)
                {
                        strcpy( szTmp,
errorMsgs[i].szMsg );
                        break;
                }
                i++;
        }

        if (m_szTextDetail)
                strcat( szTmp, m_szTextDetail );
        if (m_SystemErr)
                wsprintf( szTmp+strlen(szTmp), "
Error=%d", m_SystemErr );

        m_szErrorText = new char[strlen(szTmp)+1];
        strcpy( m_szErrorText, szTmp );
        return m_szErrorText;
}


CTPCC_Common::CTPCC_Common()
{
        m_pTxn = NULL;
        m_bCanBePooled = TRUE;
}

CTPCC_Common::~CTPCC_Common()
{
        // Pace connection close for VIA.
        //
        if (Reg.dwConnectDelay > 0)
        {
                EnterCriticalSection(&hConnectCriticalSecti
on);

                Sleep(Reg.dwConnectDelay);

                LeaveCriticalSection(&hConnectCriticalSecti
on);
        }

        if (m_pTxn)
        {
                delete m_pTxn;
        }
}

HRESULT CTPCC_Common::CallSetComplete()
{
        IObjectContext* pObjectContext = NULL;

        // get our object context
        HRESULT hr = CoGetObjectContext(
IID_IObjectContext, (void **)&pObjectContext );
        pObjectContext->SetComplete();
        ReleaseInterface(pObjectContext);
        return hr;
}
```

```
//
//      called by the ctor activator
//
STDMETHODIMP CTPCC_Common::Construct(IDispatch *
pUnk)
{
        // Code to access construction string, if
needed later...
        //      if (!pUnk)
        //              return E_UNEXPECTED;
        //      IObjectConstructString * pString
= NULL;
        //      HRESULT hr = pUnk-
>QueryInterface(IID_IObjectConstructString, (void
**)&pString);
        //      pString->Release();

        try
        {
                // Pace connection creation for
VIA.
                //
                if (Reg.dwConnectDelay > 0)
                {
        EnterCriticalSection(&hConnectCriticalSecti
on);

        Sleep(Reg.dwConnectDelay);

        LeaveCriticalSection(&hConnectCriticalSecti
on);
                }

                if (Reg.eDB_Protocol == ODBC)
                        m_pTxn =
pCTPCC_ODBC_new(    Reg.szDbServer, Reg.szDbUser,
Reg.szDbPassword,

        szMyComputerName, Reg.szDbName,

        Reg.szSPPrefix,
Reg.bCallNoDuplicatesNewOrder );
        }
        catch (CBaseErr *e)
        {
                TCHAR szMsg[256];

                _sntprintf(szMsg, sizeof(szMsg),
"%s error in CTPCC_Common::Construct, code %d: %s",
                                        e-
>ErrorTypeStr(), e->ErrorNum(), e->ErrorText());
                WriteMessageToEventLog( szMsg );
                delete e;
                return E_FAIL;
        }
        catch (...)
        {
```

```
        WriteMessageToEventLog(TEXT("Unhandled
exception in object ::Construct"));
                return E_FAIL;
        }

        return S_OK;
}

HRESULT CTPCC_Common::NewOrder(VARIANT txn_in,
VARIANT* txn_out)
{
        PNEW_ORDER_DATA     pNewOrder;
        COM_DATA            *pData;
        COM_DATA            *pOutData;

        try
        {
                // Allocate output structure
first because it is also used in the catch clauses.
                //
                VariantInit(txn_out);
                txn_out->vt = VT_SAFEARRAY;
                txn_out->parray =
SafeArrayCreateVector( VT_UI1,

                txn_in.parray->rgsabound-
>cElements,

                txn_in.parray->rgsabound-
>cElements);
                if (txn_out->parray == NULL)  //
sanity error checking - for very rare case, but to be
sure
                {
                        return E_OUTOFMEMORY;
                }

                pOutData = (COM_DATA*)txn_out-
>parray->pvData;

                pData = (COM_DATA*)txn_in.parray-
>pvData;
                pNewOrder = m_pTxn-
>BuffAddr_NewOrder();

                memcpy(pNewOrder, &pData-
>u.NewOrder, sizeof(NEW_ORDER_DATA));

                m_pTxn->NewOrder();         //
do the actual txn
                memcpy( &pOutData->u.NewOrder,
pNewOrder, sizeof(NEW_ORDER_DATA));

                pOutData->retval = ERR_SUCCESS;
                pOutData->error = 0;
                return S_OK;
        }
        catch (CBaseErr *e)
        {
                // check for lost database
connection; if yes, component is toast
```

```
                if ( ((e->ErrorType() ==
ERR_TYPE_ODBC) && (e->ErrorNum() == 10054)) )
                        m_bCanBePooled = FALSE;

                pOutData->retval = e-
>ErrorType();
                pOutData->error = e->ErrorNum();
                delete e;
                return E_TPCCCOM;

        }
        catch (...)
        {
                WriteMessageToEventLog(TEXT("Unhandled
exception in CTPCC_Common::NewOrder."));
                pOutData->retval =
ERR_TYPE_LOGIC;
                pOutData->error = 0;
                m_bCanBePooled = FALSE;
                return E_TPCCCOM;
        }
}

HRESULT CTPCC_Common::Payment(VARIANT txn_in,
VARIANT* txn_out)
{
        PPAYMENT_DATA       pPayment;
        COM_DATA            *pData;
        COM_DATA            *pOutData;

        try
        {
                // Allocate output structure
first because it is also used in the catch clauses.
                //
                VariantInit(txn_out);
                txn_out->vt = VT_SAFEARRAY;
                txn_out->parray =
SafeArrayCreateVector( VT_UI1,

                txn_in.parray->rgsabound-
>cElements,

                txn_in.parray->rgsabound-
>cElements);
                if (txn_out->parray == NULL)  //
sanity error checking - for very rare case, but to be
sure
                {
                        return E_OUTOFMEMORY;
                }

                pOutData = (COM_DATA*)txn_out-
>parray->pvData;

                pData = (COM_DATA*)txn_in.parray-
>pvData;
                pPayment = m_pTxn-
>BuffAddr_Payment();

                memcpy(pPayment, &pData-
>u.Payment, sizeof(PAYMENT_DATA));
```

```
                m_pTxn->Payment();          //
do the actual txn

                memcpy( &pOutData->u.Payment,
pPayment, sizeof(PAYMENT_DATA));

                pOutData->retval = ERR_SUCCESS;
                pOutData->error = 0;
                return S_OK;
        }
        catch (CBaseErr *e)
        {
                // check for lost database
connection; if yes, component is toast
                if ( ((e->ErrorType() ==
ERR_TYPE_ODBC) && (e->ErrorNum() == 10054)) )
                        m_bCanBePooled = FALSE;

                pOutData->retval = e-
>ErrorType();
                pOutData->error = e->ErrorNum();
                delete e;
                return E_TPCCCOM;
        }
        catch (...)
        {
                WriteMessageToEventLog(TEXT("Unhandled
exception in CTPCC_Common::Payment."));
                pOutData->retval =
ERR_TYPE_LOGIC;
                pOutData->error = 0;
                m_bCanBePooled = FALSE;
                return E_TPCCCOM;
        }
}

HRESULT CTPCC_Common::StockLevel(VARIANT txn_in,
VARIANT* txn_out)
{
        PSTOCK_LEVEL_DATA   pStockLevel;
        COM_DATA                *pData;
        COM_DATA                *pOutData;

        try
        {
                // Allocate output structure
first because it is also used in the catch clauses.
                //
                VariantInit(txn_out);
                txn_out->vt = VT_SAFEARRAY;
                txn_out->parray =
SafeArrayCreateVector( VT_UI1,

                txn_in.parray->rgsabound-
>cElements,

                txn_in.parray->rgsabound-
>cElements);
                if (txn_out->parray == NULL)  //
sanity error checking - for very rare case, but to be
sure
                {
```

```
                    return E_OUTOFMEMORY;
            }

            pOutData = (COM_DATA*)txn_out-
>parray->pvData;

            pData = (COM_DATA*)txn_in.parray-
>pvData;
            pStockLevel = m_pTxn-
>BuffAddr_StockLevel();

            memcpy(pStockLevel, &pData-
>u.StockLevel, sizeof(STOCK_LEVEL_DATA));

            m_pTxn->StockLevel();

            memcpy( &pOutData->u.StockLevel,
pStockLevel, sizeof(STOCK_LEVEL_DATA));

            pOutData->retval = ERR_SUCCESS;
            pOutData->error = 0;
            return S_OK;
        }
        catch (CBaseErr *e)
        {
            // check for lost database
connection; if yes, component is toast
            if ( ((e->ErrorType() ==
ERR_TYPE_ODBC) && (e->ErrorNum() == 10054)) )
                    m_bCanBePooled = FALSE;

            pOutData->retval = e-
>ErrorType();

            pOutData->error = e->ErrorNum();
            delete e;
            return E_TPCCCOM;
        }
        catch (...)
        {
            WriteMessageToEventLog(TEXT("Unhandled
exception in CTPCC_Common::StockLevel."));
            pOutData->retval =
ERR_TYPE_LOGIC;

            pOutData->error = 0;
            m_bCanBePooled = FALSE;
            return E_TPCCCOM;
        }
}

HRESULT CTPCC_Common::OrderStatus(VARIANT txn_in,
VARIANT* txn_out)
{
        PORDER_STATUS_DATA  pOrderStatus;
        COM_DATA                    *pData;
        COM_DATA                    *pOutData;
        try
        {
            // Allocate output structure
first because it is also used in the catch clauses.
            //
            VariantInit(txn_out);
            txn_out->vt = VT_SAFEARRAY;
```

```
            txn_out->parray =
SafeArrayCreateVector( VT_UI1,

                txn_in.parray->rgsabound-
>cElements,

                txn_in.parray->rgsabound-
>cElements);
            if (txn_out->parray == NULL)  //
sanity error checking - for very rare case, but to be
sure
            {
                    return E_OUTOFMEMORY;
            }

            pOutData = (COM_DATA*)txn_out-
>parray->pvData;

            pData = (COM_DATA*)txn_in.parray-
>pvData;
            pOrderStatus = m_pTxn-
>BuffAddr_OrderStatus();

            memcpy(pOrderStatus, &pData-
>u.OrderStatus, sizeof(ORDER_STATUS_DATA));

            m_pTxn->OrderStatus();

            memcpy( &pOutData->u.OrderStatus,
pOrderStatus, sizeof(ORDER_STATUS_DATA));

            pOutData->retval = ERR_SUCCESS;
            pOutData->error = 0;
            return S_OK;
        }
        catch (CBaseErr *e)
        {
            // check for lost database
connection; if yes, component is toast
            if ( ((e->ErrorType() ==
ERR_TYPE_ODBC) && (e->ErrorNum() == 10054)) )
                    m_bCanBePooled = FALSE;

            pOutData->retval = e-
>ErrorType();

            pOutData->error = e->ErrorNum();
            delete e;
            return E_TPCCCOM;
        }
        catch (...)
        {
            WriteMessageToEventLog(TEXT("Unhandled
exception in CTPCC_Common::OrderStatus."));
            pOutData->retval =
ERR_TYPE_LOGIC;

            pOutData->error = 0;
            m_bCanBePooled = FALSE;
            return E_TPCCCOM;
        }
}
```

tpcc_com_all.def

```
; tpcc_com_all.def : Declares the module parameters.

LIBRARY      "tpcc_com_all.dll"

EXPORTS
        DllCanUnloadNow      PRIVATE
        DllGetClassObject    PRIVATE
        DllRegisterServer    PRIVATE
        DllUnregisterServer PRIVATE
```

tpcc_com_all.h

```
/* this ALWAYS GENERATED file contains the
definitions for the interfaces */


 /* File created by MIDL compiler version 6.00.0361
*/
/* at Tue Nov 10 10:51:22 2009
 */
/* Compiler settings for .\src\tpcc_com_all.idl:
    Oicf, W1, Zp8, env=Win32 (32b run)
    protocol : dce , ms_ext, c_ext, robust
    error checks: allocation ref bounds_check enum
stub_data
    VC __declspec() decoration level:
        __declspec(uuid()), __declspec(selectany),
__declspec(novtable)
        DECLSPEC_UUID(), MIDL_INTERFACE()
*/
//@@MIDL_FILE_HEADING(   )

#pragma warning( disable: 4049 )  /* more than 64k
source lines */


/* verify that the <rpcndr.h> version is high enough
to compile this file*/
#ifndef __REQUIRED_RPCNDR_H_VERSION__
#define __REQUIRED_RPCNDR_H_VERSION__ 475
#endif

#include "rpc.h"
#include "rpcndr.h"

#ifndef __RPCNDR_H_VERSION__
#error this stub requires an updated version of
<rpcndr.h>
#endif // __RPCNDR_H_VERSION__


#ifndef __tpcc_com_all_h__
#define __tpcc_com_all_h__

#if defined(_MSC_VER) && (_MSC_VER >= 1020)
```

```
#pragma once
#endif

/* Forward Declarations */

#ifndef __TPCC_FWD_DEFINED__
#define __TPCC_FWD_DEFINED__

#ifdef __cplusplus
typedef class TPCC TPCC;
#else
typedef struct TPCC TPCC;
#endif /* __cplusplus */

#endif    /* __TPCC_FWD_DEFINED__ */


#ifndef __NewOrder_FWD_DEFINED__
#define __NewOrder_FWD_DEFINED__

#ifdef __cplusplus
typedef class NewOrder NewOrder;
#else
typedef struct NewOrder NewOrder;
#endif /* __cplusplus */

#endif    /* __NewOrder_FWD_DEFINED__ */


#ifndef __OrderStatus_FWD_DEFINED__
#define __OrderStatus_FWD_DEFINED__

#ifdef __cplusplus
typedef class OrderStatus OrderStatus;
#else
typedef struct OrderStatus OrderStatus;
#endif /* __cplusplus */

#endif    /* __OrderStatus_FWD_DEFINED__ */


#ifndef __Payment_FWD_DEFINED__
#define __Payment_FWD_DEFINED__

#ifdef __cplusplus
typedef class Payment Payment;
#else
typedef struct Payment Payment;
#endif /* __cplusplus */

#endif    /* __Payment_FWD_DEFINED__ */


#ifndef __StockLevel_FWD_DEFINED__
#define __StockLevel_FWD_DEFINED__

#ifdef __cplusplus
typedef class StockLevel StockLevel;
#else
typedef struct StockLevel StockLevel;
#endif /* __cplusplus */

#endif    /* __StockLevel_FWD_DEFINED__ */
```

```
/* header files for imported files */
#include "oaidl.h"
#include "ocidl.h"
#include "tpcc_com_ps.h"

#ifdef __cplusplus
extern "C"{
#endif

void * __RPC_USER MIDL_user_allocate(size_t);
void __RPC_USER MIDL_user_free( void * );

/* interface __MIDL_itf_tpcc_com_all_0000 */
/* [local] */




extern RPC_IF_HANDLE
__MIDL_itf_tpcc_com_all_0000_v0_0_c_ifspec;
extern RPC_IF_HANDLE
__MIDL_itf_tpcc_com_all_0000_v0_0_s_ifspec;


#ifndef __TPCCLib_LIBRARY_DEFINED__
#define __TPCCLib_LIBRARY_DEFINED__

/* library TPCCLib */
/* [helpstring][version][uuid] */


EXTERN_C const IID LIBID_TPCCLib;

EXTERN_C const CLSID CLSID_TPCC;

#ifdef __cplusplus

class DECLSPEC_UUID("122A3128-2520-11D3-BA71-
00C04FBFE08B")
TPCC;
#endif

EXTERN_C const CLSID CLSID_NewOrder;

#ifdef __cplusplus

class DECLSPEC_UUID("975BAABF-84A7-11D2-BA47-
00C04FBFE08B")
NewOrder;
#endif

EXTERN_C const CLSID CLSID_OrderStatus;

#ifdef __cplusplus

class DECLSPEC_UUID("266836AD-A50D-11D2-BA4E-
00C04FBFE08B")
```

```
OrderStatus;
#endif

EXTERN_C const CLSID CLSID_Payment;

#ifdef __cplusplus

class DECLSPEC_UUID("CD02F7EF-A4FA-11D2-BA4E-
00C04FBFE08B")
Payment;
#endif

EXTERN_C const CLSID CLSID_StockLevel;

#ifdef __cplusplus

class DECLSPEC_UUID("2668369E-A50D-11D2-BA4E-
00C04FBFE08B")
StockLevel;
#endif
#endif /* __TPCCLib_LIBRARY_DEFINED__ */

/* Additional Prototypes for ALL interfaces */

/* end of Additional Prototypes */

#ifdef __cplusplus
}
#endif

#endif
```

tpcc_com_all.idl

```
/*        FILE:            TPCC.IDL
*                              Microsoft
TPC-C Kit Ver. 4.69.000
*                              Copyright
Microsoft, 1999
*        All Rights Reserved
*
*                              not yet
audited
*
*    PURPOSE:  IDL source for TPCC.dll.  This
file is processed by the MIDL tool to
*                              produce the
type library (TPCC.tlb) and marshalling code.
*
*  Change history:
*            4.20.000 - first version
*            4.69.000 - updated rev number to
match kit
*/

interface TPCC;
interface NewOrder;
interface OrderStatus;
```

```
interface Payment;
interface StockLevel;


import "oaidl.idl";
import "ocidl.idl";
import "..\tpcc_com_ps\src\tpcc_com_ps.idl";

[
        uuid(122A3117-2520-11D3-BA71-00C04FBFE08B),
        version(1.0),
        helpstring("TPC-C 1.0 Type Library")
]
library TPCCLib
{
        importlib("stdole32.tlb");
        importlib("stdole2.tlb");

        [
                uuid(122A3128-2520-11D3-BA71-
00C04FBFE08B),
                helpstring("All Txns Class")
        ]
        coclass TPCC
        {
                [default] interface ITPCC;
        };


        [
                uuid(975BAABF-84A7-11D2-BA47-
00C04FBFE08B),
                helpstring("NewOrder Class")
        ]
        coclass NewOrder
        {
                [default] interface ITPCC;
        };


        [
                uuid(266836AD-A50D-11D2-BA4E-
00C04FBFE08B),
                helpstring("OrderStatus Class")
        ]
        coclass OrderStatus
        {
                [default] interface ITPCC;
        };


        [
                uuid(CD02F7EF-A4FA-11D2-BA4E-
00C04FBFE08B),
                helpstring("Payment Class")
        ]
        coclass Payment
        {
                [default] interface ITPCC;
        };


        [
```

```
                uuid(2668369E-A50D-11D2-BA4E-
00C04FBFE08B),
                helpstring("StockLevel Class")
        ]
        coclass StockLevel
        {
                [default] interface ITPCC;
        };

};
```

tpcc_com_all.rc

```
//Microsoft Developer Studio generated resource
script.
//
#include "resource.h"

#define APSTUDIO_READONLY_SYMBOLS
/////////////////////////////////////////////////
/////////////////////////
//
// Generated from the TEXTINCLUDE 2 resource.
//
#include "winres.h"

/////////////////////////////////////////////////
/////////////////////////
#undef APSTUDIO_READONLY_SYMBOLS

/////////////////////////////////////////////////
/////////////////////////
// English (U.S.) resources

#if !defined(AFX_RESOURCE_DLL) ||
defined(AFX_TARG_ENU)
#ifdef _WIN32
LANGUAGE LANG_ENGLISH, SUBLANG_ENGLISH_US
#pragma code_page(1252)
#endif //_WIN32

#ifdef APSTUDIO_INVOKED
/////////////////////////////////////////////////
/////////////////////////
//
// TEXTINCLUDE
//

1 TEXTINCLUDE DISCARDABLE
BEGIN
    "resource.h\0"
END

2 TEXTINCLUDE DISCARDABLE
BEGIN
    "#include ""winres.h""\r\n"
    "\0"
END

3 TEXTINCLUDE DISCARDABLE
```

```
BEGIN
    "1 TYPELIB ""tpcc_com_all.tlb""\r\n"
    "\0"
END

#endif    // APSTUDIO_INVOKED


#ifndef _MAC
/////////////////////////////////////////////////
/////////////////////////
//
// Version
//

VS_VERSION_INFO VERSIONINFO
 FILEVERSION 1,0,0,1
 PRODUCTVERSION 1,0,0,1
 FILEFLAGSMASK 0x3fL
#ifdef _DEBUG
 FILEFLAGS 0x1L
#else
 FILEFLAGS 0x0L
#endif
 FILEOS 0x4L
 FILETYPE 0x2L
 FILESUBTYPE 0x0L
BEGIN
    BLOCK "StringFileInfo"
    BEGIN
        BLOCK "040904B0"
        BEGIN
            VALUE "CompanyName", "\0"
            VALUE "FileDescription", "tpcc_com_all
Module\0"
            VALUE "FileVersion", "1, 0, 0, 1\0"
            VALUE "InternalName", "TPCCNEWORDER\0"
            VALUE "LegalCopyright", "Copyright
1997\0"
            VALUE "OriginalFilename",
"tpcc_com_all.DLL\0"
            VALUE "ProductName", "tpcc_com_all
Module\0"
            VALUE "ProductVersion", "1, 0, 0, 1\0"
            VALUE "OLESelfRegister", "\0"
        END
    END
    BLOCK "VarFileInfo"
    BEGIN
        VALUE "Translation", 0x409, 1200
    END
END

#endif    // !_MAC


/////////////////////////////////////////////////
/////////////////////////
//
// REGISTRY
//
```

```
IDR_TPCC              REGISTRY DISCARDABLE
"tpcc_com_all.rgs"
IDR_NEWORDER          REGISTRY DISCARDABLE
"tpcc_com_no.rgs"
IDR_ORDERSTATUS       REGISTRY DISCARDABLE
"tpcc_com_os.rgs"
IDR_PAYMENT           REGISTRY DISCARDABLE
"tpcc_com_pay.rgs"
IDR_STOCKLEVEL        REGISTRY DISCARDABLE
"tpcc_com_sl.rgs"

/////////////////////////////////////////////////
/////////////////////
//
// String Table
//

STRINGTABLE DISCARDABLE
BEGIN
    IDS_PROJNAME            "tpcc_com_all"
END

#endif    // English (U.S.) resources
/////////////////////////////////////////////////
/////////////////////


#ifndef APSTUDIO_INVOKED
/////////////////////////////////////////////////
/////////////////////
//
// Generated from the TEXTINCLUDE 3 resource.
//
1 TYPELIB "tpcc_com_all.tlb"

/////////////////////////////////////////////////
/////////////////////
#endif    // not APSTUDIO_INVOKED
```

tpcc_com_all.rgs

```
HKCR
{
        TPCC.AllTxns.1 = s 'All Txns Class'
        {
                CLSID = s '{122A3128-2520-11D3-
BA71-00C04FBFE08B}'
        }
        TPCC.AllTxns = s 'TPCC Class'
        {
                CurVer = s 'TPCC.AllTxns.1'
        }
        NoRemove CLSID
        {
                ForceRemove {122A3128-2520-11D3-
BA71-00C04FBFE08B} = s 'TPCC Class'
                {
```

```
                        ProgID = s
'TPCC.AllTxns.1'

                VersionIndependentProgID = s 'TPCC.AllTxns'
                        InprocServer32 = s
'%MODULE%'
                        {
                                val
ThreadingModel = s 'Both'
                        }
                }
        }
}
```

tpcc_com_all_i.c

```
/* this ALWAYS GENERATED file contains the IIDs and
CLSIDs */

/* link this file in with the server and any clients
*/


 /* File created by MIDL compiler version 6.00.0361
*/
/* at Tue Nov 10 10:51:22 2009
 */
/* Compiler settings for .\src\tpcc_com_all.idl:
    Oicf, W1, Zp8, env=Win32 (32b run)
    protocol : dce , ms_ext, c_ext, robust
    error checks: allocation ref bounds_check enum
stub_data
    VC __declspec() decoration level:
        __declspec(uuid()), __declspec(selectany),
__declspec(novtable)
        DECLSPEC_UUID(), MIDL_INTERFACE()
*/
//@@MIDL_FILE_HEADING(  )

#if !defined(_M_IA64) && !defined(_M_AMD64)


#pragma warning( disable: 4049 )  /* more than 64k
source lines */


#ifdef __cplusplus
extern "C"{
#endif


#include <rpc.h>
#include <rpcndr.h>

#ifdef _MIDL_USE_GUIDDEF_

#ifndef INITGUID
```

```
#define INITGUID
#include <guiddef.h>
#undef INITGUID
#else
#include <guiddef.h>
#endif

#define
MIDL_DEFINE_GUID(type,name,l,w1,w2,b1,b2,b3,b4,b5,b6,
b7,b8) \
    DEFINE_GUID(name,l,w1,w2,b1,b2,b3,b4,b5,b6,b7,b8)

#else // !_MIDL_USE_GUIDDEF_

#ifndef __IID_DEFINED__
#define __IID_DEFINED__

typedef struct _IID
{
    unsigned long x;
    unsigned short s1;
    unsigned short s2;
    unsigned char  c[8];
} IID;

#endif // __IID_DEFINED__

#ifndef CLSID_DEFINED
#define CLSID_DEFINED
typedef IID CLSID;
#endif // CLSID_DEFINED

#define
MIDL_DEFINE_GUID(type,name,l,w1,w2,b1,b2,b3,b4,b5,b6,
b7,b8) \
        const type name =
{l,w1,w2,{b1,b2,b3,b4,b5,b6,b7,b8}}

#endif !_MIDL_USE_GUIDDEF_

MIDL_DEFINE_GUID(IID,
LIBID_TPCCLib,0x122A3117,0x2520,0x11D3,0xBA,0x71,0x00
,0xC0,0x4F,0xBF,0xE0,0x8B);


MIDL_DEFINE_GUID(CLSID,
CLSID_TPCC,0x122A3128,0x2520,0x11D3,0xBA,0x71,0x00,0x
C0,0x4F,0xBF,0xE0,0x8B);


MIDL_DEFINE_GUID(CLSID,
CLSID_NewOrder,0x975BAABF,0x84A7,0x11D2,0xBA,0x47,0x0
0,0xC0,0x4F,0xBF,0xE0,0x8B);


MIDL_DEFINE_GUID(CLSID,
CLSID_OrderStatus,0x266836AD,0xA50D,0x11D2,0xBA,0x4E,
0x00,0xC0,0x4F,0xBF,0xE0,0x8B);
```

```
MIDL_DEFINE_GUID(CLSID,
CLSID_Payment,0xCD02F7EF,0xA4FA,0x11D2,0xBA,0x4E,0x00
,0xC0,0x4F,0xBF,0xE0,0x8B);


MIDL_DEFINE_GUID(CLSID,
CLSID_StockLevel,0x2668369E,0xA50D,0x11D2,0xBA,0x4E,0
x00,0xC0,0x4F,0xBF,0xE0,0x8B);

#undef MIDL_DEFINE_GUID

#ifdef __cplusplus
}
#endif



#endif /* !defined(_M_IA64) && !defined(_M_AMD64)*/


/* this ALWAYS GENERATED file contains the IIDs and
CLSIDs */

/* link this file in with the server and any clients
*/


 /* File created by MIDL compiler version 6.00.0361
*/
/* at Tue Nov 10 10:51:22 2009
 */
/* Compiler settings for .\src\tpcc_com_all.idl:
    Oicf, W1, Zp8, env=Win64 (32b run,appending)
    protocol : dce , ms_ext, c_ext, robust
    error checks: allocation ref bounds_check enum
stub_data
    VC __declspec() decoration level:
         __declspec(uuid()), __declspec(selectany),
__declspec(novtable)
         DECLSPEC_UUID(), MIDL_INTERFACE()
*/
//@@MIDL_FILE_HEADING(  )

#if defined(_M_IA64) || defined(_M_AMD64)


#pragma warning( disable: 4049 )  /* more than 64k
source lines */


#ifdef __cplusplus
extern "C"{
#endif


#include <rpc.h>
#include <rpcndr.h>

#ifdef _MIDL_USE_GUIDDEF_

#ifndef INITGUID
#define INITGUID
```

```
#include <guiddef.h>
#undef INITGUID
#else
#include <guiddef.h>
#endif

#define
MIDL_DEFINE_GUID(type,name,l,w1,w2,b1,b2,b3,b4,b5,b6,
b7,b8) \

DEFINE_GUID(name,l,w1,w2,b1,b2,b3,b4,b5,b6,b7,b8)

#else // !_MIDL_USE_GUIDDEF_

#ifndef __IID_DEFINED__
#define __IID_DEFINED__

typedef struct _IID
{
    unsigned long x;
    unsigned short s1;
    unsigned short s2;
    unsigned char  c[8];
} IID;

#endif // __IID_DEFINED__

#ifndef CLSID_DEFINED
#define CLSID_DEFINED
typedef IID CLSID;
#endif // CLSID_DEFINED

#define
MIDL_DEFINE_GUID(type,name,l,w1,w2,b1,b2,b3,b4,b5,b6,
b7,b8) \
        const type name =
{l,w1,w2,{b1,b2,b3,b4,b5,b6,b7,b8}}

#endif !_MIDL_USE_GUIDDEF_

MIDL_DEFINE_GUID(IID,
LIBID_TPCCLib,0x122A3117,0x2520,0x11D3,0xBA,0x71,0x00
,0xC0,0x4F,0xBF,0xE0,0x8B);


MIDL_DEFINE_GUID(CLSID,
CLSID_TPCC,0x122A3128,0x2520,0x11D3,0xBA,0x71,0x00,0x
C0,0x4F,0xBF,0xE0,0x8B);


MIDL_DEFINE_GUID(CLSID,
CLSID_NewOrder,0x975BAABF,0x84A7,0x11D2,0xBA,0x47,0x0
0,0xC0,0x4F,0xBF,0xE0,0x8B);


MIDL_DEFINE_GUID(CLSID,
CLSID_OrderStatus,0x266836AD,0xA50D,0x11D2,0xBA,0x4E,
0x00,0xC0,0x4F,0xBF,0xE0,0x8B);


MIDL_DEFINE_GUID(CLSID,
CLSID_Payment,0xCD02F7EF,0xA4FA,0x11D2,0xBA,0x4E,0x00
,0xC0,0x4F,0xBF,0xE0,0x8B);
```

```
MIDL_DEFINE_GUID(CLSID,
CLSID_StockLevel,0x2668369E,0xA50D,0x11D2,0xBA,0x4E,0
x00,0xC0,0x4F,0xBF,0xE0,0x8B);

#undef MIDL_DEFINE_GUID

#ifdef __cplusplus
}
#endif


#endif /* defined(_M_IA64) || defined(_M_AMD64)*/
```

tpcc_com_errorcode.h

```
/*      FILE:               TPCC_COM_ERRORCODE.H
 *                          Microsoft
TPC-C Kit Ver. 4.20.000
 *                          Copyright
Microsoft, 1999
 *            All Rights Reserved
 *
 *                          not yet
audited
 *
 *      PURPOSE:  Header file defining the error
code returned from ITPCC COM interface.
 *
 *   Change history:
 *            4.20.000 - first version
 */

// Error return value for methods in ITPCC interface.
//
// Define as 0x80042345 (decimal -2147212475 ).
//
const HRESULT E_TPCCCOM = MAKE_HRESULT
(SEVERITY_ERROR, FACILITY_ITF, 0x2345);
```

tpcc_com_no.rgs

```
HKCR
{
        TPCC.NewOrder.1 = s 'NewOrder Class'
        {
                CLSID = s '{975BAABF-84A7-11D2-
BA47-00C04FBFE08B}'
        }
        TPCC.NewOrder = s 'NewOrder Class'
        {
                CurVer = s 'TPCC.NewOrder.1'
        }
        NoRemove CLSID
        {
```

```
          ForceRemove {975BAABF-84A7-11D2-
BA47-00C04FBFE08B} = s 'NewOrder Class'
                    {
                              ProgID = s
'TPCC.NewOrder.1'

          VersionIndependentProgID = s
'TPCC.NewOrder'
                              InprocServer32 = s
'%MODULE%'
                    {
                                        val
ThreadingModel = s 'Both'
                    }
          }
     }
}
```

tpcc_com_os.rgs

```
HKCR
{
          TPCC.OrderStatus.1 = s 'OrderStatus Class'
          {
                    CLSID = s '{266836AD-A50D-11D2-
BA4E-00C04FBFE08B}'
          }
          TPCC.OrderStatus = s 'OrderStatus Class'
          {
                    CurVer = s 'TPCC.OrderStatus.1'
          }
          NoRemove CLSID
          {
                    ForceRemove {266836AD-A50D-11D2-
BA4E-00C04FBFE08B} = s 'OrderStatus Class'
                    {
                              ProgID = s
'TPCC.OrderStatus.1'

          VersionIndependentProgID = s
'TPCC.OrderStatus'
                              InprocServer32 = s
'%MODULE%'
                    {
                                        val
ThreadingModel = s 'Both'
                    }
          }
     }
}
```

tpcc_com_pay.rgs

```
HKCR
{
          TPCC.Payment.1 = s 'Payment Class'
          {
```

```
          CLSID = s '{CD02F7EF-A4FA-11D2-
BA4E-00C04FBFE08B}'
          }
          TPCC.Payment = s 'Payment Class'
          {
                    CurVer = s 'TPCC.Payment.1'
          }
          NoRemove CLSID
          {
                    ForceRemove {CD02F7EF-A4FA-11D2-
BA4E-00C04FBFE08B} = s 'Payment Class'
                    {
                              ProgID = s
'TPCC.Payment.1'

          VersionIndependentProgID = s 'TPCC.Payment'
                              InprocServer32 = s
'%MODULE%'
                    {
                                        val
ThreadingModel = s 'Both'
                    }
          }
     }
}
```

tpcc_com_ps.def

```
LIBRARY        "tpcc_com_ps"

EXPORTS
          DllGetClassObject        PRIVATE
          DllCanUnloadNow          PRIVATE
          GetProxyDllInfo          PRIVATE
          DllRegisterServer                PRIVATE
          DllUnregisterServer              PRIVATE
```

tpcc_com_ps.h

```
/* this ALWAYS GENERATED file contains the
definitions for the interfaces */


 /* File created by MIDL compiler version 6.00.0361
*/
/* at Tue Nov 10 10:51:13 2009
 */
/* Compiler settings for .\src\tpcc_com_ps.idl:
    Oicf, W1, Zp8, env=Win32 (32b run)
    protocol : dce , ms_ext, c_ext
    error checks: allocation ref bounds_check enum
stub_data
    VC __declspec() decoration level:
         __declspec(uuid()), __declspec(selectany),
__declspec(novtable)
```

```
          DECLSPEC_UUID(), MIDL_INTERFACE()
*/
//@@MIDL_FILE_HEADING(  )

#pragma warning( disable: 4049 )  /* more than 64k
source lines */


/* verify that the <rpcndr.h> version is high enough
to compile this file*/
#ifndef __REQUIRED_RPCNDR_H_VERSION__
#define __REQUIRED_RPCNDR_H_VERSION__ 440
#endif

#include "rpc.h"
#include "rpcndr.h"

#ifndef __RPCNDR_H_VERSION__
#error this stub requires an updated version of
<rpcndr.h>
#endif // __RPCNDR_H_VERSION__

#ifndef COM_NO_WINDOWS_H
#include "windows.h"
#include "ole2.h"
#endif /*COM_NO_WINDOWS_H*/

#ifndef __tpcc_com_ps_h__
#define __tpcc_com_ps_h__

#if defined(_MSC_VER) && (_MSC_VER >= 1020)
#pragma once
#endif

/* Forward Declarations */

#ifndef __ITPCC_FWD_DEFINED__
#define __ITPCC_FWD_DEFINED__
typedef interface ITPCC ITPCC;
#endif    /* __ITPCC_FWD_DEFINED__ */


/* header files for imported files */
#include "oaidl.h"
#include "ocidl.h"

#ifdef __cplusplus
extern "C"{
#endif

void * __RPC_USER MIDL_user_allocate(size_t);
void __RPC_USER MIDL_user_free( void * );

/* interface __MIDL_itf_tpcc_com_ps_0000 */
/* [local] */



extern RPC_IF_HANDLE
__MIDL_itf_tpcc_com_ps_0000_v0_0_c_ifspec;
extern RPC_IF_HANDLE
__MIDL_itf_tpcc_com_ps_0000_v0_0_s_ifspec;
```

```
#ifndef __ITPCC_INTERFACE_DEFINED__
#define __ITPCC_INTERFACE_DEFINED__

/* interface ITPCC */
/* [unique][helpstring][uuid][oleautomation][object]
*/


EXTERN_C const IID IID_ITPCC;

#if defined(__cplusplus) && !defined(CINTERFACE)

    MIDL_INTERFACE("FEEE6AA2-84B1-11d2-BA47-
00C04FBFE08B")
    ITPCC : public IUnknown
    {
    public:
        virtual HRESULT __stdcall NewOrder(
            /* [in] */ VARIANT txn_in,
            /* [out] */ VARIANT *txn_out) = 0;

        virtual HRESULT __stdcall Payment(
            /* [in] */ VARIANT txn_in,
            /* [out] */ VARIANT *txn_out) = 0;

        virtual HRESULT __stdcall Delivery(
            /* [in] */ VARIANT txn_in,
            /* [out] */ VARIANT *txn_out) = 0;

        virtual HRESULT __stdcall StockLevel(
            /* [in] */ VARIANT txn_in,
            /* [out] */ VARIANT *txn_out) = 0;

        virtual HRESULT __stdcall OrderStatus(
            /* [in] */ VARIANT txn_in,
            /* [out] */ VARIANT *txn_out) = 0;

        virtual HRESULT __stdcall CallSetComplete(
void) = 0;

    };

#else      /* C style interface */

    typedef struct ITPCCVtbl
    {
        BEGIN_INTERFACE

        HRESULT ( STDMETHODCALLTYPE *QueryInterface
)(
            ITPCC * This,
            /* [in] */ REFIID riid,
            /* [iid_is][out] */ void **ppvObject);

        ULONG ( STDMETHODCALLTYPE *AddRef )(
            ITPCC * This);

        ULONG ( STDMETHODCALLTYPE *Release )(
            ITPCC * This);

        HRESULT ( __stdcall *NewOrder )(
            ITPCC * This,
```
```
            /* [in] */ VARIANT txn_in,
            /* [out] */ VARIANT *txn_out);

        HRESULT ( __stdcall *Payment )(
            ITPCC * This,
            /* [in] */ VARIANT txn_in,
            /* [out] */ VARIANT *txn_out);

        HRESULT ( __stdcall *Delivery )(
            ITPCC * This,
            /* [in] */ VARIANT txn_in,
            /* [out] */ VARIANT *txn_out);

        HRESULT ( __stdcall *StockLevel )(
            ITPCC * This,
            /* [in] */ VARIANT txn_in,
            /* [out] */ VARIANT *txn_out);

        HRESULT ( __stdcall *OrderStatus )(
            ITPCC * This,
            /* [in] */ VARIANT txn_in,
            /* [out] */ VARIANT *txn_out);

        HRESULT ( __stdcall *CallSetComplete )(
            ITPCC * This);

        END_INTERFACE
    } ITPCCVtbl;

    interface ITPCC
    {
        CONST_VTBL struct ITPCCVtbl *lpVtbl;
    };



#ifdef COBJMACROS


#define ITPCC_QueryInterface(This,riid,ppvObject) \
    (This)->lpVtbl ->
QueryInterface(This,riid,ppvObject)

#define ITPCC_AddRef(This)     \
    (This)->lpVtbl -> AddRef(This)

#define ITPCC_Release(This)    \
    (This)->lpVtbl -> Release(This)


#define ITPCC_NewOrder(This,txn_in,txn_out)     \
    (This)->lpVtbl -> NewOrder(This,txn_in,txn_out)

#define ITPCC_Payment(This,txn_in,txn_out)      \
    (This)->lpVtbl -> Payment(This,txn_in,txn_out)

#define ITPCC_Delivery(This,txn_in,txn_out)     \
    (This)->lpVtbl -> Delivery(This,txn_in,txn_out)

#define ITPCC_StockLevel(This,txn_in,txn_out)   \
    (This)->lpVtbl -> StockLevel(This,txn_in,txn_out)

#define ITPCC_OrderStatus(This,txn_in,txn_out)  \
```
```
    (This)->lpVtbl ->
OrderStatus(This,txn_in,txn_out)

#define ITPCC_CallSetComplete(This)     \
    (This)->lpVtbl -> CallSetComplete(This)

#endif /* COBJMACROS */


#endif     /* C style interface */


HRESULT __stdcall ITPCC_NewOrder_Proxy(
    ITPCC * This,
    /* [in] */ VARIANT txn_in,
    /* [out] */ VARIANT *txn_out);


void __RPC_STUB ITPCC_NewOrder_Stub(
    IRpcStubBuffer *This,
    IRpcChannelBuffer *_pRpcChannelBuffer,
    PRPC_MESSAGE _pRpcMessage,
    DWORD *_pdwStubPhase);

HRESULT __stdcall ITPCC_Payment_Proxy(
    ITPCC * This,
    /* [in] */ VARIANT txn_in,
    /* [out] */ VARIANT *txn_out);


void __RPC_STUB ITPCC_Payment_Stub(
    IRpcStubBuffer *This,
    IRpcChannelBuffer *_pRpcChannelBuffer,
    PRPC_MESSAGE _pRpcMessage,
    DWORD *_pdwStubPhase);


HRESULT __stdcall ITPCC_Delivery_Proxy(
    ITPCC * This,
    /* [in] */ VARIANT txn_in,
    /* [out] */ VARIANT *txn_out);


void __RPC_STUB ITPCC_Delivery_Stub(
    IRpcStubBuffer *This,
    IRpcChannelBuffer *_pRpcChannelBuffer,
    PRPC_MESSAGE _pRpcMessage,
    DWORD *_pdwStubPhase);


HRESULT __stdcall ITPCC_StockLevel_Proxy(
    ITPCC * This,
    /* [in] */ VARIANT txn_in,
    /* [out] */ VARIANT *txn_out);


void __RPC_STUB ITPCC_StockLevel_Stub(
    IRpcStubBuffer *This,
    IRpcChannelBuffer *_pRpcChannelBuffer,
    PRPC_MESSAGE _pRpcMessage,
    DWORD *_pdwStubPhase);
```

```
HRESULT __stdcall ITPCC_OrderStatus_Proxy(
    ITPCC * This,
    /* [in] */ VARIANT txn_in,
    /* [out] */ VARIANT *txn_out);


void __RPC_STUB ITPCC_OrderStatus_Stub(
    IRpcStubBuffer *This,
    IRpcChannelBuffer *_pRpcChannelBuffer,
    PRPC_MESSAGE _pRpcMessage,
    DWORD *_pdwStubPhase);



HRESULT __stdcall ITPCC_CallSetComplete_Proxy(
    ITPCC * This);


void __RPC_STUB ITPCC_CallSetComplete_Stub(
    IRpcStubBuffer *This,
    IRpcChannelBuffer *_pRpcChannelBuffer,
    PRPC_MESSAGE _pRpcMessage,
    DWORD *_pdwStubPhase);



#endif    /* __ITPCC_INTERFACE_DEFINED__ */


/* Additional Prototypes for ALL interfaces */

unsigned long            __RPC_USER
VARIANT_UserSize(    unsigned long *, unsigned long
, VARIANT * );
unsigned char * __RPC_USER  VARIANT_UserMarshal(
unsigned long *, unsigned char *, VARIANT * );
unsigned char * __RPC_USER
VARIANT_UserUnmarshal(unsigned long *, unsigned char
*, VARIANT * );
void                     __RPC_USER
VARIANT_UserFree(    unsigned long *, VARIANT * );

/* end of Additional Prototypes */

#ifdef __cplusplus
}
#endif

#endif
```

tpcc_com_ps.idl

```
/*        FILE:            ITPCC.IDL
 *                                     Microsoft
TPC-C Kit Ver. 4.20.000
 *                                     Copyright
Microsoft, 1999
```

```
 *              All Rights Reserved
 *
 *                                          not yet
audited
 *
 *          PURPOSE:  Defines the interface used by
TPCC. This interface can be implemented by C++
components.
 *
 *  Change history:
 *                4.20.000 - first version
 */

// Forward declare all types defined
interface ITPCC;
import "oaidl.idl";
import "ocidl.idl";

        [
                    object,
                    oleautomation,
                    uuid(FEEE6AA2-84B1-11d2-BA47-
00C04FBFE08B),
                    helpstring("ITPCC Interface"),
                    pointer_default(unique)
        ]
        interface ITPCC : IUnknown
        {

        HRESULT _stdcall NewOrder

            (

        [in] VARIANT  txn_in,

        [out] VARIANT *txn_out

            );

        HRESULT _stdcall Payment

            (

        [in] VARIANT txn_in,

        [out] VARIANT *txn_out

            );

        HRESULT _stdcall Delivery

            (

        [in] VARIANT txn_in,

        [out] VARIANT *txn_out

            );

        HRESULT _stdcall StockLevel

            (
```

```
        [in] VARIANT txn_in,

        [out] VARIANT *txn_out

            );

        HRESULT _stdcall OrderStatus

            (

        [in] VARIANT txn_in,

        [out] VARIANT *txn_out

            );

        HRESULT _stdcall CallSetComplete

            (

            );

        };    // interface ITPCC
```

tpcc_com_ps_i.c

```
/* this ALWAYS GENERATED file contains the IIDs and
CLSIDs */

/* link this file in with the server and any clients
*/


 /* File created by MIDL compiler version 6.00.0361
*/
/* at Tue Nov 10 10:51:13 2009
 */
/* Compiler settings for .\src\tpcc_com_ps.idl:
    Oicf, W1, Zp8, env=Win32 (32b run)
    protocol : dce , ms_ext, c_ext
    error checks: allocation ref bounds_check enum
stub_data
    VC __declspec() decoration level:
        __declspec(uuid()), __declspec(selectany),
__declspec(novtable)
        DECLSPEC_UUID(), MIDL_INTERFACE()
*/
//@@MIDL_FILE_HEADING(  )

#if !defined(_M_IA64) && !defined(_M_AMD64)


#pragma warning( disable: 4049 )  /* more than 64k
source lines */
```

```
#ifdef __cplusplus
extern "C"{
#endif


#include <rpc.h>
#include <rpcndr.h>

#ifdef _MIDL_USE_GUIDDEF_

#ifndef INITGUID
#define INITGUID
#include <guiddef.h>
#undef INITGUID
#else
#include <guiddef.h>
#endif

#define
MIDL_DEFINE_GUID(type,name,l,w1,w2,b1,b2,b3,b4,b5,b6,
b7,b8) \

DEFINE_GUID(name,l,w1,w2,b1,b2,b3,b4,b5,b6,b7,b8)

#else // !_MIDL_USE_GUIDDEF_

#ifndef __IID_DEFINED__
#define __IID_DEFINED__

typedef struct _IID
{
    unsigned long  x;
    unsigned short s1;
    unsigned short s2;
    unsigned char  c[8];
} IID;

#endif // __IID_DEFINED__

#ifndef CLSID_DEFINED
#define CLSID_DEFINED
typedef IID CLSID;
#endif // CLSID_DEFINED

#define
MIDL_DEFINE_GUID(type,name,l,w1,w2,b1,b2,b3,b4,b5,b6,
b7,b8) \
        const type name =
{l,w1,w2,{b1,b2,b3,b4,b5,b6,b7,b8}}

#endif !_MIDL_USE_GUIDDEF_

MIDL_DEFINE_GUID(IID,
IID_ITPCC,0xFEEE6AA2,0x84B1,0x11d2,0xBA,0x47,0x00,0xC
0,0x4F,0xBF,0xE0,0x8B);

#undef MIDL_DEFINE_GUID

#ifdef __cplusplus
}
#endif
```

```
#endif /* !defined(_M_IA64) && !defined(_M_AMD64)*/



/* this ALWAYS GENERATED file contains the IIDs and
CLSIDs */

/* link this file in with the server and any clients
*/


 /* File created by MIDL compiler version 6.00.0361
*/
/* at Tue Nov 10 10:51:13 2009
 */
/* Compiler settings for .\src\tpcc_com_ps.idl:
    Oicf, W1, Zp8, env=Win64 (32b run,appending)
    protocol : dce , ms_ext, c_ext, robust
    error checks: allocation ref bounds_check enum
stub_data
    VC __declspec() decoration level:
         __declspec(uuid()), __declspec(selectany),
__declspec(novtable)
            DECLSPEC_UUID(), MIDL_INTERFACE()
*/
//@@MIDL_FILE_HEADING(  )

#if defined(_M_IA64) || defined(_M_AMD64)


#pragma warning( disable: 4049 )  /* more than 64k
source lines */


#ifdef __cplusplus
extern "C"{
#endif


#include <rpc.h>
#include <rpcndr.h>

#ifdef _MIDL_USE_GUIDDEF_

#ifndef INITGUID
#define INITGUID
#include <guiddef.h>
#undef INITGUID
#else
#include <guiddef.h>
#endif

#define
MIDL_DEFINE_GUID(type,name,l,w1,w2,b1,b2,b3,b4,b5,b6,
b7,b8) \

DEFINE_GUID(name,l,w1,w2,b1,b2,b3,b4,b5,b6,b7,b8)

#else // !_MIDL_USE_GUIDDEF_

#ifndef __IID_DEFINED__
```

```
#define __IID_DEFINED__

typedef struct _IID
{
    unsigned long  x;
    unsigned short s1;
    unsigned short s2;
    unsigned char  c[8];
} IID;

#endif // __IID_DEFINED__

#ifndef CLSID_DEFINED
#define CLSID_DEFINED
typedef IID CLSID;
#endif // CLSID_DEFINED

#define
MIDL_DEFINE_GUID(type,name,l,w1,w2,b1,b2,b3,b4,b5,b6,
b7,b8) \
        const type name =
{l,w1,w2,{b1,b2,b3,b4,b5,b6,b7,b8}}

#endif !_MIDL_USE_GUIDDEF_

MIDL_DEFINE_GUID(IID,
IID_ITPCC,0xFEEE6AA2,0x84B1,0x11d2,0xBA,0x47,0x00,0xC
0,0x4F,0xBF,0xE0,0x8B);

#undef MIDL_DEFINE_GUID

#ifdef __cplusplus
}
#endif



#endif /* defined(_M_IA64) || defined(_M_AMD64)*/
```

tpcc_com_ps_p.c

```
/* this ALWAYS GENERATED file contains the proxy stub
code */


 /* File created by MIDL compiler version 6.00.0361
*/
/* at Tue Nov 10 10:51:13 2009
 */
/* Compiler settings for .\src\tpcc_com_ps.idl:
    Oicf, W1, Zp8, env=Win32 (32b run)
    protocol : dce , ms_ext, c_ext
    error checks: allocation ref bounds_check enum
stub_data
    VC __declspec() decoration level:
         __declspec(uuid()), __declspec(selectany),
__declspec(novtable)
```

```
        DECLSPEC_UUID(), MIDL_INTERFACE()
*/
//@@MIDL_FILE_HEADING(  )

#if !defined(_M_IA64) && !defined(_M_AMD64)


#pragma warning( disable: 4049 )  /* more than 64k
source lines */
#if _MSC_VER >= 1200
#pragma warning(push)
#endif
#pragma warning( disable: 4100 ) /* unreferenced
arguments in x86 call */
#pragma warning( disable: 4211 )  /* redefine extent
to static */
#pragma warning( disable: 4232 )  /* dllimport
identity*/
#define USE_STUBLESS_PROXY


/* verify that the <rpcproxy.h> version is high
enough to compile this file*/
#ifndef __REDQ_RPCPROXY_H_VERSION__
#define __REQUIRED_RPCPROXY_H_VERSION__ 440
#endif


#include "rpcproxy.h"
#ifndef __RPCPROXY_H_VERSION__
#error this stub requires an updated version of
<rpcproxy.h>
#endif // __RPCPROXY_H_VERSION__


#include "tpcc_com_ps.h"

#define TYPE_FORMAT_STRING_SIZE   1023
#define PROC_FORMAT_STRING_SIZE   193
#define TRANSMIT_AS_TABLE_SIZE    0
#define WIRE_MARSHAL_TABLE_SIZE   1

typedef struct _MIDL_TYPE_FORMAT_STRING
    {
    short          Pad;
    unsigned char  Format[ TYPE_FORMAT_STRING_SIZE ];
    } MIDL_TYPE_FORMAT_STRING;

typedef struct _MIDL_PROC_FORMAT_STRING
    {
    short          Pad;
    unsigned char  Format[ PROC_FORMAT_STRING_SIZE ];
    } MIDL_PROC_FORMAT_STRING;


static RPC_SYNTAX_IDENTIFIER  _RpcTransferSyntax =
{{0x8A885D04,0x1CEB,0x11C9,{0x9F,0xE8,0x08,0x00,0x2B,
0x10,0x48,0x60}},{2,0}};


extern const MIDL_TYPE_FORMAT_STRING
__MIDL_TypeFormatString;
```

```
extern const MIDL_PROC_FORMAT_STRING
__MIDL_ProcFormatString;


extern const MIDL_STUB_DESC Object_StubDesc;


extern const MIDL_SERVER_INFO ITPCC_ServerInfo;
extern const MIDL_STUBLESS_PROXY_INFO
ITPCC_ProxyInfo;


extern const USER_MARSHAL_ROUTINE_QUADRUPLE
UserMarshalRoutines[ WIRE_MARSHAL_TABLE_SIZE ];

#if !defined(__RPC_WIN32__)
#error  Invalid build platform for this stub.
#endif

#if !(TARGET_IS_NT40_OR_LATER)
#error You need a Windows NT 4.0 or later to run this
stub because it uses these features:
#error   -Oif or -Oicf, [wire_marshal] or
[user_marshal] attribute.
#error However, your C/C++ compilation flags indicate
you intend to run this app on earlier systems.
#error This app will die there with the
RPC_X_WRONG_STUB_VERSION error.
#endif

static const MIDL_PROC_FORMAT_STRING
__MIDL_ProcFormatString =
    {
        0,
        {

            /* Procedure NewOrder */

                                        0x33,          /*
FC_AUTO_HANDLE */
                                        0x6c,          /*
Old Flags:  object, Oi2 */
/*  2 */  NdrFcLong( 0x0 ),   /* 0 */
/*  6 */  NdrFcShort( 0x3 ),  /* 3 */
/*  8 */  NdrFcShort( 0x1c ), /* x86 Stack
size/offset = 28 */
/* 10 */  NdrFcShort( 0x0 ),  /* 0 */
/* 12 */  NdrFcShort( 0x8 ),  /* 8 */
/* 14 */  0x7,                /* Oi2 Flags:  srv must
size, clt must size, has return, */
                                        0x3,           /*
3 */

            /* Parameter txn_in */

/* 16 */  NdrFcShort( 0x8b ), /* Flags:  must size,
must free, in, by val, */
/* 18 */  NdrFcShort( 0x4 ),  /* x86 Stack
size/offset = 4 */
/* 20 */  NdrFcShort( 0x3e2 ),          /* Type
Offset=994 */
```

```
            /* Parameter txn_out */

/* 22 */  NdrFcShort( 0x4113 ),         /* Flags:
must size, must free, out, simple ref, srv alloc
size=16 */
/* 24 */  NdrFcShort( 0x14 ), /* x86 Stack
size/offset = 20 */
/* 26 */  NdrFcShort( 0x3f4 ),          /* Type
Offset=1012 */

            /* Return value */

/* 28 */  NdrFcShort( 0x70 ), /* Flags:  out, return,
base type, */
/* 30 */  NdrFcShort( 0x18 ), /* x86 Stack
size/offset = 24 */
/* 32 */  0x8,                /* FC_LONG */
                                        0x0,           /*
0 */

            /* Procedure Payment */

/* 34 */  0x33,               /* FC_AUTO_HANDLE */
                                        0x6c,          /*
Old Flags:  object, Oi2 */
/* 36 */  NdrFcLong( 0x0 ),   /* 0 */
/* 40 */  NdrFcShort( 0x4 ),  /* 4 */
/* 42 */  NdrFcShort( 0x1c ), /* x86 Stack
size/offset = 28 */
/* 44 */  NdrFcShort( 0x0 ),  /* 0 */
/* 46 */  NdrFcShort( 0x8 ),  /* 8 */
/* 48 */  0x7,                /* Oi2 Flags:  srv must
size, clt must size, has return, */
                                        0x3,           /*
3 */

            /* Parameter txn_in */

/* 50 */  NdrFcShort( 0x8b ), /* Flags:  must size,
must free, in, by val, */
/* 52 */  NdrFcShort( 0x4 ),  /* x86 Stack
size/offset = 4 */
/* 54 */  NdrFcShort( 0x3e2 ),          /* Type
Offset=994 */

            /* Parameter txn_out */

/* 56 */  NdrFcShort( 0x4113 ),         /* Flags:
must size, must free, out, simple ref, srv alloc
size=16 */
/* 58 */  NdrFcShort( 0x14 ), /* x86 Stack
size/offset = 20 */
/* 60 */  NdrFcShort( 0x3f4 ),          /* Type
Offset=1012 */

            /* Return value */

/* 62 */  NdrFcShort( 0x70 ), /* Flags:  out, return,
base type, */
/* 64 */  NdrFcShort( 0x18 ), /* x86 Stack
size/offset = 24 */
/* 66 */  0x8,                /* FC_LONG */
```

```
                        0x0,                    /*
0 */

        /* Procedure Delivery */

/* 68 */  0x33,                 /* FC_AUTO_HANDLE */
                        0x6c,                   /*
Old Flags:  object, Oi2 */
/* 70 */  NdrFcLong( 0x0 ),    /* 0 */
/* 74 */  NdrFcShort( 0x5 ),   /* 5 */
/* 76 */  NdrFcShort( 0x1c ),  /* x86 Stack
size/offset = 28 */
/* 78 */  NdrFcShort( 0x0 ),   /* 0 */
/* 80 */  NdrFcShort( 0x8 ),   /* 8 */
/* 82 */  0x7,                 /* Oi2 Flags:  srv must
size, clt must size, has return, */
                        0x3,                    /*
3 */

        /* Parameter txn_in */

/* 84 */  NdrFcShort( 0x8b ), /* Flags:  must size,
must free, in, by val, */
/* 86 */  NdrFcShort( 0x4 ),   /* x86 Stack
size/offset = 4 */
/* 88 */  NdrFcShort( 0x3e2 ),          /* Type
Offset=994 */

        /* Parameter txn_out */

/* 90 */  NdrFcShort( 0x4113 ),         /* Flags:
must size, must free, out, simple ref, srv alloc
size=16 */
/* 92 */  NdrFcShort( 0x14 ), /* x86 Stack
size/offset = 20 */
/* 94 */  NdrFcShort( 0x3f4 ),          /* Type
Offset=1012 */

        /* Return value */

/* 96 */  NdrFcShort( 0x70 ), /* Flags:  out, return,
base type, */
/* 98 */  NdrFcShort( 0x18 ), /* x86 Stack
size/offset = 24 */
/* 100 */ 0x8,                 /* FC_LONG */
                        0x0,                    /*
0 */

        /* Procedure StockLevel */

/* 102 */ 0x33,                 /* FC_AUTO_HANDLE */
                        0x6c,                   /*
Old Flags:  object, Oi2 */
/* 104 */ NdrFcLong( 0x0 ),    /* 0 */
/* 108 */ NdrFcShort( 0x6 ),   /* 6 */
/* 110 */ NdrFcShort( 0x1c ),  /* x86 Stack
size/offset = 28 */
/* 112 */ NdrFcShort( 0x0 ),   /* 0 */
/* 114 */ NdrFcShort( 0x8 ),   /* 8 */
/* 116 */ 0x7,                 /* Oi2 Flags:  srv must
size, clt must size, has return, */
                        0x3,                    /*
3 */

        /* Parameter txn_in */

/* 118 */ NdrFcShort( 0x8b ), /* Flags:  must size,
must free, in, by val, */
/* 120 */ NdrFcShort( 0x4 ),   /* x86 Stack
size/offset = 4 */
/* 122 */ NdrFcShort( 0x3e2 ),          /* Type
Offset=994 */

        /* Parameter txn_out */

/* 124 */ NdrFcShort( 0x4113 ),         /* Flags:
must size, must free, out, simple ref, srv alloc
size=16 */
/* 126 */ NdrFcShort( 0x14 ), /* x86 Stack
size/offset = 20 */
/* 128 */ NdrFcShort( 0x3f4 ),          /* Type
Offset=1012 */

        /* Return value */

/* 130 */ NdrFcShort( 0x70 ), /* Flags:  out, return,
base type, */
/* 132 */ NdrFcShort( 0x18 ), /* x86 Stack
size/offset = 24 */
/* 134 */ 0x8,                 /* FC_LONG */
                        0x0,                    /*
0 */

        /* Procedure OrderStatus */

/* 136 */ 0x33,                 /* FC_AUTO_HANDLE */
                        0x6c,                   /*
Old Flags:  object, Oi2 */
/* 138 */ NdrFcLong( 0x0 ),    /* 0 */
/* 142 */ NdrFcShort( 0x7 ),   /* 7 */
/* 144 */ NdrFcShort( 0x1c ),  /* x86 Stack
size/offset = 28 */
/* 146 */ NdrFcShort( 0x0 ),   /* 0 */
/* 148 */ NdrFcShort( 0x8 ),   /* 8 */
/* 150 */ 0x7,                 /* Oi2 Flags:  srv must
size, clt must size, has return, */
                        0x3,                    /*
3 */

        /* Parameter txn_in */

/* 152 */ NdrFcShort( 0x8b ), /* Flags:  must size,
must free, in, by val, */
/* 154 */ NdrFcShort( 0x4 ),   /* x86 Stack
size/offset = 4 */
/* 156 */ NdrFcShort( 0x3e2 ),          /* Type
Offset=994 */

        /* Parameter txn_out */

/* 158 */ NdrFcShort( 0x4113 ),         /* Flags:
must size, must free, out, simple ref, srv alloc
size=16 */
/* 160 */ NdrFcShort( 0x14 ), /* x86 Stack
size/offset = 20 */

/* 162 */ NdrFcShort( 0x3f4 ),          /* Type
Offset=1012 */

        /* Return value */

/* 164 */ NdrFcShort( 0x70 ), /* Flags:  out, return,
base type, */
/* 166 */ NdrFcShort( 0x18 ), /* x86 Stack
size/offset = 24 */
/* 168 */ 0x8,                 /* FC_LONG */
                        0x0,                    /*
0 */

        /* Procedure CallSetComplete */

/* 170 */ 0x33,                 /* FC_AUTO_HANDLE */
                        0x6c,                   /*
Old Flags:  object, Oi2 */
/* 172 */ NdrFcLong( 0x0 ),    /* 0 */
/* 176 */ NdrFcShort( 0x8 ),   /* 8 */
/* 178 */ NdrFcShort( 0x8 ),   /* x86 Stack
size/offset = 8 */
/* 180 */ NdrFcShort( 0x0 ),   /* 0 */
/* 182 */ NdrFcShort( 0x8 ),   /* 8 */
/* 184 */ 0x4,                 /* Oi2 Flags:  has
return, */
                        0x1,                    /*
1 */

        /* Return value */

/* 186 */ NdrFcShort( 0x70 ), /* Flags:  out, return,
base type, */
/* 188 */ NdrFcShort( 0x4 ),   /* x86 Stack
size/offset = 4 */
/* 190 */ 0x8,                 /* FC_LONG */
                        0x0,                    /*
0 */

                        0x0
        }
    };

static const MIDL_TYPE_FORMAT_STRING
__MIDL_TypeFormatString =
    {
        0,
        {
                        NdrFcShort( 0x0 ),  /*
0 */
/*  2 */
                        0x12, 0x0,          /*
FC_UP */
/*  4 */  NdrFcShort( 0x3ca ),          /* Offset=
970 (974) */
/*  6 */
                        0x2b,               /*
FC_NON_ENCAPSULATED_UNION */
                        0x9,                /*
FC_ULONG */
/*  8 */  0x7,                /* Corr desc: FC_USHORT
*/
```

```
                                0x0,                    /*
*/
/* 10 */    NdrFcShort( 0xfff8 ),         /* -8 */
/* 12 */    NdrFcShort( 0x2 ),   /* Offset= 2 (14) */
/* 14 */    NdrFcShort( 0x10 ),  /* 16 */
/* 16 */    NdrFcShort( 0x2f ),  /* 47 */
/* 18 */    NdrFcLong( 0x14 ),   /* 20 */
/* 22 */    NdrFcShort( 0x800b ),         /* Simple arm
type: FC_HYPER */
/* 24 */    NdrFcLong( 0x3 ),    /* 3 */
/* 28 */    NdrFcShort( 0x8008 ),         /* Simple arm
type: FC_LONG */
/* 30 */    NdrFcLong( 0x11 ),   /* 17 */
/* 34 */    NdrFcShort( 0x8001 ),         /* Simple arm
type: FC_BYTE */
/* 36 */    NdrFcLong( 0x2 ),    /* 2 */
/* 40 */    NdrFcShort( 0x8006 ),         /* Simple arm
type: FC_SHORT */
/* 42 */    NdrFcLong( 0x4 ),    /* 4 */
/* 46 */    NdrFcShort( 0x800a ),         /* Simple arm
type: FC_FLOAT */
/* 48 */    NdrFcLong( 0x5 ),    /* 5 */
/* 52 */    NdrFcShort( 0x800c ),         /* Simple arm
type: FC_DOUBLE */
/* 54 */    NdrFcLong( 0xb ),    /* 11 */
/* 58 */    NdrFcShort( 0x8006 ),         /* Simple arm
type: FC_SHORT */
/* 60 */    NdrFcLong( 0xa ),    /* 10 */
/* 64 */    NdrFcShort( 0x8008 ),         /* Simple arm
type: FC_LONG */
/* 66 */    NdrFcLong( 0x6 ),    /* 6 */
/* 70 */    NdrFcShort( 0xe8 ),  /* Offset= 232 (302) */
/* 72 */    NdrFcLong( 0x7 ),    /* 7 */
/* 76 */    NdrFcShort( 0x800c ),         /* Simple arm
type: FC_DOUBLE */
/* 78 */    NdrFcLong( 0x8 ),    /* 8 */
/* 82 */    NdrFcShort( 0xe2 ),  /* Offset= 226 (308) */
/* 84 */    NdrFcLong( 0xd ),    /* 13 */
/* 88 */    NdrFcShort( 0xf4 ),  /* Offset= 244 (332) */
/* 90 */    NdrFcLong( 0x9 ),    /* 9 */
/* 94 */    NdrFcShort( 0x100 ),          /* Offset=
256 (350) */
/* 96 */    NdrFcLong( 0x2000 ),          /* 8192 */
/* 100 */   NdrFcShort( 0x10c ),          /* Offset=
268 (368) */
/* 102 */   NdrFcLong( 0x24 ),   /* 36 */
/* 106 */   NdrFcShort( 0x31a ),          /* Offset=
794 (900) */
/* 108 */   NdrFcLong( 0x4024 ),          /* 16420 */
/* 112 */   NdrFcShort( 0x314 ),          /* Offset=
788 (900) */
/* 114 */   NdrFcLong( 0x4011 ),          /* 16401 */
/* 118 */   NdrFcShort( 0x312 ),          /* Offset=
786 (904) */
/* 120 */   NdrFcLong( 0x4002 ),          /* 16386 */
/* 124 */   NdrFcShort( 0x310 ),          /* Offset=
784 (908) */
/* 126 */   NdrFcLong( 0x4003 ),          /* 16387 */
/* 130 */   NdrFcShort( 0x30e ),          /* Offset=
782 (912) */
/* 132 */   NdrFcLong( 0x4014 ),          /* 16404 */
/* 136 */   NdrFcShort( 0x30c ),          /* Offset=
780 (916) */

/* 138 */   NdrFcLong( 0x4004 ),          /* 16388 */
/* 142 */   NdrFcShort( 0x30a ),          /* Offset=
778 (920) */
/* 144 */   NdrFcLong( 0x4005 ),          /* 16389 */
/* 148 */   NdrFcShort( 0x308 ),          /* Offset=
776 (924) */
/* 150 */   NdrFcLong( 0x400b ),          /* 16395 */
/* 154 */   NdrFcShort( 0x2f2 ),          /* Offset=
754 (908) */
/* 156 */   NdrFcLong( 0x400a ),          /* 16394 */
/* 160 */   NdrFcShort( 0x2f0 ),          /* Offset=
752 (912) */
/* 162 */   NdrFcLong( 0x4006 ),          /* 16390 */
/* 166 */   NdrFcShort( 0x2fa ),          /* Offset=
762 (928) */
/* 168 */   NdrFcLong( 0x4007 ),          /* 16391 */
/* 172 */   NdrFcShort( 0x2f0 ),          /* Offset=
752 (924) */
/* 174 */   NdrFcLong( 0x4008 ),          /* 16392 */
/* 178 */   NdrFcShort( 0x2f2 ),          /* Offset=
754 (932) */
/* 180 */   NdrFcLong( 0x400d ),          /* 16397 */
/* 184 */   NdrFcShort( 0x2f0 ),          /* Offset=
752 (936) */
/* 186 */   NdrFcLong( 0x4009 ),          /* 16393 */
/* 190 */   NdrFcShort( 0x2ee ),          /* Offset=
750 (940) */
/* 192 */   NdrFcLong( 0x6000 ),          /* 24576 */
/* 196 */   NdrFcShort( 0x2ec ),          /* Offset=
748 (944) */
/* 198 */   NdrFcLong( 0x400c ),          /* 16396 */
/* 202 */   NdrFcShort( 0x2ea ),          /* Offset=
746 (948) */
/* 204 */   NdrFcLong( 0x10 ),   /* 16 */
/* 208 */   NdrFcShort( 0x8002 ),         /* Simple arm
type: FC_CHAR */
/* 210 */   NdrFcLong( 0x12 ),   /* 18 */
/* 214 */   NdrFcShort( 0x8006 ),         /* Simple arm
type: FC_SHORT */
/* 216 */   NdrFcLong( 0x13 ),   /* 19 */
/* 220 */   NdrFcShort( 0x8008 ),         /* Simple arm
type: FC_LONG */
/* 222 */   NdrFcLong( 0x15 ),   /* 21 */
/* 226 */   NdrFcShort( 0x800b ),         /* Simple arm
type: FC_HYPER */
/* 228 */   NdrFcLong( 0x16 ),   /* 22 */
/* 232 */   NdrFcShort( 0x8008 ),         /* Simple arm
type: FC_LONG */
/* 234 */   NdrFcLong( 0x17 ),   /* 23 */
/* 238 */   NdrFcShort( 0x8008 ),         /* Simple arm
type: FC_LONG */
/* 240 */   NdrFcLong( 0xe ),    /* 14 */
/* 244 */   NdrFcShort( 0x2c8 ),          /* Offset=
712 (956) */
/* 246 */   NdrFcLong( 0x400e ),          /* 16398 */
/* 250 */   NdrFcShort( 0x2cc ),          /* Offset=
716 (966) */
/* 252 */   NdrFcLong( 0x4010 ),          /* 16400 */
/* 256 */   NdrFcShort( 0x2ca ),          /* Offset=
714 (970) */
/* 258 */   NdrFcLong( 0x4012 ),          /* 16402 */
/* 262 */   NdrFcShort( 0x286 ),          /* Offset=
646 (908) */

/* 264 */   NdrFcLong( 0x4013 ),          /* 16403 */
/* 268 */   NdrFcShort( 0x284 ),          /* Offset=
644 (912) */
/* 270 */   NdrFcLong( 0x4015 ),          /* 16405 */
/* 274 */   NdrFcShort( 0x282 ),          /* Offset=
642 (916) */
/* 276 */   NdrFcLong( 0x4016 ),          /* 16406 */
/* 280 */   NdrFcShort( 0x278 ),          /* Offset=
632 (912) */
/* 282 */   NdrFcLong( 0x4017 ),          /* 16407 */
/* 286 */   NdrFcShort( 0x272 ),          /* Offset=
626 (912) */
/* 288 */   NdrFcLong( 0x0 ),    /* 0 */
/* 292 */   NdrFcShort( 0x0 ),   /* Offset= 0 (292) */
/* 294 */   NdrFcLong( 0x1 ),    /* 1 */
/* 298 */   NdrFcShort( 0x0 ),   /* Offset= 0 (298) */
/* 300 */   NdrFcShort( 0xffff ),         /* Offset= -1
(299) */
/* 302 */

                                0x15,                   /*
FC_STRUCT */
                                0x7,                    /*
7 */
/* 304 */   NdrFcShort( 0x8 ),   /* 8 */
/* 306 */   0xb,                 /* FC_HYPER */
                                0x5b,                   /*
FC_END */
/* 308 */
                                0x12, 0x0,              /*
FC_UP */
/* 310 */   NdrFcShort( 0xc ),   /* Offset= 12 (322) */
/* 312 */
                                0x1b,                   /*
FC_CARRAY */
                                0x1,                    /*
1 */
/* 314 */   NdrFcShort( 0x2 ),   /* 2 */
/* 316 */   0x9,                 /* Corr desc: FC_ULONG
*/
                                0x0,                    /*
*/
/* 318 */   NdrFcShort( 0xfffc ),         /* -4 */
/* 320 */   0x6,                 /* FC_SHORT */
                                0x5b,                   /*
FC_END */
/* 322 */
                                0x17,                   /*
FC_CSTRUCT */
                                0x3,                    /*
3 */
/* 324 */   NdrFcShort( 0x8 ),   /* 8 */
/* 326 */   NdrFcShort( 0xfff2 ),         /* Offset= -
14 (312) */
/* 328 */   0x8,                 /* FC_LONG */
                                0x8,                    /*
FC_LONG */
/* 330 */   0x5c,                /* FC_PAD */
                                0x5b,                   /*
FC_END */
/* 332 */
                                0x2f,                   /*
FC_IP */
```

```
                                   0x5a,                  /*
FC_CONSTANT_IID */
/* 334 */ NdrFcLong( 0x0 ),    /* 0 */
/* 338 */ NdrFcShort( 0x0 ),   /* 0 */
/* 340 */ NdrFcShort( 0x0 ),   /* 0 */
/* 342 */ 0xc0,                /* 192 */
                                   0x0,                   /*
0 */
/* 344 */ 0x0,                 /* 0 */
                                   0x0,                   /*
0 */
/* 346 */ 0x0,                 /* 0 */
                                   0x0,                   /*
0 */
/* 348 */ 0x0,                 /* 0 */
                                   0x46,                  /*
70 */
/* 350 */
                                   0x2f,                  /*
FC_IP */
                                   0x5a,                  /*
FC_CONSTANT_IID */
/* 352 */ NdrFcLong( 0x20400 ),      /* 132096 */
/* 356 */ NdrFcShort( 0x0 ),   /* 0 */
/* 358 */ NdrFcShort( 0x0 ),   /* 0 */
/* 360 */ 0xc0,                /* 192 */
                                   0x0,                   /*
0 */
/* 362 */ 0x0,                 /* 0 */
                                   0x0,                   /*
0 */
/* 364 */ 0x0,                 /* 0 */
                                   0x0,                   /*
0 */
/* 366 */ 0x0,                 /* 0 */
                                   0x46,                  /*
70 */
/* 368 */
                                   0x12, 0x10,            /*
FC_UP [pointer_deref] */
/* 370 */ NdrFcShort( 0x2 ), /* Offset= 2 (372) */
/* 372 */
                                   0x12, 0x0,             /*
FC_UP */
/* 374 */ NdrFcShort( 0x1fc ),       /* Offset=
508 (882) */
/* 376 */
                                   0x2a,                  /*
FC_ENCAPSULATED_UNION */
                                   0x49,                  /*
73 */
/* 378 */ NdrFcShort( 0x18 ), /* 24 */
/* 380 */ NdrFcShort( 0xa ), /* 10 */
/* 382 */ NdrFcLong( 0x8 ), /* 8 */
/* 386 */ NdrFcShort( 0x58 ), /* Offset= 88 (474) */
/* 388 */ NdrFcLong( 0xd ), /* 13 */
/* 392 */ NdrFcShort( 0x78 ), /* Offset= 120 (512) */
/* 394 */ NdrFcLong( 0x9 ), /* 9 */
/* 398 */ NdrFcShort( 0x94 ), /* Offset= 148 (546) */
/* 400 */ NdrFcLong( 0xc ), /* 12 */
/* 404 */ NdrFcShort( 0xbc ), /* Offset= 188 (592) */
/* 406 */ NdrFcLong( 0x24 ), /* 36 */

/* 410 */ NdrFcShort( 0x114 ),       /* Offset=
276 (686) */
/* 412 */ NdrFcLong( 0x800d ),       /* 32781 */
/* 416 */ NdrFcShort( 0x130 ),       /* Offset=
304 (720) */
/* 418 */ NdrFcLong( 0x10 ), /* 16 */
/* 422 */ NdrFcShort( 0x148 ),       /* Offset=
328 (750) */
/* 424 */ NdrFcLong( 0x2 ), /* 2 */
/* 428 */ NdrFcShort( 0x160 ),       /* Offset=
352 (780) */
/* 430 */ NdrFcLong( 0x3 ), /* 3 */
/* 434 */ NdrFcShort( 0x178 ),       /* Offset=
376 (810) */
/* 436 */ NdrFcLong( 0x14 ), /* 20 */
/* 440 */ NdrFcShort( 0x190 ),       /* Offset=
400 (840) */
/* 442 */ NdrFcShort( 0xffff ),      /* Offset= -1
(441) */
/* 444 */
                                   0x1b,                  /*
FC_CARRAY */
                                   0x3,                   /*
3 */
/* 446 */ NdrFcShort( 0x4 ), /* 4 */
/* 448 */ 0x19,                /* Corr desc:  field
pointer, FC_ULONG */
                                   0x0,                   /*
*/
/* 450 */ NdrFcShort( 0x0 ), /* 0 */
/* 452 */
                                   0x4b,                  /*
FC_PP */
                                   0x5c,                  /*
FC_PAD */
/* 454 */
                                   0x48,                  /*
FC_VARIABLE_REPEAT */
                                   0x49,                  /*
FC_FIXED_OFFSET */
/* 456 */ NdrFcShort( 0x4 ), /* 4 */
/* 458 */ NdrFcShort( 0x0 ), /* 0 */
/* 460 */ NdrFcShort( 0x1 ), /* 1 */
/* 462 */ NdrFcShort( 0x0 ), /* 0 */
/* 464 */ NdrFcShort( 0x0 ), /* 0 */
/* 466 */ 0x12, 0x0,           /* FC_UP */
/* 468 */ NdrFcShort( 0xff6e ),      /* Offset= -
146 (322) */
/* 470 */
                                   0x5b,                  /*
FC_END */
                                   0x8,                   /*
FC_LONG */
/* 472 */ 0x5c,                /* FC_PAD */
                                   0x5b,                  /*
FC_END */
/* 474 */
                                   0x16,                  /*
FC_PSTRUCT */
                                   0x3,                   /*
3 */
/* 476 */ NdrFcShort( 0x8 ), /* 8 */

/* 478 */
                                   0x4b,                  /*
FC_PP */
                                   0x5c,                  /*
FC_PAD */
/* 480 */
                                   0x46,                  /*
FC_NO_REPEAT */
                                   0x5c,                  /*
FC_PAD */
/* 482 */ NdrFcShort( 0x4 ), /* 4 */
/* 484 */ NdrFcShort( 0x4 ), /* 4 */
/* 486 */ 0x11, 0x0,           /* FC_RP */
/* 488 */ NdrFcShort( 0xffd4 ),      /* Offset= -
44 (444) */
/* 490 */
                                   0x5b,                  /*
FC_END */
                                   0x8,                   /*
FC_LONG */
/* 492 */ 0x8,                 /* FC_LONG */
                                   0x5b,                  /*
FC_END */
/* 494 */
                                   0x21,                  /*
FC_BOGUS_ARRAY */
                                   0x3,                   /*
3 */
/* 496 */ NdrFcShort( 0x0 ), /* 0 */
/* 498 */ 0x19,                /* Corr desc:  field
pointer, FC_ULONG */
                                   0x0,                   /*
*/
/* 500 */ NdrFcShort( 0x0 ), /* 0 */
/* 502 */ NdrFcLong( 0xffffffff ),      /* -1 */
/* 506 */ 0x4c,                /* FC_EMBEDDED_COMPLEX
*/
                                   0x0,                   /*
0 */
/* 508 */ NdrFcShort( 0xff50 ),      /* Offset= -
176 (332) */
/* 510 */ 0x5c,                /* FC_PAD */
                                   0x5b,                  /*
FC_END */
/* 512 */
                                   0x1a,                  /*
FC_BOGUS_STRUCT */
                                   0x3,                   /*
3 */
/* 514 */ NdrFcShort( 0x8 ), /* 8 */
/* 516 */ NdrFcShort( 0x0 ), /* 0 */
/* 518 */ NdrFcShort( 0x6 ), /* Offset= 6 (524) */
/* 520 */ 0x8,                 /* FC_LONG */
                                   0x36,                  /*
FC_POINTER */
/* 522 */ 0x5c,                /* FC_PAD */
                                   0x5b,                  /*
FC_END */
/* 524 */
                                   0x11, 0x0,             /*
FC_RP */
```

```
/* 526 */ NdrFcShort( 0xffe0 ),        /* Offset= -
32 (494) */
/* 528 */
                    0x21,               /*
FC_BOGUS_ARRAY */
                    0x3,                /*
3 */
/* 530 */ NdrFcShort( 0x0 ),  /* 0 */
/* 532 */ 0x19,               /* Corr desc:  field
pointer, FC_ULONG */
                    0x0,                /*
*/
/* 534 */ NdrFcShort( 0x0 ),  /* 0 */
/* 536 */ NdrFcLong( 0xffffffff ),     /* -1 */
/* 540 */ 0x4c,               /* FC_EMBEDDED_COMPLEX
*/
                    0x0,                /*
0 */
/* 542 */ NdrFcShort( 0xff40 ),        /* Offset= -
192 (350) */
/* 544 */ 0x5c,               /* FC_PAD */
                    0x5b,               /*
FC_END */
/* 546 */
                    0x1a,               /*
FC_BOGUS_STRUCT */
                    0x3,                /*
3 */
/* 548 */ NdrFcShort( 0x8 ),  /* 8 */
/* 550 */ NdrFcShort( 0x0 ),  /* 0 */
/* 552 */ NdrFcShort( 0x6 ),  /* Offset= 6 (558) */
/* 554 */ 0x8,                /* FC_LONG */
                    0x36,               /*
FC_POINTER */
/* 556 */ 0x5c,               /* FC_PAD */
                    0x5b,               /*
FC_END */
/* 558 */
                    0x11, 0x0,          /*
FC_RP */
/* 560 */ NdrFcShort( 0xffe0 ),        /* Offset= -
32 (528) */
/* 562 */
                    0x1b,               /*
FC_CARRAY */
                    0x3,                /*
3 */
/* 564 */ NdrFcShort( 0x4 ),  /* 4 */
/* 566 */ 0x19,               /* Corr desc:  field
pointer, FC_ULONG */
                    0x0,                /*
*/
/* 568 */ NdrFcShort( 0x0 ),  /* 0 */
/* 570 */
                    0x4b,               /*
FC_PP */
                    0x5c,               /*
FC_PAD */
/* 572 */
                    0x48,               /*
FC_VARIABLE_REPEAT */
                    0x49,               /*
FC_FIXED_OFFSET */

/* 574 */ NdrFcShort( 0x4 ),  /* 4 */
/* 576 */ NdrFcShort( 0x0 ),  /* 0 */
/* 578 */ NdrFcShort( 0x1 ),  /* 1 */
/* 580 */ NdrFcShort( 0x0 ),  /* 0 */
/* 582 */ NdrFcShort( 0x0 ),  /* 0 */
/* 584 */ 0x12, 0x0,          /* FC_UP */
/* 586 */ NdrFcShort( 0x184 ),         /* Offset=
388 (974) */
/* 588 */
                    0x5b,               /*
FC_END */
                    0x8,                /*
FC_LONG */
/* 590 */ 0x5c,               /* FC_PAD */
                    0x5b,               /*
FC_END */
/* 592 */
                    0x1a,               /*
FC_BOGUS_STRUCT */
                    0x3,                /*
3 */
/* 594 */ NdrFcShort( 0x8 ),  /* 8 */
/* 596 */ NdrFcShort( 0x0 ),  /* 0 */
/* 598 */ NdrFcShort( 0x6 ),  /* Offset= 6 (604) */
/* 600 */ 0x8,                /* FC_LONG */
                    0x36,               /*
FC_POINTER */
/* 602 */ 0x5c,               /* FC_PAD */
                    0x5b,               /*
FC_END */
/* 604 */
                    0x11, 0x0,          /*
FC_RP */
/* 606 */ NdrFcShort( 0xffd4 ),        /* Offset= -
44 (562) */
/* 608 */
                    0x2f,               /*
FC_IP */
                    0x5a,               /*
FC_CONSTANT_IID */
/* 610 */ NdrFcLong( 0x2f ),  /* 47 */
/* 614 */ NdrFcShort( 0x0 ),  /* 0 */
/* 616 */ NdrFcShort( 0x0 ),  /* 0 */
/* 618 */ 0xc0,               /* 192 */
                    0x0,                /*
0 */
/* 620 */ 0x0,                /* 0 */
                    0x0,                /*
0 */
/* 622 */ 0x0,                /* 0 */
                    0x0,                /*
0 */
/* 624 */ 0x0,                /* 0 */
                    0x46,               /*
70 */
/* 626 */
                    0x1b,               /*
FC_CARRAY */
                    0x0,                /*
0 */
/* 628 */ NdrFcShort( 0x1 ),  /* 1 */

/* 630 */ 0x19,               /* Corr desc:  field
pointer, FC_ULONG */
                    0x0,                /*
*/
/* 632 */ NdrFcShort( 0x4 ),  /* 4 */
/* 634 */ 0x1,                /* FC_BYTE */
                    0x5b,               /*
FC_END */
/* 636 */
                    0x1a,               /*
FC_BOGUS_STRUCT */
                    0x3,                /*
3 */
/* 638 */ NdrFcShort( 0x10 ), /* 16 */
/* 640 */ NdrFcShort( 0x0 ),  /* 0 */
/* 642 */ NdrFcShort( 0xa ),  /* Offset= 10 (652) */
/* 644 */ 0x8,                /* FC_LONG */
                    0x8,                /*
FC_LONG */
/* 646 */ 0x4c,               /* FC_EMBEDDED_COMPLEX
*/
                    0x0,                /*
0 */
/* 648 */ NdrFcShort( 0xffd8 ),        /* Offset= -
40 (608) */
/* 650 */ 0x36,               /* FC_POINTER */
                    0x5b,               /*
FC_END */
/* 652 */
                    0x12, 0x0,          /*
FC_UP */
/* 654 */ NdrFcShort( 0xffe4 ),        /* Offset= -
28 (626) */
/* 656 */
                    0x1b,               /*
FC_CARRAY */
                    0x3,                /*
3 */
/* 658 */ NdrFcShort( 0x4 ),  /* 4 */
/* 660 */ 0x19,               /* Corr desc:  field
pointer, FC_ULONG */
                    0x0,                /*
*/
/* 662 */ NdrFcShort( 0x0 ),  /* 0 */
/* 664 */
                    0x4b,               /*
FC_PP */
                    0x5c,               /*
FC_PAD */
/* 666 */
                    0x48,               /*
FC_VARIABLE_REPEAT */
                    0x49,               /*
FC_FIXED_OFFSET */
/* 668 */ NdrFcShort( 0x4 ),  /* 4 */
/* 670 */ NdrFcShort( 0x0 ),  /* 0 */
/* 672 */ NdrFcShort( 0x1 ),  /* 1 */
/* 674 */ NdrFcShort( 0x0 ),  /* 0 */
/* 676 */ NdrFcShort( 0x0 ),  /* 0 */
/* 678 */ 0x12, 0x0,          /* FC_UP */
/* 680 */ NdrFcShort( 0xffd4 ),        /* Offset= -
44 (636) */
/* 682 */
```

```
                          0x5b,             /*
FC_END */
                          0x8,              /*
FC_LONG */
/* 684 */ 0x5c,           /* FC_PAD */
                          0x5b,             /*
FC_END */
/* 686 */
                          0x1a,             /*
FC_BOGUS_STRUCT */
                          0x3,              /*
3 */
/* 688 */ NdrFcShort( 0x8 ), /* 8 */
/* 690 */ NdrFcShort( 0x0 ), /* 0 */
/* 692 */ NdrFcShort( 0x6 ), /* Offset= 6 (698) */
/* 694 */ 0x8,            /* FC_LONG */
                          0x36,             /*
FC_POINTER */
/* 696 */ 0x5c,           /* FC_PAD */
                          0x5b,             /*
FC_END */
/* 698 */
                          0x11, 0x0,        /*
FC_RP */
/* 700 */ NdrFcShort( 0xffd4 ),      /* Offset= -
44 (656) */
/* 702 */
                          0x1d,             /*
FC_SMFARRAY */
                          0x0,              /*
0 */
/* 704 */ NdrFcShort( 0x8 ), /* 8 */
/* 706 */ 0x1,            /* FC_BYTE */
                          0x5b,             /*
FC_END */
/* 708 */
                          0x15,             /*
FC_STRUCT */
                          0x3,              /*
3 */
/* 710 */ NdrFcShort( 0x10 ), /* 16 */
/* 712 */ 0x8,            /* FC_LONG */
                          0x6,              /*
FC_SHORT */
/* 714 */ 0x6,            /* FC_SHORT */
                          0x4c,             /*
FC_EMBEDDED_COMPLEX */
/* 716 */ 0x0,            /* 0 */
                          NdrFcShort( 0xfff1 ),
       /* Offset= -15 (702) */
                          0x5b,             /*
FC_END */
/* 720 */
                          0x1a,             /*
FC_BOGUS_STRUCT */
                          0x3,              /*
3 */
/* 722 */ NdrFcShort( 0x18 ), /* 24 */
/* 724 */ NdrFcShort( 0x0 ), /* 0 */
/* 726 */ NdrFcShort( 0xa ), /* Offset= 10 (736) */
/* 728 */ 0x8,            /* FC_LONG */
```

```
                          0x36,             /*
FC_POINTER */
/* 730 */ 0x4c,           /* FC_EMBEDDED_COMPLEX
*/
                          0x0,              /*
0 */
/* 732 */ NdrFcShort( 0xffe8 ),      /* Offset= -
24 (708) */
/* 734 */ 0x5c,           /* FC_PAD */
                          0x5b,             /*
FC_END */
/* 736 */
                          0x11, 0x0,        /*
FC_RP */
/* 738 */ NdrFcShort( 0xff0c ),      /* Offset= -
244 (494) */
/* 740 */
                          0x1b,             /*
FC_CARRAY */
                          0x0,              /*
0 */
/* 742 */ NdrFcShort( 0x1 ), /* 1 */
/* 744 */ 0x19,           /* Corr desc: field
pointer, FC_ULONG */
                          0x0,              /*
*/
/* 746 */ NdrFcShort( 0x0 ), /* 0 */
/* 748 */ 0x1,            /* FC_BYTE */
                          0x5b,             /*
FC_END */
/* 750 */
                          0x16,             /*
FC_PSTRUCT */
                          0x3,              /*
3 */
/* 752 */ NdrFcShort( 0x8 ), /* 8 */
/* 754 */
                          0x4b,             /*
FC_PP */
                          0x5c,             /*
FC_PAD */
/* 756 */
                          0x46,             /*
FC_NO_REPEAT */
                          0x5c,             /*
FC_PAD */
/* 758 */ NdrFcShort( 0x4 ), /* 4 */
/* 760 */ NdrFcShort( 0x4 ), /* 4 */
/* 762 */ 0x12, 0x0,      /* FC_UP */
/* 764 */ NdrFcShort( 0xffe8 ),      /* Offset= -
24 (740) */
/* 766 */
                          0x5b,             /*
FC_END */
                          0x8,              /*
FC_LONG */
/* 768 */ 0x8,            /* FC_LONG */
                          0x5b,             /*
FC_END */
/* 770 */
                          0x1b,             /*
FC_CARRAY */
```

```
                          0x1,              /*
1 */
/* 772 */ NdrFcShort( 0x2 ), /* 2 */
/* 774 */ 0x19,           /* Corr desc: field
pointer, FC_ULONG */
                          0x0,              /*
*/
/* 776 */ NdrFcShort( 0x0 ), /* 0 */
/* 778 */ 0x6,            /* FC_SHORT */
                          0x5b,             /*
FC_END */
/* 780 */
                          0x16,             /*
FC_PSTRUCT */
                          0x3,              /*
3 */
/* 782 */ NdrFcShort( 0x8 ), /* 8 */
/* 784 */
                          0x4b,             /*
FC_PP */
                          0x5c,             /*
FC_PAD */
/* 786 */
                          0x46,             /*
FC_NO_REPEAT */
                          0x5c,             /*
FC_PAD */
/* 788 */ NdrFcShort( 0x4 ), /* 4 */
/* 790 */ NdrFcShort( 0x4 ), /* 4 */
/* 792 */ 0x12, 0x0,      /* FC_UP */
/* 794 */ NdrFcShort( 0xffe8 ),      /* Offset= -
24 (770) */
/* 796 */
                          0x5b,             /*
FC_END */
                          0x8,              /*
FC_LONG */
/* 798 */ 0x8,            /* FC_LONG */
                          0x5b,             /*
FC_END */
/* 800 */
                          0x1b,             /*
FC_CARRAY */
                          0x3,              /*
3 */
/* 802 */ NdrFcShort( 0x4 ), /* 4 */
/* 804 */ 0x19,           /* Corr desc: field
pointer, FC_ULONG */
                          0x0,              /*
*/
/* 806 */ NdrFcShort( 0x0 ), /* 0 */
/* 808 */ 0x8,            /* FC_LONG */
                          0x5b,             /*
FC_END */
/* 810 */
                          0x16,             /*
FC_PSTRUCT */
                          0x3,              /*
3 */
/* 812 */ NdrFcShort( 0x8 ), /* 8 */
/* 814 */
```

```
                            0x4b,           /* FC_PP */
                            0x5c,           /* FC_PAD */
/* 816 */
                            0x46,           /* FC_NO_REPEAT */
                            0x5c,           /* FC_PAD */
/* 818 */ NdrFcShort( 0x4 ), /* 4 */
/* 820 */ NdrFcShort( 0x4 ), /* 4 */
/* 822 */ 0x12, 0x0,         /* FC_UP */
/* 824 */ NdrFcShort( 0xffe8 ),       /* Offset= -24 (800) */
/* 826 */
                            0x5b,           /* FC_END */
                            0x8,            /* FC_LONG */
/* 828 */ 0x8,              /* FC_LONG */
                            0x5b,           /* FC_END */
/* 830 */
                            0x1b,           /* FC_CARRAY */
                            0x7,            /* 7 */
/* 832 */ NdrFcShort( 0x8 ), /* 8 */
/* 834 */ 0x19,             /* Corr desc: field pointer, FC_ULONG */
                            0x0,            /* */
/* 836 */ NdrFcShort( 0x0 ), /* 0 */
/* 838 */ 0xb,              /* FC_HYPER */
                            0x5b,           /* FC_END */
/* 840 */
                            0x16,           /* FC_PSTRUCT */
                            0x3,            /* 3 */
/* 842 */ NdrFcShort( 0x8 ), /* 8 */
/* 844 */
                            0x4b,           /* FC_PP */
                            0x5c,           /* FC_PAD */
/* 846 */
                            0x46,           /* FC_NO_REPEAT */
                            0x5c,           /* FC_PAD */
/* 848 */ NdrFcShort( 0x4 ), /* 4 */
/* 850 */ NdrFcShort( 0x4 ), /* 4 */
/* 852 */ 0x12, 0x0,        /* FC_UP */
/* 854 */ NdrFcShort( 0xffe8 ),       /* Offset= -24 (830) */
/* 856 */
                            0x5b,           /* FC_END */

                            0x8,            /* FC_LONG */
/* 858 */ 0x8,              /* FC_LONG */
                            0x5b,           /* FC_END */
/* 860 */
                            0x15,           /* FC_STRUCT */
                            0x3,            /* 3 */
/* 862 */ NdrFcShort( 0x8 ), /* 8 */
/* 864 */ 0x8,              /* FC_LONG */
                            0x8,            /* FC_LONG */
/* 866 */ 0x5c,             /* FC_PAD */
                            0x5b,           /* FC_END */
/* 868 */
                            0x1b,           /* FC_CARRAY */
                            0x3,            /* 3 */
/* 870 */ NdrFcShort( 0x8 ), /* 8 */
/* 872 */ 0x7,              /* Corr desc: FC_USHORT */
                            0x0,            /* */
/* 874 */ NdrFcShort( 0xffd8 ),       /* -40 */
/* 876 */ 0x4c,             /* FC_EMBEDDED_COMPLEX */
                            0x0,            /* 0 */
/* 878 */ NdrFcShort( 0xffee ),       /* Offset= -18 (860) */
/* 880 */ 0x5c,             /* FC_PAD */
                            0x5b,           /* FC_END */
/* 882 */
                            0x1a,           /* FC_BOGUS_STRUCT */
                            0x3,            /* 3 */
/* 884 */ NdrFcShort( 0x28 ), /* 40 */
/* 886 */ NdrFcShort( 0xffee ),       /* Offset= -18 (868) */
/* 888 */ NdrFcShort( 0x0 ), /* Offset= 0 (888) */
/* 890 */ 0x6,             /* FC_SHORT */
                            0x6,            /* FC_SHORT */
/* 892 */ 0x8,             /* FC_LONG */
                            0x8,            /* FC_LONG */
/* 894 */ 0x4c,            /* FC_EMBEDDED_COMPLEX */
                            0x0,            /* 0 */
/* 896 */ NdrFcShort( 0xfdf8 ),       /* Offset= -520 (376) */
/* 898 */ 0x5c,            /* FC_PAD */
                            0x5b,           /* FC_END */
/* 900 */

                            0x12, 0x0,      /* FC_UP */
/* 902 */ NdrFcShort( 0xfef6 ),       /* Offset= -266 (636) */
/* 904 */
                            0x12, 0x8,      /* FC_UP [simple_pointer] */
/* 906 */ 0x1,             /* FC_BYTE */
                            0x5c,           /* FC_PAD */
/* 908 */
                            0x12, 0x8,      /* FC_UP [simple_pointer] */
/* 910 */ 0x6,             /* FC_SHORT */
                            0x5c,           /* FC_PAD */
/* 912 */
                            0x12, 0x8,      /* FC_UP [simple_pointer] */
/* 914 */ 0x8,             /* FC_LONG */
                            0x5c,           /* FC_PAD */
/* 916 */
                            0x12, 0x8,      /* FC_UP [simple_pointer] */
/* 918 */ 0xb,             /* FC_HYPER */
                            0x5c,           /* FC_PAD */
/* 920 */
                            0x12, 0x8,      /* FC_UP [simple_pointer] */
/* 922 */ 0xa,             /* FC_FLOAT */
                            0x5c,           /* FC_PAD */
/* 924 */
                            0x12, 0x8,      /* FC_UP [simple_pointer] */
/* 926 */ 0xc,             /* FC_DOUBLE */
                            0x5c,           /* FC_PAD */
/* 928 */
                            0x12, 0x0,      /* FC_UP */
/* 930 */ NdrFcShort( 0xfd8c ),       /* Offset= -628 (302) */
/* 932 */
                            0x12, 0x10,     /* FC_UP [pointer_deref] */
/* 934 */ NdrFcShort( 0xfd8e ),       /* Offset= -626 (308) */
/* 936 */
                            0x12, 0x10,     /* FC_UP [pointer_deref] */
/* 938 */ NdrFcShort( 0xfda2 ),       /* Offset= -606 (332) */
/* 940 */
                            0x12, 0x10,     /* FC_UP [pointer_deref] */
/* 942 */ NdrFcShort( 0xfdb0 ),       /* Offset= -592 (350) */
/* 944 */
                            0x12, 0x10,     /* FC_UP [pointer_deref] */
```

```
/* 946 */ NdrFcShort( 0xfdbe ),        /* Offset= -
578 (368) */
/* 948 */
                          0x12, 0x10,          /*
FC_UP [pointer_deref] */
/* 950 */ NdrFcShort( 0x2 ),   /* Offset= 2 (952) */
/* 952 */
                          0x12, 0x0,           /*
FC_UP */
/* 954 */ NdrFcShort( 0x14 ), /* Offset= 20 (974) */
/* 956 */
                          0x15,                /*
FC_STRUCT */
                          0x7,                 /*
7 */
/* 958 */ NdrFcShort( 0x10 ), /* 16 */
/* 960 */ 0x6,                 /* FC_SHORT */
                          0x1,                 /*
FC_BYTE */
/* 962 */ 0x1,                 /* FC_BYTE */
                          0x8,                 /*
FC_LONG */
/* 964 */ 0xb,                 /* FC_HYPER */
                          0x5b,                /*
FC_END */
/* 966 */
                          0x12, 0x0,           /*
FC_UP */
/* 968 */ NdrFcShort( 0xfff4 ),        /* Offset= -
12 (956) */
/* 970 */
                          0x12, 0x8,           /*
FC_UP [simple_pointer] */
/* 972 */ 0x2,                 /* FC_CHAR */
                          0x5c,                /*
FC_PAD */
/* 974 */
                          0x1a,                /*
FC_BOGUS_STRUCT */
                          0x7,                 /*
7 */
/* 976 */ NdrFcShort( 0x20 ), /* 32 */
/* 978 */ NdrFcShort( 0x0 ),  /* 0 */
/* 980 */ NdrFcShort( 0x0 ),  /* Offset= 0 (980) */
/* 982 */ 0x8,                 /* FC_LONG */
                          0x8,                 /*
FC_LONG */
/* 984 */ 0x6,                 /* FC_SHORT */
                          0x6,                 /*
FC_SHORT */
/* 986 */ 0x6,                 /* FC_SHORT */
                          0x6,                 /*
FC_SHORT */
/* 988 */ 0x4c,                /* FC_EMBEDDED_COMPLEX
*/
                          0x0,                 /*
0 */
/* 990 */ NdrFcShort( 0xfc28 ),        /* Offset= -
984 (6) */
/* 992 */ 0x5c,                /* FC_PAD */
                          0x5b,                /*
FC_END */
/* 994 */ 0xb4,                /* FC_USER_MARSHAL */
```

```
                                     0x83,                /*
131 */
/* 996 */ NdrFcShort( 0x0 ),  /* 0 */
/* 998 */ NdrFcShort( 0x10 ), /* 16 */
/* 1000 */          NdrFcShort( 0x0 ),  /* 0 */
/* 1002 */          NdrFcShort( 0xfc18 ),        /*
Offset= -1000 (2) */
/* 1004 */
                                     0x11, 0x4,           /*
FC_RP [alloced_on_stack] */
/* 1006 */          NdrFcShort( 0x6 ),  /* Offset= 6
(1012) */
/* 1008 */
                                     0x13, 0x0,           /*
FC_OP */
/* 1010 */          NdrFcShort( 0xffdc ),        /*
Offset= -36 (974) */
/* 1012 */          0xb4,                /*
FC_USER_MARSHAL */
                                     0x83,                /*
131 */
/* 1014 */          NdrFcShort( 0x0 ),  /* 0 */
/* 1016 */          NdrFcShort( 0x10 ), /* 16 */
/* 1018 */          NdrFcShort( 0x0 ),  /* 0 */
/* 1020 */          NdrFcShort( 0xfff4 ),        /*
Offset= -12 (1008) */

                                     0x0

               }
          };

static const USER_MARSHAL_ROUTINE_QUADRUPLE
UserMarshalRoutines[ WIRE_MARSHAL_TABLE_SIZE ] =
          {

               {
               VARIANT_UserSize
               ,VARIANT_UserMarshal
               ,VARIANT_UserUnmarshal
               ,VARIANT_UserFree
               }

          };


/* Standard interface: __MIDL_itf_tpcc_com_ps_0000,
ver. 0.0,

GUID={0x00000000,0x0000,0x0000,{0x00,0x00,0x00,0x00,0
x00,0x00,0x00,0x00}} */


/* Object interface: IUnknown, ver. 0.0,

GUID={0x00000000,0x0000,0x0000,{0xC0,0x00,0x00,0x00,0
x00,0x00,0x00,0x46}} */


/* Object interface: ITPCC, ver. 0.0,

GUID={0xFEEE6AA2,0x84B1,0x11d2,{0xBA,0x47,0x00,0xC0,0
x4F,0xBF,0xE0,0x8B}} */
```

```
#pragma code_seg(".orpc")
static const unsigned short
ITPCC_FormatStringOffsetTable[] =
     {
     0,
     34,
     68,
     102,
     136,
     170
     };

static const MIDL_STUBLESS_PROXY_INFO ITPCC_ProxyInfo
=
     {
     &Object_StubDesc,
     __MIDL_ProcFormatString.Format,
     &ITPCC_FormatStringOffsetTable[-3],
     0,
     0,
     0
     };


static const MIDL_SERVER_INFO ITPCC_ServerInfo =
     {
     &Object_StubDesc,
     0,
     __MIDL_ProcFormatString.Format,
     &ITPCC_FormatStringOffsetTable[-3],
     0,
     0,
     0,
     0};
CINTERFACE_PROXY_VTABLE(9) _ITPCCProxyVtbl =
{
     &ITPCC_ProxyInfo,
     &IID_ITPCC,
     IUnknown_QueryInterface_Proxy,
     IUnknown_AddRef_Proxy,
     IUnknown_Release_Proxy ,
     (void *) (INT_PTR) -1 /* ITPCC::NewOrder */ ,
     (void *) (INT_PTR) -1 /* ITPCC::Payment */ ,
     (void *) (INT_PTR) -1 /* ITPCC::Delivery */ ,
     (void *) (INT_PTR) -1 /* ITPCC::StockLevel */ ,
     (void *) (INT_PTR) -1 /* ITPCC::OrderStatus */ ,
     (void *) (INT_PTR) -1 /* ITPCC::CallSetComplete
*/
};

const CInterfaceStubVtbl _ITPCCStubVtbl =
{
     &IID_ITPCC,
     &ITPCC_ServerInfo,
     9,
     0, /* pure interpreted */
     CStdStubBuffer_METHODS
};

static const MIDL_STUB_DESC Object_StubDesc =
     {
     0,
```

```
    NdrOleAllocate,
    NdrOleFree,
    0,
    0,
    0,
    0,
    0,
    __MIDL_TypeFormatString.Format,
    1, /* -error bounds_check flag */
    0x20000, /* Ndr library version */
    0,
    0x6000169, /* MIDL Version 6.0.361 */
    0,
    UserMarshalRoutines,
    0,  /* notify & notify_flag routine table */
    0x1, /* MIDL flag */
    0, /* cs routines */
    0,   /* proxy/server info */
    0   /* Reserved5 */
    };

const CInterfaceProxyVtbl *
_tpcc_com_ps_ProxyVtblList[] =
{
    ( CInterfaceProxyVtbl *) &_ITPCCProxyVtbl,
    0
};

const CInterfaceStubVtbl *
_tpcc_com_ps_StubVtblList[] =
{
    ( CInterfaceStubVtbl *) &_ITPCCStubVtbl,
    0
};

PCInterfaceName const
_tpcc_com_ps_InterfaceNamesList[] =
{
    "ITPCC",
    0
};


#define _tpcc_com_ps_CHECK_IID(n)
        IID_GENERIC_CHECK_IID( _tpcc_com_ps, pIID,
n)

int __stdcall _tpcc_com_ps_IID_Lookup( const IID *
pIID, int * pIndex )
{

    if(!_tpcc_com_ps_CHECK_IID(0))
        {
        *pIndex = 0;
        return 1;
        }

    return 0;
}

const ExtendedProxyFileInfo tpcc_com_ps_ProxyFileInfo
=
{
```

```
    (PCInterfaceProxyVtblList *) &
_tpcc_com_ps_ProxyVtblList,
    (PCInterfaceStubVtblList *) &
_tpcc_com_ps_StubVtblList,
    (const PCInterfaceName * ) &
_tpcc_com_ps_InterfaceNamesList,
    0, // no delegation
    & _tpcc_com_ps_IID_Lookup,
    1,
    2,
    0, /* table of [async_uuid] interfaces */
    0, /* Filler1 */
    0, /* Filler2 */
    0  /* Filler3 */
};
#if _MSC_VER >= 1200
#pragma warning(pop)
#endif


#endif /* !defined(_M_IA64) && !defined(_M_AMD64)*/


/* this ALWAYS GENERATED file contains the proxy stub
code */


 /* File created by MIDL compiler version 6.00.0361
*/
/* at Tue Nov 10 10:51:13 2009
 */
/* Compiler settings for .\src\tpcc_com_ps.idl:
    Oicf, W1, Zp8, env=Win64 (32b run,appending)
    protocol : dce , ms_ext, c_ext, robust
    error checks: allocation ref bounds_check enum
stub_data
    VC __declspec() decoration level:
         __declspec(uuid()), __declspec(selectany),
__declspec(novtable)
         DECLSPEC_UUID(), MIDL_INTERFACE()
*/
//@@MIDL_FILE_HEADING(  )

#if defined(_M_IA64) || defined(_M_AMD64)


#pragma warning( disable: 4049 )  /* more than 64k
source lines */
#if _MSC_VER >= 1200
#pragma warning(push)
#endif

#pragma warning( disable: 4211 )  /* redefine extent
to static */
#pragma warning( disable: 4232 )  /* dllimport
identity*/
#define USE_STUBLESS_PROXY


/* verify that the <rpcproxy.h> version is high
enough to compile this file*/
#ifndef __REDQ_RPCPROXY_H_VERSION__
```

```
#define __REQUIRED_RPCPROXY_H_VERSION__ 475
#endif


#include "rpcproxy.h"
#ifndef __RPCPROXY_H_VERSION__
#error this stub requires an updated version of
<rpcproxy.h>
#endif // __RPCPROXY_H_VERSION__


#include "tpcc_com_ps.h"

#define TYPE_FORMAT_STRING_SIZE   1003
#define PROC_FORMAT_STRING_SIZE   253
#define TRANSMIT_AS_TABLE_SIZE    0
#define WIRE_MARSHAL_TABLE_SIZE   1

typedef struct _MIDL_TYPE_FORMAT_STRING
    {
    short        Pad;
    unsigned char  Format[ TYPE_FORMAT_STRING_SIZE ];
    } MIDL_TYPE_FORMAT_STRING;

typedef struct _MIDL_PROC_FORMAT_STRING
    {
    short        Pad;
    unsigned char  Format[ PROC_FORMAT_STRING_SIZE ];
    } MIDL_PROC_FORMAT_STRING;


static RPC_SYNTAX_IDENTIFIER _RpcTransferSyntax =
{{0x8A885D04,0x1CEB,0x11C9,{0x9F,0xE8,0x08,0x00,0x2B,
0x10,0x48,0x60}},{2,0}};


extern const MIDL_TYPE_FORMAT_STRING
__MIDL_TypeFormatString;
extern const MIDL_PROC_FORMAT_STRING
__MIDL_ProcFormatString;


extern const MIDL_STUB_DESC Object_StubDesc;


extern const MIDL_SERVER_INFO ITPCC_ServerInfo;
extern const MIDL_STUBLESS_PROXY_INFO
ITPCC_ProxyInfo;


extern const USER_MARSHAL_ROUTINE_QUADRUPLE
UserMarshalRoutines[ WIRE_MARSHAL_TABLE_SIZE ];

#if !defined(__RPC_WIN64__)
#error  Invalid build platform for this stub.
#endif

static const MIDL_PROC_FORMAT_STRING
__MIDL_ProcFormatString =
    {
        0,
        {
```

```
        /* Procedure NewOrder */

                        0x33,           /*
FC_AUTO_HANDLE */
                        0x6c,           /*
Old Flags:  object, Oi2 */
/*  2 */    NdrFcLong( 0x0 ),   /* 0 */
/*  6 */    NdrFcShort( 0x3 ),  /* 3 */
/*  8 */    NdrFcShort( 0x30 ), /* ia64 Stack
size/offset = 48 */
/* 10 */    NdrFcShort( 0x0 ),  /* 0 */
/* 12 */    NdrFcShort( 0x8 ),  /* 8 */
/* 14 */    0x47,               /* Oi2 Flags:  srv must
size, clt must size, has return, has ext, */
                        0x3,            /*
3 */
/* 16 */    0xa,                /* 10 */
                        0x7,            /*
Ext Flags:  new corr desc, clt corr check, srv corr
check, */
/* 18 */    NdrFcShort( 0x20 ), /* 32 */
/* 20 */    NdrFcShort( 0x20 ), /* 32 */
/* 22 */    NdrFcShort( 0x0 ),  /* 0 */
/* 24 */    NdrFcShort( 0x0 ),  /* 0 */

        /* Parameter txn_in */

/* 26 */    NdrFcShort( 0x8b ), /* Flags:  must size,
must free, in, by val, */
/* 28 */    NdrFcShort( 0x8 ),  /* ia64 Stack
size/offset = 8 */
/* 30 */    NdrFcShort( 0x3ce ),        /* Type
Offset=974 */

        /* Parameter txn_out */

/* 32 */    NdrFcShort( 0x6113 ),       /* Flags:
must size, must free, out, simple ref, srv alloc
size=24 */
/* 34 */    NdrFcShort( 0x20 ), /* ia64 Stack
size/offset = 32 */
/* 36 */    NdrFcShort( 0x3e0 ),        /* Type
Offset=992 */

        /* Return value */

/* 38 */    NdrFcShort( 0x70 ), /* Flags:  out, return,
base type, */
/* 40 */    NdrFcShort( 0x28 ), /* ia64 Stack
size/offset = 40 */
/* 42 */    0x8,                /* FC_LONG */
                        0x0,            /*
0 */

        /* Procedure Payment */

/* 44 */    0x33,               /* FC_AUTO_HANDLE */
                        0x6c,           /*
Old Flags:  object, Oi2 */
/* 46 */    NdrFcLong( 0x0 ),   /* 0 */
/* 50 */    NdrFcShort( 0x4 ),  /* 4 */
/* 52 */    NdrFcShort( 0x30 ), /* ia64 Stack
size/offset = 48 */
```

```
/* 54 */    NdrFcShort( 0x0 ),  /* 0 */
/* 56 */    NdrFcShort( 0x8 ),  /* 8 */
/* 58 */    0x47,               /* Oi2 Flags:  srv must
size, clt must size, has return, has ext, */
                        0x3,            /*
3 */
/* 60 */    0xa,                /* 10 */
                        0x7,            /*
Ext Flags:  new corr desc, clt corr check, srv corr
check, */
/* 62 */    NdrFcShort( 0x20 ), /* 32 */
/* 64 */    NdrFcShort( 0x20 ), /* 32 */
/* 66 */    NdrFcShort( 0x0 ),  /* 0 */
/* 68 */    NdrFcShort( 0x0 ),  /* 0 */

        /* Parameter txn_in */

/* 70 */    NdrFcShort( 0x8b ), /* Flags:  must size,
must free, in, by val, */
/* 72 */    NdrFcShort( 0x8 ),  /* ia64 Stack
size/offset = 8 */
/* 74 */    NdrFcShort( 0x3ce ),        /* Type
Offset=974 */

        /* Parameter txn_out */

/* 76 */    NdrFcShort( 0x6113 ),       /* Flags:
must size, must free, out, simple ref, srv alloc
size=24 */
/* 78 */    NdrFcShort( 0x20 ), /* ia64 Stack
size/offset = 32 */
/* 80 */    NdrFcShort( 0x3e0 ),        /* Type
Offset=992 */

        /* Return value */

/* 82 */    NdrFcShort( 0x70 ), /* Flags:  out, return,
base type, */
/* 84 */    NdrFcShort( 0x28 ), /* ia64 Stack
size/offset = 40 */
/* 86 */    0x8,                /* FC_LONG */
                        0x0,            /*
0 */

        /* Procedure Delivery */

/* 88 */    0x33,               /* FC_AUTO_HANDLE */
                        0x6c,           /*
Old Flags:  object, Oi2 */
/* 90 */    NdrFcLong( 0x0 ),   /* 0 */
/* 94 */    NdrFcShort( 0x5 ),  /* 5 */
/* 96 */    NdrFcShort( 0x30 ), /* ia64 Stack
size/offset = 48 */
/* 98 */    NdrFcShort( 0x0 ),  /* 0 */
/* 100 */   NdrFcShort( 0x8 ),  /* 8 */
/* 102 */   0x47,               /* Oi2 Flags:  srv must
size, clt must size, has return, has ext, */
                        0x3,            /*
3 */
/* 104 */   0xa,                /* 10 */
                        0x7,            /*
Ext Flags:  new corr desc, clt corr check, srv corr
check, */
```

```
/* 106 */   NdrFcShort( 0x20 ), /* 32 */
/* 108 */   NdrFcShort( 0x20 ), /* 32 */
/* 110 */   NdrFcShort( 0x0 ),  /* 0 */
/* 112 */   NdrFcShort( 0x0 ),  /* 0 */

        /* Parameter txn_in */

/* 114 */   NdrFcShort( 0x8b ), /* Flags:  must size,
must free, in, by val, */
/* 116 */   NdrFcShort( 0x8 ),  /* ia64 Stack
size/offset = 8 */
/* 118 */   NdrFcShort( 0x3ce ),        /* Type
Offset=974 */

        /* Parameter txn_out */

/* 120 */   NdrFcShort( 0x6113 ),       /* Flags:
must size, must free, out, simple ref, srv alloc
size=24 */
/* 122 */   NdrFcShort( 0x20 ), /* ia64 Stack
size/offset = 32 */
/* 124 */   NdrFcShort( 0x3e0 ),        /* Type
Offset=992 */

        /* Return value */

/* 126 */   NdrFcShort( 0x70 ), /* Flags:  out, return,
base type, */
/* 128 */   NdrFcShort( 0x28 ), /* ia64 Stack
size/offset = 40 */
/* 130 */   0x8,                /* FC_LONG */
                        0x0,            /*
0 */

        /* Procedure StockLevel */

/* 132 */   0x33,               /* FC_AUTO_HANDLE */
                        0x6c,           /*
Old Flags:  object, Oi2 */
/* 134 */   NdrFcLong( 0x0 ),   /* 0 */
/* 138 */   NdrFcShort( 0x6 ),  /* 6 */
/* 140 */   NdrFcShort( 0x30 ), /* ia64 Stack
size/offset = 48 */
/* 142 */   NdrFcShort( 0x0 ),  /* 0 */
/* 144 */   NdrFcShort( 0x8 ),  /* 8 */
/* 146 */   0x47,               /* Oi2 Flags:  srv must
size, clt must size, has return, has ext, */
                        0x3,            /*
3 */
/* 148 */   0xa,                /* 10 */
                        0x7,            /*
Ext Flags:  new corr desc, clt corr check, srv corr
check, */
/* 150 */   NdrFcShort( 0x20 ), /* 32 */
/* 152 */   NdrFcShort( 0x20 ), /* 32 */
/* 154 */   NdrFcShort( 0x0 ),  /* 0 */
/* 156 */   NdrFcShort( 0x0 ),  /* 0 */

        /* Parameter txn_in */

/* 158 */   NdrFcShort( 0x8b ), /* Flags:  must size,
must free, in, by val, */
```

```
/* 160 */	NdrFcShort( 0x8 ),	/* ia64 Stack
size/offset = 8 */
/* 162 */	NdrFcShort( 0x3ce ),	/* Type
Offset=974 */

		/* Parameter txn_out */

/* 164 */	NdrFcShort( 0x6113 ),	/* Flags:
must size, must free, out, simple ref, srv alloc
size=24 */
/* 166 */	NdrFcShort( 0x20 ),	/* ia64 Stack
size/offset = 32 */
/* 168 */	NdrFcShort( 0x3e0 ),	/* Type
Offset=992 */

		/* Return value */

/* 170 */	NdrFcShort( 0x70 ),	/* Flags:  out, return,
base type, */
/* 172 */	NdrFcShort( 0x28 ),	/* ia64 Stack
size/offset = 40 */
/* 174 */	0x8,	/* FC_LONG */
			0x0,	/*
0 */

		/* Procedure OrderStatus */

/* 176 */	0x33,	/* FC_AUTO_HANDLE */
			0x6c,	/*
Old Flags:  object, Oi2 */
/* 178 */	NdrFcLong( 0x0 ),	/* 0 */
/* 182 */	NdrFcShort( 0x7 ),	/* 7 */
/* 184 */	NdrFcShort( 0x30 ),	/* ia64 Stack
size/offset = 48 */
/* 186 */	NdrFcShort( 0x0 ),	/* 0 */
/* 188 */	NdrFcShort( 0x8 ),	/* 8 */
/* 190 */	0x47,	/* Oi2 Flags:  srv must
size, clt must size, has return, has ext, */
			0x3,	/*
3 */
/* 192 */	0xa,	/* 10 */
			0x7,	/*
Ext Flags:  new corr desc, clt corr check, srv corr
check, */
/* 194 */	NdrFcShort( 0x20 ),	/* 32 */
/* 196 */	NdrFcShort( 0x20 ),	/* 32 */
/* 198 */	NdrFcShort( 0x0 ),	/* 0 */
/* 200 */	NdrFcShort( 0x0 ),	/* 0 */

		/* Parameter txn_in */

/* 202 */	NdrFcShort( 0x8b ),	/* Flags:  must size,
must free, in, by val, */
/* 204 */	NdrFcShort( 0x8 ),	/* ia64 Stack
size/offset = 8 */
/* 206 */	NdrFcShort( 0x3ce ),	/* Type
Offset=974 */

		/* Parameter txn_out */

/* 208 */	NdrFcShort( 0x6113 ),	/* Flags:
must size, must free, out, simple ref, srv alloc
size=24 */
```

```
/* 210 */	NdrFcShort( 0x20 ),	/* ia64 Stack
size/offset = 32 */
/* 212 */	NdrFcShort( 0x3e0 ),	/* Type
Offset=992 */

		/* Return value */

/* 214 */	NdrFcShort( 0x70 ),	/* Flags:  out, return,
base type, */
/* 216 */	NdrFcShort( 0x28 ),	/* ia64 Stack
size/offset = 40 */
/* 218 */	0x8,	/* FC_LONG */
			0x0,	/*
0 */

		/* Procedure CallSetComplete */

/* 220 */	0x33,	/* FC_AUTO_HANDLE */
			0x6c,	/*
Old Flags:  object, Oi2 */
/* 222 */	NdrFcLong( 0x0 ),	/* 0 */
/* 226 */	NdrFcShort( 0x8 ),	/* 8 */
/* 228 */	NdrFcShort( 0x10 ),	/* ia64 Stack
size/offset = 16 */
/* 230 */	NdrFcShort( 0x0 ),	/* 0 */
/* 232 */	NdrFcShort( 0x8 ),	/* 8 */
/* 234 */	0x44,	/* Oi2 Flags:  has
return, has ext, */
			0x1,	/*
1 */
/* 236 */	0xa,	/* 10 */
			0x1,	/*
Ext Flags:  new corr desc, */
/* 238 */	NdrFcShort( 0x0 ),	/* 0 */
/* 240 */	NdrFcShort( 0x0 ),	/* 0 */
/* 242 */	NdrFcShort( 0x0 ),	/* 0 */
/* 244 */	NdrFcShort( 0x0 ),	/* 0 */

		/* Return value */

/* 246 */	NdrFcShort( 0x70 ),	/* Flags:  out, return,
base type, */
/* 248 */	NdrFcShort( 0x8 ),	/* ia64 Stack
size/offset = 8 */
/* 250 */	0x8,	/* FC_LONG */
			0x0,	/*
0 */

			0x0
		}
	};

static const MIDL_TYPE_FORMAT_STRING
__MIDL_TypeFormatString =
	{
		0,
		{
			NdrFcShort( 0x0 ),	/*
0 */
/*  2 */
			0x12, 0x0,	/*
FC_UP */
```

```
/*  4 */	NdrFcShort( 0x3b6 ),	/* Offset=
950 (954) */
/*  6 */
			0x2b,	/*
FC_NON_ENCAPSULATED_UNION */
			0x9,	/*
FC_ULONG */
/*  8 */	0x7,	/* Corr desc: FC_USHORT
*/
			0x0,	/*
*/
/* 10 */	NdrFcShort( 0xfff8 ),	/* -8 */
/* 12 */	NdrFcShort( 0x1 ),	/* Corr flags:  early,
*/
/* 14 */	NdrFcShort( 0x2 ),	/* Offset= 2 (16) */
/* 16 */	NdrFcShort( 0x10 ),	/* 16 */
/* 18 */	NdrFcShort( 0x2f ),	/* 47 */
/* 20 */	NdrFcLong( 0x14 ),	/* 20 */
/* 24 */	NdrFcShort( 0x800b ),	/* Simple arm
type: FC_HYPER */
/* 26 */	NdrFcLong( 0x3 ),	/* 3 */
/* 30 */	NdrFcShort( 0x8008 ),	/* Simple arm
type: FC_LONG */
/* 32 */	NdrFcLong( 0x11 ),	/* 17 */
/* 36 */	NdrFcShort( 0x8001 ),	/* Simple arm
type: FC_BYTE */
/* 38 */	NdrFcLong( 0x2 ),	/* 2 */
/* 42 */	NdrFcShort( 0x8006 ),	/* Simple arm
type: FC_SHORT */
/* 44 */	NdrFcLong( 0x4 ),	/* 4 */
/* 48 */	NdrFcShort( 0x800a ),	/* Simple arm
type: FC_FLOAT */
/* 50 */	NdrFcLong( 0x5 ),	/* 5 */
/* 54 */	NdrFcShort( 0x800c ),	/* Simple arm
type: FC_DOUBLE */
/* 56 */	NdrFcLong( 0xb ),	/* 11 */
/* 60 */	NdrFcShort( 0x8006 ),	/* Simple arm
type: FC_SHORT */
/* 62 */	NdrFcLong( 0xa ),	/* 10 */
/* 66 */	NdrFcShort( 0x8008 ),	/* Simple arm
type: FC_LONG */
/* 68 */	NdrFcLong( 0x6 ),	/* 6 */
/* 72 */	NdrFcShort( 0xe8 ),	/* Offset= 232 (304) */
/* 74 */	NdrFcLong( 0x7 ),	/* 7 */
/* 78 */	NdrFcShort( 0x800c ),	/* Simple arm
type: FC_DOUBLE */
/* 80 */	NdrFcLong( 0x8 ),	/* 8 */
/* 84 */	NdrFcShort( 0xe2 ),	/* Offset= 226 (310) */
/* 86 */	NdrFcLong( 0xd ),	/* 13 */
/* 90 */	NdrFcShort( 0xf6 ),	/* Offset= 246 (336) */
/* 92 */	NdrFcLong( 0x9 ),	/* 9 */
/* 96 */	NdrFcShort( 0x102 ),	/* Offset=
258 (354) */
/* 98 */	NdrFcLong( 0x2000 ),	/* 8192 */
/* 102 */	NdrFcShort( 0x10e ),	/* Offset=
270 (372) */
/* 104 */	NdrFcLong( 0x24 ),	/* 36 */
/* 108 */	NdrFcShort( 0x304 ),	/* Offset=
772 (880) */
/* 110 */	NdrFcLong( 0x4024 ),	/* 16420 */
/* 114 */	NdrFcShort( 0x2fe ),	/* Offset=
766 (880) */
/* 116 */	NdrFcLong( 0x4011 ),	/* 16401 */
```

```
/* 120 */ NdrFcShort( 0x2fc ),          /* Offset=
764 (884) */
/* 122 */ NdrFcLong( 0x4002 ),          /* 16386 */
/* 126 */ NdrFcShort( 0x2fa ),          /* Offset=
762 (888) */
/* 128 */ NdrFcLong( 0x4003 ),          /* 16387 */
/* 132 */ NdrFcShort( 0x2f8 ),          /* Offset=
760 (892) */
/* 134 */ NdrFcLong( 0x4014 ),          /* 16404 */
/* 138 */ NdrFcShort( 0x2f6 ),          /* Offset=
758 (896) */
/* 140 */ NdrFcLong( 0x4004 ),          /* 16388 */
/* 144 */ NdrFcShort( 0x2f4 ),          /* Offset=
756 (900) */
/* 146 */ NdrFcLong( 0x4005 ),          /* 16389 */
/* 150 */ NdrFcShort( 0x2f2 ),          /* Offset=
754 (904) */
/* 152 */ NdrFcLong( 0x400b ),          /* 16395 */
/* 156 */ NdrFcShort( 0x2dc ),          /* Offset=
732 (888) */
/* 158 */ NdrFcLong( 0x400a ),          /* 16394 */
/* 162 */ NdrFcShort( 0x2da ),          /* Offset=
730 (892) */
/* 164 */ NdrFcLong( 0x4006 ),          /* 16390 */
/* 168 */ NdrFcShort( 0x2e4 ),          /* Offset=
740 (908) */
/* 170 */ NdrFcLong( 0x4007 ),          /* 16391 */
/* 174 */ NdrFcShort( 0x2da ),          /* Offset=
730 (904) */
/* 176 */ NdrFcLong( 0x4008 ),          /* 16392 */
/* 180 */ NdrFcShort( 0x2dc ),          /* Offset=
732 (912) */
/* 182 */ NdrFcLong( 0x400d ),          /* 16397 */
/* 186 */ NdrFcShort( 0x2da ),          /* Offset=
730 (916) */
/* 188 */ NdrFcLong( 0x4009 ),          /* 16393 */
/* 192 */ NdrFcShort( 0x2d8 ),          /* Offset=
728 (920) */
/* 194 */ NdrFcLong( 0x6000 ),          /* 24576 */
/* 198 */ NdrFcShort( 0x2d6 ),          /* Offset=
726 (924) */
/* 200 */ NdrFcLong( 0x400c ),          /* 16396 */
/* 204 */ NdrFcShort( 0x2d4 ),          /* Offset=
724 (928) */
/* 206 */ NdrFcLong( 0x10 ),  /* 16 */
/* 210 */ NdrFcShort( 0x8002 ),         /* Simple arm
type: FC_CHAR */
/* 212 */ NdrFcLong( 0x12 ),  /* 18 */
/* 216 */ NdrFcShort( 0x8006 ),         /* Simple arm
type: FC_SHORT */
/* 218 */ NdrFcLong( 0x13 ),  /* 19 */
/* 222 */ NdrFcShort( 0x8008 ),         /* Simple arm
type: FC_LONG */
/* 224 */ NdrFcLong( 0x15 ),  /* 21 */
/* 228 */ NdrFcShort( 0x800b ),         /* Simple arm
type: FC_HYPER */
/* 230 */ NdrFcLong( 0x16 ),  /* 22 */
/* 234 */ NdrFcShort( 0x8008 ),         /* Simple arm
type: FC_LONG */
/* 236 */ NdrFcLong( 0x17 ),  /* 23 */
/* 240 */ NdrFcShort( 0x8008 ),         /* Simple arm
type: FC_LONG */
/* 242 */ NdrFcLong( 0xe ),   /* 14 */

/* 246 */ NdrFcShort( 0x2b2 ),          /* Offset=
690 (936) */
/* 248 */ NdrFcLong( 0x400e ),          /* 16398 */
/* 252 */ NdrFcShort( 0x2b6 ),          /* Offset=
694 (946) */
/* 254 */ NdrFcLong( 0x4010 ),          /* 16400 */
/* 258 */ NdrFcShort( 0x2b4 ),          /* Offset=
692 (950) */
/* 260 */ NdrFcLong( 0x4012 ),          /* 16402 */
/* 264 */ NdrFcShort( 0x270 ),          /* Offset=
624 (888) */
/* 266 */ NdrFcLong( 0x4013 ),          /* 16403 */
/* 270 */ NdrFcShort( 0x26e ),          /* Offset=
622 (892) */
/* 272 */ NdrFcLong( 0x4015 ),          /* 16405 */
/* 276 */ NdrFcShort( 0x26c ),          /* Offset=
620 (896) */
/* 278 */ NdrFcLong( 0x4016 ),          /* 16406 */
/* 282 */ NdrFcShort( 0x262 ),          /* Offset=
610 (892) */
/* 284 */ NdrFcLong( 0x4017 ),          /* 16407 */
/* 288 */ NdrFcShort( 0x25c ),          /* Offset=
604 (892) */
/* 290 */ NdrFcLong( 0x0 ),   /* 0 */
/* 294 */ NdrFcShort( 0x0 ),  /* Offset= 0 (294) */
/* 296 */ NdrFcLong( 0x1 ),   /* 1 */
/* 300 */ NdrFcShort( 0x0 ),  /* Offset= 0 (300) */
/* 302 */ NdrFcShort( 0xffff ),         /* Offset= -1
(301) */
/* 304 */
                         0x15,          /*
FC_STRUCT */
                         0x7,           /*
7 */
/* 306 */ NdrFcShort( 0x8 ),  /* 8 */
/* 308 */ 0xb,                /* FC_HYPER */
                         0x5b,          /*
FC_END */
/* 310 */
                         0x12, 0x0,     /*
FC_UP */
/* 312 */ NdrFcShort( 0xe ),  /* Offset= 14 (326) */
/* 314 */
                         0x1b,          /*
FC_CARRAY */
                         0x1,           /*
1 */
/* 316 */ NdrFcShort( 0x2 ),  /* 2 */
/* 318 */ 0x9,                /* Corr desc: FC_ULONG
*/
                         0x0,           /*
*/
/* 320 */ NdrFcShort( 0xfffc ),         /* -4 */
/* 322 */ NdrFcShort( 0x1 ),  /* Corr flags:  early,
*/
/* 324 */ 0x6,                /* FC_SHORT */
                         0x5b,          /*
FC_END */
/* 326 */
                         0x17,          /*
FC_CSTRUCT */
                         0x3,           /*
3 */

/* 328 */ NdrFcShort( 0x8 ),  /* 8 */
/* 330 */ NdrFcShort( 0xfff0 ),         /* Offset= -
16 (314) */
/* 332 */ 0x8,                /* FC_LONG */
                         0x8,           /*
FC_LONG */
/* 334 */ 0x5c,               /* FC_PAD */
                         0x5b,          /*
FC_END */
/* 336 */
                         0x2f,          /*
FC_IP */
                         0x5a,          /*
FC_CONSTANT_IID */
/* 338 */ NdrFcLong( 0x0 ),   /* 0 */
/* 342 */ NdrFcShort( 0x0 ),  /* 0 */
/* 344 */ NdrFcShort( 0x0 ),  /* 0 */
/* 346 */ 0xc0,               /* 192 */
                         0x0,           /*
0 */
/* 348 */ 0x0,                /* 0 */
                         0x0,           /*
0 */
/* 350 */ 0x0,                /* 0 */
                         0x0,           /*
0 */
/* 352 */ 0x0,                /* 0 */
                         0x46,          /*
70 */
/* 354 */
                         0x2f,          /*
FC_IP */
                         0x5a,          /*
FC_CONSTANT_IID */
/* 356 */ NdrFcLong( 0x20400 ),         /* 132096 */
/* 360 */ NdrFcShort( 0x0 ),  /* 0 */
/* 362 */ NdrFcShort( 0x0 ),  /* 0 */
/* 364 */ 0xc0,               /* 192 */
                         0x0,           /*
0 */
/* 366 */ 0x0,                /* 0 */
                         0x0,           /*
0 */
/* 368 */ 0x0,                /* 0 */
                         0x0,           /*
0 */
/* 370 */ 0x0,                /* 0 */
                         0x46,          /*
70 */
/* 372 */
                         0x12, 0x10,    /*
FC_UP [pointer_deref] */
/* 374 */ NdrFcShort( 0x2 ),  /* Offset= 2 (376) */
/* 376 */
                         0x12, 0x0,     /*
FC_UP */
/* 378 */ NdrFcShort( 0x1e4 ),          /* Offset=
484 (862) */
/* 380 */
                         0x2a,          /*
FC_ENCAPSULATED_UNION */
                         0x89,          /*
137 */
```

```
/* 382 */ NdrFcShort( 0x20 ), /* 32 */
/* 384 */ NdrFcShort( 0xa ), /* 10 */
/* 386 */ NdrFcLong( 0x8 ), /* 8 */
/* 390 */ NdrFcShort( 0x50 ), /* Offset= 80 (470) */
/* 392 */ NdrFcLong( 0xd ), /* 13 */
/* 396 */ NdrFcShort( 0x70 ), /* Offset= 112 (508) */
/* 398 */ NdrFcLong( 0x9 ), /* 9 */
/* 402 */ NdrFcShort( 0x90 ), /* Offset= 144 (546) */
/* 404 */ NdrFcLong( 0xc ), /* 12 */
/* 408 */ NdrFcShort( 0xb0 ), /* Offset= 176 (584) */
/* 410 */ NdrFcLong( 0x24 ), /* 36 */
/* 414 */ NdrFcShort( 0x102 ), /* Offset= 258 (672) */
/* 416 */ NdrFcLong( 0x800d ), /* 32781 */
/* 420 */ NdrFcShort( 0x11e ), /* Offset= 286 (706) */
/* 422 */ NdrFcLong( 0x10 ), /* 16 */
/* 426 */ NdrFcShort( 0x138 ), /* Offset= 312 (738) */
/* 428 */ NdrFcLong( 0x2 ), /* 2 */
/* 432 */ NdrFcShort( 0x14e ), /* Offset= 334 (766) */
/* 434 */ NdrFcLong( 0x3 ), /* 3 */
/* 438 */ NdrFcShort( 0x164 ), /* Offset= 356 (794) */
/* 440 */ NdrFcLong( 0x14 ), /* 20 */
/* 444 */ NdrFcShort( 0x17a ), /* Offset= 378 (822) */
/* 446 */ NdrFcShort( 0xffff ), /* Offset= -1 (445) */
/* 448 */
                0x21, /* FC_BOGUS_ARRAY */
                0x3, /* 3 */
/* 450 */ NdrFcShort( 0x0 ), /* 0 */
/* 452 */ 0x19, /* Corr desc: field pointer, FC_ULONG */
                0x0, /* */
/* 454 */ NdrFcShort( 0x0 ), /* 0 */
/* 456 */ NdrFcShort( 0x1 ), /* Corr flags: early, */
/* 458 */ NdrFcLong( 0xffffffff ), /* -1 */
/* 462 */ NdrFcShort( 0x0 ), /* Corr flags: */
/* 464 */
                0x12, 0x0, /* FC_UP */
/* 466 */ NdrFcShort( 0xff74 ), /* Offset= -140 (326) */
/* 468 */ 0x5c, /* FC_PAD */
                0x5b, /* FC_END */
/* 470 */
                0x1a, /* FC_BOGUS_STRUCT */
                0x3, /* 3 */
/* 472 */ NdrFcShort( 0x10 ), /* 16 */
/* 474 */ NdrFcShort( 0x0 ), /* 0 */
/* 476 */ NdrFcShort( 0x6 ), /* Offset= 6 (482) */
/* 478 */ 0x8, /* FC_LONG */
                0x40, /* FC_STRUCTPAD4 */
/* 480 */ 0x36, /* FC_POINTER */
                0x5b, /* FC_END */
/* 482 */
                0x11, 0x0, /* FC_RP */
/* 484 */ NdrFcShort( 0xffdc ), /* Offset= -36 (448) */
/* 486 */
                0x21, /* FC_BOGUS_ARRAY */
                0x3, /* 3 */
/* 488 */ NdrFcShort( 0x0 ), /* 0 */
/* 490 */ 0x19, /* Corr desc: field pointer, FC_ULONG */
                0x0, /* */
/* 492 */ NdrFcShort( 0x0 ), /* 0 */
/* 494 */ NdrFcShort( 0x1 ), /* Corr flags: early, */
/* 496 */ NdrFcLong( 0xffffffff ), /* -1 */
/* 500 */ NdrFcShort( 0x0 ), /* Corr flags: */
/* 502 */ 0x4c, /* FC_EMBEDDED_COMPLEX */
                0x0, /* */
/* 504 */ NdrFcShort( 0xff58 ), /* Offset= -168 (336) */
/* 506 */ 0x5c, /* FC_PAD */
                0x5b, /* FC_END */
/* 508 */
                0x1a, /* FC_BOGUS_STRUCT */
                0x3, /* 3 */
/* 510 */ NdrFcShort( 0x10 ), /* 16 */
/* 512 */ NdrFcShort( 0x0 ), /* 0 */
/* 514 */ NdrFcShort( 0x6 ), /* Offset= 6 (520) */
/* 516 */ 0x8, /* FC_LONG */
                0x40, /* FC_STRUCTPAD4 */
/* 518 */ 0x36, /* FC_POINTER */
                0x5b, /* FC_END */
/* 520 */
                0x11, 0x0, /* FC_RP */
/* 522 */ NdrFcShort( 0xffdc ), /* Offset= -36 (486) */
/* 524 */
                0x21, /* FC_BOGUS_ARRAY */
                0x3, /* 3 */
/* 526 */ NdrFcShort( 0x0 ), /* 0 */
/* 528 */ 0x19, /* Corr desc: field pointer, FC_ULONG */
                0x0, /* */
/* 530 */ NdrFcShort( 0x0 ), /* 0 */
/* 532 */ NdrFcShort( 0x1 ), /* Corr flags: early, */
/* 534 */ NdrFcLong( 0xffffffff ), /* -1 */
/* 538 */ NdrFcShort( 0x0 ), /* Corr flags: */
/* 540 */ 0x4c, /* FC_EMBEDDED_COMPLEX */
                0x0, /* 0 */
/* 542 */ NdrFcShort( 0xff44 ), /* Offset= -188 (354) */
/* 544 */ 0x5c, /* FC_PAD */
                0x5b, /* FC_END */
/* 546 */
                0x1a, /* FC_BOGUS_STRUCT */
                0x3, /* 3 */
/* 548 */ NdrFcShort( 0x10 ), /* 16 */
/* 550 */ NdrFcShort( 0x0 ), /* 0 */
/* 552 */ NdrFcShort( 0x6 ), /* Offset= 6 (558) */
/* 554 */ 0x8, /* FC_LONG */
                0x40, /* FC_STRUCTPAD4 */
/* 556 */ 0x36, /* FC_POINTER */
                0x5b, /* FC_END */
/* 558 */
                0x11, 0x0, /* FC_RP */
/* 560 */ NdrFcShort( 0xffdc ), /* Offset= -36 (524) */
/* 562 */
                0x21, /* FC_BOGUS_ARRAY */
                0x3, /* 3 */
/* 564 */ NdrFcShort( 0x0 ), /* 0 */
/* 566 */ 0x19, /* Corr desc: field pointer, FC_ULONG */
                0x0, /* */
/* 568 */ NdrFcShort( 0x0 ), /* 0 */
/* 570 */ NdrFcShort( 0x1 ), /* Corr flags: early, */
/* 572 */ NdrFcLong( 0xffffffff ), /* -1 */
/* 576 */ NdrFcShort( 0x0 ), /* Corr flags: */
/* 578 */
                0x12, 0x0, /* FC_UP */
/* 580 */ NdrFcShort( 0x176 ), /* Offset= 374 (954) */
/* 582 */ 0x5c, /* FC_PAD */
                0x5b, /* FC_END */
/* 584 */
                0x1a, /* FC_BOGUS_STRUCT */
                0x3, /* 3 */
/* 586 */ NdrFcShort( 0x10 ), /* 16 */
/* 588 */ NdrFcShort( 0x0 ), /* 0 */
```

```
/* 590 */ NdrFcShort( 0x6 ), /* Offset= 6 (596) */
/* 592 */ 0x8, /* FC_LONG */
          0x40, /* FC_STRUCTPAD4 */
/* 594 */ 0x36, /* FC_POINTER */
          0x5b, /* FC_END */
/* 596 */
          0x11, 0x0, /* FC_RP */
/* 598 */ NdrFcShort( 0xffdc ), /* Offset= -36 (562) */
/* 600 */
          0x2f, /* FC_IP */
          0x5a, /* FC_CONSTANT_IID */
/* 602 */ NdrFcLong( 0x2f ), /* 47 */
/* 606 */ NdrFcShort( 0x0 ), /* 0 */
/* 608 */ NdrFcShort( 0x0 ), /* 0 */
/* 610 */ 0xc0, /* 192 */
          0x0, /* 0 */
/* 612 */ 0x0, /* 0 */
          0x0, /* 0 */
/* 614 */ 0x0, /* 0 */
          0x0, /* 0 */
/* 616 */ 0x0, /* 0 */
          0x46, /* 70 */
/* 618 */
          0x1b, /* FC_CARRAY */
          0x0, /* 0 */
/* 620 */ NdrFcShort( 0x1 ), /* 1 */
/* 622 */ 0x19, /* Corr desc: field pointer, FC_ULONG */
          0x0, /* */
/* 624 */ NdrFcShort( 0x4 ), /* 4 */
/* 626 */ NdrFcShort( 0x1 ), /* Corr flags: early, */
/* 628 */ 0x1, /* FC_BYTE */
          0x5b, /* FC_END */
/* 630 */
          0x1a, /* FC_BOGUS_STRUCT */
          0x3, /* 3 */
/* 632 */ NdrFcShort( 0x18 ), /* 24 */
/* 634 */ NdrFcShort( 0x0 ), /* 0 */
/* 636 */ NdrFcShort( 0xa ), /* Offset= 10 (646) */
/* 638 */ 0x8, /* FC_LONG */
          0x8, /* FC_LONG */
/* 640 */ 0x4c, /* FC_EMBEDDED_COMPLEX */
          0x0, /* 0 */

/* 642 */ NdrFcShort( 0xffd6 ), /* Offset= -42 (600) */
/* 644 */ 0x36, /* FC_POINTER */
          0x5b, /* FC_END */
/* 646 */
          0x12, 0x0, /* FC_UP */
/* 648 */ NdrFcShort( 0xffe2 ), /* Offset= -30 (618) */
/* 650 */
          0x21, /* FC_BOGUS_ARRAY */
          0x3, /* 3 */
/* 652 */ NdrFcShort( 0x0 ), /* 0 */
/* 654 */ 0x19, /* Corr desc: field pointer, FC_ULONG */
          0x0, /* */
/* 656 */ NdrFcShort( 0x0 ), /* 0 */
/* 658 */ NdrFcShort( 0x1 ), /* Corr flags: early, */
/* 660 */ NdrFcLong( 0xffffffff ), /* -1 */
/* 664 */ NdrFcShort( 0x0 ), /* Corr flags: */
/* 666 */
          0x12, 0x0, /* FC_UP */
/* 668 */ NdrFcShort( 0xffda ), /* Offset= -38 (630) */
/* 670 */ 0x5c, /* FC_PAD */
          0x5b, /* FC_END */
/* 672 */
          0x1a, /* FC_BOGUS_STRUCT */
          0x3, /* 3 */
/* 674 */ NdrFcShort( 0x10 ), /* 16 */
/* 676 */ NdrFcShort( 0x0 ), /* 0 */
/* 678 */ NdrFcShort( 0x6 ), /* Offset= 6 (684) */
/* 680 */ 0x8, /* FC_LONG */
          0x40, /* FC_STRUCTPAD4 */
/* 682 */ 0x36, /* FC_POINTER */
          0x5b, /* FC_END */
/* 684 */
          0x11, 0x0, /* FC_RP */
/* 686 */ NdrFcShort( 0xffdc ), /* Offset= -36 (650) */
/* 688 */
          0x1d, /* FC_SMFARRAY */
          0x0, /* 0 */
/* 690 */ NdrFcShort( 0x8 ), /* 8 */
/* 692 */ 0x1, /* FC_BYTE */
          0x5b, /* FC_END */
/* 694 */

          0x15, /* FC_STRUCT */
          0x3, /* 3 */
/* 696 */ NdrFcShort( 0x10 ), /* 16 */
/* 698 */ 0x8, /* FC_LONG */
          0x6, /* FC_SHORT */
/* 700 */ 0x6, /* FC_SHORT */
          0x4c, /* FC_EMBEDDED_COMPLEX */
/* 702 */ 0x0, /* 0 */
          NdrFcShort( 0xfff1 ), /* Offset= -15 (688) */
          0x5b, /* FC_END */
/* 706 */
          0x1a, /* FC_BOGUS_STRUCT */
          0x3, /* 3 */
/* 708 */ NdrFcShort( 0x20 ), /* 32 */
/* 710 */ NdrFcShort( 0x0 ), /* 0 */
/* 712 */ NdrFcShort( 0xa ), /* Offset= 10 (722) */
/* 714 */ 0x8, /* FC_LONG */
          0x40, /* FC_STRUCTPAD4 */
/* 716 */ 0x36, /* FC_POINTER */
          0x4c, /* FC_EMBEDDED_COMPLEX */
/* 718 */ 0x0, /* 0 */
          NdrFcShort( 0xffe7 ), /* Offset= -25 (694) */
          0x5b, /* FC_END */
/* 722 */
          0x11, 0x0, /* FC_RP */
/* 724 */ NdrFcShort( 0xff12 ), /* Offset= -238 (486) */
/* 726 */
          0x1b, /* FC_CARRAY */
          0x0, /* 0 */
/* 728 */ NdrFcShort( 0x1 ), /* 1 */
/* 730 */ 0x19, /* Corr desc: field pointer, FC_ULONG */
          0x0, /* */
/* 732 */ NdrFcShort( 0x0 ), /* 0 */
/* 734 */ NdrFcShort( 0x1 ), /* Corr flags: early, */
/* 736 */ 0x1, /* FC_BYTE */
          0x5b, /* FC_END */
/* 738 */
          0x1a, /* FC_BOGUS_STRUCT */
          0x3, /* 3 */
/* 740 */ NdrFcShort( 0x10 ), /* 16 */
/* 742 */ NdrFcShort( 0x0 ), /* 0 */
```

```
/* 744 */ NdrFcShort( 0x6 ),  /* Offset= 6 (750) */
/* 746 */ 0x8,                /* FC_LONG */
          0x40,               /*
FC_STRUCTPAD4 */
/* 748 */ 0x36,              /* FC_POINTER */
          0x5b,               /*
FC_END */
/* 750 */
          0x12, 0x0,          /*
FC_UP */
/* 752 */ NdrFcShort( 0xffe6 ),       /* Offset= -
26 (726) */
/* 754 */
          0x1b,               /*
FC_CARRAY */
          0x1,                /*
1 */
/* 756 */ NdrFcShort( 0x2 ),  /* 2 */
/* 758 */ 0x19,              /* Corr desc:  field
pointer, FC_ULONG */
          0x0,                /*
*/
/* 760 */ NdrFcShort( 0x0 ),  /* 0 */
/* 762 */ NdrFcShort( 0x1 ),  /* Corr flags:  early,
*/
/* 764 */ 0x6,               /* FC_SHORT */
          0x5b,               /*
FC_END */
/* 766 */
          0x1a,               /*
FC_BOGUS_STRUCT */
          0x3,                /*
3 */
/* 768 */ NdrFcShort( 0x10 ),  /* 16 */
/* 770 */ NdrFcShort( 0x0 ),  /* 0 */
/* 772 */ NdrFcShort( 0x6 ),  /* Offset= 6 (778) */
/* 774 */ 0x8,               /* FC_LONG */
          0x40,               /*
FC_STRUCTPAD4 */
/* 776 */ 0x36,              /* FC_POINTER */
          0x5b,               /*
FC_END */
/* 778 */
          0x12, 0x0,          /*
FC_UP */
/* 780 */ NdrFcShort( 0xffe6 ),       /* Offset= -
26 (754) */
/* 782 */
          0x1b,               /*
FC_CARRAY */
          0x3,                /*
3 */
/* 784 */ NdrFcShort( 0x4 ),  /* 4 */
/* 786 */ 0x19,              /* Corr desc:  field
pointer, FC_ULONG */
          0x0,                /*
*/
/* 788 */ NdrFcShort( 0x0 ),  /* 0 */
/* 790 */ NdrFcShort( 0x1 ),  /* Corr flags:  early,
*/
/* 792 */ 0x8,               /* FC_LONG */
          0x5b,               /*
FC_END */
```

```
/* 794 */
          0x1a,               /*
FC_BOGUS_STRUCT */
          0x3,                /*
3 */
/* 796 */ NdrFcShort( 0x10 ),  /* 16 */
/* 798 */ NdrFcShort( 0x0 ),  /* 0 */
/* 800 */ NdrFcShort( 0x6 ),  /* Offset= 6 (806) */
/* 802 */ 0x8,               /* FC_LONG */
          0x40,               /*
FC_STRUCTPAD4 */
/* 804 */ 0x36,              /* FC_POINTER */
          0x5b,               /*
FC_END */
/* 806 */
          0x12, 0x0,          /*
FC_UP */
/* 808 */ NdrFcShort( 0xffe6 ),       /* Offset= -
26 (782) */
/* 810 */
          0x1b,               /*
FC_CARRAY */
          0x7,                /*
7 */
/* 812 */ NdrFcShort( 0x8 ),  /* 8 */
/* 814 */ 0x19,              /* Corr desc:  field
pointer, FC_ULONG */
          0x0,                /*
*/
/* 816 */ NdrFcShort( 0x0 ),  /* 0 */
/* 818 */ NdrFcShort( 0x1 ),  /* Corr flags:  early,
*/
/* 820 */ 0xb,               /* FC_HYPER */
          0x5b,               /*
FC_END */
/* 822 */
          0x1a,               /*
FC_BOGUS_STRUCT */
          0x3,                /*
3 */
/* 824 */ NdrFcShort( 0x10 ),  /* 16 */
/* 826 */ NdrFcShort( 0x0 ),  /* 0 */
/* 828 */ NdrFcShort( 0x6 ),  /* Offset= 6 (834) */
/* 830 */ 0x8,               /* FC_LONG */
          0x40,               /*
FC_STRUCTPAD4 */
/* 832 */ 0x36,              /* FC_POINTER */
          0x5b,               /*
FC_END */
/* 834 */
          0x12, 0x0,          /*
FC_UP */
/* 836 */ NdrFcShort( 0xffe6 ),       /* Offset= -
26 (810) */
/* 838 */
          0x15,               /*
FC_STRUCT */
          0x3,                /*
3 */
/* 840 */ NdrFcShort( 0x8 ),  /* 8 */
/* 842 */ 0x8,               /* FC_LONG */
          0x8,                /*
FC_LONG */
```

```
/* 844 */ 0x5c,              /* FC_PAD */
          0x5b,               /*
FC_END */
/* 846 */
          0x1b,               /*
FC_CARRAY */
          0x3,                /*
3 */
/* 848 */ NdrFcShort( 0x8 ),  /* 8 */
/* 850 */ 0x7,               /* Corr desc: FC_USHORT
*/
          0x0,                /*
*/
/* 852 */ NdrFcShort( 0xffc8 ),       /* -56 */
/* 854 */ NdrFcShort( 0x1 ),  /* Corr flags:  early,
*/
/* 856 */ 0x4c,              /* FC_EMBEDDED_COMPLEX
*/
          0x0,                /*
0 */
/* 858 */ NdrFcShort( 0xffec ),       /* Offset= -
20 (838) */
/* 860 */ 0x5c,              /* FC_PAD */
          0x5b,               /*
FC_END */
/* 862 */
          0x1a,               /*
FC_BOGUS_STRUCT */
          0x3,                /*
3 */
/* 864 */ NdrFcShort( 0x38 ),  /* 56 */
/* 866 */ NdrFcShort( 0xffec ),       /* Offset= -
20 (846) */
/* 868 */ NdrFcShort( 0x0 ),  /* Offset= 0 (868) */
/* 870 */ 0x6,               /* FC_SHORT */
          0x6,                /*
FC_SHORT */
/* 872 */ 0x8,               /* FC_LONG */
          0x8,                /*
FC_LONG */
/* 874 */ 0x40,              /* FC_STRUCTPAD4 */
          0x4c,               /*
FC_EMBEDDED_COMPLEX */
/* 876 */ 0x0,               /* 0 */
          NdrFcShort( 0xfe0f ),
          /* Offset= -497 (380) */
          0x5b,               /*
FC_END */
/* 880 */
          0x12, 0x0,          /*
FC_UP */
/* 882 */ NdrFcShort( 0xff04 ),       /* Offset= -
252 (630) */
/* 884 */
          0x12, 0x8,          /*
FC_UP [simple_pointer] */
/* 886 */ 0x1,               /* FC_BYTE */
          0x5c,               /*
FC_PAD */
/* 888 */
          0x12, 0x8,          /*
FC_UP [simple_pointer] */
/* 890 */ 0x6,               /* FC_SHORT */
```

```
                          0x5c,           /*
FC_PAD */
/* 892 */
                          0x12, 0x8,      /*
FC_UP [simple_pointer] */
/* 894 */ 0x8,            /* FC_LONG */
                          0x5c,           /*
FC_PAD */
/* 896 */
                          0x12, 0x8,      /*
FC_UP [simple_pointer] */
/* 898 */ 0xb,           /* FC_HYPER */
                          0x5c,           /*
FC_PAD */
/* 900 */
                          0x12, 0x8,      /*
FC_UP [simple_pointer] */
/* 902 */ 0xa,           /* FC_FLOAT */
                          0x5c,           /*
FC_PAD */
/* 904 */
                          0x12, 0x8,      /*
FC_UP [simple_pointer] */
/* 906 */ 0xc,           /* FC_DOUBLE */
                          0x5c,           /*
FC_PAD */
/* 908 */
                          0x12, 0x0,      /*
FC_UP */
/* 910 */ NdrFcShort( 0xfda2 ),        /* Offset= -
606 (304) */
/* 912 */
                          0x12, 0x10,     /*
FC_UP [pointer_deref] */
/* 914 */ NdrFcShort( 0xfda4 ),        /* Offset= -
604 (310) */
/* 916 */
                          0x12, 0x10,     /*
FC_UP [pointer_deref] */
/* 918 */ NdrFcShort( 0xfdba ),        /* Offset= -
582 (336) */
/* 920 */
                          0x12, 0x10,     /*
FC_UP [pointer_deref] */
/* 922 */ NdrFcShort( 0xfdc8 ),        /* Offset= -
568 (354) */
/* 924 */
                          0x12, 0x10,     /*
FC_UP [pointer_deref] */
/* 926 */ NdrFcShort( 0xfdd6 ),        /* Offset= -
554 (372) */
/* 928 */
                          0x12, 0x10,     /*
FC_UP [pointer_deref] */
/* 930 */ NdrFcShort( 0x2 ), /* Offset= 2 (932) */
/* 932 */
                          0x12, 0x0,      /*
FC_UP */
/* 934 */ NdrFcShort( 0x14 ), /* Offset= 20 (954) */
/* 936 */
                          0x15,           /*
FC_STRUCT */

                          0x7,            /*
7 */
/* 938 */ NdrFcShort( 0x10 ), /* 16 */
/* 940 */ 0x6,                 /* FC_SHORT */
                          0x1,            /*
FC_BYTE */
/* 942 */ 0x1,            /* FC_BYTE */
                          0x8,            /*
FC_LONG */
/* 944 */ 0xb,           /* FC_HYPER */
                          0x5b,           /*
FC_END */
/* 946 */
                          0x12, 0x0,      /*
FC_UP */
/* 948 */ NdrFcShort( 0xfff4 ),        /* Offset= -
12 (936) */
/* 950 */
                          0x12, 0x8,      /*
FC_UP [simple_pointer] */
/* 952 */ 0x2,                 /* FC_CHAR */
                          0x5c,           /*
FC_PAD */
/* 954 */
                          0x1a,           /*
FC_BOGUS_STRUCT */
                          0x7,            /*
7 */
/* 956 */ NdrFcShort( 0x20 ), /* 32 */
/* 958 */ NdrFcShort( 0x0 ), /* 0 */
/* 960 */ NdrFcShort( 0x0 ), /* Offset= 0 (960) */
/* 962 */ 0x8,           /* FC_LONG */
                          0x8,            /*
FC_LONG */
/* 964 */ 0x6,                 /* FC_SHORT */
                          0x6,            /*
FC_SHORT */
/* 966 */ 0x6,                 /* FC_SHORT */
                          0x6,            /*
FC_SHORT */
/* 968 */ 0x4c,          /* FC_EMBEDDED_COMPLEX
*/
                          0x0,            /*
0 */
/* 970 */ NdrFcShort( 0xfc3c ),        /* Offset= -
964 (6) */
/* 972 */ 0x5c,                /* FC_PAD */
                          0x5b,           /*
FC_END */
/* 974 */ 0xb4,          /* FC_USER_MARSHAL */
                          0x83,           /*
131 */
/* 976 */ NdrFcShort( 0x0 ), /* 0 */
/* 978 */ NdrFcShort( 0x18 ), /* 24 */
/* 980 */ NdrFcShort( 0x0 ), /* 0 */
/* 982 */ NdrFcShort( 0xfc2c ),        /* Offset= -
980 (2) */
/* 984 */
                          0x11, 0x4,      /*
FC_RP [alloced_on_stack] */
/* 986 */ NdrFcShort( 0x6 ), /* Offset= 6 (992) */
/* 988 */

                          0x13, 0x0,      /*
FC_OP */
/* 990 */ NdrFcShort( 0xffdc ),         /* Offset= -
36 (954) */
/* 992 */ 0xb4,          /* FC_USER_MARSHAL */
                          0x83,           /*
131 */
/* 994 */ NdrFcShort( 0x0 ), /* 0 */
/* 996 */ NdrFcShort( 0x18 ), /* 24 */
/* 998 */ NdrFcShort( 0x0 ), /* 0 */
/* 1000 */        NdrFcShort( 0xfff4 ),        /*
Offset= -12 (988) */

                          0x0

        }
    };

static const USER_MARSHAL_ROUTINE_QUADRUPLE
UserMarshalRoutines[ WIRE_MARSHAL_TABLE_SIZE ] =
    {

        {
        VARIANT_UserSize
        ,VARIANT_UserMarshal
        ,VARIANT_UserUnmarshal
        ,VARIANT_UserFree
        }

    };


/* Standard interface: __MIDL_itf_tpcc_com_ps_0000,
ver. 0.0,

GUID={0x00000000,0x0000,0x0000,{0x00,0x00,0x00,0x00,0x00,0x00,0x00,0x00}} */


/* Object interface: IUnknown, ver. 0.0,

GUID={0x00000000,0x0000,0x0000,{0xC0,0x00,0x00,0x00,0x00,0x00,0x00,0x46}} */


/* Object interface: ITPCC, ver. 0.0,

GUID={0xFEEE6AA2,0x84B1,0x11d2,{0xBA,0x47,0x00,0xC0,0x4F,0xBF,0xE0,0x8B}} */

#pragma code_seg(".orpc")
static const unsigned short
ITPCC_FormatStringOffsetTable[] =
    {
    0,
    44,
    88,
    132,
    176,
    220
    };
```

```
static const MIDL_STUBLESS_PROXY_INFO ITPCC_ProxyInfo
=
    {
    &Object_StubDesc,
    __MIDL_ProcFormatString.Format,
    &ITPCC_FormatStringOffsetTable[-3],
    0,
    0,
    0
    };


static const MIDL_SERVER_INFO ITPCC_ServerInfo =
    {
    &Object_StubDesc,
    0,
    __MIDL_ProcFormatString.Format,
    &ITPCC_FormatStringOffsetTable[-3],
    0,
    0,
    0,
    0};
CINTERFACE_PROXY_VTABLE(9) _ITPCCProxyVtbl =
{
    &ITPCC_ProxyInfo,
    &IID_ITPCC,
    IUnknown_QueryInterface_Proxy,
    IUnknown_AddRef_Proxy,
    IUnknown_Release_Proxy ,
    (void *) (INT_PTR) -1 /* ITPCC::NewOrder */ ,
    (void *) (INT_PTR) -1 /* ITPCC::Payment */ ,
    (void *) (INT_PTR) -1 /* ITPCC::Delivery */ ,
    (void *) (INT_PTR) -1 /* ITPCC::StockLevel */ ,
    (void *) (INT_PTR) -1 /* ITPCC::OrderStatus */ ,
    (void *) (INT_PTR) -1 /* ITPCC::CallSetComplete
*/
};

const CInterfaceStubVtbl _ITPCCStubVtbl =
{
    &IID_ITPCC,
    &ITPCC_ServerInfo,
    9,
    0, /* pure interpreted */
    CStdStubBuffer_METHODS
};

static const MIDL_STUB_DESC Object_StubDesc =
    {
    0,
    NdrOleAllocate,
    NdrOleFree,
    0,
    0,
    0,
    0,
    0,
    __MIDL_TypeFormatString.Format,
    1, /* -error bounds_check flag */
    0x50002, /* Ndr library version */
    0,
    0x6000169, /* MIDL Version 6.0.361 */
    0,
```

```
    UserMarshalRoutines,
    0,  /* notify & notify_flag routine table */
    0x1, /* MIDL flag */
    0, /* cs routines */
    0,   /* proxy/server info */
    0   /* Reserved5 */
    };

const CInterfaceProxyVtbl *
_tpcc_com_ps_ProxyVtblList[] =
{
    ( CInterfaceProxyVtbl *) &_ITPCCProxyVtbl,
    0
};

const CInterfaceStubVtbl *
_tpcc_com_ps_StubVtblList[] =
{
    ( CInterfaceStubVtbl *) &_ITPCCStubVtbl,
    0
};

PCInterfaceName const
_tpcc_com_ps_InterfaceNamesList[] =
{
    "ITPCC",
    0
};


#define _tpcc_com_ps_CHECK_IID(n)
        IID_GENERIC_CHECK_IID( _tpcc_com_ps, pIID,
n)

int __stdcall _tpcc_com_ps_IID_Lookup( const IID *
pIID, int * pIndex )
{

    if(!_tpcc_com_ps_CHECK_IID(0))
        {
        *pIndex = 0;
        return 1;
        }

    return 0;
}

const ExtendedProxyFileInfo tpcc_com_ps_ProxyFileInfo
=
{
    (PCInterfaceProxyVtblList *) &
_tpcc_com_ps_ProxyVtblList,
    (PCInterfaceStubVtblList *) &
_tpcc_com_ps_StubVtblList,
    (const PCInterfaceName * ) &
_tpcc_com_ps_InterfaceNamesList,
    0, // no delegation
    & _tpcc_com_ps_IID_Lookup,
    1,
    2,
    0, /* table of [async_uuid] interfaces */
    0, /* Filler1 */
    0, /* Filler2 */
```

```
    0  /* Filler3 */
};
#if _MSC_VER >= 1200
#pragma warning(pop)
#endif


#endif /* defined(_M_IA64) || defined(_M_AMD64)*/
```

tpcc_com_sl.rgs

```
HKCR
{
        TPCC.StockLevel.1 = s 'StockLevel Class'
        {
                CLSID = s '{2668369E-A50D-11D2-
BA4E-00C04FBFE08B}'
        }
        TPCC.StockLevel = s 'StockLevel Class'
        {
                CurVer = s 'TPCC.StockLevel.1'
        }
        NoRemove CLSID
        {
                ForceRemove {2668369E-A50D-11D2-
BA4E-00C04FBFE08B} = s 'StockLevel Class'
                {
                        ProgID = s
'TPCC.StockLevel.1'
                        VersionIndependentProgID = s
'TPCC.StockLevel'
                        InprocServer32 = s
'%MODULE%'
                        {
                                val
ThreadingModel = s 'Both'
                        }
                }
        }
}
```

tpcc_odbc.cpp

```
/*      FILE:               TPCC_ODBC.CPP
 *                                      Microsoft
TPC-C Kit Ver. 4.69.000
 *                                      Copyright
Microsoft, 2002
 *              All Rights Reserved
 *
 *                                      Version
4.10.000 audited by Richard Gimarc, Performance
Metrics, 3/17/99
 *
 *      PURPOSE:  Implements ODBC calls for TPC-C
txns.
```

```
*       Contact:  Charles Levine
(clevine@microsoft.com)
*
*  Change history:
*              4.42.000 - changed w_id fields
from short to long to support >32K warehouses
*              4.20.000 - updated rev number to
match kit
*              4.10.001 - not deleting error
class in catch handler on deadlock retry;
*                               not a
functional bug, but a memory leak
*              4.69.000 - updated rev number to
match kit
*/

#include <windows.h>
#include <stdio.h>
#include <assert.h>

#define DBNTWIN32
#include <sqltypes.h>
#include <sql.h>
#include <sqlext.h>

//#define COMPILE_FOR_SNAC     // define that to
compile for SQL Native Client; comment out to use
MDAC

#ifndef COMPILE_FOR_SNAC
#include <odbcss.h>
#else
// Compile for SNAC
#include <sqlncli.h>
#endif

#ifdef ICECAP
#include <icapexp.h>
#endif

// need to declare functions for export
#define DllDecl   __declspec( dllexport )

#include "..\..\common\src\error.h"
#include "..\..\common\src\trans.h"
#include "..\..\common\src\txn_base.h"
#include "tpcc_odbc.h"

// version string; must match return value from
tpcc_version stored proc
const char        sVersion[] = "4.20.000";

const iMaxRetries = 3;                    // how many
retries on deadlock
//const iMaxRetries = 0;           // for
debugging

const int iErrOleDbProvider = 7312;
const char sErrTimeoutExpired[] = "Timeout expired";

static SQLHENV henv = SQL_NULL_HENV;
                 // ODBC environment handle
```

```
BOOL APIENTRY DllMain(HMODULE hModule, DWORD
ul_reason_for_call, LPVOID lpReserved)
{
        switch( ul_reason_for_call )
        {
                case DLL_PROCESS_ATTACH:

        DisableThreadLibraryCalls(hModule);
                        if (
SQLAllocHandleStd(SQL_HANDLE_ENV, SQL_NULL_HANDLE,
&henv) != SQL_SUCCESS )
                                return FALSE;
                        break;

                case DLL_PROCESS_DETACH:
                        if (henv != NULL)

        SQLFreeEnv(henv);
                        break;

                default:
                        /* nothing */;
        }
        return TRUE;
}

/* FUNCTION: CTPCC_ODBC_ERR::ErrorText
 *
 */

char* CTPCC_ODBC_ERR::ErrorText(void)
{
        int i;

        static SERRORMSG errorMsgs[] =
        {
                { ERR_WRONG_SP_VERSION,
"Wrong version of stored procs on database
server"   },
                { ERR_INVALID_CUST,
"Invalid Customer id,name."
                                        },
                { ERR_NO_SUCH_ORDER,
"No orders found for customer."
                                        },
                { ERR_RETRIED_TRANS,
"Retries before transaction succeeded."
                        },
                { ERR_INVALID_NEW_ORDER_PARAM,
"New Order parameter invalid."
                                },
                { 0,             "" 

        }
        };
        static char szNotFound[] = "Unknown error
number.";

        for(i=0; errorMsgs[i].szMsg[0]; i++)
        {
```

```
                if ( m_errno ==
errorMsgs[i].iError )
                                break;
        }
        if ( !errorMsgs[i].szMsg[0] )
                return szNotFound;
        else
                return errorMsgs[i].szMsg;
}

// wrapper routine for class constructor
__declspec(dllexport) CTPCC_ODBC* CTPCC_ODBC_new(
        LPCSTR szServer,            // name of
SQL server
        LPCSTR szUser,                      //
user name for login
        LPCSTR szPassword,          // password
for login
        LPCSTR szHost,                      //
not used
        LPCSTR szDatabase,          // name of
database to use
        LPCWSTR szSPPrefix,         // prefix to
append to the stored procedure names
        BOOL bCallNoDuplicatesNewOrder ) // whether
to check for non-duplicate items in NewOrder and call
a new SP
{
        return new CTPCC_ODBC( szServer, szUser,
szPassword, szHost, szDatabase, szSPPrefix,
bCallNoDuplicatesNewOrder );
}


CTPCC_ODBC::CTPCC_ODBC (
        LPCSTR szServer,
        // name of SQL server
        LPCSTR szUser,
                // user name for login
        LPCSTR szPassword,
        // password for login
        LPCSTR szHost,
                // not used
        LPCSTR szDatabase,
        // name of database to use
        LPCWSTR szSPPrefix,
        // prefix to append to the stored procedure
names
        BOOL     bCallNoDuplicatesNewOrder //
whether to check for non-duplicate items in NewOrder
and call a new SP
:
m_bCallNoDuplicatesNewOrder(bCallNoDuplicatesNewOrder
)
{
        RETCODE            rc;

        // initialization
        m_hdbc = SQL_NULL_HDBC;
        m_hstmt = SQL_NULL_HSTMT;

        m_hstmtNewOrder = SQL_NULL_HSTMT;
```

```
        m_hstmtPayment = SQL_NULL_HSTMT;
        m_hstmtDelivery = SQL_NULL_HSTMT;
        m_hstmtOrderStatus = SQL_NULL_HSTMT;
        m_hstmtStockLevel = SQL_NULL_HSTMT;

        m_descNewOrderCols1 = SQL_NULL_HDESC;
        m_descNewOrderCols2 = SQL_NULL_HDESC;
        m_descOrderStatusCols1 = SQL_NULL_HDESC;
        m_descOrderStatusCols2 = SQL_NULL_HDESC;

        wcsncpy(m_szSPPrefix, szSPPrefix,
sizeof(m_szSPPrefix)/sizeof(m_szSPPrefix[0]));

        if ( SQLAllocHandle(SQL_HANDLE_DBC, henv,
&m_hdbc) != SQL_SUCCESS )

        ThrowError(CODBCERR::eAllocHandle);

        if ( SQLSetConnectOption(m_hdbc,
SQL_PACKET_SIZE, 4096) != SQL_SUCCESS )

        ThrowError(CODBCERR::eConnOption);

        {
                char
        szConnectStr[256];
                char
        szOutStr[1024];
                SQLSMALLINT
        iOutStrLen;

#ifndef COMPILE_FOR_SNAC
                sprintf( szConnectStr,
"DRIVER=SQL
Server;SERVER=%s;UID=%s;PWD=%s;DATABASE=%s",
                        szServer, szUser,
szPassword, szDatabase );
#else
                // Compile for SNAC
                sprintf( szConnectStr,
"DRIVER=SQL Native
Client;SERVER=%s;UID=%s;PWD=%s;DATABASE=%s",
                        szServer, szUser,
szPassword, szDatabase );
#endif
                rc = SQLDriverConnect(m_hdbc,
NULL, (SQLCHAR*)szConnectStr, sizeof(szConnectStr),
                        (SQLCHAR*)szOutStr,
sizeof(szOutStr), &iOutStrLen, SQL_DRIVER_NOPROMPT );

                if (rc != SQL_SUCCESS && rc !=
SQL_SUCCESS_WITH_INFO)

        ThrowError(CODBCERR::eConnect);
        }

        if (SQLAllocHandle(SQL_HANDLE_STMT, m_hdbc,
&m_hstmt) != SQL_SUCCESS)

        ThrowError(CODBCERR::eAllocHandle);

        {

        char                    buffer[128];
                // set some options affecting
connection behavior
                strcpy(buffer, "set nocount on
set XACT_ABORT ON");
                rc = SQLExecDirect(m_hstmt,
(unsigned char *)buffer, SQL_NTS);
                if (rc != SQL_SUCCESS && rc !=
SQL_SUCCESS_WITH_INFO)

        ThrowError(CODBCERR::eExecDirect);

                // verify that version of stored
procs on server is correct
                char db_sp_version[10];
                strcpy(buffer, "{call
tpcc_version}");
                rc = SQLExecDirect(m_hstmt,
(unsigned char *)buffer, SQL_NTS);
                if (rc != SQL_SUCCESS && rc !=
SQL_SUCCESS_WITH_INFO)

        ThrowError(CODBCERR::eExecDirect);
                if ( SQLBindCol(m_hstmt, 1,
SQL_C_CHAR, &db_sp_version, sizeof(db_sp_version),
NULL) != SQL_SUCCESS )

        ThrowError(CODBCERR::eBindCol);
                if ( SQLFetch(m_hstmt) ==
SQL_ERROR )

        ThrowError(CODBCERR::eFetch);
                if
(strcmp(db_sp_version,sVersion))
                        throw new
CTPCC_ODBC_ERR( CTPCC_ODBC_ERR::ERR_WRONG_SP_VERSION
);

                SQLFreeHandle(SQL_HANDLE_STMT,
m_hstmt);
        }

        // Bind parameters for each of the
transactions
        InitNewOrderParams();
        InitPaymentParams();
        InitOrderStatusParams();
        InitDeliveryParams();
        InitStockLevelParams();
}

CTPCC_ODBC::~CTPCC_ODBC( void )
{
        // note: descriptors are automatically
released when the connection is dropped
        SQLFreeHandle(SQL_HANDLE_STMT,
m_hstmtNewOrder);
        SQLFreeHandle(SQL_HANDLE_STMT,
m_hstmtPayment);
        SQLFreeHandle(SQL_HANDLE_STMT,
m_hstmtDelivery);

        SQLFreeHandle(SQL_HANDLE_STMT,
m_hstmtOrderStatus);
        SQLFreeHandle(SQL_HANDLE_STMT,
m_hstmtStockLevel);

        SQLDisconnect(m_hdbc);
        SQLFreeHandle(SQL_HANDLE_DBC, m_hdbc);
}

//void CTPCC_ODBC::ThrowError( CODBCERR::ACTION
eAction )
void CTPCC_ODBC::ThrowError( RETCODE eAction )
{
        RETCODE         rc;
        SDWORD          lNativeError;
        char            szState[6];
        char
        szMsg[SQL_MAX_MESSAGE_LENGTH];
        char
        szTmp[6*SQL_MAX_MESSAGE_LENGTH];
        CODBCERR    *pODBCErr;
        // not allocated until needed (maybe never)

        pODBCErr = new CODBCERR();

        pODBCErr->m_NativeError = 0;
        //pODBCErr->m_eAction = eAction;
        pODBCErr->m_eAction =
(CODBCERR::ACTION)eAction;
        pODBCErr->m_bDeadLock = FALSE;

        szTmp[0] = 0;
        szMsg[0] = 0;
        while (TRUE)
        {
                rc = SQLError(henv, m_hdbc,
m_hstmt, (BYTE *)&szState, &lNativeError,
(BYTE *)&szMsg, sizeof(szMsg), NULL);
                if (rc == SQL_NO_DATA)
                {
                        break;
                }

                if (rc != SQL_SUCCESS)
                {
                        break;
                }

                // check for deadlock
                if (lNativeError == 1205 ||
(lNativeError == iErrOleDbProvider &&
                        strstr(szMsg,
sErrTimeoutExpired) != NULL))
                        pODBCErr->m_bDeadLock =
TRUE;

                // capture the (first) database
error
                if (pODBCErr->m_NativeError == 0
&& lNativeError != 0)
                        pODBCErr->m_NativeError
= lNativeError;
```

```
                    // quit if there isn't enough
room to concatenate error text
                    if ( (strlen(szMsg) + 2) >
(sizeof(szTmp) - strlen(szTmp)) )
                            break;

                    // include line break after first
error msg
                    if (szTmp[0] != 0)
                            strcat( szTmp, "\n");
                    strcat( szTmp, szMsg );
            }

            if (pODBCErr->m_odbcerrstr != NULL)
            {
                    delete [] pODBCErr->m_odbcerrstr;
                    pODBCErr->m_odbcerrstr = NULL;
            }

            if (strlen(szTmp) > 0)
            {
                    pODBCErr->m_odbcerrstr = new
char[ strlen(szTmp)+1 ];
                    strcpy( pODBCErr->m_odbcerrstr,
szTmp );
            }

            SQLFreeStmt(m_hstmt, SQL_CLOSE);
            throw pODBCErr;
}

void CTPCC_ODBC::InitStockLevelParams()
{
            if (   SQLAllocHandle(SQL_HANDLE_STMT,
m_hdbc, &m_hstmtStockLevel) != SQL_SUCCESS )

            ThrowError(CODBCERR::eAllocHandle);

            m_hstmt = m_hstmtStockLevel;

            int i = 0;
            if (   SQLBindParameter(m_hstmt, ++i,
SQL_PARAM_INPUT, SQL_C_SLONG, SQL_INTEGER, 0, 0,
&m_txn.StockLevel.w_id, 0, NULL) != SQL_SUCCESS
                    || SQLBindParameter(m_hstmt, ++i,
SQL_PARAM_INPUT, SQL_C_UTINYINT, SQL_TINYINT, 0, 0,
&m_txn.StockLevel.d_id, 0, NULL) != SQL_SUCCESS
                    || SQLBindParameter(m_hstmt, ++i,
SQL_PARAM_INPUT, SQL_C_SSHORT, SQL_SMALLINT, 0, 0,
&m_txn.StockLevel.threshold, 0, NULL) != SQL_SUCCESS
                    )
                    ThrowError(CODBCERR::eBindParam);

            if ( SQLBindCol(m_hstmt, 1, SQL_C_SLONG,
&m_txn.StockLevel.low_stock, 0, NULL) != SQL_SUCCESS
)
                    ThrowError(CODBCERR::eBindCol);

            //Compose Stock Level statement
            _snwprintf(m_szStockLevelCommand,
sizeof(m_szStockLevelCommand)/sizeof(m_szStockLevelCo
mmand[0]),
```

```
                    L"{call %stpcc_stocklevel
(?,?,?)}", m_szSPPrefix);
}

void CTPCC_ODBC::StockLevel()
{
            RETCODE                 rc;
            int                     iTryCount =
0;

            m_hstmt = m_hstmtStockLevel;

            while (TRUE)
            {
                    try
                    {
                            rc =
SQLExecDirectW(m_hstmt, m_szStockLevelCommand,
SQL_NTS);
                            if (rc != SQL_SUCCESS
&& rc != SQL_SUCCESS_WITH_INFO)

                    ThrowError(CODBCERR::eExecDirect);

                            if ( SQLFetch(m_hstmt)
== SQL_ERROR )

                    ThrowError(CODBCERR::eFetch);

                            SQLFreeStmt(m_hstmt,
SQL_CLOSE);

                    m_txn.StockLevel.exec_status_code = eOK;
                            break;
                    }
                    catch (CODBCERR *e)
                    {
                            if ((!e->m_bDeadLock)
|| (++iTryCount > iMaxRetries))
                                    throw;

                            // hit deadlock;
backoff for increasingly longer period
                            delete e;
                            Sleep(10 * iTryCount);
                    }
            }
//      if (iTryCount)
//              throw new
CTPCC_ODBC_ERR(CTPCC_ODBC_ERR::ERR_RETRIED_TRANS,
iTryCount);
}

void CTPCC_ODBC::InitNewOrderParams()
{
            if (   SQLAllocHandle(SQL_HANDLE_STMT,
m_hdbc, &m_hstmtNewOrder) != SQL_SUCCESS
||
SQLAllocHandle(SQL_HANDLE_STMT, m_hdbc,
&m_hstmtNewOrderNoDuplicates) != SQL_SUCCESS
```

```
||
SQLAllocHandle(SQL_HANDLE_DESC, m_hdbc,
&m_descNewOrderCols1) != SQL_SUCCESS
                    ||
SQLAllocHandle(SQL_HANDLE_DESC, m_hdbc,
&m_descNewOrderCols2) != SQL_SUCCESS
                    ||
SQLAllocHandle(SQL_HANDLE_DESC, m_hdbc,
&m_descNewOrderNoDuplicatesCols1) != SQL_SUCCESS
                    ||
SQLAllocHandle(SQL_HANDLE_DESC, m_hdbc,
&m_descNewOrderNoDuplicatesCols2) != SQL_SUCCESS
                    )

            ThrowError(CODBCERR::eAllocHandle);

            m_hstmt = m_hstmtNewOrder;

            if ( SQLSetStmtAttrW( m_hstmt,
SQL_ATTR_APP_ROW_DESC, m_descNewOrderCols1,
SQL_IS_POINTER ) != SQL_SUCCESS )

            ThrowError(CODBCERR::eSetStmtAttr);

            int i = 0;
            if (   SQLBindParameter(m_hstmt, ++i,
SQL_PARAM_INPUT, SQL_C_SLONG, SQL_INTEGER, 0, 0,
&m_txn.NewOrder.w_id, 0, NULL) != SQL_SUCCESS
                    || SQLBindParameter(m_hstmt, ++i,
SQL_PARAM_INPUT, SQL_C_UTINYINT, SQL_TINYINT, 0, 0,
&m_txn.NewOrder.d_id, 0, NULL) != SQL_SUCCESS
                    || SQLBindParameter(m_hstmt, ++i,
SQL_PARAM_INPUT, SQL_C_SLONG, SQL_INTEGER, 0, 0,
&m_txn.NewOrder.c_id, 0, NULL) != SQL_SUCCESS
                    || SQLBindParameter(m_hstmt, ++i,
SQL_PARAM_INPUT, SQL_C_UTINYINT, SQL_TINYINT, 0, 0,
&m_txn.NewOrder.o_ol_cnt, 0, NULL) != SQL_SUCCESS
                    || SQLBindParameter(m_hstmt, ++i,
SQL_PARAM_INPUT, SQL_C_UTINYINT, SQL_TINYINT, 0, 0,
&m_txn.NewOrder.o_all_local, 0, NULL) != SQL_SUCCESS
                    )
                    ThrowError(CODBCERR::eBindParam);

            for (int j=0; j<MAX_OL_NEW_ORDER_ITEMS;
j++)
            {
                    if (   SQLBindParameter(m_hstmt,
++i, SQL_PARAM_INPUT, SQL_C_SLONG, SQL_INTEGER, 0, 0,
&m_txn.NewOrder.OL[j].ol_i_id, 0, NULL) !=
SQL_SUCCESS
                            ||
SQLBindParameter(m_hstmt, ++i, SQL_PARAM_INPUT,
SQL_C_SLONG, SQL_INTEGER, 0, 0,
&m_txn.NewOrder.OL[j].ol_supply_w_id, 0, NULL) !=
SQL_SUCCESS
                            ||
SQLBindParameter(m_hstmt, ++i, SQL_PARAM_INPUT,
SQL_C_SSHORT, SQL_SMALLINT, 0, 0,
&m_txn.NewOrder.OL[j].ol_quantity, 0, NULL) !=
SQL_SUCCESS
                            )

                    ThrowError(CODBCERR::eBindParam);
```

```
        }
        // set the bind offset pointer
        if ( SQLSetStmtAttrW( m_hstmt,
SQL_ATTR_ROW_BIND_OFFSET_PTR, &m_BindOffset,
SQL_IS_POINTER ) != SQL_SUCCESS )

            ThrowError(CODBCERR::eSetStmtAttr);

        i = 0;
        if (   SQLBindCol(m_hstmt, ++i, SQL_C_CHAR,
&m_txn.NewOrder.OL[0].ol_i_name,
sizeof(m_txn.NewOrder.OL[0].ol_i_name), NULL) !=
SQL_SUCCESS
            || SQLBindCol(m_hstmt, ++i,
SQL_C_SSHORT, &m_txn.NewOrder.OL[0].ol_stock, 0,
NULL) != SQL_SUCCESS
            || SQLBindCol(m_hstmt, ++i,
SQL_C_CHAR,  &m_txn.NewOrder.OL[0].ol_brand_generic,
sizeof(m_txn.NewOrder.OL[0].ol_brand_generic), NULL)
!= SQL_SUCCESS
            || SQLBindCol(m_hstmt, ++i,
SQL_C_DOUBLE, &m_txn.NewOrder.OL[0].ol_i_price, 0,
NULL) != SQL_SUCCESS
            || SQLBindCol(m_hstmt, ++i,
SQL_C_DOUBLE, &m_txn.NewOrder.OL[0].ol_amount, 0,
NULL) != SQL_SUCCESS
                )
                ThrowError(CODBCERR::eBindCol);

        // associate the column bindings for the
second result set
        if ( SQLSetStmtAttrW( m_hstmt,
SQL_ATTR_APP_ROW_DESC, m_descNewOrderCols2,
SQL_IS_POINTER ) != SQL_SUCCESS )

            ThrowError(CODBCERR::eSetStmtAttr);

        i = 0;
        if (   SQLBindCol(m_hstmt, ++i,
SQL_C_DOUBLE,   &m_txn.NewOrder.w_tax, 0, NULL) !=
SQL_SUCCESS
            || SQLBindCol(m_hstmt, ++i,
SQL_C_DOUBLE,   &m_txn.NewOrder.d_tax, 0, NULL) !=
SQL_SUCCESS
            || SQLBindCol(m_hstmt, ++i,
SQL_C_SLONG,    &m_txn.NewOrder.o_id, 0, NULL) !=
SQL_SUCCESS
            || SQLBindCol(m_hstmt, ++i,
SQL_C_CHAR,     &m_txn.NewOrder.c_last,
sizeof(m_txn.NewOrder.c_last), NULL) != SQL_SUCCESS
            || SQLBindCol(m_hstmt, ++i,
SQL_C_DOUBLE,   &m_txn.NewOrder.c_discount, 0, NULL)
!= SQL_SUCCESS
            || SQLBindCol(m_hstmt, ++i,
SQL_C_CHAR,     &m_txn.NewOrder.c_credit,
sizeof(m_txn.NewOrder.c_credit), NULL) != SQL_SUCCESS
            || SQLBindCol(m_hstmt, ++i,
SQL_C_TYPE_TIMESTAMP, &m_txn.NewOrder.o_entry_d, 0,
NULL) != SQL_SUCCESS
            || SQLBindCol(m_hstmt, ++i,
SQL_C_SLONG,    &m_no_commit_flag, 0, NULL) !=
SQL_SUCCESS
```

```
            )
                ThrowError(CODBCERR::eBindCol);

        //Compose the New Order statement
        _snwprintf(m_szNewOrderCommand,
sizeof(m_szNewOrderCommand)/sizeof(m_szNewOrderComman
d[0]),
                          // 0         1         2
            //
0123456789012345678901234567890123456789
                          L"{call
%stpcc_neworder(?,?,?,?,?,?,?,?,?,?,?,?,?,?,?,?,?,?
,?,?,?,?,?,?,"

            L"?,?,?,?,?,?,?,?,?,?,?,?,?,?,?,?,?,?,?
,?,?,?,?)}", m_szSPPrefix);

        m_iBeginNewOrderVariablePart = 29 +
wcslen(m_szSPPrefix);         // fixed part + prefix
part

        /////////////////////////////////////////////
/////////////////////////////////////////
        //
        //              Now initialize New Order that
works on no duplicate (w_id,i_id) pairs
        //              and returns one result set for
lineitem details.
        //
        //
        m_hstmt = m_hstmtNewOrderNoDuplicates;

        if ( SQLSetStmtAttrW( m_hstmt,
SQL_ATTR_APP_ROW_DESC,
m_descNewOrderNoDuplicatesCols1, SQL_IS_POINTER ) !=
SQL_SUCCESS )

            ThrowError(CODBCERR::eSetStmtAttr);

        i = 0;
        if (   SQLBindParameter(m_hstmt, ++i,
SQL_PARAM_INPUT, SQL_C_SLONG, SQL_INTEGER, 0, 0,
&m_txn.NewOrder.w_id, 0, NULL) != SQL_SUCCESS
            || SQLBindParameter(m_hstmt, ++i,
SQL_PARAM_INPUT, SQL_C_UTINYINT, SQL_TINYINT, 0, 0,
&m_txn.NewOrder.d_id, 0, NULL) != SQL_SUCCESS
            || SQLBindParameter(m_hstmt, ++i,
SQL_PARAM_INPUT, SQL_C_SLONG, SQL_INTEGER, 0, 0,
&m_txn.NewOrder.c_id, 0, NULL) != SQL_SUCCESS
            || SQLBindParameter(m_hstmt, ++i,
SQL_PARAM_INPUT, SQL_C_UTINYINT, SQL_TINYINT, 0, 0,
&m_txn.NewOrder.o_ol_cnt, 0, NULL) != SQL_SUCCESS
            || SQLBindParameter(m_hstmt, ++i,
SQL_PARAM_INPUT, SQL_C_UTINYINT, SQL_TINYINT, 0, 0,
&m_txn.NewOrder.o_all_local, 0, NULL) != SQL_SUCCESS
                )
                ThrowError(CODBCERR::eBindParam);

        for (int j=0; j<MAX_OL_NEW_ORDER_ITEMS;
j++)
        {
                if (   SQLBindParameter(m_hstmt,
++i, SQL_PARAM_INPUT, SQL_C_SLONG, SQL_INTEGER, 0, 0,
```

```
&m_txn.NewOrder.OL[j].ol_i_id, 0, NULL) !=
SQL_SUCCESS
                    ||
SQLBindParameter(m_hstmt, ++i, SQL_PARAM_INPUT,
SQL_C_SLONG, SQL_INTEGER, 0, 0,
&m_txn.NewOrder.OL[j].ol_supply_w_id, 0, NULL) !=
SQL_SUCCESS
                    ||
SQLBindParameter(m_hstmt, ++i, SQL_PARAM_INPUT,
SQL_C_SSHORT, SQL_SMALLINT, 0, 0,
&m_txn.NewOrder.OL[j].ol_quantity, 0, NULL) !=
SQL_SUCCESS
                        )

            ThrowError(CODBCERR::eBindParam);
        }

        // set row-wise binding
        if (   SQLSetStmtAttrW(m_hstmt,
SQL_ATTR_ROW_BIND_TYPE,
(SQLPOINTER)sizeof(m_txn.NewOrder.OL[0]),
SQL_IS_UINTEGER) != SQL_SUCCESS
            || SQLSetStmtAttrW(m_hstmt,
SQL_ATTR_ROWS_FETCHED_PTR, &m_RowsFetched, 0) !=
SQL_SUCCESS )

            ThrowError(CODBCERR::eSetStmtAttr);

        i = 0;
        if (   SQLBindCol(m_hstmt, ++i, SQL_C_CHAR,
&m_txn.NewOrder.OL[0].ol_i_name,
sizeof(m_txn.NewOrder.OL[0].ol_i_name), NULL) !=
SQL_SUCCESS
            || SQLBindCol(m_hstmt, ++i,
SQL_C_SSHORT, &m_txn.NewOrder.OL[0].ol_stock, 0,
NULL) != SQL_SUCCESS
            || SQLBindCol(m_hstmt, ++i,
SQL_C_CHAR,    &m_txn.NewOrder.OL[0].ol_brand_generic,
sizeof(m_txn.NewOrder.OL[0].ol_brand_generic), NULL)
!= SQL_SUCCESS
            || SQLBindCol(m_hstmt, ++i,
SQL_C_DOUBLE, &m_txn.NewOrder.OL[0].ol_i_price, 0,
NULL) != SQL_SUCCESS
            || SQLBindCol(m_hstmt, ++i,
SQL_C_DOUBLE, &m_txn.NewOrder.OL[0].ol_amount, 0,
NULL) != SQL_SUCCESS
                )
                ThrowError(CODBCERR::eBindCol);

        // associate the column bindings for the
second result set
        if ( SQLSetStmtAttrW( m_hstmt,
SQL_ATTR_APP_ROW_DESC,
m_descNewOrderNoDuplicatesCols2, SQL_IS_POINTER ) !=
SQL_SUCCESS )

            ThrowError(CODBCERR::eSetStmtAttr);

        i = 0;
        if (   SQLBindCol(m_hstmt, ++i,
SQL_C_DOUBLE,   &m_txn.NewOrder.w_tax, 0, NULL) !=
SQL_SUCCESS
```

```
            || SQLBindCol(m_hstmt, ++i,
SQL_C_DOUBLE,    &m_txn.NewOrder.d_tax, 0, NULL) !=
SQL_SUCCESS
            || SQLBindCol(m_hstmt, ++i,
SQL_C_SLONG,    &m_txn.NewOrder.o_id, 0, NULL) !=
SQL_SUCCESS
            || SQLBindCol(m_hstmt, ++i,
SQL_C_CHAR,    &m_txn.NewOrder.c_last,
sizeof(m_txn.NewOrder.c_last), NULL) != SQL_SUCCESS
            || SQLBindCol(m_hstmt, ++i,
SQL_C_DOUBLE,    &m_txn.NewOrder.c_discount, 0, NULL)
!= SQL_SUCCESS
            || SQLBindCol(m_hstmt, ++i,
SQL_C_CHAR,    &m_txn.NewOrder.c_credit,
sizeof(m_txn.NewOrder.c_credit), NULL) != SQL_SUCCESS
            || SQLBindCol(m_hstmt, ++i,
SQL_C_TYPE_TIMESTAMP, &m_txn.NewOrder.o_entry_d, 0,
NULL) != SQL_SUCCESS
            || SQLBindCol(m_hstmt, ++i,
SQL_C_SLONG,    &m_no_commit_flag, 0, NULL) !=
SQL_SUCCESS
            )
        ThrowError(CODBCERR::eBindCol);

    //Compose the New Order statement
    _snwprintf(m_szNewOrderNoDuplicatesCommand,
sizeof(m_szNewOrderNoDuplicatesCommand)/sizeof(m_szNe
wOrderNoDuplicatesCommand[0]),
                    L"{call
%stpcc_neworder_new(?,?,?,?,?,?,?,?,?,?,?,?,?,?,?,?,?
,?,?,?,?,?,?,?,?,"
            L"?,?,?,?,?,?,?,?,?,?,?,?,?,?,?,?,?,?,?,?
,?,?,?,?)}", m_szSPPrefix);

        m_iBeginNewOrderNoDuplicatesVariablePart =
33 + wcslen(m_szSPPrefix);    // fixed part + prefix
part
}

//
//      Returns true if there are duplicate
(warehouse_id, item_id)
//      lineitem pairs in New Order input
parameters.
//
bool CTPCC_ODBC::DuplicatesInNewOrder()
{
    int i, j;

    for (i = 0; i < m_txn.NewOrder.o_ol_cnt;
++i)
    {
        for (j = i+1; j<
m_txn.NewOrder.o_ol_cnt; ++j)
        {
            if
(m_txn.NewOrder.OL[i].ol_i_id ==
m_txn.NewOrder.OL[j].ol_i_id)
            {
                return true;
            }
        }
```

```
    }

    return false;
}

void CTPCC_ODBC::NewOrder()
{
    if (m_bCallNoDuplicatesNewOrder)
    {
        if (DuplicatesInNewOrder())
        {
            NewOrderDuplicates();
        }
        else
        {
            NewOrderNoDuplicates();
        }
    }
    else
    {
        NewOrderDuplicates();
    }
}

void CTPCC_ODBC::NewOrderDuplicates()
{
    int
i;
    RETCODE                               rc;
    int
iTryCount = 0;

                                          //
0        1        2
                                          //
01234567890123456789012345678
    wchar_t
    szSqlTemplate[iMAX_SP_NAME_LEN];

                            //= L"{call
tpcc_neworder(?,?,?,?,"
                                          //
L"?,?,?,?,?,?,?,?,?,?,?,?,?,?,"
                                          //
L"?,?,?,?,?,?,?,?,?,?,?,?,?,?,"
                                          //
L"?,?,?,?,?,?,?,?,?,?,?,?,?,?)}";

            m_hstmt = m_hstmtNewOrder;

        // associate the parameter and column
bindings for this transaction
        if ( SQLSetStmtAttrW( m_hstmt,
SQL_ATTR_APP_ROW_DESC, m_descNewOrderCols1,
SQL_IS_POINTER ) != SQL_SUCCESS )
            ThrowError(CODBCERR::eSetStmtAttr);
```

```
        // clip statement buffer based on number of
parameters
        // fixed part is 29 chars and variable part
is 6 chars per line item
        wcscpy(szSqlTemplate, m_szNewOrderCommand);
        i = m_iBeginNewOrderVariablePart +
m_txn.NewOrder.o_ol_cnt*6;
        wcscpy( &szSqlTemplate[i], L")}" );

        // check whether any order lines are for a
remote warehouse
        m_txn.NewOrder.o_all_local = 1;
        for (i = 0; i < m_txn.NewOrder.o_ol_cnt;
i++)
        {
            if
(m_txn.NewOrder.OL[i].ol_supply_w_id !=
m_txn.NewOrder.w_id)
            {
            m_txn.NewOrder.o_all_local = 0;  // at
least one remote warehouse
                        break;
            }
        }

        while (TRUE)
        {
            try
            {
                m_BindOffset = 0;
                rc =
SQLExecDirectW(m_hstmt, szSqlTemplate, SQL_NTS);
                if (rc != SQL_SUCCESS
&& rc != SQL_SUCCESS_WITH_INFO)
                        ThrowError(CODBCERR::eExecDirect);

                        // Get order line
results
            m_txn.NewOrder.total_amount = 0;
                for (i = 0;
i<m_txn.NewOrder.o_ol_cnt; i++)
                {
                        // set the
bind offset value...        m_BindOffset
= i * sizeof(m_txn.NewOrder.OL[0]);
                        if (
SQLFetch(m_hstmt) == SQL_ERROR)
                        ThrowError(CODBCERR::eFetch);
                        // move to
the next resultset
                        if (
SQLMoreResults(m_hstmt) == SQL_ERROR )
                        ThrowError(CODBCERR::eMoreResults);
```

```
        m_txn.NewOrder.total_amount +=
m_txn.NewOrder.OL[i].ol_amount;
                }
                        // associate the column
bindings for the second result set
                        if ( SQLSetStmtAttrW(
m_hstmt, SQL_ATTR_APP_ROW_DESC, m_descNewOrderCols2,
SQL_IS_POINTER ) != SQL_SUCCESS )

        ThrowError(CODBCERR::eSetStmtAttr);
                        if ( SQLFetch(m_hstmt)
== SQL_ERROR)

        ThrowError(CODBCERR::eFetch);
                        SQLFreeStmt(m_hstmt,
SQL_CLOSE);
                        if (m_no_commit_flag ==
1)
                        {
        m_txn.NewOrder.total_amount *= ((1 +
m_txn.NewOrder.w_tax + m_txn.NewOrder.d_tax) * (1 -
m_txn.NewOrder.c_discount));

        m_txn.NewOrder.exec_status_code = eOK;
                        }
                        else

        m_txn.NewOrder.exec_status_code =
eInvalidItem;
                        break;
                }
                catch (CODBCERR *e)
                {
                        if ((!e->m_bDeadLock)
|| (++iTryCount > iMaxRetries))
                                throw;
                        // hit deadlock;
backoff for increasingly longer period
                        delete e;
                        Sleep(10 * iTryCount);
                }
        }

//      if (iTryCount)
//              throw new
CTPCC_ODBC_ERR(CTPCC_ODBC_ERR::ERR_RETRIED_TRANS,
iTryCount);
}

//
//      No lineitem duplicates optimized version.
//
void CTPCC_ODBC::NewOrderNoDuplicates()
{
```

```
        int
i;
        RETCODE                                 rc;
        int
iTryCount = 0;

                                                //
0       1       2       3
                                                //
012345678901234567890123456789 0123
        wchar_t
szSqlTemplate[iMAX_SP_NAME_LEN];

                                                //= L"{call
tpcc_neworder_new(?,?,?,?,?,"
                                                //
L"?,?,?,?,?,?,?,?,?,?,?,?,?,?,"
                                                //
L"?,?,?,?,?,?,?,?,?,?,?,?,?,?,"
                                                //
L"?,?,?,?,?,?,?,?,?,?,?,?,?,?)}";

        m_hstmt = m_hstmtNewOrderNoDuplicates;

        // associate the parameter and column
bindings for this transaction
        if ( SQLSetStmtAttrW( m_hstmt,
SQL_ATTR_APP_ROW_DESC,
m_descNewOrderNoDuplicatesCols1, SQL_IS_POINTER ) !=
SQL_SUCCESS )

        ThrowError(CODBCERR::eSetStmtAttr);
        // clip statement buffer based on number of
parameters
        // fixed part is 33 chars and variable part
is 6 chars per line item
        wcscpy(szSqlTemplate,
m_szNewOrderNoDuplicatesCommand);
        i =
m_iBeginNewOrderNoDuplicatesVariablePart +
m_txn.NewOrder.o_ol_cnt*6;
        wcscpy( &szSqlTemplate[i], L")}" );
        // check whether any order lines are for a
remote warehouse
        m_txn.NewOrder.o_all_local = 1;
        for (i = 0; i < m_txn.NewOrder.o_ol_cnt;
i++)
                {
                        if
(m_txn.NewOrder.OL[i].ol_supply_w_id !=
m_txn.NewOrder.w_id)
                        {
        m_txn.NewOrder.o_all_local = 0;  // at
least one remote warehouse
                                break;
                        }
                }
```

```
        }
        while (TRUE)
        {
                try
                {
                        // configure block
cursor
                        if (
SQLSetStmtAttrW(m_hstmt, SQL_ATTR_ROW_ARRAY_SIZE,
(SQLPOINTER)1, 0) != SQL_SUCCESS )

        ThrowError(CODBCERR::eSetStmtAttr);
                        rc =
SQLExecDirectW(m_hstmt, szSqlTemplate, SQL_NTS);
                        if (rc != SQL_SUCCESS
&& rc != SQL_SUCCESS_WITH_INFO)

        ThrowError(CODBCERR::eExecDirect);
                        // configure block
cursor
                        if
(SQLSetStmtAttrW(m_hstmt, SQL_ATTR_ROW_ARRAY_SIZE,
(SQLPOINTER)MAX_OL_NEW_ORDER_ITEMS, 0) !=
SQL_SUCCESS)

        ThrowError(CODBCERR::eSetStmtAttr);
                        // Get order line
results
                        if ( SQLFetch(m_hstmt)
== SQL_ERROR)

        ThrowError(CODBCERR::eFetch);

        m_txn.NewOrder.total_amount = 0;
                        for (i = 0;
i<m_txn.NewOrder.o_ol_cnt; i++)
                        {

        m_txn.NewOrder.total_amount +=
m_txn.NewOrder.OL[i].ol_amount;
                        }
                        // associate the column
bindings for the second result set
                        if ( SQLSetStmtAttrW(
m_hstmt, SQL_ATTR_APP_ROW_DESC,
m_descNewOrderNoDuplicatesCols2, SQL_IS_POINTER ) !=
SQL_SUCCESS )

        ThrowError(CODBCERR::eSetStmtAttr);
                        // move to the next
resultset
                        if (
SQLMoreResults(m_hstmt) == SQL_ERROR )
```

```
            ThrowError(CODBCERR::eMoreResults);

                        if ( (rc =
SQLFetch(m_hstmt)) == SQL_ERROR)

            ThrowError(CODBCERR::eFetch);

                        SQLFreeStmt(m_hstmt,
SQL_CLOSE);

                        // Check Fetch return
code for no rows returned.
                        // It means customer id
or warehouse id were invalid.
                        //
                        if (rc == SQL_NO_DATA)
                                    throw new
CTPCC_ODBC_ERR(CTPCC_ODBC_ERR::ERR_INVALID_NEW_ORDER_
PARAM);

                        if (m_no_commit_flag ==
1)
                        {

        m_txn.NewOrder.total_amount *= ((1 +
m_txn.NewOrder.w_tax + m_txn.NewOrder.d_tax) * (1 -
m_txn.NewOrder.c_discount));

        m_txn.NewOrder.exec_status_code = eOK;
                        }
                        else

        m_txn.NewOrder.exec_status_code =
eInvalidItem;

                        break;
                    }
                    catch (CODBCERR *e)
                    {
                        if ((!e->m_bDeadLock)
|| (++iTryCount > iMaxRetries))
                                    throw;

                        // hit deadlock;
backoff for increasingly longer period
                        delete e;
                        Sleep(10 * iTryCount);
                    }
                }
//      if (iTryCount)
//              throw new
CTPCC_ODBC_ERR(CTPCC_ODBC_ERR::ERR_RETRIED_TRANS,
iTryCount);
}

void CTPCC_ODBC::InitPaymentParams()
{
        if (   SQLAllocHandle(SQL_HANDLE_STMT,
m_hdbc, &m_hstmtPayment) != SQL_SUCCESS )

        ThrowError(CODBCERR::eAllocHandle);

        m_hstmt = m_hstmtPayment;

        int i = 0;
        if (   SQLBindParameter(m_hstmt, ++i,
SQL_PARAM_INPUT, SQL_C_SLONG, SQL_INTEGER, 0, 0,
&m_txn.Payment.w_id, 0, NULL) != SQL_SUCCESS
            || SQLBindParameter(m_hstmt, ++i,
SQL_PARAM_INPUT, SQL_C_SLONG, SQL_INTEGER, 0, 0,
&m_txn.Payment.c_w_id, 0, NULL) != SQL_SUCCESS
            || SQLBindParameter(m_hstmt, ++i,
SQL_PARAM_INPUT, SQL_C_DOUBLE, SQL_NUMERIC, 6, 2,
&m_txn.Payment.h_amount, 0, NULL) != SQL_SUCCESS
            || SQLBindParameter(m_hstmt, ++i,
SQL_PARAM_INPUT, SQL_C_UTINYINT, SQL_TINYINT, 0, 0,
&m_txn.Payment.d_id, 0, NULL) != SQL_SUCCESS
            || SQLBindParameter(m_hstmt, ++i,
SQL_PARAM_INPUT, SQL_C_UTINYINT, SQL_TINYINT, 0, 0,
&m_txn.Payment.c_d_id, 0, NULL) != SQL_SUCCESS
            || SQLBindParameter(m_hstmt, ++i,
SQL_PARAM_INPUT, SQL_C_SLONG, SQL_INTEGER, 0, 0,
&m_txn.Payment.c_id, 0, NULL) != SQL_SUCCESS
            || SQLBindParameter(m_hstmt, ++i,
SQL_PARAM_INPUT, SQL_C_CHAR, SQL_CHAR,
sizeof(m_txn.Payment.c_last), 0,
&m_txn.Payment.c_last, sizeof(m_txn.Payment.c_last),
NULL) != SQL_SUCCESS
            )
                        ThrowError(CODBCERR::eBindParam);

        i = 0;
        if (   SQLBindCol(m_hstmt, ++i,
SQL_C_SLONG,    &m_txn.Payment.c_id,            0,
NULL) != SQL_SUCCESS
            || SQLBindCol(m_hstmt, ++i,
SQL_C_CHAR,     &m_txn.Payment.c_last,
        sizeof(m_txn.Payment.c_last), NULL) !=
SQL_SUCCESS
            || SQLBindCol(m_hstmt, ++i,
SQL_C_TYPE_TIMESTAMP, &m_txn.Payment.h_date,
        0, NULL) != SQL_SUCCESS
            || SQLBindCol(m_hstmt, ++i,
SQL_C_CHAR,     &m_txn.Payment.w_street_1,
        sizeof(m_txn.Payment.w_street_1), NULL) !=
SQL_SUCCESS
            || SQLBindCol(m_hstmt, ++i,
SQL_C_CHAR,     &m_txn.Payment.w_street_2,
        sizeof(m_txn.Payment.w_street_2), NULL) !=
SQL_SUCCESS
            || SQLBindCol(m_hstmt, ++i,
SQL_C_CHAR,     &m_txn.Payment.w_city,
        sizeof(m_txn.Payment.w_city), NULL) !=
SQL_SUCCESS
            || SQLBindCol(m_hstmt, ++i,
SQL_C_CHAR,     &m_txn.Payment.w_state,
        sizeof(m_txn.Payment.w_state), NULL) !=
SQL_SUCCESS
            || SQLBindCol(m_hstmt, ++i,
SQL_C_CHAR,     &m_txn.Payment.w_zip,
        sizeof(m_txn.Payment.w_zip), NULL) !=
SQL_SUCCESS
            || SQLBindCol(m_hstmt, ++i,
SQL_C_CHAR,     &m_txn.Payment.d_street_1,
        sizeof(m_txn.Payment.d_street_1), NULL) !=
SQL_SUCCESS
            || SQLBindCol(m_hstmt, ++i,
SQL_C_CHAR,     &m_txn.Payment.d_street_2,
        sizeof(m_txn.Payment.d_street_2), NULL) !=
SQL_SUCCESS
            || SQLBindCol(m_hstmt, ++i,
SQL_C_CHAR,     &m_txn.Payment.d_city,
        sizeof(m_txn.Payment.d_city), NULL) !=
SQL_SUCCESS
            || SQLBindCol(m_hstmt, ++i,
SQL_C_CHAR,     &m_txn.Payment.d_state,
        sizeof(m_txn.Payment.d_state), NULL) !=
SQL_SUCCESS
            || SQLBindCol(m_hstmt, ++i,
SQL_C_CHAR,     &m_txn.Payment.d_zip,
        sizeof(m_txn.Payment.d_zip), NULL) !=
SQL_SUCCESS
            || SQLBindCol(m_hstmt, ++i,
SQL_C_CHAR,     &m_txn.Payment.c_first,
        sizeof(m_txn.Payment.c_first), NULL) !=
SQL_SUCCESS
            || SQLBindCol(m_hstmt, ++i,
SQL_C_CHAR,     &m_txn.Payment.c_middle,
        sizeof(m_txn.Payment.c_middle), NULL) !=
SQL_SUCCESS
            || SQLBindCol(m_hstmt, ++i,
SQL_C_CHAR,     &m_txn.Payment.c_street_1,
        sizeof(m_txn.Payment.c_street_1), NULL) !=
SQL_SUCCESS
            || SQLBindCol(m_hstmt, ++i,
SQL_C_CHAR,     &m_txn.Payment.c_street_2,
        sizeof(m_txn.Payment.c_street_2), NULL) !=
SQL_SUCCESS
            || SQLBindCol(m_hstmt, ++i,
SQL_C_CHAR,     &m_txn.Payment.c_city,
        sizeof(m_txn.Payment.c_city), NULL) !=
SQL_SUCCESS
            || SQLBindCol(m_hstmt, ++i,
SQL_C_CHAR,     &m_txn.Payment.c_state,
        sizeof(m_txn.Payment.c_state), NULL) !=
SQL_SUCCESS
            || SQLBindCol(m_hstmt, ++i,
SQL_C_CHAR,     &m_txn.Payment.c_zip,
        sizeof(m_txn.Payment.c_zip), NULL) !=
SQL_SUCCESS
            || SQLBindCol(m_hstmt, ++i,
SQL_C_CHAR,     &m_txn.Payment.c_phone,
        sizeof(m_txn.Payment.c_phone), NULL) !=
SQL_SUCCESS
            || SQLBindCol(m_hstmt, ++i,
SQL_C_TYPE_TIMESTAMP, &m_txn.Payment.c_since,
        0, NULL) != SQL_SUCCESS
            || SQLBindCol(m_hstmt, ++i,
SQL_C_CHAR,     &m_txn.Payment.c_credit,
        sizeof(m_txn.Payment.c_credit), NULL) !=
SQL_SUCCESS
            || SQLBindCol(m_hstmt, ++i,
SQL_C_DOUBLE,   &m_txn.Payment.c_credit_lim,0, NULL)
!= SQL_SUCCESS
            || SQLBindCol(m_hstmt, ++i,
SQL_C_DOUBLE,   &m_txn.Payment.c_discount,     0,
NULL) != SQL_SUCCESS
```

```
                || SQLBindCol(m_hstmt, ++i,
SQL_C_DOUBLE,   &m_txn.Payment.c_balance,      0,
NULL) != SQL_SUCCESS
                || SQLBindCol(m_hstmt, ++i,
SQL_C_CHAR,     &m_txn.Payment.c_data,
        sizeof(m_txn.Payment.c_data), NULL) !=
SQL_SUCCESS
                )
                ThrowError(CODBCERR::eBindCol);

        //Compose Payment statement
        _snwprintf(m_szPaymentCommand,
sizeof(m_szPaymentCommand)/sizeof(m_szPaymentCommand[
0]),
                L"{call %stpcc_payment
(?,?,?,?,?,?)}", m_szSPPrefix);
}

void CTPCC_ODBC::Payment()
{
        RETCODE             rc;
        int                         iTryCount =
0;

        m_hstmt = m_hstmtPayment;

        if (m_txn.Payment.c_id != 0)
                m_txn.Payment.c_last[0] = 0;

        while (TRUE)
        {
                try
                {
                        rc =
SQLExecDirectW(m_hstmt, m_szPaymentCommand, SQL_NTS);
                        if (rc != SQL_SUCCESS
&& rc != SQL_SUCCESS_WITH_INFO)

        ThrowError(CODBCERR::eExecDirect);

                        if ( SQLFetch(m_hstmt)
== SQL_ERROR)

        ThrowError(CODBCERR::eFetch);

                        SQLFreeStmt(m_hstmt,
SQL_CLOSE);

                        if (m_txn.Payment.c_id
== 0)
                                throw new
CTPCC_ODBC_ERR( CTPCC_ODBC_ERR::ERR_INVALID_CUST );
                        else

        m_txn.Payment.exec_status_code = eOK;

                        break;
                }
                catch (CODBCERR *e)
                {
                        if ((!e->m_bDeadLock)
|| (++iTryCount > iMaxRetries))
                                throw;
```

```
                                // hit deadlock;
backoff for increasingly longer period
                                delete e;
                                Sleep(10 * iTryCount);
                        }
                }
//        if (iTryCount)
//                throw new
CTPCC_ODBC_ERR(CTPCC_ODBC_ERR::ERR_RETRIED_TRANS,
iTryCount);
}

void CTPCC_ODBC::InitOrderStatusParams()
{
        if (   SQLAllocHandle(SQL_HANDLE_STMT,
m_hdbc, &m_hstmtOrderStatus) != SQL_SUCCESS
                ||
SQLAllocHandle(SQL_HANDLE_DESC, m_hdbc,
&m_descOrderStatusCols1) != SQL_SUCCESS
                ||
SQLAllocHandle(SQL_HANDLE_DESC, m_hdbc,
&m_descOrderStatusCols2) != SQL_SUCCESS
                )

        ThrowError(CODBCERR::eAllocHandle);

        m_hstmt = m_hstmtOrderStatus;

        if (   SQLSetStmtAttrW( m_hstmt,
SQL_ATTR_APP_ROW_DESC, m_descOrderStatusCols1,
SQL_IS_POINTER ) != SQL_SUCCESS )

        ThrowError(CODBCERR::eSetStmtAttr);

        int i = 0;
        if (   SQLBindParameter(m_hstmt, ++i,
SQL_PARAM_INPUT, SQL_C_SLONG, SQL_INTEGER, 0, 0,
&m_txn.OrderStatus.w_id, 0, NULL) != SQL_SUCCESS
                || SQLBindParameter(m_hstmt, ++i,
SQL_PARAM_INPUT, SQL_C_UTINYINT, SQL_TINYINT, 0, 0,
&m_txn.OrderStatus.d_id, 0, NULL) != SQL_SUCCESS
                || SQLBindParameter(m_hstmt, ++i,
SQL_PARAM_INPUT, SQL_C_SLONG, SQL_INTEGER, 0, 0,
&m_txn.OrderStatus.c_id, 0, NULL) != SQL_SUCCESS
                || SQLBindParameter(m_hstmt, ++i,
SQL_PARAM_INPUT, SQL_C_CHAR, SQL_CHAR,
sizeof(m_txn.OrderStatus.c_last), 0,
&m_txn.OrderStatus.c_last,
sizeof(m_txn.OrderStatus.c_last), NULL) !=
SQL_SUCCESS
                )
                        ThrowError(CODBCERR::eBindParam);

        // configure block cursor
        if (   SQLSetStmtAttrW(m_hstmt,
SQL_ATTR_ROW_BIND_TYPE,
(SQLPOINTER)sizeof(m_txn.OrderStatus.OL[0]), 0) !=
SQL_SUCCESS
                || SQLSetStmtAttrW(m_hstmt,
SQL_ATTR_ROWS_FETCHED_PTR, &m_RowsFetched, 0) !=
SQL_SUCCESS
```

```
                )
        ThrowError(CODBCERR::eSetStmtAttr);

        i = 0;
        if (   SQLBindCol(m_hstmt, ++i,
SQL_C_SLONG, &m_txn.OrderStatus.OL[0].ol_supply_w_id,
0, NULL) != SQL_SUCCESS
                || SQLBindCol(m_hstmt, ++i,
SQL_C_SLONG, &m_txn.OrderStatus.OL[0].ol_i_id, 0,
NULL) != SQL_SUCCESS
                || SQLBindCol(m_hstmt, ++i,
SQL_C_SSHORT, &m_txn.OrderStatus.OL[0].ol_quantity,
0, NULL) != SQL_SUCCESS
                || SQLBindCol(m_hstmt, ++i,
SQL_C_DOUBLE, &m_txn.OrderStatus.OL[0].ol_amount, 0,
NULL) != SQL_SUCCESS
                || SQLBindCol(m_hstmt, ++i,
SQL_C_TYPE_TIMESTAMP,
&m_txn.OrderStatus.OL[0].ol_delivery_d, 0, NULL) !=
SQL_SUCCESS
                )
                        ThrowError(CODBCERR::eBindCol);

        if ( SQLSetStmtAttrW( m_hstmt,
SQL_ATTR_APP_ROW_DESC, m_descOrderStatusCols2,
SQL_IS_POINTER ) != SQL_SUCCESS )

        ThrowError(CODBCERR::eSetStmtAttr);

        i = 0;
        if (   SQLBindCol(m_hstmt, ++i,
SQL_C_SLONG, &m_txn.OrderStatus.c_id, 0, NULL) !=
SQL_SUCCESS
                || SQLBindCol(m_hstmt, ++i,
SQL_C_CHAR, &m_txn.OrderStatus.c_last,
sizeof(m_txn.OrderStatus.c_last), NULL) !=
SQL_SUCCESS
                || SQLBindCol(m_hstmt, ++i,
SQL_C_CHAR, &m_txn.OrderStatus.c_first,
sizeof(m_txn.OrderStatus.c_first), NULL) !=
SQL_SUCCESS
                || SQLBindCol(m_hstmt, ++i,
SQL_C_CHAR, &m_txn.OrderStatus.c_middle,
sizeof(m_txn.OrderStatus.c_middle), NULL) !=
SQL_SUCCESS
                || SQLBindCol(m_hstmt, ++i,
SQL_C_TYPE_TIMESTAMP, &m_txn.OrderStatus.o_entry_d,
0, NULL) != SQL_SUCCESS
                || SQLBindCol(m_hstmt, ++i,
SQL_C_SSHORT, &m_txn.OrderStatus.o_carrier_id, 0,
NULL) != SQL_SUCCESS
                || SQLBindCol(m_hstmt, ++i,
SQL_C_DOUBLE, &m_txn.OrderStatus.c_balance, 0, NULL)
!= SQL_SUCCESS
                || SQLBindCol(m_hstmt, ++i,
SQL_C_SLONG, &m_txn.OrderStatus.o_id, 0, NULL) !=
SQL_SUCCESS
                )
                        ThrowError(CODBCERR::eBindCol);

        //Compose Order Status statement
```

```
        _snwprintf(m_szOrderStatusCommand,
sizeof(m_szOrderStatusCommand)/sizeof(m_szOrderStatus
Command[0]),
                L"{call %stpcc_orderstatus
(?,?,?,?)}", m_szSPPrefix);
}

void CTPCC_ODBC::OrderStatus()
{
        int
                iTryCount = 0;
        RETCODE
        rc;

        m_hstmt = m_hstmtOrderStatus;

        if (m_txn.OrderStatus.c_id != 0)
                m_txn.OrderStatus.c_last[0] = 0;

        while (TRUE)
        {
                try
                {
                        if ( SQLSetStmtAttrW(
m_hstmt, SQL_ATTR_APP_ROW_DESC,
m_descOrderStatusCols1, SQL_IS_POINTER ) !=
SQL_SUCCESS )

        ThrowError(CODBCERR::eSetStmtAttr);

                        // configure block
cursor
                        if (
SQLSetStmtAttrW(m_hstmt, SQL_ATTR_ROW_ARRAY_SIZE,
(SQLPOINTER)1, 0) != SQL_SUCCESS )

        ThrowError(CODBCERR::eSetStmtAttr);

                        rc =
SQLExecDirectW(m_hstmt, m_szOrderStatusCommand,
SQL_NTS);
                        if (rc != SQL_SUCCESS
&& rc != SQL_SUCCESS_WITH_INFO)

        ThrowError(CODBCERR::eExecDirect);

                        // configure block
cursor
                        if (
SQLSetStmtAttrW(m_hstmt, SQL_ATTR_ROW_ARRAY_SIZE,
(SQLPOINTER)MAX_OL_ORDER_STATUS_ITEMS, 0) !=
SQL_SUCCESS )

        ThrowError(CODBCERR::eSetStmtAttr);

                        rc = SQLFetchScroll(
m_hstmt, SQL_FETCH_NEXT, 0 );
//                      if ( !((rc ==
SQL_SUCCESS) || ((rc == SQL_SUCCESS_WITH_INFO) &&
(m_RowsFetched != 0))) )
                        if ( (rc !=
SQL_SUCCESS) )
```

```
                        ThrowError(CODBCERR::eFetchScroll);

                        m_txn.OrderStatus.o_ol_cnt =
(short)m_RowsFetched;

                        if
(m_txn.OrderStatus.o_ol_cnt != 0)
                        {
                                if (
SQLSetStmtAttrW( m_hstmt, SQL_ATTR_APP_ROW_DESC,
m_descOrderStatusCols2, SQL_IS_POINTER ) !=
SQL_SUCCESS )

        ThrowError(CODBCERR::eSetStmtAttr);
//                              if (
SQLMoreResults(m_hstmt) == SQL_ERROR )
                                if ( (rc =
SQLMoreResults(m_hstmt)) != SQL_SUCCESS )
                                {

        ThrowError(CODBCERR::eMoreResults);
                                }
//                              if ( (rc =
SQLFetch(m_hstmt)) == SQL_ERROR)
                                if ( (rc =
SQLFetch(m_hstmt)) != SQL_SUCCESS)

        ThrowError(CODBCERR::eFetch);
                        }
                                SQLFreeStmt(m_hstmt,
SQL_CLOSE);
                                if
(m_txn.OrderStatus.o_ol_cnt == 0)
                                        throw new
CTPCC_ODBC_ERR( CTPCC_ODBC_ERR::ERR_NO_SUCH_ORDER );
                                else if
(m_txn.OrderStatus.c_id == 0 &&
m_txn.OrderStatus.c_last[0] == 0)
                                        throw new
CTPCC_ODBC_ERR( CTPCC_ODBC_ERR::ERR_INVALID_CUST );
                                else

        m_txn.OrderStatus.exec_status_code = eOK;

                                break;
                }
                catch (CODBCERR *e)
                {
                        if ((!e->m_bDeadLock)
|| (++iTryCount > iMaxRetries))
                                throw;

                        // hit deadlock;
backoff for increasingly longer period
                                delete e;
                                Sleep(10 * iTryCount);
```

```
                }
        }
//      if (iTryCount)
//              throw new
CTPCC_ODBC_ERR(CTPCC_ODBC_ERR::ERR_RETRIED_TRANS,
iTryCount);
}

void CTPCC_ODBC::InitDeliveryParams()
{
        if (   SQLAllocHandle(SQL_HANDLE_STMT,
m_hdbc, &m_hstmtDelivery) != SQL_SUCCESS )

        ThrowError(CODBCERR::eAllocHandle);

        m_hstmt = m_hstmtDelivery;

        int i = 0;
        if (   SQLBindParameter(m_hstmt, ++i,
SQL_PARAM_INPUT, SQL_C_SLONG, SQL_INTEGER, 0, 0,
&m_txn.Delivery.w_id, 0, NULL) != SQL_SUCCESS
            || SQLBindParameter(m_hstmt, ++i,
SQL_PARAM_INPUT, SQL_C_SSHORT, SQL_SMALLINT, 0, 0,
&m_txn.Delivery.o_carrier_id, 0, NULL) != SQL_SUCCESS
)
                ThrowError(CODBCERR::eBindParam);

        for (i=0;i<10;i++)
        {
                if ( SQLBindCol(m_hstmt,
(UWORD)(i+1), SQL_C_SLONG, &m_txn.Delivery.o_id[i],
0, NULL) != SQL_SUCCESS )

        ThrowError(CODBCERR::eBindCol);
        }

        //Compose Delivery statement
        _snwprintf(m_szDeliveryCommand,
sizeof(m_szDeliveryCommand)/sizeof(m_szDeliveryComman
d[0]),
                L"{call %stpcc_delivery (?,?)}",
m_szSPPrefix);
}

void CTPCC_ODBC::Delivery()
{
        RETCODE                 rc;
        int                             iTryCount =
0;

        m_hstmt = m_hstmtDelivery;

        while (TRUE)
        {
                try
                {
                        rc =
SQLExecDirectW(m_hstmt, m_szDeliveryCommand,
SQL_NTS);
                        if (rc != SQL_SUCCESS
&& rc != SQL_SUCCESS_WITH_INFO)
```

```
            ThrowError(CODBCERR::eExecDirect);

                        if ( SQLFetch(m_hstmt)
== SQL_ERROR )

            ThrowError(CODBCERR::eFetch);

                        SQLFreeStmt(m_hstmt,
SQL_CLOSE);

            m_txn.Delivery.exec_status_code = eOK;
                        break;
                }
                catch (CODBCERR *e)
                {
                        if ((!e->m_bDeadLock)
|| (++iTryCount > iMaxRetries))
                                throw;

                        // hit deadlock;
backoff for increasingly longer period
                        delete e;
                        Sleep(10 * iTryCount);
                }
        }

//      if (iTryCount)
//              throw new
CTPCC_ODBC_ERR(CTPCC_ODBC_ERR::ERR_RETRIED_TRANS,
iTryCount);
}
```

tpcc_odbc.h

```
/*      FILE:                   TPCC_ODBC.H
 *                                      Microsoft
TPC-C Kit Ver. 4.69.000
 *                                      Copyright
Microsoft, 1999
 *              All Rights Reserved
 *
 *                                      Version
4.10.000 audited by Richard Gimarc, Performance
Metrics, 3/17/99
 *
 *      PURPOSE:  Header file for TPC-C txn class
implementation.
 *
 *  Change history:
 *              4.20.000 - updated rev number to
match kit
 *              4.69.000 - updated rev number to
match kit
 */
#pragma once

// need to declare functions for import, unless
define has already been created
// by the DLL's .cpp module for export.
```

```
#ifndef DllDecl
#define DllDecl  __declspec( dllimport )
#endif

#define iMAX_SP_NAME_LEN 256  //maximum length of a
stored procedure name with parameters

class CODBCERR : public CBaseErr
{
        public:
                enum ACTION
                {
                        eNone,
                        eUnknown,
                        eAllocConn,
        // error from SQLAllocConnect
                        eAllocHandle,
        // error from SQLAllocHandle
                        eConnOption,
        // error from SQLSetConnectOption
                        eConnect,
        // error from SQLConnect
                        eAllocStmt,
                // error from SQLAllocStmt
                        eExecDirect,
        // error from SQLExecDirect
                        eBindParam,
                // error from SQLBindParameter
                        eBindCol,
        // error from SQLBindCol
                        eFetch,
                // error from SQLFetch
                        eFetchScroll,
        // error from SQLFetchScroll
                        eMoreResults,
        // error from SQLMoreResults
                        ePrepare,
        // error from SQLPrepare
                        eExecute,
        // error from SQLExecute
                        eSetEnvAttr,
        // error from SQLSetEnvAttr
                        eSetStmtAttr
        // error from SQLSetStmtAttr
                };

                CODBCERR(void)
                {
                        m_eAction = eNone;
                        m_NativeError = 0;
                        m_bDeadLock = FALSE;
                        m_odbcerrstr = NULL;
                };

                ~CODBCERR()
                {
                        if (m_odbcerrstr !=
NULL)
                                delete []
m_odbcerrstr;
                };

                ACTION    m_eAction;
```

```
                int
        m_NativeError;
                BOOL      m_bDeadLock;
                char     *m_odbcerrstr;

                int             ErrorType()
{return ERR_TYPE_ODBC;};
                char*     ErrorTypeStr() { return
"ODBC"; }
                int             ErrorNum()
{return m_NativeError;};
                char*     ErrorText() {return
m_odbcerrstr;};
                int             ErrorAction()
{ return (int)m_eAction; }
};

class CTPCC_ODBC_ERR : public CBaseErr
{
        public:
                enum TPCC_ODBC_ERRS
                {
                        ERR_WRONG_SP_VERSION =
1,      // "Wrong version of stored procs on
database server"
                        ERR_INVALID_CUST,
                // "Invalid Customer id,name."
                        ERR_NO_SUCH_ORDER,
                // "No orders found for
customer."
                        ERR_RETRIED_TRANS,
                // "Retries before transaction
succeeded."

        ERR_INVALID_NEW_ORDER_PARAM   // "New Order
parameter invalid."
                };

                CTPCC_ODBC_ERR( int iErr ) {
m_errno = iErr; m_iTryCount = 0; };

                CTPCC_ODBC_ERR( int iErr, int
iTryCount ) { m_errno = iErr; m_iTryCount =
iTryCount; };

                int             m_errno;
                int             m_iTryCount;

                int             ErrorType()
{return ERR_TYPE_TPCC_ODBC;};
                char*     ErrorTypeStr() { return
"TPCC ODBC"; }
                int             ErrorNum()
{return m_errno;};

                char*     ErrorText();
};

class DllDecl CTPCC_ODBC : public CTPCC_BASE
{
        private:
                // declare variables and private
functions here...
```

```
            BOOL            m_bDeadlock;
                // transaction was selected as
deadlock victim
            int
    m_MaxRetries;           // retry
count on deadlock

            SQLHENV         m_henv;
                    // ODBC environment
handle
            SQLHDBC         m_hdbc;
            SQLHSTMT  m_hstmt;
        // the current hstmt

            SQLHSTMT  m_hstmtNewOrder;
            SQLHSTMT
    m_hstmtNewOrderNoDuplicates;  // NewOrder
with one result set for lineitem details
            SQLHSTMT  m_hstmtPayment;
            SQLHSTMT  m_hstmtDelivery;
            SQLHSTMT  m_hstmtOrderStatus;
            SQLHSTMT  m_hstmtStockLevel;

            SQLHDESC  m_descNewOrderCols1;
            SQLHDESC  m_descNewOrderCols2;
            SQLHDESC
    m_descNewOrderNoDuplicatesCols1;        //
NewOrder with one result set for lineitem details
            SQLHDESC
    m_descNewOrderNoDuplicatesCols2;        //
NewOrder with one result set for lineitem details
            SQLHDESC  m_descOrderStatusCols1;
            SQLHDESC  m_descOrderStatusCols2;

            wchar_t
    m_szSPPrefix[32];   // stored procedures
prefix

            wchar_t
    m_szNewOrderCommand[iMAX_SP_NAME_LEN];
            wchar_t
    m_szNewOrderNoDuplicatesCommand[iMAX_SP_NAM
E_LEN];
            int
    m_iBeginNewOrderVariablePart; // begining
of the variable part in NewOrder statement
            int
    m_iBeginNewOrderNoDuplicatesVariablePart;
        // begining of the variable part in
NewOrder statement
            wchar_t
    m_szPaymentCommand[iMAX_SP_NAME_LEN];
            wchar_t
    m_szDeliveryCommand[iMAX_SP_NAME_LEN];
            wchar_t
    m_szOrderStatusCommand[iMAX_SP_NAME_LEN];
            wchar_t
    m_szStockLevelCommand[iMAX_SP_NAME_LEN];

            // new-order specific fields
            SQLUINTEGER       m_BindOffset;
            SQLUINTEGER
    m_RowsFetched;
```

```
            int
    m_no_commit_flag;

                // tpcc_neworder_new flag
            BOOL
    m_bCallNoDuplicatesNewOrder;

            //void ThrowError(
CODBCERR::ACTION eAction );
            void ThrowError( RETCODE eAction
);

            void InitNewOrderParams();
            void InitPaymentParams();
            void InitDeliveryParams();
            void InitStockLevelParams();
            void InitOrderStatusParams();

            union
            {
                    NEW_ORDER_DATA
    NewOrder;

                    PAYMENT_DATA
    Payment;

                    DELIVERY_DATA
    Delivery;

                    STOCK_LEVEL_DATA
    StockLevel;

                    ORDER_STATUS_DATA
    OrderStatus;
            }
    m_txn;

            bool DuplicatesInNewOrder();
            void NewOrderDuplicates();
            void NewOrderNoDuplicates();

        public:
            CTPCC_ODBC(         LPCSTR
szServer, LPCSTR szUser, LPCSTR szPassword,

    LPCSTR szHost, LPCSTR szDatabase,

    LPCWSTR szSPPrefix, BOOL
bCallNoDuplicatesNewOrder);
            ~CTPCC_ODBC(void);

            inline PNEW_ORDER_DATA
    BuffAddr_NewOrder()          { return
&m_txn.NewOrder;   };
            inline PPAYMENT_DATA
    BuffAddr_Payment()           { return
&m_txn.Payment;    };
            inline PDELIVERY_DATA
    BuffAddr_Delivery()          { return
&m_txn.Delivery;   };
            inline PSTOCK_LEVEL_DATA
    BuffAddr_StockLevel()        { return
&m_txn.StockLevel; };
            inline PORDER_STATUS_DATA
    BuffAddr_OrderStatus()       { return
&m_txn.OrderStatus; };
```

```
            void NewOrder          ();
            void Payment           ();
            void Delivery          ();
            void StockLevel        ();
            void OrderStatus    ();
};


// wrapper routine for class constructor
extern "C"  DllDecl CTPCC_ODBC* CTPCC_ODBC_new
            (       LPCSTR szServer, LPCSTR szUser,
LPCSTR szPassword,
            LPCSTR szHost, LPCSTR szDatabase,
            LPCWSTR szSPPrefix, BOOL
bCallNoDuplicatesNewOrder );

typedef CTPCC_ODBC* (TYPE_CTPCC_ODBC)(LPCSTR, LPCSTR,
LPCSTR, LPCSTR, LPCSTR, LPCWSTR, BOOL);
```

tpcc_oledb.cpp

```
/*      FILE:               TPCC_OLEDB.CPP
 *                              Microsoft
TPC-C Kit Ver. 4.69.000
 *                              Copyright
Microsoft, 2004
 *                              Written by
Sergey Vasilevskiy
 *          All Rights Reserved
 *
 *
 *
 *      PURPOSE:  Implements OLEDB calls for TPC-C
txns.
 *      Contact:  Charles Levine
(clevine@microsoft.com)
 *
 *
 *          4.69.000 - updated rev number to
match kit
 */

#include <windows.h>
#include <stdio.h>
#include <assert.h>
#include <stddef.h>


#define DBINITCONSTANTS
#include <oledb.h>
//#include <sqloledb.h> // Use MDAC
#include <C:\\Program Files\\Microsoft SQL
Server\\100\\SDK\\Include\\sqlncli.h>   // Use SNAC
#include <oledberr.h>

#ifdef ICECAP
#include <icapexp.h>
#endif

// need to declare functions for export
```

```
#define DllDecl  __declspec( dllexport )

#include "..\..\common\src\error.h"
#include "..\..\common\src\trans.h"
#include "..\..\common\src\txn_base.h"
#include "tpcc_oledb.h"

#ifndef SQL_MAX_MESSAGE_LENGTH
#define SQL_MAX_MESSAGE_LENGTH 512
#endif

// version string; must match return value from
tpcc_version stored proc
const char          sVersion[] = "4.20.000";

const iMaxRetries = 10;            // how many
retries on deadlock

const int iErrOleDbProvider = 7312;
const char sErrTimeoutExpired[] = "Timeout expired";

// this needs to be the same as the max length of
machine/database/user/password in Benchcraft
(engstut.h)
const static int    iMaxNameLen = 32;

BOOL APIENTRY DllMain(HMODULE hModule, DWORD
ul_reason_for_call, LPVOID lpReserved)
{
        switch( ul_reason_for_call )
        {
                case DLL_PROCESS_ATTACH:

        DisableThreadLibraryCalls(hModule);

                        break;

                case DLL_PROCESS_DETACH:

                        break;

                default:
                        /* nothing */;
        }
        return TRUE;
}

/* FUNCTION: CTPCC_OLEDB_ERR::ErrorText
 *
 */

char* CTPCC_OLEDB_ERR::ErrorText(void)
{
        int i;

        static SERRORMSG errorMsgs[] =
        {
                { ERR_WRONG_SP_VERSION,
        "Wrong version of stored procs on database
server"  },
                { ERR_INVALID_CUST,
        "Invalid Customer id,name."
                                        },
```

```
                { ERR_NO_SUCH_ORDER,
        "No orders found for customer."
                                        },
                { ERR_RETRIED_TRANS,
        "Retries before transaction succeeded."
                        },
                { 0,
                        "" }

        }
        };

        static char szNotFound[] = "Unknown error
number.";

        for(i=0; errorMsgs[i].szMsg[0]; i++)
        {
                if ( m_errno ==
errorMsgs[i].iError )
                        break;
        }
        if ( !errorMsgs[i].szMsg[0] )
                return szNotFound;
        else
                return errorMsgs[i].szMsg;
}

// wrapper routine for class constructor
__declspec(dllexport) CTPCC_OLEDB* CTPCC_OLEDB_new(
        LPCSTR szServer,             // name of
SQL server
        LPCSTR szUser,                     //
user name for login
        LPCSTR szPassword,          // password
for login
        LPCSTR szHost,                     //
not used
        LPCSTR szDatabase,          // name of
database to use
        LPCWSTR szSPPrefix )               //
prefix to append to the stored procedure names
{
        return new CTPCC_OLEDB( szServer, szUser,
szPassword, szHost, szDatabase, szSPPrefix );
}


CTPCC_OLEDB::CTPCC_OLEDB (
        LPCSTR szServer,
        // name of SQL server
        LPCSTR szUser,
                // user name for login
        LPCSTR szPassword,
        // password for login
        LPCSTR szHost,
                // not used
        LPCSTR szDatabase,
        // name of database to use
        LPCWSTR szSPPrefix
        // prefix to append to the stored procedure
names
        )
```

```
        : m_pIMalloc(NULL)
{
        int
        iRc;
        int
        i;
        HRESULT                                hr;

        IDBInitialize*
        pIDBInitialize = NULL;              //
data source interface
        IDBProperties*
        pIDBProperties = NULL;
        ICommandText*
        pICommandText;
        // SQL command without parameters
        wchar_t
        szwServer[iMaxNameLen];             //
Unicode string used to convert to BSTR
        wchar_t
        szwDatabase[iMaxNameLen];     // Unicode
string used to convert to BSTR
        wchar_t
        szwUser[iMaxNameLen];               //
Unicode string used to convert to BSTR
        wchar_t
        szwPassword[iMaxNameLen];     // Unicode
string used to convert to BSTR

        // Copy stored procedures prefix
        wcsncpy(m_szSPPrefix, szSPPrefix,
sizeof(m_szSPPrefix)/sizeof(m_szSPPrefix[0]));

        // Convert single byte ANSI strings to
Unicode (for later conversion to BSTR)
        iRc = MultiByteToWideChar(CP_THREAD_ACP,
MB_PRECOMPOSED, szServer, (int)strlen(szServer)+1,
szwServer, iMaxNameLen);
        iRc = MultiByteToWideChar(CP_THREAD_ACP,
MB_PRECOMPOSED, szDatabase,
(int)strlen(szDatabase)+1, szwDatabase, iMaxNameLen);
        iRc = MultiByteToWideChar(CP_THREAD_ACP,
MB_PRECOMPOSED, szUser, (int)strlen(szUser)+1,
szwUser, iMaxNameLen);
        iRc = MultiByteToWideChar(CP_THREAD_ACP,
MB_PRECOMPOSED, szPassword,
(int)strlen(szPassword)+1, szwPassword, iMaxNameLen);

        // Initialize COM library to be able to use
OLE-DB interfaces
        CoInitialize(NULL);

        // Initialization - create SQLOLEDB
component
        //hr = CoCreateInstance(CLSID_SQLOLEDB, //
GUID of SQLOLEDB component
        // Compile for SNAC
        hr = CoCreateInstance(CLSID_SQLNCLI,    //
GUID of SQLNCLI component
                        NULL,
                // not defining an aggregate
component, so NULL
```

```
                    CLSCTX_INPROC_SERVER,   //
run the component in our process
                    IID_IDBInitialize,
                    (void **) &pIDBInitialize);
    /*
    Initialize the property values needed
    to establish the connection.
    */
    for(i = 0; i < 4; i++)
        VariantInit(&m_InitProperties[i].vValue);
    //Server name.
    m_InitProperties[0].dwPropertyID =
DBPROP_INIT_DATASOURCE;
    m_InitProperties[0].vValue.vt      = VT_BSTR;
    m_InitProperties[0].vValue.bstrVal=
SysAllocString(szwServer);
    m_InitProperties[0].dwOptions     =
DBPROPOPTIONS_REQUIRED;
    m_InitProperties[0].colid         = DB_NULLID;
    //Database.
    m_InitProperties[1].dwPropertyID =
DBPROP_INIT_CATALOG;
    m_InitProperties[1].vValue.vt      = VT_BSTR;
    m_InitProperties[1].vValue.bstrVal=
SysAllocString(szwDatabase);
    m_InitProperties[1].dwOptions     =
DBPROPOPTIONS_REQUIRED;
    m_InitProperties[1].colid         = DB_NULLID;
    //Username (login).
    m_InitProperties[2].dwPropertyID =
DBPROP_AUTH_USERID;
    m_InitProperties[2].vValue.vt      = VT_BSTR;
    m_InitProperties[2].vValue.bstrVal=
SysAllocString(szwUser);
    m_InitProperties[2].dwOptions     =
DBPROPOPTIONS_REQUIRED;
    m_InitProperties[2].colid         = DB_NULLID;
    //Password.
    m_InitProperties[3].dwPropertyID =
DBPROP_AUTH_PASSWORD;
    m_InitProperties[3].vValue.vt      = VT_BSTR;
    m_InitProperties[3].vValue.bstrVal=
SysAllocString(szwPassword);
    m_InitProperties[3].dwOptions     =
DBPROPOPTIONS_REQUIRED;
    m_InitProperties[3].colid         = DB_NULLID;
    /*
    Construct the DBPROPSET
structure(m_rgInitPropSet). The
    DBPROPSET structure is used to pass an array of
DBPROP
    structures (m_InitProperties) to the
SetProperties method.
    */
    m_rgInitPropSet.guidPropertySet =
DBPROPSET_DBINIT;
    m_rgInitPropSet.cProperties    = 4;
    m_rgInitPropSet.rgProperties   =
m_InitProperties;
    //Set initialization properties.
        if (FAILED(hr = pIDBInitialize-
>QueryInterface(IID_IDBProperties,

                    (void **)&pIDBProperties)))
        {
            ThrowError(pIDBInitialize,
COLEDBERR::eQueryInterface, "CTPCC_OLEDB()");
        }

    hr = pIDBProperties->SetProperties(1,
&m_rgInitPropSet);

    pIDBProperties->Release();
    //Now establish the connection to the data
source.
    hr = pIDBInitialize->Initialize();

        // Free BSTR property strings
        for(i = 0; i < 4; i++)
        {

SysFreeString(m_InitProperties[i].vValue.bstrVal);

        }

        hr = pIDBInitialize-
>QueryInterface(IID_IDBCreateSession, (void
**)&m_pIDBCreateSession);

        // Releasing this has no effect on the SQL
Server connection
        // of the data source object because of the
reference maintained by
        // m_pIDBCreateSession.
        pIDBInitialize->Release();
        pIDBInitialize = NULL;

        hr = m_pIDBCreateSession-
>CreateSession(NULL, IID_IDBCreateCommand, (IUnknown
**)&m_pIDBCreateCommand);
        if (FAILED(hr))
        {
            ThrowError(m_pIDBCreateSession,
COLEDBERR::eCreateSession, "CTPCC_OLEDB()");
        }

        hr = m_pIDBCreateCommand-
>CreateCommand(NULL, IID_ICommandText, (IUnknown
**)&pICommandText);
        if (FAILED(hr))
        {
            ThrowError(m_pIDBCreateCommand,
COLEDBERR::eCreateCommand, "CTPCC_OLEDB()");
        }

        hr = pICommandText-
>SetCommandText(DBGUID_SQL, L"set nocount on set
XACT_ABORT ON");
        if (FAILED(hr))
        {
            ThrowError(pICommandText,
COLEDBERR::eSetCommandText, "CTPCC_OLEDB()");
        }

        hr = pICommandText->Execute(NULL, IID_NULL,
NULL, NULL, NULL);
        if (FAILED(hr))
        {
            ThrowError(pICommandText,
COLEDBERR::eExecute, "CTPCC_OLEDB()");
        }

        pICommandText->Release();

        // verify that version of stored procs on
server is correct
        CheckSPVersion();

        // Get IMalloc interface
        hr = CoGetMalloc(1, (LPMALLOC
*)&m_pIMalloc);

        // Bind parameters for each of the
transactions
        InitNewOrderParams();
        InitPaymentParams();
        InitOrderStatusParams();
        InitDeliveryParams();
        InitStockLevelParams();
}

CTPCC_OLEDB::~CTPCC_OLEDB( void )
{
        if (m_pIMalloc != NULL)
        {
            m_pIMalloc->Release();
        }
        m_pIPaymentCommand->Release();
        m_pIDBCreateCommand->Release();
        m_pIDBCreateSession->Release();

        CoUninitialize();   // uninitialize COM
library
}

/*
*       Check stored procedures version on the
server.
*/
void CTPCC_OLEDB::CheckSPVersion()
{
        HRESULT                  hr;
        char
        db_sp_version[10];
        ICommandText*        pICommandText;
        IAccessor*                   pIAccessor;
        IRowset*         pRowset;
        const ULONG                    nOutputParams
= 1;      // output 1st result set columns
        HACCESSOR
        hTpccVersionOutputAccessor;
        // Structure to bind in accessor
        DBBINDING
        acOutputDBBinding[nOutputParams];
        DBBINDSTATUS
        acOutputDBBindStatus[nOutputParams];
```

```
        LONG                         cRows = 1;
        // number of rows returned in the rowset
        ULONG
        cRowsObtained;
        HROW                         rghRow;
        //returned row handles
        HROW*                        prghRow =
&rghRow;


        hr = m_pIDBCreateCommand-
>CreateCommand(NULL, IID_ICommandText, (IUnknown
**)&pICommandText);
        if (FAILED(hr))
        {
                ThrowError(m_pIDBCreateCommand,
COLEDBERR::eCreateCommand, "CheckSPVersion()");
        }

        hr = pICommandText-
>SetCommandText(DBGUID_SQL, L"{call tpcc_version}");
        if (FAILED(hr))
        {
                ThrowError(pICommandText,
COLEDBERR::eSetCommandText, "CheckSPVersion()");
        }

        hr = pICommandText-
>QueryInterface(IID_IAccessor, (void **)&pIAccessor);
        if (FAILED(hr))
        {
                ThrowError(pICommandText,
COLEDBERR::eQueryInterface, "CheckSPVersion()");
        }

        // Now fill the binding information for
result set 1 output columns
        InitBindings(&acOutputDBBinding[0],
nOutputParams, eOutputColumn);

        // Binding for a rowset
        SetBinding(&acOutputDBBinding[0], 0,
sizeof(db_sp_version), DBTYPE_STR);

        hr = pIAccessor->CreateAccessor(
                        DBACCESSOR_ROWDATA,
                        nOutputParams,
                        acOutputDBBinding,
                        sizeof(db_sp_version),
&hTpccVersionOutputAccessor,
                        acOutputDBBindStatus);
        if (FAILED(hr))
        {
                ThrowError(pIAccessor,
COLEDBERR::eCreateAccessor, "CheckSPVersion()");
        }

        hr = pICommandText->Execute(NULL,
IID_IRowset, NULL, NULL, (IUnknown **)&pRowset);
        if (FAILED(hr))
        {
```

```
                ThrowError(pICommandText,
COLEDBERR::eExecute, "CheckSPVersion()");
        }

        // Fetch the result row handle(s)
        hr = pRowset->GetNextRows(DB_NULL_HCHAPTER,
0, cRows, &cRowsObtained, &prghRow);
        if (FAILED(hr))
        {
                ThrowError(pICommandText,
COLEDBERR::eGetNextRows, "CheckSPVersion()");
        }

        // Fetch the actual row data by handle
        hr = pRowset->GetData(rghRow,
hTpccVersionOutputAccessor, &db_sp_version);
        if (FAILED(hr))
        {
                ThrowError(pICommandText,
COLEDBERR::eGetData, "CheckSPVersion()");
        }

        // Release row(s)
        hr = pRowset->Release();

        pICommandText->Release();

        // Check the retrieved version
        if (strcmp(db_sp_version,sVersion))
                        throw new
CTPCC_OLEDB_ERR(
CTPCC_OLEDB_ERR::ERR_WRONG_SP_VERSION );
}

void CTPCC_OLEDB::ThrowError( IUnknown*
pObjectWithError, COLEDBERR::ACTION eAction, LPCTSTR
szLocation)
{
        HRESULT
        hr;
        //char
        szState[6];
        char
        szMsg[SQL_MAX_MESSAGE_LENGTH];
        char
        szTmp[6*SQL_MAX_MESSAGE_LENGTH];
        COLEDBERR
        *pOLEDBErr;                      //
not allocated until needed (maybe never)
        int
                        iLen;
        // Interfaces
        IErrorInfo*             pIErrorInfoAll
= NULL;
        IErrorInfo*             pIErrorInfoRecord
= NULL;
        IErrorRecords*          pIErrorRecords
= NULL;
        ISupportErrorInfo*      pISupportErrorInfo
= NULL;
        ISQLServerErrorInfo*
pISQLServerErrorInfo    = NULL;
```

```
        ISQLErrorInfo*
        pISQLErrorInfo    = NULL;

        // Information used when cannot get custom
error object
        ERRORINFO
        BasicErrorInfo;
        BSTR
        bstrDescription;
        // Number of error records.
        ULONG                   nRecs;
        ULONG                   nRec;

        // SQL Server error information from
ISQLServerErrorInfo.
        SSERRORINFO*            pSSErrorInfo =
NULL;
        OLECHAR*                pSSErrorStrings =
NULL;

        assert(pObjectWithError != NULL);

        pOLEDBErr = new COLEDBERR(szLocation);

        pOLEDBErr->m_NativeError = 0;
        pOLEDBErr->m_eAction = eAction;
        pOLEDBErr->m_bDeadLock = FALSE;

        szTmp[0] = 0;

        // Only ask for error information if the
interface supports it.
        // Note: SQLOLEDB provider supports error
interface, so this check is
        // for good style only.
        hr = pObjectWithError-
>QueryInterface(IID_ISupportErrorInfo, (void**)
&pISupportErrorInfo);
        if (FAILED(hr))
        {
                _snprintf(szMsg, sizeof(szMsg),
"SupportErrorInfo interface not supported (hr=0x%X)",
hr);
                pOLEDBErr->m_OLEDBErrStr = new
char[strlen(szMsg)+1];
                strcpy(pOLEDBErr->m_OLEDBErrStr,
szMsg);
                throw pOLEDBErr;
        }
        /*if (FAILED(pISupportErrorInfo-
>InterfaceSupportsErrorInfo(IID_InterfaceWithError)))
        {
                _snprintf(szMsg, sizeof(szMsg),
"InterfaceWithError interface not supported");
                pOLEDBErr->m_OLEDBErrStr = new
char[strlen(szMsg)+1];
                strcpy(pOLEDBErr->m_OLEDBErrStr,
szMsg);
                return;
        }*/

        // Do not test the return of GetErrorInfo.
It can succeed and return
```

```
        // a NULL pointer in pIErrorInfoAll. Simply
test the pointer.
        GetErrorInfo(0, &pIErrorInfoAll);

        if (pIErrorInfoAll != NULL)
        {
                // Test to see if it's a valid
OLE DB IErrorInfo interface
                // exposing a list of records.
                if (SUCCEEDED(pIErrorInfoAll-
>QueryInterface(IID_IErrorRecords,      (void**)
&pIErrorRecords)))
                {
                        pIErrorRecords-
>GetRecordCount(&nRecs);

                        // Within each record,
retrieve information from each
                        // of the defined
interfaces.
                        for (nRec = 0; nRec <
nRecs; nRec++)
                        {
                                // Request
the generic SQL error interface.
        pIErrorRecords->GetCustomErrorObject(nRec,

        IID_ISQLErrorInfo, // generic SQL error
interface

        (IUnknown**) &pISQLErrorInfo);

                                if
(pISQLErrorInfo != NULL)
                                {
                                        //
Request SQL Server-specific error interface, not the
generic SQL error interface.
        pISQLErrorInfo->QueryInterface(

        IID_ISQLServerErrorInfo, // SQL Server
error interface

        (void**) &pISQLServerErrorInfo);
                                }
                                // Test to
ensure the reference is valid, then
                                // get error
information from ISQLServerErrorInfo.
                                if
(pISQLServerErrorInfo != NULL)
                                {
        pISQLServerErrorInfo-
>GetErrorInfo(&pSSErrorInfo, &pSSErrorStrings);

                                        //
ISQLServerErrorInfo::GetErrorInfo succeeds
```

```
                                        //
even when it has nothing to return. Test the
                                        //
pointers before using.                              if
(pSSErrorInfo)
                                        {
                                                // First, add the error message.

                                                // Convert Unicode error string to ANSI.

                                                WideCharToMultiByte(CP_THREAD_ACP, 0,

                                                        pSSErrorInfo->pwszMessage, -1,

                                                        szMsg, sizeof(szMsg),

                                                        NULL, NULL);

                                                // quit if there isn't enough room to
concatenate error text
                                                if ( (strlen(szMsg) + 2) > (sizeof(szTmp) -
strlen(szTmp)) )

                                                        break;

                                                // include line break after first error msg

                                                if (szTmp[0] != 0)

                                                        strcat( szTmp, "\r\n");
                                                // concatenate the error record to the
overall error message

                                                strcat( szTmp, szMsg );

                                                // Second, add the stored procedure name
and line number, if available.

                                                if (wcslen(pSSErrorInfo->pwszProcedure)>0)

                                                {
                                                        // Prefix with a line break

                                                        iLen = sprintf(szMsg,
"\r\nProcedure: ");

                                                        // Convert Unicode error string
to ANSI.

                                                        WideCharToMultiByte(CP_THREAD_ACP, 0,
```

```
                                                        pSSErrorInfo-
>pwszProcedure, -1,

                                                        &szMsg[iLen],
sizeof(szMsg) - iLen,

                                                        NULL, NULL);

                                                // Check if have space to add the
line number.

                                                // Assume the line number takes
no more than 3 digits.

                                                if ((strlen(szMsg) + 4)<
sizeof(szMsg))

                                                {

        _snprintf(&szMsg[strlen(szMsg)],
sizeof(szMsg),

                                                                ":%d",
pSSErrorInfo->wLineNumber);

                                                }

                                                // quit if there isn't enough
room to concatenate error text

                                                if ( (strlen(szMsg) + 2) >
(sizeof(szTmp) - strlen(szTmp)) )

                                                        break;

                                                // concatenate the error record
to the overall error message

                                                strcat( szTmp, szMsg );

                                                // copy the overall error string
to the exception
                                                pOLEDBErr->m_OLEDBErrStr = new
char[strlen(szTmp)+1];

                                                strcpy(pOLEDBErr->m_OLEDBErrStr,
szTmp);

                                        }

                                        // Third, capture the (first) database
error
```

```cpp
        if (pOLEDBErr->m_NativeError == 0 &&
pSSErrorInfo->lNative != 0)
        {
                pOLEDBErr->m_NativeError =
pSSErrorInfo->lNative;

                // Check for deadlock error code
and set the deadlock flag
                if (pSSErrorInfo->lNative ==
1205)
                {
                        pOLEDBErr->m_bDeadLock
= TRUE;
                }
        }


        // IMalloc::Free needed to release
references
        // on returned values.
        if (m_pIMalloc != NULL)
        {
                m_pIMalloc-
>Free(pSSErrorStrings);
                m_pIMalloc->Free(pSSErrorInfo);
        }
                                }
        pISQLServerErrorInfo->Release();
                                }
                                else
                                {
                                        //
Custom error object is not supported.
                                        //
Use general OLE-DB error interface.

                                        //
Get the numeric error code
        pIErrorRecords->GetBasicErrorInfo(nRec,
&BasicErrorInfo);

                                        if
(pOLEDBErr->m_NativeError == 0)
```

```cpp
                                        {
                // Get the failed call HRESULT code, which
is not really the native error

                pOLEDBErr->m_NativeError =
BasicErrorInfo.hrError;
                                        }

                                        //
Try to get the string description of the error.
                pIErrorRecords->GetErrorInfo(nRec,
LOCALE_USER_DEFAULT,
(IErrorInfo**)&pIErrorInfoRecord);

                                        if
(pIErrorInfoRecord)
                                        {
                pIErrorInfoRecord-
>GetDescription(&bstrDescription);

                // Convert Unicode error string to ANSI.
                WideCharToMultiByte(CP_THREAD_ACP, 0,
                        bstrDescription, -1,
                        szMsg, sizeof(szMsg),
                        NULL, NULL);

                pOLEDBErr->m_OLEDBErrStr = new
char[strlen(szMsg)+1];
                strcpy(pOLEDBErr->m_OLEDBErrStr, szMsg);
                                        }
                                }    // for()
                        }          // if
(SUCCEEDED(pIErrorInfoAll-
>QueryInterface(IID_IErrorRecords, (void**)
&pIErrorRecords)))
                        else
                        {    // No IErrorRecords
interface supported. Use default IErrorInfo.
                                // Note: SQLOLEDB
supports IErrorRecords, so this check is for good
style only.
                                _snprintf(szMsg,
sizeof(szMsg), "IErrorRecords interface not
supported");
                                pOLEDBErr-
>m_OLEDBErrStr = new char[strlen(szMsg)+1];
                                strcpy(pOLEDBErr-
>m_OLEDBErrStr, szMsg);
                        }

                        pIErrorInfoAll->Release();
```

```cpp
                }    // if (pIErrorInfoAll != NULL)
                else
                {
                        // No IErrorInfo interface
supported.
                        // Note: SQLOLEDB supports
IErrorInfo, so this check is for good style only.
                        _snprintf(szMsg, sizeof(szMsg),
"IErrorInfo interface not supported");
                        pOLEDBErr->m_OLEDBErrStr = new
char[strlen(szMsg)+1];
                        strcpy(pOLEDBErr->m_OLEDBErrStr,
szMsg);
                }

        throw pOLEDBErr;
}

/*
*
*       Create a new command object from the SQL
text passed in.
*
*/
void CTPCC_OLEDB::CreateCommand(wchar_t*
szSQLCommand,                      // I: SQL
query for the command

                ICommandText**
ppICommandText        // O: returned command object

                                )
{
        HRESULT                              hr;

        // Create a new command object
        hr = m_pIDBCreateCommand-
>CreateCommand(NULL, IID_ICommandText, (IUnknown
**)ppICommandText);
        if (FAILED(hr))
        {
                ThrowError(m_pIDBCreateCommand,
COLEDBERR::eCreateCommand,
"CTPCC_OLEDB::CreateCommand");
        }

        // Set command text
        hr = (*ppICommandText)-
>SetCommandText(DBGUID_SQL, szSQLCommand);
        if (FAILED(hr))
        {
                ThrowError(*ppICommandText,
COLEDBERR::eSetCommandText,
"CTPCC_OLEDB::CreateCommand");
        }

        // Prepare the command
        PrepareCommand(*ppICommandText);
}

/*
```

```
*       QueryInterface and Prepare in one function
for simplicity.
*       DEFERRED PREPARE property is set to off to
prepare immediatelly.
*/
void CTPCC_OLEDB::PrepareCommand(ICommandText*
pICommandText)
{
        HRESULT                         hr;
        ICommandPrepare*    pICommandPrepare;
        ICommandProperties* pICommandProperties;
        DBPROPSET
        rowSetPropSet;
        DBPROP
        rowSetProp;

        // Set the deferred prepare property to
false.
        rowSetProp.dwPropertyID =
SSPROP_DEFERPREPARE;
        memset(&rowSetProp.vValue, 0,
sizeof(rowSetProp.vValue));
        rowSetProp.dwOptions =
DBPROPOPTIONS_REQUIRED;
        rowSetProp.colid = DB_NULLID;

        rowSetPropSet.cProperties = 1;
        rowSetPropSet.guidPropertySet =
DBPROPSET_SQLSERVERROWSET;
        rowSetPropSet.rgProperties = &rowSetProp;

        // Query interface for setting properties
        hr = pICommandText-
>QueryInterface(IID_ICommandProperties, (void
**)&pICommandProperties);
        if (FAILED(hr))
        {
                ThrowError(pICommandText,
COLEDBERR::eQueryInterface,
"CTPCC_OLEDB::PrepareCommand");
        }

        // Set the property set
        hr = pICommandProperties->SetProperties(1,
&rowSetPropSet);
        if (FAILED(hr))
        {
                ThrowError(pICommandText,
COLEDBERR::eQueryInterface,
"CTPCC_OLEDB::PrepareCommand");
        }

        // Get interface for preparing commands
        hr = pICommandText-
>QueryInterface(IID_ICommandPrepare, (void
**)&pICommandPrepare);
        if (FAILED(hr))
        {
                ThrowError(pICommandText,
COLEDBERR::eQueryInterface,
"CTPCC_OLEDB::PrepareCommand");
        }
```

```
        // Prepare Payment command
        hr = pICommandPrepare->Prepare(0xFFFFFFFF);
        if (FAILED(hr))
        {
                ThrowError(pICommandPrepare,
COLEDBERR::ePrepare, "CTPCC_OLEDB::PrepareCommand");
        }
}

/*
*       Initialize fields of an array of bindings
structures.
*       Needs to be called before setting
individual parameter/column bindings.
*/
void CTPCC_OLEDB::InitBindings(DBBINDING*
pDBBindings,        // IO: array of bindings

                int iCount,
                                       // I: number of
elements in the array

                eBindingType BindingType)    //
I: what the bindings will be used for
(parameters/columns)
{
        int i;

        for(i = 0; i < iCount; i++)
    {
                pDBBindings[i].iOrdinal = i + 1;
        pDBBindings[i].obLength = 0;
        pDBBindings[i].obStatus = 0;
        pDBBindings[i].pTypeInfo = NULL;
        pDBBindings[i].pObject = NULL;
        pDBBindings[i].pBindExt = NULL;
        pDBBindings[i].dwPart = DBPART_VALUE;

                switch (BindingType)
                {
                case eInputParameter:
                        pDBBindings[i].eParamIO
= DBPARAMIO_INPUT;
                        break;
                case eOutputParameter:
                        pDBBindings[i].eParamIO
= DBPARAMIO_OUTPUT;
                        break;
                case eInputOutputParameter:
                        pDBBindings[i].eParamIO
= DBPARAMIO_INPUT | DBPARAMIO_OUTPUT;
                        break;
                case eOutputColumn:
                        pDBBindings[i].eParamIO
= DBPARAMIO_NOTPARAM;
                        break;
                default:
                        assert(false);        //
this should never happen
                }

        pDBBindings[i].dwMemOwner =
DBMEMOWNER_CLIENTOWNED;
```

```
        pDBBindings[i].dwFlags = 0;
                pDBBindings[i].bPrecision = 0;
        pDBBindings[i].bScale = 0;
    }
}

/*
*       Perform binding for one parameter or output
column.
*
*/
void CTPCC_OLEDB::SetBinding(DBBINDING* pDBBinding,
// I: binding row structure

                size_t obValue,
        // I: parameter (column) offset in the user
buffer

                size_t cbMaxLen,                 //
I: parameter (column) length

                DBTYPE wType
        // I: parameter (column) type
                )
{
        pDBBinding->obValue = (ULONG)obValue;
        pDBBinding->cbMaxLen = (ULONG)cbMaxLen;
        pDBBinding->wType = wType;
}

void CTPCC_OLEDB::InitStockLevelParams()
{
        int
                i;
        HRESULT
        hr;
        wchar_t
        szName[iMAX_SP_NAME_LEN];
        IAccessor*
        pIAccessor;
    const ULONG
        nInputParams = 3;   // input parameters
        const ULONG
        nOutputParams = 1;  // output 1st result
set columns
        // Structure to bind in accessor
        DBBINDING
        acInputDBBinding[nInputParams];
        DBBINDSTATUS
        acInputDBBindStatus[nInputParams];
        DBBINDING
        acOutputDBBinding[nOutputParams];
        DBBINDSTATUS
        acOutputDBBindStatus[nOutputParams];

        // Set command text
        _snwprintf(szName,
sizeof(szName)/sizeof(szName[0]),
                                        L"{call
%stpcc_stocklevel (?,?,?)}", m_szSPPrefix);
```

```cpp
        // Create and Prepare a new command object
for StockLevel.
        CreateCommand(szName,
&m_pIStockLevelCommand);

        // Describe the consumer buffer by filling
in the array
    // of DBBINDING structures.  Each binding
associates
    // a single parameter to the consumer's buffer.
        InitBindings(&acInputDBBinding[0],
nInputParams, eInputParameter);

        i = 0;
    // StockLevel parameter 1
        SetBinding(&acInputDBBinding[i++],
offsetof(STOCK_LEVEL_DATA, w_id),
sizeof(m_txn.StockLevel.w_id), DBTYPE_I4);

        // StockLevel parameter 2
        SetBinding(&acInputDBBinding[i++],
offsetof(STOCK_LEVEL_DATA, d_id),
sizeof(m_txn.StockLevel.d_id), DBTYPE_UI1);

        // StockLevel parameter 3
        SetBinding(&acInputDBBinding[i++],
offsetof(STOCK_LEVEL_DATA, threshold),
sizeof(m_txn.StockLevel.threshold), DBTYPE_I2);

        hr = m_pIStockLevelCommand-
>QueryInterface(IID_IAccessor, (void **)&pIAccessor);
        if (FAILED(hr))
        {
                ThrowError(m_pIStockLevelCommand,
COLEDBERR::eQueryInterface,
"InitStockLevelParams()");
        }

        hr = pIAccessor->CreateAccessor(
                        DBACCESSOR_PARAMETERDATA,
                        nInputParams,
                        acInputDBBinding,
                        sizeof(STOCK_LEVEL_DATA),
&m_hStockLevelInputAccessor,
                        acInputDBBindStatus);
        if (FAILED(hr))
        {
                ThrowError(pIAccessor,
COLEDBERR::eCreateAccessor,
"InitStockLevelParams()");
        }

        m_StockLevelExecuteParams.cParamSets = 1;
        m_StockLevelExecuteParams.hAccessor =
m_hStockLevelInputAccessor;
        m_StockLevelExecuteParams.pData =
&m_txn.StockLevel;

        // Now fill the binding information for
result set 1 output columns
        InitBindings(&acOutputDBBinding[0],
nOutputParams, eOutputColumn);

        // Binding for a rowset that may return
more than one row.
        i = 0;
        // StockLevel output column 1
        SetBinding(&acOutputDBBinding[i++],
offsetof(STOCK_LEVEL_DATA, low_stock),
sizeof(m_txn.StockLevel.low_stock), DBTYPE_I4);

        hr = pIAccessor->CreateAccessor(
                        DBACCESSOR_ROWDATA |
DBACCESSOR_OPTIMIZED,
                        nOutputParams,
                        acOutputDBBinding,
                        sizeof(STOCK_LEVEL_DATA),
&m_hStockLevelOutputAccessor,
                        acOutputDBBindStatus);
        if (FAILED(hr))
        {
                ThrowError(pIAccessor,
COLEDBERR::eCreateAccessor,
"InitStockLevelParams()");
        }
}

void CTPCC_OLEDB::StockLevel()
{
        HRESULT                      hr;
        int
        iTryCount = 0;
        IRowset*           pRowset;
        LONG                             cRows = 1;
        // number of rows returned in the rowset
        ULONG
        cRowsObtained;
        HROW                      rghRow;
        //returned row handles
        HROW*                      prghRow =
&rghRow;

        while (TRUE)
        {
                try
                {
                        // Execute the prepared
command
                        hr =
m_pIStockLevelCommand->Execute(NULL, IID_IRowset,
&m_StockLevelExecuteParams, NULL,

                        (IUnknown **)&pRowset);
                        if (FAILED(hr))
                        {

                        ThrowError(m_pIStockLevelCommand,
COLEDBERR::eExecute, "StockLevel()");
                        }

                        // Fetch the result row
handle(s)

                        hr = pRowset-
>GetNextRows(DB_NULL_HCHAPTER, 0, cRows,
&cRowsObtained, &prghRow);
                        if (FAILED(hr))
                        {

                        ThrowError(m_pIStockLevelCommand,
COLEDBERR::eGetNextRows, "StockLevel()");
                        }

                        // Fetch the actual row
data by handle
                        hr = pRowset-
>GetData(rghRow, m_hStockLevelOutputAccessor,
&m_txn.StockLevel);
                        if (FAILED(hr))
                        {

                        ThrowError(m_pIStockLevelCommand,
COLEDBERR::eGetData, "StockLevel()");
                        }

                        // Release row(s)
                        hr = pRowset-
>ReleaseRows(cRowsObtained, prghRow, NULL, NULL,
NULL);
                        // Release rowset
                        hr = pRowset-
>Release();

                        m_txn.StockLevel.exec_status_code = eOK;

                        break;
                }
                catch (COLEDBERR *e)
                {
                        if ((!e->m_bDeadLock)
|| (++iTryCount > iMaxRetries))
                                throw;

                        // hit deadlock;
backoff for increasingly longer period
                        delete e;
                        Sleep(10 * iTryCount);
                }
        }
//      if (iTryCount)
//              throw new
CTPCC_OLEDB_ERR(CTPCC_OLEDB_ERR::ERR_RETRIED_TRANS,
iTryCount);
}

void CTPCC_OLEDB::InitNewOrderParams()
{
        int
                i, j, iOlCount;
        HRESULT
        hr;
        wchar_t
        szName[iMAX_SP_NAME_LEN];
```

```
        IAccessor*
        pIAccessor;
    const ULONG
        nInputParams = 5 +
3*MAX_OL_NEW_ORDER_ITEMS;     // input parameters
        const ULONG
        nOutputParams = 5;  // output 1st result
set columns
        const ULONG
        nOutputParams2 = 8; // output 2nd result
set columns
        // Structure to bind in accessor
        DBBINDING
        acInputDBBinding[nInputParams];
        DBBINDSTATUS
        acInputDBBindStatus[nInputParams];
        DBBINDING
        acOutputDBBinding[nOutputParams];
        DBBINDSTATUS
        acOutputDBBindStatus[nOutputParams];
        DBBINDING
        acOutputDBBinding2[nOutputParams2];
        DBBINDSTATUS
        acOutputDBBindStatus2[nOutputParams2];

        // Describe the consumer buffer by filling
in the array
    // of DBBINDING structures.  Each binding
associates
    // a single parameter to the consumer's buffer.
        InitBindings(&acInputDBBinding[0],
nInputParams, eInputParameter);

        i = 0;
    // NewOrder parameter 1
        SetBinding(&acInputDBBinding[i++],
offsetof(NEW_ORDER_DATA, w_id),
sizeof(m_txn.NewOrder.w_id), DBTYPE_I4);

    // NewOrder parameter 2
        SetBinding(&acInputDBBinding[i++],
offsetof(NEW_ORDER_DATA, d_id),
sizeof(m_txn.NewOrder.d_id), DBTYPE_UI1);

        // NewOrder parameter 3
        SetBinding(&acInputDBBinding[i++],
offsetof(NEW_ORDER_DATA, c_id),
sizeof(m_txn.NewOrder.c_id), DBTYPE_I4);

        // NewOrder parameter 4
        SetBinding(&acInputDBBinding[i++],
offsetof(NEW_ORDER_DATA, o_ol_cnt),
sizeof(m_txn.NewOrder.o_ol_cnt), DBTYPE_UI1);

        // NewOrder parameter 5
        SetBinding(&acInputDBBinding[i++],
offsetof(NEW_ORDER_DATA, o_all_local),
sizeof(m_txn.NewOrder.o_all_local), DBTYPE_UI1);

        for (j=0; j<MAX_OL_NEW_ORDER_ITEMS; j++)
        {

        SetBinding(&acInputDBBinding[i++],


offsetof(NEW_ORDER_DATA, OL[j].ol_i_id),
sizeof(m_txn.NewOrder.OL[j].ol_i_id), DBTYPE_I4);

        SetBinding(&acInputDBBinding[i++],
offsetof(NEW_ORDER_DATA, OL[j].ol_supply_w_id),
sizeof(m_txn.NewOrder.OL[j].ol_supply_w_id),
DBTYPE_I4);

        SetBinding(&acInputDBBinding[i++],
offsetof(NEW_ORDER_DATA, OL[j].ol_quantity),
sizeof(m_txn.NewOrder.OL[j].ol_quantity), DBTYPE_I2);

        }


        // Now fill the binding information for
result set 1 output columns
        InitBindings(&acOutputDBBinding[0],
nOutputParams, eOutputColumn);

        // Binding for the order line rowsets (each
consist of one row).
        // Bind to offsets of the OL_NEW_ORDER_DATA
structure instead of NEW_ORDER_DATA.
        // IRowset::GetData() will be passed
individual array slots OL[i] to fetch the data
        // from the row set.

        i = 0;
        // NewOrder output column 1
        SetBinding(&acOutputDBBinding[i++],
offsetof(OL_NEW_ORDER_DATA, ol_i_name),
sizeof(m_txn.NewOrder.OL[0].ol_i_name), DBTYPE_STR);

        // NewOrder output column 2
        SetBinding(&acOutputDBBinding[i++],
offsetof(OL_NEW_ORDER_DATA, ol_stock),
sizeof(m_txn.NewOrder.OL[0].ol_stock), DBTYPE_I2);

        // NewOrder output column 3
        SetBinding(&acOutputDBBinding[i++],
offsetof(OL_NEW_ORDER_DATA, ol_brand_generic),
sizeof(m_txn.NewOrder.OL[0].ol_brand_generic),
DBTYPE_STR);

        // NewOrder output column 4
        SetBinding(&acOutputDBBinding[i++],
offsetof(OL_NEW_ORDER_DATA, ol_i_price),
sizeof(m_txn.NewOrder.OL[0].ol_i_price), DBTYPE_R8);

        // NewOrder output column 5
        SetBinding(&acOutputDBBinding[i++],
offsetof(OL_NEW_ORDER_DATA, ol_amount),
sizeof(m_txn.NewOrder.OL[0].ol_amount), DBTYPE_R8);


        // Now fill the binding information for
result set 2 output columns
        InitBindings(&acOutputDBBinding2[0],
nOutputParams2, eOutputColumn);

        i = 0;


        // NewOrder output column 1
        SetBinding(&acOutputDBBinding2[i++],
offsetof(NEW_ORDER_DATA, w_tax),
sizeof(m_txn.NewOrder.w_tax), DBTYPE_R8);

        // NewOrder output column 2
        SetBinding(&acOutputDBBinding2[i++],
offsetof(NEW_ORDER_DATA, d_tax),
sizeof(m_txn.NewOrder.d_tax), DBTYPE_R8);

        // NewOrder output column 3
        SetBinding(&acOutputDBBinding2[i++],
offsetof(NEW_ORDER_DATA, o_id),
sizeof(m_txn.NewOrder.o_id), DBTYPE_I4);

        // NewOrder output column 4
        SetBinding(&acOutputDBBinding2[i++],
offsetof(NEW_ORDER_DATA, c_last),
sizeof(m_txn.NewOrder.c_last), DBTYPE_STR);

        // NewOrder output column 5
        SetBinding(&acOutputDBBinding2[i++],
offsetof(NEW_ORDER_DATA, c_discount),
sizeof(m_txn.NewOrder.c_discount), DBTYPE_R8);

        // NewOrder output column 6
        SetBinding(&acOutputDBBinding2[i++],
offsetof(NEW_ORDER_DATA, c_credit),
sizeof(m_txn.NewOrder.c_credit), DBTYPE_STR);

        // NewOrder output column 7
        SetBinding(&acOutputDBBinding2[i++],
offsetof(NEW_ORDER_DATA, o_entry_d),
sizeof(m_txn.NewOrder.o_entry_d),
DBTYPE_DBTIMESTAMP);

        // NewOrder output column 8
        SetBinding(&acOutputDBBinding2[i++],
offsetof(NEW_ORDER_DATA, o_commit_flag),
sizeof(m_txn.NewOrder.o_commit_flag), DBTYPE_I2);

        for (j=0; j<MAX_OL_NEW_ORDER_ITEMS; j++)
        {
                // Set command text first

                // Print the fixed first portion
of parameters
                i = _snwprintf(szName,
sizeof(szName)/sizeof(szName[0]),

        L"{call %stpcc_neworder (?,?,?,?,?",
m_szSPPrefix);

                // Now print the variable portion
depending on the number of order line parameters
                for (iOlCount = 0; iOlCount <= j;
++iOlCount)
                {
                        i +=
_snwprintf(&szName[i],
sizeof(szName)/sizeof(szName[0]) - i, L",?,?,?");

                }
```

```
        // Print the fixed end
        if (j != MAX_OL_NEW_ORDER_ITEMS -
1)
        {       // append 'default' for
the parameters that are not used
                i +=
_snwprintf(&szName[i],
sizeof(szName)/sizeof(szName[0]) - i, L",default)}");

        }
        else    // using all 15 order
line parameters
        {
                i +=
_snwprintf(&szName[i],
sizeof(szName)/sizeof(szName[0]) - i, L")}");
        }

        // Create and Prepare a new
command object for NewOrder.
        CreateCommand(szName,
&m_pINewOrderCommand[j]);

        // Now create the input accessor
for this prepared command
        hr = m_pINewOrderCommand[j]-
>QueryInterface(IID_IAccessor, (void **)&pIAccessor);
        if (FAILED(hr))
        {

    ThrowError(m_pINewOrderCommand[j],
COLEDBERR::eQueryInterface, "InitNewOrderParams()");
        }

        hr = pIAccessor->CreateAccessor(


    DBACCESSOR_PARAMETERDATA,

                                        5 +
3 * (j + 1),


    acInputDBBinding,


    sizeof(NEW_ORDER_DATA),


    &m_hNewOrderInputAccessor[j],


    acInputDBBindStatus);
        if (FAILED(hr))
        {
                ThrowError(pIAccessor,
COLEDBERR::eCreateAccessor, "InitNewOrderParams()");
        }

        m_NewOrderExecuteParams[j].cParamSets = 1;
```

```
                //
m_NewOrderExecuteParams.hAccessor is set dynamically
at run-time
                // based on the number of new
order items for the particular transaction call.

        m_NewOrderExecuteParams[j].hAccessor =
m_hNewOrderInputAccessor[j];
                m_NewOrderExecuteParams[j].pData
= &m_txn.NewOrder;

                // Create accessor for the first
rowset
                hr = pIAccessor->CreateAccessor(
                        DBACCESSOR_ROWDATA |
DBACCESSOR_OPTIMIZED,
                        nOutputParams,
                        acOutputDBBinding,

        sizeof(OL_NEW_ORDER_DATA),

                &m_hNewOrderOutputAccessor[j],
                        acOutputDBBindStatus);
                if (FAILED(hr))
                {
                        ThrowError(pIAccessor,
COLEDBERR::eCreateAccessor, "InitNewOrderParams()");
                }

                // Create accessor for the second
rowset
                hr = pIAccessor->CreateAccessor(
                        DBACCESSOR_ROWDATA, //
cannot be optimized too because #1 accessor is
                        nOutputParams2,
                        acOutputDBBinding2,
                        sizeof(NEW_ORDER_DATA),

                &m_hNewOrderOutputAccessor2[j],
                        acOutputDBBindStatus2);
                if (FAILED(hr))
                {
                        ThrowError(pIAccessor,
COLEDBERR::eCreateAccessor, "InitNewOrderParams()");
                }

                pIAccessor->Release();
        }
}

void CTPCC_OLEDB::NewOrder()
{
        HRESULT                         hr;
        int                     iTryCount = 0;
        IMultipleResults*   pMultipleResults;
        IRowset*                    pRowset;
        IRowset*                    pRowset2;
        LONG
        cRows = 1;              // number of rows
returned in the 1st rowset
        ULONG
        cRowsObtained;
```

```
        HROW
        rghRows;           //returned row handles
for the 1st result set
        HROW*
        prghRows = &rghRows;
        LONG
        cRows2 = 1;            // number of rows
returned in the 2nd rowset
        ULONG
        cRowsObtained2;
        HROW
        rghRows2;          //returned row handle
for the 2nd result set
        HROW*
        prghRows2 = &rghRows2;
        int
        i;
        long
        lRowsAffected;      // the number of
affected rows for a rowset
        int
        iHandleIndex;       // index into the
handle arrays based on the orders count

        // check whether any order lines are for a
remote warehouse
        m_txn.NewOrder.o_all_local = 1;
        for (i = 0; i < m_txn.NewOrder.o_ol_cnt;
i++)
        {
                if
(m_txn.NewOrder.OL[i].ol_supply_w_id !=
m_txn.NewOrder.w_id)
                {

        m_txn.NewOrder.o_all_local = 0;  // at
least one remote warehouse
                        break;
                }
        }

        iHandleIndex = m_txn.NewOrder.o_ol_cnt - 1;
        // for convenience

        while (TRUE)
        {
                try
                {
                        // Execute the prepared
command (according to the number of new orders)
                        // Ask for
IMultipleResults because it returns 2 rowsets.
                        hr =
m_pINewOrderCommand[iHandleIndex]->Execute(

        NULL, IID_IMultipleResults,

        &m_NewOrderExecuteParams[iHandleIndex],

        NULL,
```

```
                (IUnknown **)&pMultipleResults);
                                if (FAILED(hr))
                                {

        ThrowError(m_pINewOrderCommand[iHandleIndex
], COLEDBERR::eExecute, "NewOrder()");
                                }

        /////////////////////////
                                // Get order line
results

        /////////////////////////
        m_txn.NewOrder.total_amount = 0;
                                for (i = 0; i <
m_txn.NewOrder.o_ol_cnt; ++i)
                                {
                                        // Get the
first rowset object
                                        hr =
pMultipleResults->GetResult(NULL, 0, IID_IRowset,
&lRowsAffected, (IUnknown **)&pRowset);
                                        if
(FAILED(hr))
                                        {

        char szTmp[256];

        _snprintf(szTmp, sizeof(szTmp), "NewOrder()
result set %d, hr=0x%X", i, hr);

        ThrowError(m_pINewOrderCommand[m_txn.NewOrd
er.o_ol_cnt - 1], COLEDBERR::eGetResult, szTmp);
                                        }
                                        // Fetch the
result row handle(s)
                                        hr = pRowset-
>GetNextRows(DB_NULL_HCHAPTER, 0, cRows,
&cRowsObtained, &prghRows);
                                        if
(FAILED(hr))
                                        {

        ThrowError(m_pINewOrderCommand[iHandleIndex
], COLEDBERR::eGetNextRows, "NewOrder()");
                                        }
                                        // Fetch the
actual row data by handle
                                        hr = pRowset-
>GetData(rghRows,
m_hNewOrderOutputAccessor[iHandleIndex],
&m_txn.NewOrder.OL[i]);
                                        if
(FAILED(hr))
                                        {
```

```
                ThrowError(m_pINewOrderCommand[iHandleIndex
], COLEDBERR::eGetData, "NewOrder()");
                                        }

                m_txn.NewOrder.total_amount +=
m_txn.NewOrder.OL[i].ol_amount;

                                        // Release
row(s)
                                        hr = pRowset-
>ReleaseRows(cRowsObtained, prghRows, NULL, NULL,
NULL);
                                        // Release
rowset
                                        hr = pRowset-
>Release();
                                }

        //////////////////////////////
                                // Get the second
rowset object

        //////////////////////////////
                                hr = pMultipleResults-
>GetResult(NULL, 0, IID_IRowset, &lRowsAffected,
(IUnknown **)&pRowset2);
                                if (FAILED(hr))
                                {
                                        char
szTmp[256];

        _snprintf(szTmp, sizeof(szTmp), "NewOrder()
result set %d, hr=%d", i, hr);

        ThrowError(m_pINewOrderCommand[iHandleIndex
], COLEDBERR::eGetResult, szTmp);
                                }
                                // Fetch the result row
handle(s)
                                hr = pRowset2-
>GetNextRows(DB_NULL_HCHAPTER, 0, cRows2,
&cRowsObtained2, &prghRows2);
                                if (FAILED(hr))
                                {

        ThrowError(m_pINewOrderCommand[iHandleIndex
], COLEDBERR::eGetNextRows, "NewOrder()");
                                }
                                // Fetch the actual row
data by handle
                                hr = pRowset2-
>GetData(rghRows2,
m_hNewOrderOutputAccessor2[iHandleIndex],
&m_txn.NewOrder);
                                if (FAILED(hr))
                                {
```

```
                ThrowError(m_pINewOrderCommand[iHandleIndex
], COLEDBERR::eGetData, "NewOrder()");
                                }

                                // Release row(s)
                                hr = pRowset2-
>ReleaseRows(cRowsObtained2, prghRows2, NULL, NULL,
NULL);
                                // Release rowset
                                hr = pRowset2-
>Release();

                                // Release the common
MultipleResults interface
                                hr = pMultipleResults-
>Release();
                                if
(m_txn.NewOrder.o_all_local == 1)
                                {

        m_txn.NewOrder.total_amount *= ((1 +
m_txn.NewOrder.w_tax + m_txn.NewOrder.d_tax) * (1 -
m_txn.NewOrder.c_discount));

        m_txn.NewOrder.exec_status_code = eOK;
                                }
                                else
                                {

        m_txn.NewOrder.exec_status_code =
eInvalidItem;
                                }

                                break;

                        }
                        catch (COLEDBERR *e)
                        {
                                if ((!e->m_bDeadLock)
|| (++iTryCount > iMaxRetries))
                                        throw;

                                // hit deadlock;
backoff for increasingly longer period
                                delete e;
                                Sleep(10 * iTryCount);
                        }
                }
//      if (iTryCount)
//              throw new
CTPCC_OLEDB_ERR(CTPCC_OLEDB_ERR::ERR_RETRIED_TRANS,
iTryCount);
}

void CTPCC_OLEDB::InitPaymentParams()
{
        int
                i;
        HRESULT
        hr;
```

```
        wchar_t
        szName[iMAX_SP_NAME_LEN];
        IAccessor*
        pIAccessor;
    const ULONG
        nInputParams = 7;   // input parameters
        const ULONG
        nOutputParams = 27; // output result set
columns
        // Structure to bind in accessor
        DBBINDING
        acInputDBBinding[nInputParams];
        DBBINDSTATUS
        acInputDBBindStatus[nInputParams];
        DBBINDING
        acOutputDBBinding[nOutputParams];
        DBBINDSTATUS
        acOutputDBBindStatus[nOutputParams];

        // Set command text
        _snwprintf(szName,
sizeof(szName)/sizeof(szName[0]), L"{call
%stpcc_payment(?,?,?,?,?,?,?)}", m_szSPPrefix);

        // Create and Prepare a new command object
for Payment.
        CreateCommand(szName, &m_pIPaymentCommand);


        // Describe the consumer buffer by filling
in the array
    // of DBBINDING structures.  Each binding
associates
    // a single parameter to the consumer's buffer.
        InitBindings(&acInputDBBinding[0],
nInputParams, eInputParameter);

        i = 0;
    // Payment parameter 1
        SetBinding(&acInputDBBinding[i++],
offsetof(PAYMENT_DATA, w_id),
sizeof(m_txn.Payment.w_id), DBTYPE_I4);

        // Payment parameter 2
        SetBinding(&acInputDBBinding[i++],
offsetof(PAYMENT_DATA, c_w_id),
sizeof(m_txn.Payment.c_w_id), DBTYPE_I4);

        // Payment parameter 3
        SetBinding(&acInputDBBinding[i++],
offsetof(PAYMENT_DATA, h_amount),
sizeof(m_txn.Payment.h_amount), DBTYPE_R8);

    // Payment parameter 4
        SetBinding(&acInputDBBinding[i++],
offsetof(PAYMENT_DATA, d_id),
sizeof(m_txn.Payment.d_id), DBTYPE_UI1);

        // Payment parameter 5
        SetBinding(&acInputDBBinding[i++],
offsetof(PAYMENT_DATA, c_d_id),
sizeof(m_txn.Payment.c_d_id), DBTYPE_UI1);
```

```
        // Payment parameter 6
        SetBinding(&acInputDBBinding[i++],
offsetof(PAYMENT_DATA, c_id),
sizeof(m_txn.Payment.c_id), DBTYPE_I4);

        // Payment parameter 7
        SetBinding(&acInputDBBinding[i++],
offsetof(PAYMENT_DATA, c_last),
sizeof(m_txn.Payment.c_last), DBTYPE_STR);

        hr = m_pIPaymentCommand-
>QueryInterface(IID_IAccessor, (void **)&pIAccessor);
        if (FAILED(hr))
        {
                ThrowError(m_pIPaymentCommand,
COLEDBERR::eQueryInterface, "InitPaymentParams()");
        }

        hr = pIAccessor->CreateAccessor(
                DBACCESSOR_PARAMETERDATA,
                nInputParams,
                acInputDBBinding,
                sizeof(PAYMENT_DATA),
                &m_hPaymentInputAccessor,
                acInputDBBindStatus);
        if (FAILED(hr))
        {
                ThrowError(pIAccessor,
COLEDBERR::eCreateAccessor, "InitPaymentParams()");
        }

        m_PaymentExecuteParams.cParamSets = 1;
        m_PaymentExecuteParams.hAccessor =
m_hPaymentInputAccessor;
        m_PaymentExecuteParams.pData =
&m_txn.Payment;

        // Now fill the binding information for
output columns
        InitBindings(&acOutputDBBinding[0],
nOutputParams, eOutputColumn);

        i = 0;
        // Payment output column 1
        SetBinding(&acOutputDBBinding[i++],
offsetof(PAYMENT_DATA, c_id),
sizeof(m_txn.Payment.c_id), DBTYPE_I4);

        // Payment output column 2
        SetBinding(&acOutputDBBinding[i++],
offsetof(PAYMENT_DATA, c_last),
sizeof(m_txn.Payment.c_last), DBTYPE_STR);

        // Payment output column 3
        SetBinding(&acOutputDBBinding[i++],
offsetof(PAYMENT_DATA, h_date),
sizeof(m_txn.Payment.h_date), DBTYPE_DBTIMESTAMP);

        // Payment output column 4
        SetBinding(&acOutputDBBinding[i++],
offsetof(PAYMENT_DATA, w_street_1),
sizeof(m_txn.Payment.w_street_1), DBTYPE_STR);
```

```
        // Payment output column 5
        SetBinding(&acOutputDBBinding[i++],
offsetof(PAYMENT_DATA, w_street_2),
sizeof(m_txn.Payment.w_street_2), DBTYPE_STR);

        // Payment output column 6
        SetBinding(&acOutputDBBinding[i++],
offsetof(PAYMENT_DATA, w_city),
sizeof(m_txn.Payment.w_city), DBTYPE_STR);

        // Payment output column 7
        SetBinding(&acOutputDBBinding[i++],
offsetof(PAYMENT_DATA, w_state),
sizeof(m_txn.Payment.w_state), DBTYPE_STR);

        // Payment output column 8
        SetBinding(&acOutputDBBinding[i++],
offsetof(PAYMENT_DATA, w_zip),
sizeof(m_txn.Payment.w_zip), DBTYPE_STR);

        // Payment output column 9
        SetBinding(&acOutputDBBinding[i++],
offsetof(PAYMENT_DATA, d_street_1),
sizeof(m_txn.Payment.d_street_1), DBTYPE_STR);

        // Payment output column 10
        SetBinding(&acOutputDBBinding[i++],
offsetof(PAYMENT_DATA, d_street_2),
sizeof(m_txn.Payment.d_street_2), DBTYPE_STR);

        // Payment output column 11
        SetBinding(&acOutputDBBinding[i++],
offsetof(PAYMENT_DATA, d_city),
sizeof(m_txn.Payment.d_city), DBTYPE_STR);

        // Payment output column 12
        SetBinding(&acOutputDBBinding[i++],
offsetof(PAYMENT_DATA, d_state),
sizeof(m_txn.Payment.d_state), DBTYPE_STR);

        // Payment output column 13
        SetBinding(&acOutputDBBinding[i++],
offsetof(PAYMENT_DATA, d_zip),
sizeof(m_txn.Payment.d_zip), DBTYPE_STR);

        // Payment output column 14
        SetBinding(&acOutputDBBinding[i++],
offsetof(PAYMENT_DATA, c_first),
sizeof(m_txn.Payment.c_first), DBTYPE_STR);

        // Payment output column 15
        SetBinding(&acOutputDBBinding[i++],
offsetof(PAYMENT_DATA, c_middle),
sizeof(m_txn.Payment.c_middle), DBTYPE_STR);

        // Payment output column 16
        SetBinding(&acOutputDBBinding[i++],
offsetof(PAYMENT_DATA, d_street_1),
sizeof(m_txn.Payment.d_street_1), DBTYPE_STR);

        // Payment output column 17
```

```
        SetBinding(&acOutputDBBinding[i++],
offsetof(PAYMENT_DATA, d_street_2),
sizeof(m_txn.Payment.d_street_2), DBTYPE_STR);

        // Payment output column 18
        SetBinding(&acOutputDBBinding[i++],
offsetof(PAYMENT_DATA, d_city),
sizeof(m_txn.Payment.d_city), DBTYPE_STR);

        // Payment output column 19
        SetBinding(&acOutputDBBinding[i++],
offsetof(PAYMENT_DATA, d_state),
sizeof(m_txn.Payment.d_state), DBTYPE_STR);

        // Payment output column 20
        SetBinding(&acOutputDBBinding[i++],
offsetof(PAYMENT_DATA, d_zip),
sizeof(m_txn.Payment.d_zip), DBTYPE_STR);

        // Payment output column 21
        SetBinding(&acOutputDBBinding[i++],
offsetof(PAYMENT_DATA, c_phone),
sizeof(m_txn.Payment.c_phone), DBTYPE_STR);

        // Payment output column 22
        SetBinding(&acOutputDBBinding[i++],
offsetof(PAYMENT_DATA, c_since),
sizeof(m_txn.Payment.c_since), DBTYPE_DBTIMESTAMP);

        // Payment output column 23
        SetBinding(&acOutputDBBinding[i++],
offsetof(PAYMENT_DATA, c_credit),
sizeof(m_txn.Payment.c_credit), DBTYPE_STR);

        // Payment output column 24
        SetBinding(&acOutputDBBinding[i++],
offsetof(PAYMENT_DATA, c_credit_lim),
sizeof(m_txn.Payment.c_credit_lim), DBTYPE_R8);

        // Payment output column 25
        SetBinding(&acOutputDBBinding[i++],
offsetof(PAYMENT_DATA, c_discount),
sizeof(m_txn.Payment.c_discount), DBTYPE_R8);

        // Payment output column 26
        SetBinding(&acOutputDBBinding[i++],
offsetof(PAYMENT_DATA, c_balance),
sizeof(m_txn.Payment.c_balance), DBTYPE_R8);

        // Payment output column 27
        SetBinding(&acOutputDBBinding[i++],
offsetof(PAYMENT_DATA, c_data),
sizeof(m_txn.Payment.c_data), DBTYPE_STR);

        hr = pIAccessor->CreateAccessor(
                        DBACCESSOR_ROWDATA |
DBACCESSOR_OPTIMIZED,
                        nOutputParams,
                        acOutputDBBinding,
                        sizeof(PAYMENT_DATA),
&m_hPaymentOutputAccessor,
                        acOutputDBBindStatus);

        if (FAILED(hr))
        {
                ThrowError(pIAccessor,
COLEDBERR::eCreateAccessor, "InitPaymentParams()");
        }
}

void CTPCC_OLEDB::Payment()
{
        HRESULT                 hr;
        int
        iTryCount = 0;
        IRowset*        pRowset;
        LONG                    cRows = 1;
        // number of rows returned in the rowset
        ULONG
        cRowsObtained;
        HROW                    rghRow;
        //returned row handles
        HROW*                   prghRow =
&rghRow;

        if (m_txn.Payment.c_id != 0)
                m_txn.Payment.c_last[0] = 0;

        while (TRUE)
        {
                try
                {
                        // Execute the prepared
command
                        hr =
m_pIPaymentCommand->Execute(NULL, IID_IRowset,
&m_PaymentExecuteParams, NULL,

                        (IUnknown **)&pRowset);
                        if (FAILED(hr))
                        {
                        ThrowError(m_pIPaymentCommand,
COLEDBERR::eExecute, "Payment()");
                        }

                        // Fetch the result row
handle(s)
                        hr = pRowset-
>GetNextRows(DB_NULL_HCHAPTER, 0, cRows,
&cRowsObtained, &prghRow);
                        if (FAILED(hr))
                        {
                        ThrowError(m_pIPaymentCommand,
COLEDBERR::eGetNextRows, "Payment()");
                        }

                        // Fetch the actual row
data by handle
                        hr = pRowset-
>GetData(rghRow, m_hPaymentOutputAccessor,
&m_txn.Payment);
                        if (FAILED(hr))

                        {
                        ThrowError(m_pIPaymentCommand,
COLEDBERR::eGetData, "Payment()");
                        }

                        // Release row(s)
                        hr = pRowset-
>ReleaseRows(cRowsObtained, prghRow, NULL, NULL,
NULL);
                        // Release rowset
                        hr = pRowset-
>Release();

                        if (m_txn.Payment.c_id
== 0)
                                throw new
CTPCC_OLEDB_ERR( CTPCC_OLEDB_ERR::ERR_INVALID_CUST );
                        else

        m_txn.Payment.exec_status_code = eOK;

                        break;
                }
                catch (COLEDBERR *e)
                {
                        if ((!e->m_bDeadLock)
|| (++iTryCount > iMaxRetries))
                                throw;

                        // hit deadlock;
backoff for increasingly longer period
                        delete e;
                        Sleep(10 * iTryCount);
                }
        }
//      if (iTryCount)
//              throw new
CTPCC_OLEDB_ERR(CTPCC_OLEDB_ERR::ERR_RETRIED_TRANS,
iTryCount);
}

void CTPCC_OLEDB::InitOrderStatusParams()
{
        int
                i;
        HRESULT
        hr;
        wchar_t
        szName[iMAX_SP_NAME_LEN];
        IAccessor*
        pIAccessor;
        const ULONG
        nInputParams = 4;    // input parameters
        const ULONG
        nOutputParams = 5;  // output 1st result
set columns
        const ULONG
        nOutputParams2 = 8; // output 2nd result
set columns
        // Structure to bind in accessor
```

```cpp
        DBBINDING
        acInputDBBinding[nInputParams];
        DBBINDSTATUS
        acInputDBBindStatus[nInputParams];
        DBBINDING
        acOutputDBBinding[nOutputParams];
        DBBINDSTATUS
        acOutputDBBindStatus[nOutputParams];
        DBBINDING
        acOutputDBBinding2[nOutputParams2];
        DBBINDSTATUS
        acOutputDBBindStatus2[nOutputParams2];

        // Set command text
        _snwprintf(szName,
sizeof(szName)/sizeof(szName[0]),
                        L"{call
%stpcc_orderstatus (?,?,?,?)}", m_szSPPrefix);

        // Create and Prepare a new command object
for OrderStatus.
        CreateCommand(szName,
&m_pIOrderStatusCommand);

        // Describe the consumer buffer by filling
in the array
        // of DBBINDING structures.  Each binding
associates
        // a single parameter to the consumer's buffer.
        InitBindings(&acInputDBBinding[0],
nInputParams, eInputParameter);

        i = 0;
        // OrderStatus parameter 1
        SetBinding(&acInputDBBinding[i++],
offsetof(ORDER_STATUS_DATA, w_id),
sizeof(m_txn.OrderStatus.w_id), DBTYPE_I4);

        // OrderStatus parameter 2
        SetBinding(&acInputDBBinding[i++],
offsetof(ORDER_STATUS_DATA, d_id),
sizeof(m_txn.OrderStatus.d_id), DBTYPE_UI1);

        // OrderStatus parameter 3
        SetBinding(&acInputDBBinding[i++],
offsetof(ORDER_STATUS_DATA, c_id),
sizeof(m_txn.OrderStatus.c_id), DBTYPE_I4);

        // OrderStatus parameter 4
        SetBinding(&acInputDBBinding[i++],
offsetof(ORDER_STATUS_DATA, c_last),
sizeof(m_txn.OrderStatus.c_last), DBTYPE_STR);

        hr = m_pIOrderStatusCommand-
>QueryInterface(IID_IAccessor, (void **)&pIAccessor);
        if (FAILED(hr))
        {
        ThrowError(m_pIOrderStatusCommand,
COLEDBERR::eQueryInterface,
"InitOrderStatusParams()");
        }

        hr = pIAccessor->CreateAccessor(
                        DBACCESSOR_PARAMETERDATA,
                        nInputParams,
                        acInputDBBinding,
sizeof(ORDER_STATUS_DATA),
&m_hOrderStatusInputAccessor,
                        acInputDBBindStatus);
        if (FAILED(hr))
        {
                ThrowError(pIAccessor,
COLEDBERR::eCreateAccessor,
"InitOrderStatusParams()");
        }

        m_OrderStatusExecuteParams.cParamSets = 1;
        m_OrderStatusExecuteParams.hAccessor =
m_hOrderStatusInputAccessor;
        m_OrderStatusExecuteParams.pData =
&m_txn.OrderStatus;

        // Now fill the binding information for
result set 1 output columns
        InitBindings(&acOutputDBBinding[0],
nOutputParams, eOutputColumn);

        // Binding for a rowset that may return
more than one row.
        // Bind to offsets of the
OL_ORDER_STATUS_DATA structure instead of
ORDER_STATUS_DATA.
        // IRowset::GetData() will be passed
individual array slots OL[i] to fetch the data
        // from the row set.

        i = 0;
        // OrderStatus output column 1
        SetBinding(&acOutputDBBinding[i++],
offsetof(OL_ORDER_STATUS_DATA, ol_supply_w_id),
sizeof(m_txn.OrderStatus.OL[0].ol_supply_w_id),
DBTYPE_I4);

        // OrderStatus output column 2
        SetBinding(&acOutputDBBinding[i++],
offsetof(OL_ORDER_STATUS_DATA, ol_i_id),
sizeof(m_txn.OrderStatus.OL[0].ol_i_id), DBTYPE_I4);

        // OrderStatus output column 3
        SetBinding(&acOutputDBBinding[i++],
offsetof(OL_ORDER_STATUS_DATA, ol_quantity),
sizeof(m_txn.OrderStatus.OL[0].ol_quantity),
DBTYPE_I2);

        // OrderStatus output column 4
        SetBinding(&acOutputDBBinding[i++],
offsetof(OL_ORDER_STATUS_DATA, ol_amount),
sizeof(m_txn.OrderStatus.OL[0].ol_amount),
DBTYPE_R8);

        // OrderStatus output column 5
        SetBinding(&acOutputDBBinding[i++],
offsetof(OL_ORDER_STATUS_DATA, ol_delivery_d),
sizeof(m_txn.OrderStatus.OL[0].ol_delivery_d),
DBTYPE_DBTIMESTAMP);

        hr = pIAccessor->CreateAccessor(
                        DBACCESSOR_ROWDATA |
DBACCESSOR_OPTIMIZED,
                        nOutputParams,
                        acOutputDBBinding,
sizeof(OL_ORDER_STATUS_DATA),
&m_hOrderStatusOutputAccessor,
                        acOutputDBBindStatus);
        if (FAILED(hr))
        {
                ThrowError(pIAccessor,
COLEDBERR::eCreateAccessor,
"InitOrderStatusParams()");
        }

        // Now fill the binding information for
result set 2 output columns
        InitBindings(&acOutputDBBinding2[0],
nOutputParams2, eOutputColumn);

        i = 0;
        // OrderStatus output column 1
        SetBinding(&acOutputDBBinding2[i++],
offsetof(ORDER_STATUS_DATA, c_id),
sizeof(m_txn.OrderStatus.c_id), DBTYPE_I4);

        // OrderStatus output column 2
        SetBinding(&acOutputDBBinding2[i++],
offsetof(ORDER_STATUS_DATA, c_last),
sizeof(m_txn.OrderStatus.c_last), DBTYPE_STR);

        // OrderStatus output column 3
        SetBinding(&acOutputDBBinding2[i++],
offsetof(ORDER_STATUS_DATA, c_first),
sizeof(m_txn.OrderStatus.c_first), DBTYPE_STR);

        // OrderStatus output column 4
        SetBinding(&acOutputDBBinding2[i++],
offsetof(ORDER_STATUS_DATA, c_middle),
sizeof(m_txn.OrderStatus.c_middle), DBTYPE_STR);

        // OrderStatus output column 5
        SetBinding(&acOutputDBBinding2[i++],
offsetof(ORDER_STATUS_DATA, o_entry_d),
sizeof(m_txn.OrderStatus.o_entry_d),
DBTYPE_DBTIMESTAMP);

        // OrderStatus output column 7
        SetBinding(&acOutputDBBinding2[i++],
offsetof(ORDER_STATUS_DATA, o_carrier_id),
sizeof(m_txn.OrderStatus.o_carrier_id), DBTYPE_I2);

        // OrderStatus output column 8
        SetBinding(&acOutputDBBinding2[i++],
offsetof(ORDER_STATUS_DATA, c_balance),
sizeof(m_txn.OrderStatus.c_balance), DBTYPE_R8);

        // OrderStatus output column 9
```

```
        SetBinding(&acOutputDBBinding2[i++],                        // Execute the prepared                                hr = pRowset-
offsetof(ORDER_STATUS_DATA, o_id),               command                                                 >GetData(rghRows[i], m_hOrderStatusOutputAccessor,
sizeof(m_txn.OrderStatus.o_id), DBTYPE_I4);                                      // Ask for              &m_txn.OrderStatus.OL[i]);
                                                 IMultipleResults because it returns 2 rowsets.                                         if
        hr = pIAccessor->CreateAccessor(                 hr =                                            (FAILED(hr))
                DBACCESSOR_ROWDATA, //        m_pIOrderStatusCommand->Execute(NULL,                                               {
cannot be optimized too because #1 accessor is   IID_IMultipleResults, &m_OrderStatusExecuteParams,
                nOutputParams2,                  NULL,                                                           ThrowError(m_pIOrderStatusCommand,
                acOutputDBBinding2,                                                                      COLEDBERR::eGetData, "OrderStatus()");
                sizeof(NEW_ORDER_DATA),                  (IUnknown **)&pMultipleResults);                                               }
&m_hOrderStatusOutputAccessor2,                                  if (FAILED(hr))                                                }
                acOutputDBBindStatus2);                          {
        if (FAILED(hr))                                                                                                  // Release row(s)
        {                                                ThrowError(m_pIOrderStatusCommand,                              hr = pRowset-
                ThrowError(pIAccessor,           COLEDBERR::eExecute, "OrderStatus()");                  >ReleaseRows(cRowsObtained, prghRows, NULL, NULL,
COLEDBERR::eCreateAccessor,                              }                                               NULL);
"InitOrderStatusParams()");                                                                                             // Release rowset
        }                                        /////////////////////////                                              hr = pRowset-
}                                                                // Get order line              >Release();
                                                 results
void CTPCC_OLEDB::OrderStatus()                  /////////////////////////
{                                                                                                       ///////////////////////////////////
        HRESULT                          hr;                             // Get the first rowset                         // Get the second
        int                                      object                                                 rowset object
        iTryCount = 0;                                   hr = pMultipleResults-
        IMultipleResults*   pMultipleResults;    >GetResult(NULL, 0, IID_IRowset, &lRowsAffected,                ///////////////////////////////
        IRowset*                  pRowset;        (IUnknown **)&pRowset);                                                 if
        IRowset*                  pRowset2;                       if (FAILED(hr))                        (m_txn.OrderStatus.o_ol_cnt > 0)
        LONG                                                     {                                                       {
        cRows = MAX_OL_ORDER_STATUS_ITEMS;       //                                                                              hr =
number of rows returned in the 1st rowset                ThrowError(m_pIOrderStatusCommand,             pMultipleResults->GetResult(NULL, 0, IID_IRowset,
        ULONG                                    COLEDBERR::eGetResult, "OrderStatus()");               &lRowsAffected, (IUnknown **)&pRowset2);
        cRowsObtained;                                           }                                                               if
        HROW                                                             // Fetch the result row        (FAILED(hr))
        rghRows[MAX_OL_ORDER_STATUS_ITEMS];      handle(s)                                                                       {
        //returned row handles for the 1st result                       hr = pRowset-
set                                              >GetNextRows(DB_NULL_HCHAPTER, 0, cRows,                        ThrowError(m_pIOrderStatusCommand,
        HROW*                                    &cRowsObtained, &prghRows);                             COLEDBERR::eGetResult, "OrderStatus()");
        prghRows = &rghRows[0];                                  if (FAILED(hr))                                                 }
        LONG                                                     {
        cRows2 = 1;          // number of rows                                                                                   // Fetch the
returned in the 2nd rowset                               ThrowError(m_pIOrderStatusCommand,             result row handle(s)
        ULONG                                    COLEDBERR::eGetNextRows, "OrderStatus()");                                      hr =
        cRowsObtained2;                                          }                                       pRowset2->GetNextRows(DB_NULL_HCHAPTER, 0, cRows2,
        HROW                                                                                             &cRowsObtained2, &prghRows2);
        rghRows2;            //returned row handle                 m_txn.OrderStatus.o_ol_cnt =                                         if
for the 2nd result set                           (short)cRowsObtained;                                  (FAILED(hr))
        HROW*                                                                                                                    {
        prghRows2 = &rghRows2;                                           // Get the data from
        int                                      multiple rows in this rowset                                   ThrowError(m_pIOrderStatusCommand,
        i;                                                               for (i = 0; i <                 COLEDBERR::eGetNextRows, "OrderStatus()");
        long                                     m_txn.OrderStatus.o_ol_cnt; ++i)                                                }
        lRowsAffected;      // the number of                     {
affected rows for a rowset                                               // Fetch the                                            // Fetch the
                                                 actual row data by handle                              actual row data by handle
        if (m_txn.OrderStatus.c_id != 0)                                                                                        hr =
                m_txn.OrderStatus.c_last[0] = 0;                                                         pRowset2->GetData(rghRows2,
                                                                                                        m_hOrderStatusOutputAccessor2, &m_txn.OrderStatus);
        while (TRUE)                                                                                                                     if
        {                                                                                               (FAILED(hr))
                try                                                                                                              {
                {
```

```
                ThrowError(m_pIOrderStatusCommand,
COLEDBERR::eGetData, "OrderStatus()");
                        }

                                // Release
row(s)
                                hr =
pRowset2->Release();
                        }

                        // Release the common
MultipleResults interface
                        hr = pMultipleResults-
>Release();

                        if
(m_txn.OrderStatus.o_ol_cnt == 0)
                                throw new
CTPCC_OLEDB_ERR( CTPCC_OLEDB_ERR::ERR_NO_SUCH_ORDER
);
                        else if
(m_txn.OrderStatus.c_id == 0 &&
m_txn.OrderStatus.c_last[0] == 0)
                                throw new
CTPCC_OLEDB_ERR( CTPCC_OLEDB_ERR::ERR_INVALID_CUST );
                        else

        m_txn.OrderStatus.exec_status_code = eOK;

                        break;

                }
                catch (COLEDBERR *e)
                {
                        if ((!e->m_bDeadLock)
|| (++iTryCount > iMaxRetries))
                                throw;

                        // hit deadlock;
backoff for increasingly longer period
                        delete e;
                        Sleep(10 * iTryCount);
                }
        }
//      if (iTryCount)
//              throw new
CTPCC_OLEDB_ERR(CTPCC_OLEDB_ERR::ERR_RETRIED_TRANS,
iTryCount);
}

void CTPCC_OLEDB::InitDeliveryParams()
{
        int
                i;
        HRESULT
        hr;
        wchar_t
        szName[iMAX_SP_NAME_LEN];
        IAccessor*
        pIAccessor;
```

```
        const ULONG
                nInputParams = 2;    // input parameters
        const ULONG
                nOutputParams = 10; // output 1st result
set columns
                // Structure to bind in accessor
                DBBINDING
                acInputDBBinding[nInputParams];
                DBBINDSTATUS
                acInputDBBindStatus[nInputParams];
                DBBINDING
                acOutputDBBinding[nOutputParams];
                DBBINDSTATUS
                acOutputDBBindStatus[nOutputParams];

                // Set command text
                _snwprintf(szName,
sizeof(szName)/sizeof(szName[0]),
                                        L"{call %stpcc_delivery
(?,?)}", m_szSPPrefix);

                // Create and Prepare a new command object
for Delivery.
                CreateCommand(szName,
&m_pIDeliveryCommand);

                // Describe the consumer buffer by filling
in the array
        // of DBBINDING structures.  Each binding
associates
        // a single parameter to the consumer's buffer.
                InitBindings(&acInputDBBinding[0],
nInputParams, eInputParameter);

                i = 0;
        // Delivery parameter 1
                SetBinding(&acInputDBBinding[i++],
offsetof(DELIVERY_DATA, w_id),
sizeof(m_txn.Delivery.w_id), DBTYPE_I4);

                // Delivery parameter 2
                SetBinding(&acInputDBBinding[i++],
offsetof(DELIVERY_DATA, o_carrier_id),
sizeof(m_txn.Delivery.o_carrier_id), DBTYPE_I2);

                hr = m_pIDeliveryCommand-
>QueryInterface(IID_IAccessor, (void **)&pIAccessor);
                if (FAILED(hr))
                {
                        ThrowError(m_pIDeliveryCommand,
COLEDBERR::eQueryInterface, "InitDeliveryParams()");
                }

                hr = pIAccessor->CreateAccessor(
                                DBACCESSOR_PARAMETERDATA,
                                nInputParams,
                                acInputDBBinding,
                                sizeof(DELIVERY_DATA),
&m_hDeliveryInputAccessor,
                                acInputDBBindStatus);
                if (FAILED(hr))
                {
```

```
                ThrowError(pIAccessor,
COLEDBERR::eCreateAccessor, "InitDeliveryParams()");
                }

        m_DeliveryExecuteParams.cParamSets = 1;
        m_DeliveryExecuteParams.hAccessor =
m_hDeliveryInputAccessor;
        m_DeliveryExecuteParams.pData =
&m_txn.Delivery;

        // Now fill the binding information for
result set 1 output columns
        InitBindings(&acOutputDBBinding[0],
nOutputParams, eOutputColumn);

        // Binding for a rowset that may return
more than one row.
        for (i = 0; i < 10; ++i)
        {
                // Delivery output column 1
                SetBinding(&acOutputDBBinding[i],
offsetof(DELIVERY_DATA, o_id[i]),
sizeof(m_txn.Delivery.o_id[i]), DBTYPE_I4);
        }

        hr = pIAccessor->CreateAccessor(
                        DBACCESSOR_ROWDATA |
DBACCESSOR_OPTIMIZED,
                        nOutputParams,
                        acOutputDBBinding,
                        sizeof(DELIVERY_DATA),
&m_hDeliveryOutputAccessor,
                        acOutputDBBindStatus);
        if (FAILED(hr))
        {
                ThrowError(pIAccessor,
COLEDBERR::eCreateAccessor, "InitDeliveryParams()");
        }
}

void CTPCC_OLEDB::Delivery()
{
        HRESULT                         hr;
        int
        iTryCount = 0;
        IRowset*                pRowset;
        LONG                            cRows = 1;
        // number of rows returned in the rowset
        ULONG
        cRowsObtained;
        HROW                            rghRow;
        //returned row handles
        HROW*                   prghRow =
&rghRow;

        while (TRUE)
        {
                try
                {
                                // Execute the prepared
command
```

```
                hr =
m_pIDeliveryCommand->Execute(NULL, IID_IRowset,
&m_DeliveryExecuteParams, NULL,

            (IUnknown **)&pRowset);
                        if (FAILED(hr))
                        {

    ThrowError(m_pIDeliveryCommand,
COLEDBERR::eExecute, "Delivery()");
                        }

                        // Fetch the result row
handle(s)
                        hr = pRowset-
>GetNextRows(DB_NULL_HCHAPTER, 0, cRows,
&cRowsObtained, &prghRow);
                        if (FAILED(hr))
                        {

    ThrowError(m_pIDeliveryCommand,
COLEDBERR::eGetNextRows, "Delivery()");
                        }

                        // Fetch the actual row
data by handle
                        hr = pRowset-
>GetData(rghRow, m_hDeliveryOutputAccessor,
&m_txn.Delivery);
                        if (FAILED(hr))
                        {

    ThrowError(m_pIDeliveryCommand,
COLEDBERR::eGetData, "Delivery()");
                        }

                        // Release row(s)
                        hr = pRowset-
>ReleaseRows(cRowsObtained, prghRow, NULL, NULL,
NULL);

                        // Release rowset
                        hr = pRowset-
>Release();

        m_txn.Delivery.exec_status_code = eOK;

                        break;
                }
                catch (COLEDBERR *e)
                {
                        if ((!e->m_bDeadLock)
|| (++iTryCount > iMaxRetries))
                                throw;

                        // hit deadlock;
backoff for increasingly longer period
                        delete e;
                        Sleep(10 * iTryCount);
                }
        }
```

```
//      if (iTryCount)
//              throw new
CTPCC_OLEDB_ERR(CTPCC_OLEDB_ERR::ERR_RETRIED_TRANS,
iTryCount);
}
```

tpcc_oledb.h

```
/*      FILE:                TPCC_OLEDB.H
 *                             Microsoft
TPC-C Kit Ver. 4.20.000
 *                             Copyright
Microsoft, 1999-2004
 *                             Written by
Sergey Vasilevskiy
 *              All Rights Reserved
 *
 *
 *      PURPOSE:  Header file for TPC-C txn class
OLE DB implementation.
 *
 *
 */
#pragma once

// need to declare functions for import, unless
define has already been created
// by the DLL's .cpp module for export.
#ifndef DllDecl
#define DllDecl  __declspec( dllimport )
#endif

#define iMAX_SP_NAME_LEN 256  //maximum length of a
stored procedure name with parameters

// Type of parameter and result set column bindings.
enum eBindingType
{
        eInputParameter,
        eOutputParameter,
        eInputOutputParameter,
        eOutputColumn
};

class COLEDBERR : public CBaseErr
{
        public:
                enum ACTION
                {
                        eNone,
                        eUnknown,
                        eQueryInterface,
    // error from QueryInterface
                        eCreateSession,
                        eCreateCommand,
                        eSetCommandText,
                        eExecute,
        // = 6
                        eCreateAccessor,
```

```
                        ePrepare,
                        eGetNextRows,
                        eGetData,
                        eGetResult
        // = 11
                };

        COLEDBERR(LPCTSTR szLoc)
                        : CBaseErr(szLoc)
        {
                m_eAction = eNone;
                m_NativeError = 0;
                m_bDeadLock = FALSE;
                m_OLEDBErrStr = NULL;
        };

        ~COLEDBERR()
        {
                if (m_OLEDBErrStr !=
NULL)
                        delete []
m_OLEDBErrStr;
        };

        ACTION    m_eAction;
        int
    m_NativeError;
        BOOL    m_bDeadLock;
        char    *m_OLEDBErrStr;

        int            ErrorType()
{return ERR_TYPE_OLEDB;};
        char*    ErrorTypeStr() { return
"OLEDB"; }
        int            ErrorNum()
{return m_NativeError;};
        char*    ErrorText() {return
m_OLEDBErrStr;};
        int            ErrorAction()
{ return (int)m_eAction; }

};

class CTPCC_OLEDB_ERR : public CBaseErr
{
        public:
                enum TPCC_OLEDB_ERRS
                {
                        ERR_WRONG_SP_VERSION =
1,      // "Wrong version of stored procs on
database server"
                        ERR_INVALID_CUST,
        // "Invalid Customer id,name."
                        ERR_NO_SUCH_ORDER,
        // "No orders found for
customer."
                        ERR_RETRIED_TRANS,
        // "Retries before transaction
succeeded."
                };

                CTPCC_OLEDB_ERR( int iErr ) {
m_errno = iErr; m_iTryCount = 0; };
```

```cpp
            CTPCC_OLEDB_ERR( int iErr, int
iTryCount ) { m_errno = iErr; m_iTryCount =
iTryCount; };

            int             m_errno;
            int             m_iTryCount;

            int             ErrorType()
{return ERR_TYPE_TPCC_OLEDB;};
            char*   ErrorTypeStr() { return
"TPCC OLEDB"; }
            int             ErrorNum()
{return m_errno;};

            char*   ErrorText();
};
class DllDecl CTPCC_OLEDB : public CTPCC_BASE
{
        private:
            // declare variables and private
functions here...
            BOOL
            m_bDeadlock;                 //
transaction was selected as deadlock victim
            int
                        m_MaxRetries;
        // retry count on deadlock

            DBPROPSET
            m_rgInitPropSet;             //
initialization property set used to establish a
connection
            DBPROP
            m_InitProperties[4];         //
individual initialization properties

            IDBCreateSession*
            m_pIDBCreateSession;         // session
(connection) interface
            IDBCreateCommand*
            m_pIDBCreateCommand;         // SQL
command creation interface

            IMalloc*
            m_pIMalloc;
            // Needed to release error strings.

            // StockLevel
            ICommandText*
            m_pIStockLevelCommand;
            HACCESSOR
            m_hStockLevelInputAccessor;   // accessor
to bind input parameters
            HACCESSOR
            m_hStockLevelOutputAccessor;  // accessor
to bind output columns
            DBPARAMS
            m_StockLevelExecuteParams;           //
parameter structure for Execute

            // NewOrder
```

```cpp
            // One prepared command for each
possible number of new order line items
            ICommandText*
            m_pINewOrderCommand[MAX_OL_NEW_ORDER_ITEMS]
;
            // accessors to bind input
parameters
            // one for each possible number
of new order line items
            HACCESSOR
            m_hNewOrderInputAccessor[MAX_OL_NEW_ORDER_I
TEMS];
            // accessor to bind output
columns of the first rowset
            HACCESSOR
            m_hNewOrderOutputAccessor[MAX_OL_NEW_ORDER_
ITEMS];
            // accessor to bind output
columns of the second rowset
            HACCESSOR
            m_hNewOrderOutputAccessor2[MAX_OL_NEW_ORDER
_ITEMS];
            // parameter structure for
Execute
            DBPARAMS
            m_NewOrderExecuteParams[MAX_OL_NEW_ORDER_IT
EMS];

            // Payment
            ICommandText*
            m_pIPaymentCommand;
            HACCESSOR
            m_hPaymentInputAccessor;       // accessor
to bind input parameters
            HACCESSOR
            m_hPaymentOutputAccessor;      // accessor
to bind output columns
            DBPARAMS
            m_PaymentExecuteParams;                //
parameter structure for Execute

            // OrderStatus
            ICommandText*
            m_pIOrderStatusCommand;
            HACCESSOR
            m_hOrderStatusInputAccessor;  // accessor
to bind input parameters
            HACCESSOR
            m_hOrderStatusOutputAccessor; // accessor
to bind output columns
            HACCESSOR
            m_hOrderStatusOutputAccessor2;         //
accessor to bind output columns
            DBPARAMS
            m_OrderStatusExecuteParams;            //
parameter structure for Execute

            // Delivery
            ICommandText*
            m_pIDeliveryCommand;
            HACCESSOR
            m_hDeliveryInputAccessor;      // accessor
to bind input parameters
```

```cpp
            HACCESSOR
            m_hDeliveryOutputAccessor;     // accessor
to bind output columns
            DBPARAMS
            m_DeliveryExecuteParams;       // parameter
structure for Execute

            wchar_t
            m_szSPPrefix[32];   // stored
procedures prefix

            // new-order specific fields

            int
                        m_no_commit_flag;

            void ThrowError( IUnknown*
pObjectWithError, COLEDBERR::ACTION eAction, LPCTSTR
szLocation );

            void CheckSPVersion();

            void InitNewOrderParams();
            void InitPaymentParams();
            void InitDeliveryParams();
            void InitStockLevelParams();
            void InitOrderStatusParams();

            // Helper function to create and
prepare a command
            void CreateCommand(wchar_t*
szSQLCommand, ICommandText** ppICommandText);
            // Helper function to prepare a
command
            void PrepareCommand(ICommandText*
pICommand);

            // Helper function to fill one
binding
            // Used for both input parameter
and output column bindings
            void SetBinding(DBBINDING*
pDBBinding, size_t obValue, size_t cbMaxLen, DBTYPE
wType);

            // Helper function to initialize
an array of bindings
            void InitBindings(DBBINDING*
pDBBindings, int iCount, eBindingType BindingType);

            union
            {
                        NEW_ORDER_DATA
            NewOrder;
                        PAYMENT_DATA
            Payment;
                        DELIVERY_DATA
            Delivery;
                        STOCK_LEVEL_DATA
            StockLevel;
                        ORDER_STATUS_DATA
            OrderStatus;
```

```
                  }
            m_txn;

            public:
                  CTPCC_OLEDB(LPCSTR szServer,
LPCSTR szUser, LPCSTR szPassword, LPCSTR szHost,
LPCSTR szDatabase, LPCWSTR szSPPrefix);
                  ~CTPCC_OLEDB(void);

                  inline PNEW_ORDER_DATA
      BuffAddr_NewOrder()           { return
&m_txn.NewOrder;   };
                  inline PPAYMENT_DATA
      BuffAddr_Payment()            { return
&m_txn.Payment;    };
                  inline PDELIVERY_DATA
      BuffAddr_Delivery()           { return
&m_txn.Delivery;   };
                  inline PSTOCK_LEVEL_DATA
      BuffAddr_StockLevel()         { return
&m_txn.StockLevel; };
                  inline PORDER_STATUS_DATA
      BuffAddr_OrderStatus()        { return
&m_txn.OrderStatus; };

                  void NewOrder            ();
                  void Payment             ();
                  void Delivery            ();
                  void StockLevel          ();
                  void OrderStatus         ();

};


// wrapper routine for class constructor
extern "C" DllDecl CTPCC_OLEDB* CTPCC_OLEDB_new
            ( LPCSTR szServer, LPCSTR szUser, LPCSTR
szPassword, LPCSTR szHost, LPCSTR szDatabase, LPCWSTR
szSPPrefix );

typedef CTPCC_OLEDB* (TYPE_CTPCC_OLEDB)(LPCSTR,
LPCSTR, LPCSTR, LPCSTR, LPCSTR, LPCWSTR);
```

trans.h

```
/*      FILE:            TRANS.H
 *                                      Microsoft
TPC-C Kit Ver. 4.42.000
 *                                      Copyright
Microsoft, 2002
 *            All Rights Reserved
 *
 *                                      Version
4.10.000 audited by Richard Gimarc, Performance
Metrics, 3/17/99
 *
 *      PURPOSE:  Header file for TPC-C structure
templates.
 *
 *  Change history:
```

```
 *                  4.42.000 - changed w_id fields
from short to long to support >32K warehouses
 *                  4.20.000 - updated rev number to
match kit
 *                  4.69.000 - updated rev number to
match kit
 */
#pragma once

// String length constants
#define SERVER_NAME_LEN                 20
#define DATABASE_NAME_LEN               20
#define USER_NAME_LEN                   20
#define PASSWORD_LEN                    20
#define TABLE_NAME_LEN                  20
#define I_DATA_LEN                      50
#define I_NAME_LEN                      24
#define BRAND_LEN                        1
#define LAST_NAME_LEN                   16
#define W_NAME_LEN                      10
#define ADDRESS_LEN                     20
#define STATE_LEN                        2
#define ZIP_LEN                          9
#define S_DIST_LEN                      24
#define S_DATA_LEN                      50
#define D_NAME_LEN                      10
#define FIRST_NAME_LEN                  16
#define MIDDLE_NAME_LEN                  2
#define PHONE_LEN                       16
#define DATETIME_LEN                    30
#define CREDIT_LEN                       2
#define C_DATA_LEN                     250
#define H_DATA_LEN                      24
#define DIST_INFO_LEN                   24
#define MAX_OL_NEW_ORDER_ITEMS          15
#define MAX_OL_ORDER_STATUS_ITEMS       15
#define STATUS_LEN                      25
#define OL_DIST_INFO_LEN                         24


// TIMESTAMP_STRUCT is provided by the ODBC header
file sqltypes.h, but is not available
// when compiling with dblib, so redefined here.
Note: we are using the symbol "__SQLTYPES"
// (declared in sqltypes.h) as a way to determine if
TIMESTAMP_STRUCT has been declared.
#ifndef __SQLTYPES
            typedef struct
            {
                                        short
      /* SQLSMALLINT */   year;
                                        unsigned short      /*
SQLUSMALLINT */    month;
                                        unsigned short      /*
SQLUSMALLINT */    day;
                                        unsigned short      /*
SQLUSMALLINT */    hour;
                                        unsigned short      /*
SQLUSMALLINT */    minute;
                                        unsigned short      /*
SQLUSMALLINT */    second;
                                        unsigned long       /*
SQLUINTEGER */     fraction;
            } TIMESTAMP_STRUCT;
```

```
#endif

// possible values for exec_status_code after
transaction completes
enum EXEC_STATUS
{
            eOK,                        // 0
            "Transaction commited."
            eInvalidItem,         // 1       "Item number
is not valid."
            eDeliveryFailed       // 2       "Delivery
Post Failed."
};

// transaction structures
typedef struct
{
            // input params
            long
            ol_supply_w_id;
            long
            ol_i_id;
            short
            ol_quantity;

            // output params
            char
            ol_i_name[I_NAME_LEN+1];
            char
            ol_brand_generic[BRAND_LEN+1];
            double
            ol_i_price;
            double
            ol_amount;
            short
            ol_stock;
} OL_NEW_ORDER_DATA;

typedef struct
{
            // input params
            long            w_id;
            short           d_id;
            long            c_id;
            short           o_ol_cnt;

            // output params
            EXEC_STATUS
            exec_status_code;
            char
            c_last[LAST_NAME_LEN+1];
            char            c_credit[CREDIT_LEN+1];
            double          c_discount;
            double          w_tax;
            double          d_tax;
            long                    o_id;
            short
            o_commit_flag;
            TIMESTAMP_STRUCT    o_entry_d;
            short           o_all_local;
            double          total_amount;
            OL_NEW_ORDER_DATA
            OL[MAX_OL_NEW_ORDER_ITEMS];
```

```
} NEW_ORDER_DATA, *PNEW_ORDER_DATA;

typedef struct
{       // input params
        long
w_id;
        short
d_id;
        long
c_id;
        short
c_d_id;
        long
c_w_id;
        double
h_amount;
        char
c_last[LAST_NAME_LEN+1];

        // output params
        EXEC_STATUS
exec_status_code;
        TIMESTAMP_STRUCT     h_date;
        char
w_street_1[ADDRESS_LEN+1];
        char
w_street_2[ADDRESS_LEN+1];
        char
w_city[ADDRESS_LEN+1];
        char
w_state[STATE_LEN+1];
        char
w_zip[ZIP_LEN+1];
        char
d_street_1[ADDRESS_LEN+1];
        char
d_street_2[ADDRESS_LEN+1];
        char
d_city[ADDRESS_LEN+1];
        char
d_state[STATE_LEN+1];
        char
d_zip[ZIP_LEN+1];
        char
c_first[FIRST_NAME_LEN+1];
        char
c_middle[MIDDLE_NAME_LEN + 1];
        char
c_street_1[ADDRESS_LEN+1];
        char
c_street_2[ADDRESS_LEN+1];
        char
c_city[ADDRESS_LEN+1];
        char
c_state[STATE_LEN+1];
        char
c_zip[ZIP_LEN+1];
        char
c_phone[PHONE_LEN+1];
        TIMESTAMP_STRUCT     c_since;
        char
c_credit[CREDIT_LEN+1];
```

```
        double
c_credit_lim;
        double
c_discount;
        double
c_balance;
        char
c_data[200+1];
} PAYMENT_DATA, *PPAYMENT_DATA;

typedef struct
{
        long
        ol_i_id;
        long
        ol_supply_w_id;
        short
        ol_quantity;
        double
        ol_amount;
        TIMESTAMP_STRUCT     ol_delivery_d;
} OL_ORDER_STATUS_DATA;

typedef struct
{       // input params
        long               w_id;
        short              d_id;
        long               c_id;
        char
c_last[LAST_NAME_LEN+1];

        // output params
        EXEC_STATUS
exec_status_code;
        char
c_first[FIRST_NAME_LEN+1];
        char
c_middle[MIDDLE_NAME_LEN+1];
        double             c_balance;
        long               o_id;
        TIMESTAMP_STRUCT    o_entry_d;
        short              o_carrier_id;
        OL_ORDER_STATUS_DATA
OL[MAX_OL_ORDER_STATUS_ITEMS];
        short              o_ol_cnt;
} ORDER_STATUS_DATA, *PORDER_STATUS_DATA;


typedef struct
{       // input params
        long                       w_id;
        short                      o_carrier_id;

        // output params
        EXEC_STATUS
        exec_status_code;
        SYSTEMTIME                 queue_time;
        long
        o_id[10];         // id's of delivered
orders for districts 1 to 10
} DELIVERY_DATA, *PDELIVERY_DATA;
```

```
//This structure is used for posting delivery
transactions and for writing them to the delivery
server.
typedef struct _DELIVERY_TRANSACTION
{
        SYSTEMTIME          queue;
        //time delivery transaction queued
        long                w_id;
        //delivery warehouse
        short               o_carrier_id;
        //carrier id
} DELIVERY_TRANSACTION;

typedef struct
{       // input params
        long
        w_id;
        short
        d_id;
        short
        threshold;

        // output params
        EXEC_STATUS
        exec_status_code;
        long
        low_stock;
} STOCK_LEVEL_DATA, *PSTOCK_LEVEL_DATA;
```

txnlog.h

```
/*      FILE:              TXNLOG.H
 *                         Microsoft
TPC-C Kit Ver. 4.10.000
 *                         not yet
audited
 *
 *      PURPOSE:  Header file for txn log class
 *                         Copyright
Microsoft, 1999
 *         All Rights Reserved
 *
 */
#include <stdio.h>          //needed for FILE

#define DRIVER_NAME_LEN
                32        //max length of the
driver engine name - must be the same as in
engstut.h!
#define TXN_LOG_INCORRECTLY_SHUT_DOWN   100
        //ctrl rec subtype generated by the txn log
when reading an abruptly shut down log

#pragma once

   typedef struct _TXN_NEWORDER
        {
        BYTE     OL_Count;          //range 0 to
31
```

```
        BYTE        OL_Remote_Count;    //range 0 to
31
        WORD        c_id;
        int                 o_id;
        } TXN_NEWORDER;

    typedef struct _TXN_PAYMENT
        {
        BYTE        CustByName;
        BYTE        IsRemote;
        } TXN_PAYMENT;

    typedef struct _TXN_ORDERSTATUS
        {
            BYTE        CustByName;
        } TXN_ORDERSTATUS;

        typedef union _TXN_DETAILS
        {
            TXN_NEWORDER        NewOrder;
            TXN_PAYMENT
        Payment;
            TXN_ORDERSTATUS     OrderStatus;
        } TXN_DETAILS;


        // Common header for all records in txn
log.  The TxnType field is
        // a switch which identifies the particular
variant.
        #define TXN_REC_TYPE_CONTROL         1
        //
        #define TXN_REC_TYPE_TPCC
2          // replaces TRANSACTION_TYPE_TPCC
        #define TXN_REC_TYPE_TPCC_DELIV_DEF      3

        #define TXN_REC_TYPE_TPCW
4           // replaces TRANSACTION_TYPE_TPCW

        typedef struct _TXN_RECORD_HEADER
        {
                JULIAN_TIME         TxnStartT0;
                // start of txn
                BYTE        TxnType;
        // one of TXN_REC_TYPE_*
                BYTE        TxnSubType;
                // depends on TxnType
        } TXN_RECORD_HEADER, *PTXN_RECORD_HEADER;


        typedef struct _TXN_RECORD_CONTROL
        {
                // common header; must exactly
match TXN_RECORD_HEADER
                JULIAN_TIME         TxnStartT0;
                // start of txn
                BYTE        TxnType;
        // = TXN_REC_TYPE_CONTROL
                BYTE        TxnSubType;
                // depends on TxnType
                // end of common header

                DWORD       Len;
                    // number of bytes after this
field
                } TXN_RECORD_CONTROL, *PTXN_RECORD_CONTROL;

        // TPC-C Txn Record Layout:
        //
        //'TxnStartT0' is a Julian timestamp
corresponding to the moment the
        //txn is sent to the SUT, i.e., beginning of
response time.  Deltas
        //are in milliseconds.  Note that if RTDelay > 0,
then the txn was
        //delayed by this amount.  The delay occurs at
the beginning of the
        //response time.  So if RTDelay > 0, then the txn
was actually sent
        //at TxnStartT0 + RTDelay.
        //
        //Graphically:
        //
        //  time -->
        //
        //   |--- Menu  ---|-- Keying  --|-- Response --
|--- Think  --|
        //     <- DeltaT1 -> <- DeltaT2 -> <- DeltaT4  ->
<- DeltaT3 ->
        //                                  ^
        //                                  ^ TxnStartT0
        //
        //RTDelay is the amount of response time delay
included in DeltaT4.
        //RTDelay is recorded per txn because this value
can be changed on
        //the fly, and so may vary from txn to txn.
        //
        //TxnStatus is the txn completion code.  It is
used to indicate errors.
        //For example, in the New Order txn, 1% of txns
abort.  TxnStatus will
        //reflect this.

            typedef struct _TXN_RECORD_TPCC
            {
                    // common header; must exactly
match TXN_RECORD_HEADER
                    JULIAN_TIME         TxnStartT0;
                    // start of txn
                    BYTE        TxnType;
            // = TXN_REC_TYPE_TPCC
                    BYTE        TxnSubType;
                    // depends on TxnType
                    // end of common header

                    int     DeltaT1;            //
menu time (ms)
                    int     DeltaT2;            //
keying time (ms)
                    int     DeltaT3;            //
think time (ms)
                    int     DeltaT4;            //
response time (ms)

                int     RTDelay;            //
response time delay (ms)
                int                 TxnError;
                // error code providing more detail for
TxnStatus
                int                 w_id;
                // warehouse ID
                BYTE        d_id;
                // assigned district ID for this thread
                BYTE        d_id_ThisTxn;       //
district ID chosen for this particular
                BYTE        TxnStatus;
                // completion status for txn to indicate
errors
                BYTE        reserved;           //
for word alignment
                TXN_DETAILS         TxnDetails;
                //
                bool IsSuccessRecord() { return
(TxnStatus == ERR_SUCCESS || TxnStatus ==
ERR_BAD_ITEM_ID || TxnStatus ==
ERR_TYPE_DELIVERY_POST); }
                } TXN_RECORD_TPCC, *PTXN_RECORD_TPCC;

        // TPC-C Deferred Delivery Txn Record
Layout:
        //
        //Incorporating delivery transaction information
into the above
        //structure would increase the size of
TXN_DETAILS from 8 to 42 bytes.
        //Hence, we store delivery transaction details in
a separate structure.
        //
        typedef struct _TXN_RECORD_TPCC_DELIV_DEF
        {
                // common header; must exactly
match TXN_RECORD_HEADER
                JULIAN_TIME         TxnStartT0;
                // start of txn
                BYTE        TxnType;
        // = TXN_REC_TYPE_TPCC_DELIV_DEF
                BYTE        TxnSubType;
        // = 0
                // end of common header

                int     DeltaT4;            //
response time (ms)
                int                 DeltaTxnExec;
        // execution time (ms)
                int                 w_id;
                // warehouse ID
                BYTE        TxnStatus;
                // completion status for txn to indicate
errors
                BYTE        reserved;           //
for word alignment
                short   o_carrier_id;       //
carrier id
                long    o_id[10];           //
returned delivery transaction ids
```

```
            bool IsSuccessRecord() { return
(TxnStatus == ERR_SUCCESS || TxnStatus ==
ERR_BAD_ITEM_ID || TxnStatus ==
ERR_TYPE_DELIVERY_POST); }
            } TXN_RECORD_TPCC_DELIV_DEF,
*PTXN_RECORD_TPCC_DELIV_DEF;


        //
        //TPC-W records.
        //
        typedef struct _TXN_RECORD_TPCW
        {
            // common header; must exactly
match TXN_RECORD_HEADER
            JULIAN_TIME     TxnStartT0;
            // start of txn
            BYTE       TxnType;
        // = TXN_REC_TYPE_TPCW
            BYTE       TxnSubType;
            // depends on TxnType
            // end of common header

            int     ThinkTime;        //
think time (ms)
            int     WIRT;
        // response time (ms)
            int             TxnError;
        // error code providing more detail for
TxnStatus
            BYTE       TxnStatus;
        // completion status for txn to indicate
errors
            //This field below depends on the
txn sub type:
            //- for Home interaction:    it
indicates whether the user was a new customer (or
returning)
            //- for Buy Confirm:
        it indicates whether the shipping address
was updated
            //- for Search Request:
        it indicates the search type (Author,
Title, or Subject)
            //This statistics needs to be
reported according to 5.5.5.1 clause in the specs.
            //Because this field occupies 1
byte, the record structure is already aligned on word
boundary.
            union    {
                BYTE     newCustomer;
                BYTE     addrUpdated;
                BYTE     searchType;
            }     intrDetails;

            //This field is mostly for
informational/debugging purposes.
            //It indicates what user
performed this web interaction and what instance
(session) of that use it was.
            //The first 22 bits indicate the
user #, and the top 10 bits indicate instance
(session) #.
            unsigned __int32    uiUser;
```

```
            bool IsSuccessRecord() { return
(TxnStatus == ERR_SUCCESS); }
        } TXN_RECORD_TPCW, *PTXN_RECORD_TPCW;

        //
        //      Data part of a control record
written when a user is created (or it's new session)
- to record USMD
        typedef struct _TXN_RECORD_TPCW_USER_DATA
        {
            unsigned __int32   uiUser;
                            // user number
            JULIAN_TIME
        USMD;                              //
USMD for this user
            BYTE
        bRetCust;                 // returning
customer?
        } TXN_RECORD_TPCW_USER_DATA,
*PTXN_RECORD_TPCW_USER_DATA;

        //The entire TPCW User control record
structure
        typedef struct _TXN_RECORD_TPCW_USER
        {
            // common header; must exactly
match TXN_RECORD_HEADER
            JULIAN_TIME     TxnStartT0;
            // start of txn
            BYTE       TxnType;
        // = TXN_REC_TYPE_CONTROL
            BYTE       TxnSubType;
            // depends on TxnType
            // end of common header

            DWORD    Len;
            // number of bytes after this
field
            //The fields above must exactly
match TXN_RECORD_CONTROL

            //The fields below must exactly
match TXN_RECORD_TPCW_USER_DATA
            unsigned __int32   uiUser;
                            // user number
            JULIAN_TIME
        USMD;                              //
USMD for this user
            BYTE
        bRetCust;                 // returning
customer?
        } TXN_RECORD_TPCW_USER,
*PTXN_RECORD_TPCW_USER;


#define          USER_INDEX_NBITS    22
#define          USER_INDEX_MASK
0x003fffff       //lower 22
bits mask for user field in TPCW record
#define          USER_SESSION_MASK  0xffc00000
                 //upper 10 bits mask for user
field in TPCW record
```

```
#define          USER_CREATE_REC          254
            //subtype for the control record
written when a user is created

#define          TXN_LOG_VERSION          2
#define          TXN_DATA_START
    4096      // offset in log file where log
records start
#define          TXN_LOG_EYE_CATCHER "BC"     //
signature bytes at the start of log file


            //////////////////////////////////////////
////////////////////////////////////
            // The transaction log has a header as the
first 4K block.
            //
            typedef struct _TXN_LOG_HEADER
            {
                char
        EyeCatcher[2];      // signature bytes;
should always be "BC"
                int
        LogVersion;               // set to
TXN_LOG_VERSION
            JULIAN_TIME
        BeginTxnTS;               // timestamp
of first (lowest) txn start
            JULIAN_TIME
        EndTxnTS;            // timestamp of last
(highest) txn completion time
                int
        iRecCount;                // number of
records in log file
            BOOL
        bLogSorted;
                int
        iFileSize;               // file size
in bytes

            // driver engine that created
this log file
            char
        szDriverEngineName[DRIVER_NAME_LEN];
            // the record map provides a fast
way to get close to a particular timestamp in a
sorted log file.
//            struct
//            {
//                        JULIAN_TIME
//        TS;                       // timestamp
of record
//                int
        iPos;            // byte
position in file
//            }
        RecMap[RecMapSize];
//#define       RecMapSize
    200

        } TXN_LOG_HEADER, *PTXN_LOG_HEADER;
```

```
        /* Header of the sorted pointers blocks in
Temp file (in merging). */
        typedef struct BLOCK_HEADER {
                long        BlockPos;
                __int64 CurPos;
                DWORD       BytesRead;
                int                 nRecords;
                BYTE        *offset;  /* offset of
pointers to records in the log file */
        } BLOCK_HEADER, *PBLOCK_HEADER;


#define   READ_BUFFER_SIZE            64*1024
//#define WRITE_BUFFER_SIZE            8*1024
#define   WRITE_BUFFER_SIZE            128*1024

#define   NUM_READ_BUFFERS            1
#define   NUM_WRITE_BUFFERS           2
#define   MAX_NUM_BUFFERS                          2

// flags passed in to the constructor
#define   TXN_LOG_WRITE               0x01
#define   TXN_LOG_READ                0x02
#define   TXN_LOG_SORTED              0x04
#define TXN_LOG_CRASHOPEN   0x08             //
if set, invalid headers will be tolerated; used for
recovery

#define   TXN_LOG_OS_ERROR    1
#define   TXN_LOG_NOT_SORTED  2

#define SKIP_CTRL_RECS                 1

class CTxnLog
{
        private:
                DWORD               iBufferSize;
                                //buffer allocated size
                DWORD
        iBytesFreeInBuffer;          //total bytes
available for use in buffer
                int
        iNumBuffers;
        //buffers in use
                int
        iActiveBuffer;
        //indicates which buffer is active: 0 or 1
                int
        iIoBuffer;
        //buffer for any pending IO operation
//            int
        iFilePointer;
        //position in file.
                LARGE_INTEGER       lFilePointer;
                //position in file.
                int
        iNextRec;
        //when reading, ordinal value of next
record
```

```
                // A "save point" is remembered
each time GetNextRecord is called with a start time
specified.
                // The next time it is called, if
start time is after the save point, we start scanning
from the
                // save point.  This is
particularly useful in FindBestInterval, where the
log is scanned repeatedly.
                JULIAN_TIME
        SavePtTime;
//            int
        iSavePtFilePointer;
                LARGE_INTEGER
        lSavePtFilePointer;
                int
        iSavePtNextRec;

                JULIAN_TIME        lastTS;
                                //when
writing sorted output, used to verify records are
sorted
                BOOL               bWrite;
                                //writing log
file
                BOOL               bCrashOpen;
                                // tolerate
bad headers and consistency checks
                BOOL
        bLogSorted;                             //
is log file sorted?  applies to both input and output
                JULIAN_TIME
        BeginTxnTS;                             //
timestamp of first (lowest) txn start
                JULIAN_TIME
        EndTxnTS;                    // timestamp
of last (highest) txn completion time
                int
        iRecCount;                              //
number of records in log file
                // To write a checkpoint
information into the header, need to know the
EndTxnTS for the
                // last record written to the
disk. It is not necessarily the last record in the
                // last written buffer, as the
last record may be only partially in the buffer.
                // So remember the timestamps for
2 last records that begin in the buffer - one of
                // them will the last complete
record written to disk.
                JULIAN_TIME
        PrevEndTxnTS;                   // timestamp
of the previous to last record
                union {
                        TXN_LOG_HEADER
        HeaderForCheckpoint;// header written on
every checkpoint
                        char
        szHeaderBuffer[512];          //
512 bytes is the minimum we can write to the disk
```

```
                } HeaderBuffer;      //need the
union because can't write sizeof(TXN_LOG_HEADER) -
too few bytes

                // Control record returned from
GetNextRecord if the file
                // currently opened for read was
not properly shut down
                struct
                {
                        TXN_RECORD_CONTROL
        RecHeader;
                        char
        szDriverName[DRIVER_NAME_LEN];

                } IncorrectShutDownRec;

                BYTE               *pCurrent;
                                //ptr to
current buffer
                BYTE
        *pBuffer[MAX_NUM_BUFFERS];

                PTXN_RECORD_HEADER  *TxnArray;
                                //transaction record pointer
array for sort

                DWORD              dwError;
                DWORD
        dwCheckpointError;          //error in
checkpoint thread
                HANDLE             hTxnFile;
                                //handle to log file
                HANDLE             hMapFile;
                                //map file used when
sorting the log
                HANDLE             hIoComplete;
                                //event to signify that
there are no pending IOs
                HANDLE             hLogFileIo;
                                //event to
signal the IO thread to write the inactive buffer
                HANDLE
        hStopCheckpointThread;       //event to
signal the checkpoint thread to exit

                Spinlock  Spin;
                                //spin lock to protect
the txn log file buffers
                Spinlock  WriteSpin;
                                //spin lock to protect
the WriteFile operation between IO and Checkpoint
threads

                FILE
        *tmpFile;           //temp file for merging
sorted pieces
                PBLOCK_HEADER
        tmpHeaders;                 //sorted
pointers block header
                BYTE
        **recPointers;      //record pointer
buffers for each sorted block
```

```
        PTXN_RECORD_HEADER  *recBuffers;
    //record buffers for each sorted block
        int
    *PointersRead;
    //# of pointers processed in each block
        BOOL        *BlockAvailable;
            //whether to check a particular
block for jmin

        int             nBlocks;
        int             jmin;

        //index (block-wise) of the lowest
timestamp record
        int
    iAvgRecordLen;
        //average record length

        int
    iSortedReturnedCount;
        //keeps track of the # of sorted records
returned through GetSortedRecord()

        BOOL       bIncorrectShutDown;
        // indicates whether the log
opened for read was not correctly shut
down

        int Write(BYTE *ptr, DWORD Size);
        static void LogFileIO(CTxnLog *);

        void LoadBuffers(int j);
        //used in sort/merge to load
record buffers

        static void
CheckpointThread(CTxnLog *);  // checkpointing thread

    public:

        CTxnLog(LPCTSTR szFileName, DWORD
dwOpts, char *szDriver = NULL);
        ~CTxnLog(void);

        int WriteToLog(PTXN_RECORD_TPCC
pTxnRcrd);
        int
WriteToLog(PTXN_RECORD_TPCC_DELIV_DEF pTxnRcrd);
        int
WriteToLog(PTXN_RECORD_CONTROL pCtrlRec);
        int WriteToLog(PTXN_RECORD_HEADER
pCtrlRec);
        int WriteToLog(PTXN_RECORD_TPCW
pTxnRcrd);        //support for TPC-W

        int WriteCtrlRecToLog(BYTE
SubType, LPTSTR lpStr, DWORD dwLen);

        void
CloseTransactionLogFile(void);

        PTXN_RECORD_HEADER
GetNextRecord(BOOL bSkipCtrlRecs = FALSE);
```

```
        PTXN_RECORD_HEADER
GetNextRecord(JULIAN_TIME SeekTimeT0, BOOL
bSkipCtrlRecs = FALSE);

        int Sort(void);
        PTXN_RECORD_HEADER
GetSortedRecord();

        inline BOOL IsSorted(void) {
return bLogSorted; };
        inline JULIAN_TIME BeginTS(void)
{ return BeginTxnTS; };
        inline JULIAN_TIME EndTS(void) {
return EndTxnTS; };
        inline int RecordCount(void) {
return iRecCount; };
};

class CTXNLOG_ERR : public CBaseErr
{
    public:
        enum CTXNLOG_ERRS
        {
            ERR_BAD_FILE_FORMAT,
        // "File format is invalid."

        ERR_UNKNOWN_LOG_VERSION,      // "Log file
version is unknown."
            ERR_BROKEN_LOG_FILE,
        // "Log file is broken."
            ERR_LOG_NOT_SORTED,
        // "Log file is not sorted"
            ERR_INVALID_TIME_SEQ,
        // "Internal Error: Record Time
Sequence invalid."
        };

        CTXNLOG_ERR(int iErr) :
CBaseErr(iErr) {};

        int ErrorType() {return
ERR_TYPE_TXNLOG;};
        char *ErrorTypeStr() { return
"TXN LOG"; }

        char *ErrorText()
        {
            static char *szMsgs[] =
{
                "File format
is invalid.",
                "Log file
version is unknown.",
                "Log file is
broken.",
                "Log file is
not sorted",
                "Internal
Error: Record Time Sequence invalid.",
                ""
            };
```

```
            for(int i = 0;
szMsgs[i][0]; i++)
            {
                if ( m_idMsg
== i )
        break;
            }

            return(szMsgs[i][0] ?
szMsgs[i] : ERR_UNKNOWN);
        };
};
```

txn_base.h

```
/*      FILE:           TXN_BASE.H
 *                          Microsoft
TPC-C Kit Ver. 4.69.000
 *                          Copyright
Microsoft, 1999
 *          All Rights Reserved
 *
 *                          Version
4.10.000 audited by Richard Gimarc, Performance
Metrics, 3/17/99
 *
 *      PURPOSE:  Header file for TPC-C txn class
implementation.
 *
 *   Change history:
 *          4.20.000 - updated rev number to
match kit
 */

#pragma once

// need to declare functions for import, unless
define has already been created
// by the DLL's .cpp module for export.
#ifndef DllDecl
#define DllDecl  __declspec( dllimport )
#endif

class DllDecl CTPCC_BASE
{
    public:
        CTPCC_BASE(void) {};
        virtual ~CTPCC_BASE(void) {};

        virtual PNEW_ORDER_DATA
    BuffAddr_NewOrder()          = 0;
        virtual PPAYMENT_DATA
    BuffAddr_Payment()           = 0;
        virtual PDELIVERY_DATA
    BuffAddr_Delivery()          = 0;
        virtual PSTOCK_LEVEL_DATA
    BuffAddr_StockLevel()        = 0;
        virtual PORDER_STATUS_DATA
    BuffAddr_OrderStatus()       = 0;
```

```
                virtual void NewOrder
        () = 0;
                virtual void Payment
        () = 0;
                virtual void Delivery
        () = 0;
                virtual void StockLevel
        () = 0;
                virtual void OrderStatus      ()
= 0;
};
```

_resource.h

```
//{{NO_DEPENDENCIES}}
// Microsoft Developer Studio generated include file.
// Used by tpcc_com_all.rc
//
#define IDS_PROJNAME                    100
#define IDR_TPCC                        101
#define IDR_NEWORDER                    102
#define IDR_ORDERSTATUS                 103
#define IDR_PAYMENT                     104
#define IDR_STOCKLEVEL                  105

// Next default values for new objects
//
#ifdef APSTUDIO_INVOKED
#ifndef APSTUDIO_READONLY_SYMBOLS
#define _APS_NEXT_RESOURCE_VALUE        202
#define _APS_NEXT_COMMAND_VALUE         32768
#define _APS_NEXT_CONTROL_VALUE         201
#define _APS_NEXT_SYMED_VALUE           106
#endif
#endif
```

Appendix B:

Database Design

The TPC-C database was created with the following Transact-SQL scripts:

backup.sql

```
--------------------------------------------------
-------------
--
--
-- File:   BACKUP.SQL
--
--       Microsoft TPC-C Benchmark Kit Ver. 4.61
--
--       Copyright Microsoft, 2005
--
--------------------------------------------------
-------------

DECLARE @startdate  DATETIME,
        @enddate        DATETIME

SELECT @startdate = GETDATE()
SELECT 'Start date:',
                CONVERT(VARCHAR(30),@startdate,
21)

DUMP DATABASE tpcc TO tpccback8, tpccback9,
tpccback10, tpccback11, tpccback12, tpccback13,
tpccback14 WITH init, stats = 1

SELECT @enddate = GETDATE()
SELECT 'End date: ',
                CONVERT(VARCHAR(30),@enddate, 21)
SELECT 'Elapsed time (in seconds): ',
                DATEDIFF(second, @startdate,
@enddate)
GO
```

backupdev.sql

```
--------------------------------------------------
-------------
--
--
-- File:   BACKUPDEV.SQL
--
--       Microsoft TPC-C Benchmark Kit Ver. 4.68
--
--       Copyright Microsoft, 2005
--
--
--
--------------------------------------------------
-------------

USE master
GO

-----------------------
-- create backup devices
```

```
-----------------------
EXEC sp_addumpdevice
'disk','tpccback8','T:\tpccback8.dmp'
GO
EXEC sp_addumpdevice
'disk','tpccback9','U:\tpccback9.dmp'
GO
EXEC sp_addumpdevice
'disk','tpccback10','V:\tpccback10.dmp'
GO
EXEC sp_addumpdevice
'disk','tpccback11','W:\tpccback11.dmp'
GO
EXEC sp_addumpdevice
'disk','tpccback12','X:\tpccback12.dmp'
GO
EXEC sp_addumpdevice
'disk','tpccback13','Y:\tpccback13.dmp'
GO
EXEC sp_addumpdevice
'disk','tpccback14','Z:\tpccback14.dmp'
GO
```

createdb.sql

```
--------------------------------------------------
-------------
--
--
-- File:   CREATEDB.SQL
--
--       Microsoft TPC-C Benchmark Kit Ver. 4.68
--
--       Copyright Microsoft, 2005
--
--
--
--------------------------------------------------
-------------

SET ANSI_NULL_DFLT_OFF ON
GO

USE master
GO

------------------------------------
-- Create temporary table for timing
------------------------------------
IF EXISTS( SELECT name FROM sysobjects WHERE name =
'tpcc_timer' )
    DROP TABLE tpcc_timer
GO

CREATE TABLE tpcc_timer
                (start_date  CHAR(30),
                 end_date    CHAR(30))
GO

INSERT INTO tpcc_timer VALUES(0,0)
```

```
GO

---------------------
-- Store starting time
---------------------
UPDATE  tpcc_timer
SET     start_date = (SELECT   CONVERT(CHAR(30),
GETDATE(), 21))
GO


---------------------------
-- create main database files
---------------------------
CREATE DATABASE tpcc
ON PRIMARY
(       NAME            = MSSQL_tpcc_root,
        FILENAME = 'c:\MSSQL_tpcc_root.mdf',
        SIZE            = 8MB,
        FILEGROWTH      = 0),

FILEGROUP MSSQL_stk_fg
(       NAME            = MSSQL_stk1,
        FILENAME  = 'c:\stk\stk1\',
        SIZE            = 25990MB,
        FILEGROWTH      = 0),
(       NAME            = MSSQL_stk2,
        FILENAME  = 'c:\stk\stk2\',
        SIZE            = 25990MB,
        FILEGROWTH      = 0),
(       NAME            = MSSQL_stk3,
        FILENAME  = 'c:\stk\stk3\',
        SIZE            = 25990MB,
        FILEGROWTH      = 0),
(       NAME            = MSSQL_stk4,
        FILENAME  = 'c:\stk\stk4\',
        SIZE            = 25990MB,
        FILEGROWTH      = 0),
(       NAME            = MSSQL_stk5,
        FILENAME  = 'c:\stk\stk5\',
        SIZE            = 25990MB,
        FILEGROWTH      = 0),
(       NAME            = MSSQL_stk6,
        FILENAME  = 'c:\stk\stk6\',
        SIZE            = 25990MB,
        FILEGROWTH      = 0),
(       NAME            = MSSQL_stk7,
        FILENAME  = 'c:\stk\stk7\',
        SIZE            = 25990MB,
        FILEGROWTH      = 0),
(       NAME            = MSSQL_stk8,
        FILENAME  = 'c:\stk\stk8\',
        SIZE            = 25990MB,
        FILEGROWTH      = 0),
(       NAME            = MSSQL_stk9,
        FILENAME  = 'c:\stk\stk9\',
        SIZE            = 25990MB,
        FILEGROWTH      = 0),
(       NAME            = MSSQL_stk10,
        FILENAME  = 'c:\stk\stk10\',
        SIZE            = 25990MB,
        FILEGROWTH      = 0),
```

```
(          NAME          = MSSQL_stk11,        FILEGROWTH       = 0),                              SIZE          = 25990MB,
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    SIZE          = 25990MB,             FILENAME = 'c:\stk\stk29\',              (          NAME          = MSSQL_stk45,
    FILEGROWTH       = 0),               SIZE          = 25990MB,                 FILENAME = 'c:\stk\stk45\',
(          NAME          = MSSQL_stk14,        FILEGROWTH       = 0),                   SIZE          = 25990MB,
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```

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        FILEGROWTH = 0),                                SIZE      = 25990MB,                      FILENAME  = 'c:\stk\stk104\',
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```

```
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```

```
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         FILEGROWTH = 0),
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```

```
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        FILEGROWTH        = 0),
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        SIZE              = 5999MB,
        FILEGROWTH        = 0),
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        SIZE              = 5999MB,
        FILEGROWTH        = 0),
(       NAME              = MSSQL_misc180,
        FILENAME = 'c:\misc\misc180\',
        SIZE              = 5999MB,
        FILEGROWTH        = 0)

LOG ON
(       NAME              = MSSQL_tpcc_log_1,
        FILENAME = 'E:',
        SIZE              = 1118200MB,
        FILEGROWTH        = 0),
(       NAME              = MSSQL_tpcc_log_2,
        FILENAME = 'F:',
        SIZE              = 1118200MB,
        FILEGROWTH        = 0),
(       NAME              = MSSQL_tpcc_log_3,
        FILENAME = 'G:',
        SIZE              = 1118200MB,
        FILEGROWTH        = 0),
(       NAME              = MSSQL_tpcc_log_4,
        FILENAME = 'H:',
        SIZE              = 1118200MB,
        FILEGROWTH        = 0)
COLLATE Latin1_General_BIN
GO

--------------------
-- Store ending time
--------------------
UPDATE  tpcc_timer
SET     end_date  = (SELECT   CONVERT(CHAR(30),
GETDATE(), 21))
GO

SELECT  DATEDIFF(second,(SELECT start_date FROM
tpcc_timer),(SELECT end_date FROM tpcc_timer))
GO

------------------------
-- remove temporary table
------------------------
IF EXISTS ( SELECT name FROM sysobjects WHERE name =
'tpcc_timer' )
    DROP TABLE tpcc_timer
GO
```

dbopt1.sql

```
--------------------------------------------------
------------
```

```
--
--
--  File:   DBOPT1.SQL
--
--          Microsoft TPC-C Benchmark Kit Ver. 4.68
--
--          Copyright Microsoft, 2006
--
--
--
--          Sets database options for load
--
--
--------------------------------------------------
------------
USE master
GO

ALTER DATABASE tpcc SET RECOVERY BULK_LOGGED
GO

EXEC sp_dboption tpcc,'trunc. log on chkpt.',TRUE
GO

ALTER DATABASE tpcc SET TORN_PAGE_DETECTION OFF
GO

ALTER DATABASE tpcc SET PAGE_VERIFY NONE
GO

USE tpcc
GO

CHECKPOINT
GO
```

dbopt2.sql

```
--------------------------------------------------
------------
--
--
--  File:   DBOPT2.SQL
--
--          Microsoft TPC-C Benchmark Kit Ver. 4.68
--
--          Copyright Microsoft, 2006
--
--
--
--          Sets database options after load
--
--
--------------------------------------------------
------------
ALTER DATABASE tpcc SET RECOVERY FULL
GO
```

```
USE tpcc
GO

CHECKPOINT
GO

sp_configure 'allow updates',1
GO

RECONFIGURE WITH OVERRIDE
GO

DECLARE  @msg              varchar(50)

--------------------------------------------------
--      OPTIONS FOR SQL SERVER 2000          --
-- Set option values for user-defined indexes --
--------------------------------------------------

SET     @msg   = ' '
PRINT   @msg
SET     @msg   = 'Setting SQL Server indexoptions'
PRINT   @msg
SET     @msg   = ' '
PRINT   @msg

EXEC sp_indexoption 'customer',
'DisAllowPageLocks',           TRUE
EXEC sp_indexoption 'district',
        'DisAllowPageLocks',           TRUE
EXEC sp_indexoption 'warehouse',
'DisAllowPageLocks',           TRUE
EXEC sp_indexoption 'stock',
'DisAllowPageLocks',           TRUE
EXEC sp_indexoption 'order_line',
'DisAllowRowLocks',      TRUE
EXEC sp_indexoption 'orders',
'DisAllowRowLocks',      TRUE
EXEC sp_indexoption 'new_order',
'DisAllowRowLocks',      TRUE
EXEC sp_indexoption 'item',
'DisAllowRowLocks',      TRUE
EXEC sp_indexoption 'item',
'DisAllowPageLocks',    False
GO

Print ' '
Print '*******************'
Print 'Pre-specified Locking Hierarchy:'
Print '    Lockflag = 0 ==> No pre-specified
hierarchy'
Print '   Lockflag = 1 ==> Lock at Page-level then
Table-level'
Print '   Lockflag = 2 ==> Lock at Row-level then
Table-level'
Print '   Lockflag = 3 ==> Lock at Table-level'
Print ' '

SELECT  name,
        lockflags
FROM    sysindexes
WHERE   object_id('warehouse')  = id OR
        object_id('district')   = id OR
```

```
           object_id('customer')   = id OR
           object_id('stock')      = id OR
           object_id('orders')     = id OR
           object_id('order_line') = id OR
           object_id('history')    = id OR
           object_id('new_order')  = id OR
           object_id('item')       = id
ORDER   BY lockflags asc
GO


sp_configure 'allow updates',0
GO


RECONFIGURE WITH OVERRIDE
GO


EXEC sp_dboption tpcc,        'auto update
statistics',          FALSE
EXEC sp_dboption tpcc,        'auto create
statistics',          FALSE
GO


DECLARE @db_id  int,
        @tbl_id int

SET    @db_id  = DB_ID('tpcc')
SET    @tbl_id = OBJECT_ID('tpcc..warehouse')
DBCC PINTABLE (@db_id, @tbl_id)

SET    @tbl_id = OBJECT_ID('tpcc..district')
DBCC PINTABLE (@db_id, @tbl_id)

SET    @tbl_id = OBJECT_ID('tpcc..new_order')
DBCC PINTABLE (@db_id, @tbl_id)

SET    @tbl_id = OBJECT_ID('tpcc..item')
DBCC PINTABLE (@db_id, @tbl_id)
GO
```

delivery.sql

```
-------------------------------------------------
------------
--
--
-- File:  DELIVERY.SQL
--
--       Microsoft TPC-C Benchmark Kit Ver. 4.68
--
--       Copyright Microsoft, 2006
--
--
--
--       Creates delivery stored procedure
--
--
--
--       Interface Level:   4.20.000
--
```

```
--
--
-------------------------------------------------
------------
SET QUOTED_IDENTIFIER OFF
GO

SET ANSI_NULLS ON
GO

USE tpcc
GO

IF EXISTS ( SELECT name FROM sysobjects WHERE name =
'tpcc_delivery' )
    DROP PROCEDURE tpcc_delivery
GO

CREATE PROC tpcc_delivery
              @w_id           int,

              @o_carrier_id   smallint

AS

DECLARE @d_id      tinyint,
        @o_id      int,
        @c_id      int,
        @total     money,
        @oid1      int,
        @oid2      int,
        @oid3      int,
        @oid4      int,
        @oid5      int,
        @oid6      int,
        @oid7      int,
        @oid8      int,
        @oid9      int,
        @oid10     int

SELECT  @d_id  = 0

BEGIN TRANSACTION d
    WHILE (@d_id < 10)
    BEGIN
        SELECT  @d_id  = @d_id + 1,
                @total = 0,
                @o_id  = 0

        SELECT  TOP 1
                @o_id  = no_o_id
        FROM    new_order WITH (serializable
updlock)
        WHERE   no_w_id = @w_id AND
                no_d_id = @d_id
        ORDER   BY no_o_id ASC

        IF (@@rowcount <> 0)
        BEGIN
            -- claim the order for this district
            DELETE  new_order
            WHERE   no_w_id = @w_id AND
                    no_d_id = @d_id AND
```

```
                    no_o_id = @o_id

            -- set carrier_id on this order (and get
customer id)
            UPDATE  orders
            SET     o_carrier_id   = @o_carrier_id,
                    @c_id          = o_c_id
            WHERE   o_w_id          = @w_id AND
                    o_d_id          = @d_id AND
                    o_id            = @o_id

            -- set date in all lineitems for this
order (and sum amounts)
            UPDATE  order_line
            SET     ol_delivery_d  = GETDATE(),
                    @total         = @total +
ol_amount
            WHERE   ol_w_id         = @w_id AND
                    ol_d_id         = @d_id AND
                    ol_o_id         = @o_id

            -- accummulate lineitem amounts for this
order into customer
            UPDATE  customer
            SET     c_balance       = c_balance +
@total,
                    c_delivery_cnt  = c_delivery_cnt
+ 1
            WHERE   c_w_id          = @w_id AND
                    c_d_id          = @d_id AND
                    c_id            = @c_id
        END

    SELECT @oid1   = CASE @d_id WHEN  1   THEN
@o_id ELSE @oid1   END,
           @oid2   = CASE @d_id WHEN  2   THEN
@o_id ELSE @oid2   END,
           @oid3   = CASE @d_id WHEN  3   THEN
@o_id ELSE @oid3   END,
           @oid4   = CASE @d_id WHEN  4   THEN
@o_id ELSE @oid4   END,
           @oid5   = CASE @d_id WHEN  5   THEN
@o_id ELSE @oid5   END,
           @oid6   = CASE @d_id WHEN  6   THEN
@o_id ELSE @oid6   END,
           @oid7   = CASE @d_id WHEN  7   THEN
@o_id ELSE @oid7   END,
           @oid8   = CASE @d_id WHEN  8   THEN
@o_id ELSE @oid8   END,
           @oid9   = CASE @d_id WHEN  9   THEN
@o_id ELSE @oid9   END,
           @oid10  = CASE @d_id WHEN  10  THEN
@o_id ELSE @oid10  END
    END

COMMIT TRANSACTION d

-- return delivery data to client

SELECT  @oid1,
        @oid2,
        @oid3,
        @oid4,
```

```
            @oid5,
            @oid6,
            @oid7,
            @oid8,
            @oid9,
            @oid10
GO

SET QUOTED_IDENTIFIER OFF
GO

SET ANSI_NULLS ON
GO
```

getargs.c

```
//      File:           GETARGS.C
//                              Microsoft
TPC-C Kit Ver. 4.51
//                              Copyright
Microsoft, 1996, 1997, 1998, 1999, 2000, 2001, 2002,
2003
//      Purpose:  Source file for command line
processing


// Includes
#include "tpcc.h"

//=====================================================
====================
//
// Function name: GetArgsLoader
//
//=====================================================
====================

void GetArgsLoader(int argc, char **argv,
TPCCLDR_ARGS *pargs)
{
    int          i;
    char *ptr;

#ifdef DEBUG
    printf("[%ld]DBG: Entering GetArgsLoader()\n",
(int) GetCurrentThreadId());
#endif

    /* init args struct with some useful values */
    pargs->server               = SERVER;
    pargs->user                 = USER;
    pargs->password             = PASSWORD;
    pargs->database             = DATABASE;
    pargs->batch                = BATCH;
    pargs->num_warehouses       = UNDEF;
        pargs->tables_all                   =
TRUE;
        pargs->table_item                   =
FALSE;
```

```
        pargs->table_warehouse              =
FALSE;
        pargs->table_customer               =
FALSE;
        pargs->table_orders                 =
FALSE;
        pargs->loader_res_file              =
LOADER_RES_FILE;
        pargs->log_path
        = LOADER_LOG_PATH;
        pargs->pack_size                    =
DEFLDPACKSIZE;
        pargs->starting_warehouse     =
DEF_STARTING_WAREHOUSE;
        pargs->build_index                  =
BUILD_INDEX;
        pargs->index_order                  =
INDEX_ORDER;
        pargs->index_script_path      =
INDEX_SCRIPT_PATH;
        pargs->scale_down                   =
SCALE_DOWN;

    /* check for zero command line args */
    if ( argc == 1 )
                GetArgsLoaderUsage();

    for (i = 1; i < argc; ++i)
    {
                if (argv[i][0] != '-' &&
argv[i][0] != '/')
                {
                printf("\nUnrecognized command");
                GetArgsLoaderUsage();
                exit(1);
                }

                ptr = argv[i];

                switch (ptr[1])
                {
                case '?':    /* Fall throught */
        GetArgsLoaderUsage();
                                break;

                case 'D':
                                pargs-
>database = ptr+2;
                                break;

                case 'P':
                                pargs-
>password = ptr+2;
                                break;

                case 'S':
                                pargs->server
= ptr+2;
                                break;

                case 'U':
```

```
                                pargs->user =
ptr+2;
                                break;

                case 'b':
                                pargs->batch
= atol(ptr+2);
                                break;

                case 'W':
                                pargs-
>num_warehouses = atol(ptr+2);
                                break;

                case 's':
                                pargs-
>starting_warehouse = atol(ptr+2);
                                break;

                case 't':
                                {
        pargs->tables_all = FALSE;
                                        if
(strcmp(ptr+2,"item") == 0)
        pargs->table_item = TRUE;
        else if (strcmp(ptr+2,"warehouse") == 0)
        pargs->table_warehouse = TRUE;
        else if (strcmp(ptr+2,"customer") == 0)
        pargs->table_customer = TRUE;
        else if (strcmp(ptr+2,"orders") == 0)
        pargs->table_orders = TRUE;
        else
                                        {
        printf("\nUnrecognized command");
        GetArgsLoaderUsage();
        exit(1);
                                        }
        break;
                                }
                                case 'f':
                                                pargs-
>loader_res_file = ptr+2;
                                break;
                                case 'L':
                                                pargs-
>log_path = ptr+2;
                                break;
```

```
                            case 'p':
                                    pargs-
>pack_size = atol(ptr+2);
                                    break;

                            case 'i':
                                    pargs-
>build_index = atol(ptr+2);
                                    break;

                            case 'o':
                                    pargs-
>index_order = atol(ptr+2);
                                    break;

                            case 'c':
                                    pargs-
>scale_down = atol(ptr+2);
                                    break;

                    case 'd':
                                    pargs-
>index_script_path = ptr+2;
                                    break;

                            default:
                                    GetArgsLoaderUsage();
                                    exit(-1);
                                    break;
                    }
        }

        /* check for required args */
        if (pargs->num_warehouses == UNDEF )
        {
                    printf("Number of Warehouses is
required\n");
                    exit(-2);
        }

        return;
}


//=====================================================
====================
//
// Function name: GetArgsLoaderUsage
//
//=====================================================
====================

void GetArgsLoaderUsage()
{

#ifdef DEBUG
    printf("[%ld]DBG: Entering
GetArgsLoaderUsage()\n", (int) GetCurrentThreadId());
#endif

    printf("TPCCLDR:\n\n");
```

```
            printf("Parameter
Default\n");
            printf("----------------------------------
--------------------------\n");
        printf("-W Number of Warehouses to Load
Required \n");
        printf("-S Server
%s\n", SERVER);
        printf("-U Username
%s\n", USER);
        printf("-P Password
%s\n", PASSWORD);
        printf("-D Database
%s\n", DATABASE);
            printf("-b Batch Size
%ld\n", (long) BATCH);
            printf("-p TDS packet size
%ld\n", (long) DEFLDPACKSIZE);
            printf("-L Loader BCP Log Path
%s\n", LOADER_LOG_PATH);
            printf("-f Loader Results Output Filename
%s\n", LOADER_RES_FILE);
            printf("-s Starting Warehouse
%ld\n", (long) DEF_STARTING_WAREHOUSE);
            printf("-i Build Option (data = 0, data and
index = 1)        %ld\n", (long) BUILD_INDEX);
            printf("-o Cluster Index Build Order
(before = 1, after = 0)  %ld\n", (long) INDEX_ORDER);
            printf("-c Build Scaled Database (normal =
0, tiny = 1)        %ld\n", (long) SCALE_DOWN);
            printf("-d Index Script Path
%s\n", INDEX_SCRIPT_PATH);
            printf("-t Table to Load
all tables \n");
        printf("    [item|warehouse|customer|orders]\n");
        printf("    Notes: \n");
        printf("      - the '-t' parameter may be included
multiple times to \n");
        printf("        specify multiple tables to be
loaded \n");
        printf("      - 'item' loads ITEM table \n");
        printf("      - 'warehouse' loads WAREHOUSE,
DISTRICT, and STOCK tables \n");
        printf("      - 'customer' loads CUSTOMER and
HISTORY tables \n");
        printf("      - 'orders' load NEW-ORDER, ORDERS,
ORDER-LINE tables \n");

            printf("\nNote:  Command line switches are
case sensitive.\n");

    exit(0);
}
```

idxcuscl.sql

```
----------------------------------------------------
------------
```

```
--
--
--  File:   IDXCUSCL.SQL
--
--          Microsoft TPC-C Benchmark Kit Ver. 4.68
--
--          Copyright Microsoft, 2006
--
--
--          Creates clustered index on customer table
--
----------------------------------------------------
------------
USE tpcc
GO

DECLARE @startdate  DATETIME,
        @enddate    DATETIME

SELECT  @startdate = GETDATE()
SELECT  'Start date:',
        CONVERT(VARCHAR(30),@startdate,21)

IF EXISTS ( SELECT name FROM sysindexes WHERE name =
'customer_c1' )
    DROP INDEX customer.customer_c1

CREATE UNIQUE CLUSTERED INDEX customer_c1 ON
customer(c_w_id, c_d_id, c_id)
    ON MSSQL_cust_fg

SELECT  @enddate = GETDATE()
SELECT  'End date:',
        CONVERT(VARCHAR(30),@enddate,21)
SELECT  'Elapsed time (in seconds): ',
        DATEDIFF(second, @startdate, @enddate)
GO
```

idxcusnc.sql

```
----------------------------------------------------
------------
--
--
--  File:   IDXCUSNC.SQL
--
--          Microsoft TPC-C Benchmark Kit Ver. 4.68
--
--          Copyright Microsoft, 2006
--
--
--
--          Creates non-clustered index on customer
table     --
----------------------------------------------------
------------
USE tpcc
GO
```

```
DECLARE @startdate  DATETIME,
        @enddate    DATETIME

SELECT @startdate = GETDATE()
SELECT 'Start date:',
       CONVERT(VARCHAR(30),@startdate,21)

IF EXISTS ( SELECT name FROM sysindexes WHERE name =
'customer_nc1' )
    DROP INDEX customer.customer_nc1

CREATE UNIQUE NONCLUSTERED INDEX customer_nc1 ON
customer(c_w_id, c_d_id, c_last, c_first, c_id)
    ON MSSQL_cust_fg

SELECT @enddate = GETDATE()
SELECT 'End date:',
       CONVERT(VARCHAR(30),@enddate,21)
SELECT 'Elapsed time (in seconds): ',
       DATEDIFF(second, @startdate, @enddate)
GO
```

idxdiscl.sql

```
-----------------------------------------------
-------------
--
--
-- File:   IDXDISCL.SQL
--
--          Microsoft TPC-C Benchmark Kit Ver. 4.68
--
--          Copyright Microsoft, 2006
--
--
--
--          Creates clustered index on district table
--
-----------------------------------------------
-------------
USE tpcc
GO

DECLARE @startdate  DATETIME,
        @enddate    DATETIME

SELECT @startdate = GETDATE()
SELECT 'Start date:',
       CONVERT(VARCHAR(30),@startdate,21)

IF EXISTS ( SELECT name FROM sysindexes WHERE name =
'district_c1' )
    DROP INDEX district.district_c1

CREATE UNIQUE CLUSTERED INDEX district_c1 ON
district(d_w_id, d_id)
    WITH FILLFACTOR=100 ON MSSQL_misc_fg

SELECT @enddate = GETDATE()
SELECT 'End date:',
```

```
       CONVERT(VARCHAR(30),@enddate,21)
SELECT 'Elapsed time (in seconds): ',
       DATEDIFF(second, @startdate, @enddate)
GO
```

idxhiscl.sql

```
-----------------------------------------------
-------------
--
--
-- File:   IDXHISCL.SQL
--
--          Microsoft TPC-C Benchmark Kit Ver. 4.68
--
--          Copyright Microsoft, 2006
--
--
--
--          Creates clustered index on history table
--
--
--
--          CAUTION: This index is only beneficial
for systems  --
--          CAUTION: with 8 or more processors.
--
--          CAUTION: It may negatively impact
performance on    --
--          CAUTION: systems with less than 8
processors.      --
--
--
-----------------------------------------------
-------------
USE tpcc
GO

DECLARE @startdate  DATETIME,
        @enddate    DATETIME

SELECT @startdate = GETDATE()
SELECT 'Start date:',
       CONVERT(VARCHAR(30),@startdate,21)

IF EXISTS ( SELECT name FROM sysindexes WHERE name =
'history_c1' )
    DROP INDEX history.history_c1

CREATE UNIQUE CLUSTERED INDEX history_c1 ON
history(h_c_w_id, h_date, h_c_d_id, h_c_id, h_amount)
    ON MSSQL_misc_fg

SELECT @enddate = GETDATE()
SELECT 'End date:',
       CONVERT(VARCHAR(30),@enddate,21)
SELECT 'Elapsed time (in seconds): ',
       DATEDIFF(second, @startdate, @enddate)
GO
```

idxitmcl.sql

```
-----------------------------------------------
-------------
--
--
-- File:   IDXITMCL.SQL
--
--          Microsoft TPC-C Benchmark Kit Ver. 4.68
--
--          Copyright Microsoft, 2006
--
--
--
--          Creates clustered index on item table
--
--
-----------------------------------------------
-------------
USE tpcc
GO

DECLARE @startdate  DATETIME,
        @enddate    DATETIME

SELECT @startdate = GETDATE()
SELECT 'Start date:',
       CONVERT(VARCHAR(30),@startdate,21)

IF EXISTS ( SELECT name FROM sysindexes WHERE name =
'item_c1' )
    DROP INDEX item.item_c1

CREATE UNIQUE CLUSTERED INDEX item_c1 ON item(i_id)
    ON MSSQL_misc_fg

SELECT @enddate = GETDATE()
SELECT 'End date:',
       CONVERT(VARCHAR(30),@enddate,21)
SELECT 'Elapsed time (in seconds): ',
       DATEDIFF(second, @startdate, @enddate)
GO
```

idxnodcl.sql

```
-----------------------------------------------
-------------
--
--
-- File:   IDXNODCL.SQL
--
--          Microsoft TPC-C Benchmark Kit Ver. 4.68
--
--          Copyright Microsoft, 2006
--
--
--
```

```
--          Creates clustered index on new-order
table           --
--
--
-------------------------------------------------
------------
USE tpcc
GO

DECLARE @startdate  DATETIME,
        @enddate    DATETIME

SELECT  @startdate = GETDATE()
SELECT  'Start date:',
        CONVERT(VARCHAR(30),@startdate,21)

IF EXISTS ( SELECT name FROM sysindexes WHERE name =
'new_order_c1' )
    DROP INDEX new_order.new_order_c1

CREATE UNIQUE CLUSTERED INDEX new_order_c1 ON
new_order(no_w_id, no_d_id, no_o_id)
    ON MSSQL_misc_fg

SELECT  @enddate = GETDATE()
SELECT  'End date:',
        CONVERT(VARCHAR(30),@enddate,21)
SELECT  'Elapsed time (in seconds): ',
        DATEDIFF(second, @startdate, @enddate)
GO
```

idxodlcl.sql

```
-------------------------------------------------
------------
--
--
-- File:   IDXODLCL.SQL
--
--          Microsoft TPC-C Benchmark Kit Ver. 4.68
--
--          Copyright Microsoft, 2006
--
--
--
--          Creates clustered index on order-line
table           --
--
--
-------------------------------------------------
------------
USE tpcc
GO

DECLARE @startdate  DATETIME,
        @enddate    DATETIME

SELECT  @startdate = GETDATE()
SELECT  'Start date:',
        CONVERT(VARCHAR(30),@startdate,21)
```

```
IF EXISTS ( SELECT name FROM sysindexes WHERE name =
'order_line_c1' )
    DROP INDEX order_line.order_line_c1

CREATE UNIQUE CLUSTERED INDEX order_line_c1 ON
order_line(ol_w_id, ol_d_id, ol_o_id, ol_number)
    ON MSSQL_ol_fg

SELECT  @enddate = GETDATE()
SELECT  'End date:',
        CONVERT(VARCHAR(30),@enddate,21)
SELECT  'Elapsed time (in seconds): ',
        DATEDIFF(second, @startdate, @enddate)
GO
```

idxordcl.sql

```
-------------------------------------------------
------------
--
--
-- File:   IDXORDCL.SQL
--
--          Microsoft TPC-C Benchmark Kit Ver. 4.68
--
--          Copyright Microsoft, 2006
--
--
--
--          Creates clustered index on orders table
--
--
--
-------------------------------------------------
------------
USE tpcc
GO

DECLARE @startdate  DATETIME,
        @enddate    DATETIME

SELECT  @startdate = GETDATE()
SELECT  'Start date:',
        CONVERT(VARCHAR(30),@startdate,21)

IF EXISTS ( SELECT name FROM sysindexes WHERE name =
'orders_c1' )
    DROP INDEX orders.orders_c1

CREATE UNIQUE CLUSTERED INDEX orders_c1 ON
orders(o_w_id, o_d_id, o_id)
    ON MSSQL_misc_fg

SELECT  @enddate = GETDATE()
SELECT  'End date:',
        CONVERT(VARCHAR(30),@enddate,21)
SELECT  'Elapsed time (in seconds): ',
        DATEDIFF(second, @startdate, @enddate)
GO
```

idxordnc.sql

```
-------------------------------------------------
------------
--
--
-- File:   IDXORDNC.SQL
--
--          Microsoft TPC-C Benchmark Kit Ver. 4.68
--
--          Copyright Microsoft, 2006
--
--
--
--          Creates non-clustered index on orders
table           --
-------------------------------------------------
------------
USE tpcc
GO

DECLARE @startdate  DATETIME,
        @enddate    DATETIME

SELECT  @startdate = GETDATE()
SELECT  'Start date:',
        CONVERT(VARCHAR(30),@startdate,21)

IF EXISTS ( SELECT name FROM sysindexes WHERE name =
'orders_nc1' )
    DROP INDEX orders.orders_nc1

CREATE INDEX orders_nc1 ON orders(o_w_id, o_d_id,
o_c_id, o_id)
    ON MSSQL_misc_fg

SELECT  @enddate = GETDATE()
SELECT  'End date:',
        CONVERT(VARCHAR(30),@enddate,21)
SELECT  'Elapsed time (in seconds): ',
        DATEDIFF(second, @startdate, @enddate)
GO
```

idxstkcl.sql

```
-------------------------------------------------
------------
--
--
-- File:   IDXSTKCL.SQL
--
--          Microsoft TPC-C Benchmark Kit Ver. 4.68
--
--          Copyright Microsoft, 2006
--
--
--
--          Creates clustered index on stock table
--
```

```
--
--
-------------------------------------------------
-------------
USE tpcc
GO

DECLARE @startdate  DATETIME,
        @enddate    DATETIME

SELECT  @startdate = GETDATE()
SELECT  'Start date:',
        CONVERT(VARCHAR(30),@startdate,21)

IF EXISTS ( SELECT name FROM sysindexes WHERE name =
'stock_c1' )
    DROP INDEX stock.stock_c1

CREATE UNIQUE CLUSTERED INDEX stock_c1 ON
stock(s_i_id, s_w_id)
    ON MSSQL_stk_fg

SELECT  @enddate = GETDATE()
SELECT  'End date:',
        CONVERT(VARCHAR(30),@enddate,21)
SELECT  'Elapsed time (in seconds): ',
        DATEDIFF(second, @startdate, @enddate)
GO
```

idxwarcl.sql

```
-------------------------------------------------
-------------
--
--
-- File:   IDXWARCL.SQL
--
--          Microsoft TPC-C Benchmark Kit Ver. 4.68
--
--          Copyright Microsoft, 2006
--
--
--
--          Creates clustered index on warehouse
table        --
--
--
-------------------------------------------------
-------------
USE tpcc
GO

DECLARE @startdate  DATETIME,
        @enddate    DATETIME

SELECT  @startdate = GETDATE()
SELECT  'Start date:',
        CONVERT(VARCHAR(30),@startdate,21)
```

```
IF EXISTS ( SELECT name FROM sysindexes WHERE name =
'warehouse_c1' )
    DROP INDEX warehouse.warehouse_c1

CREATE UNIQUE CLUSTERED INDEX warehouse_c1 ON
warehouse(w_id)
    WITH FILLFACTOR=100 ON MSSQL_misc_fg

SELECT  @enddate = GETDATE()
SELECT  'End date:',
        CONVERT(VARCHAR(30),@enddate,21)
SELECT  'Elapsed time (in seconds): ',
        DATEDIFF(second, @startdate, @enddate)
GO
```

neword.sql

```
-------------------------------------------------
-------------
--
--
-- File:   NEWORD.SQL
--
--          Microsoft TPC-C Benchmark Kit Ver. 4.68
--
--          Copyright Microsoft, 2006
--
--
--
--          Creates neworder stored procedure
--
--
--
--          Interface Level:    4.20.000
--
--
--
-------------------------------------------------
-------------
SET QUOTED_IDENTIFIER OFF
GO

SET ANSI_NULLS ON
GO

USE tpcc
GO

IF EXISTS ( SELECT name FROM sysobjects WHERE name =
'tpcc_neworder' )
    DROP PROCEDURE tpcc_neworder
GO

CREATE PROCEDURE    tpcc_neworder
                        @w_id           int,
                        @d_id           tinyint,
                        @c_id           int,
                        @o_ol_cnt       tinyint,
                        @o_all_local    tinyint,
```

```
                        @i_id1  int = 0, @s_w_id1
int = 0, @ol_qty1  smallint = 0,
                        @i_id2  int = 0, @s_w_id2
int = 0, @ol_qty2  smallint = 0,
                        @i_id3  int = 0, @s_w_id3
int = 0, @ol_qty3  smallint = 0,
                        @i_id4  int = 0, @s_w_id4
int = 0, @ol_qty4  smallint = 0,
                        @i_id5  int = 0, @s_w_id5
int = 0, @ol_qty5  smallint = 0,
                        @i_id6  int = 0, @s_w_id6
int = 0, @ol_qty6  smallint = 0,
                        @i_id7  int = 0, @s_w_id7
int = 0, @ol_qty7  smallint = 0,
                        @i_id8  int = 0, @s_w_id8
int = 0, @ol_qty8  smallint = 0,
                        @i_id9  int = 0, @s_w_id9
int = 0, @ol_qty9  smallint = 0,
                        @i_id10 int = 0, @s_w_id10
int = 0, @ol_qty10 smallint = 0,
                        @i_id11 int = 0, @s_w_id11
int = 0, @ol_qty11 smallint = 0,
                        @i_id12 int = 0, @s_w_id12
int = 0, @ol_qty12 smallint = 0,
                        @i_id13 int = 0, @s_w_id13
int = 0, @ol_qty13 smallint = 0,
                        @i_id14 int = 0, @s_w_id14
int = 0, @ol_qty14 smallint = 0,
                        @i_id15 int = 0, @s_w_id15
int = 0, @ol_qty15 smallint = 0


AS
DECLARE @w_tax          smallmoney,
        @d_tax          smallmoney,
        @c_last         char(16),
        @c_credit       char(2),
        @c_discount     smallmoney,
        @i_price        smallmoney,
        @i_name         char(24),
        @i_data         char(50),
        @o_entry_d      datetime,
        @remote_flag    int,
        @s_quantity     smallint,
        @s_data         char(50),
        @s_dist         char(24),
        @li_no          int,
        @o_id           int,
        @commit_flag    tinyint,
        @li_id          int,
        @li_s_w_id      int,
        @li_qty         smallint,
        @ol_number      int,
        @c_id_local     int

BEGIN

BEGIN TRANSACTION n

-------------------------------------------------
------
```

```
-- get district tax and next availible order id and
update
-- plus initialize local variables
-------------------------------------------------
------
    UPDATE  district
    SET     @d_tax         = d_tax,
            @o_id          = d_next_o_id,
            d_next_o_id    = d_next_o_id + 1,
            @o_entry_d     = GETDATE(),
            @li_no         = 0,
            @commit_flag   = 1
    WHERE   d_w_id         = @w_id AND
            d_id           = @d_id

---------------------
-- process orderlines
---------------------
    WHILE (@li_no < @o_ol_cnt)
    BEGIN
        SELECT  @li_no  = @li_no + 1

---------------------------------------------
-- set i_id, s_w_id, and qty for this lineitem
---------------------------------------------
        SELECT  @li_id = CASE @li_no
                            WHEN 1 THEN @i_id1
                            WHEN 2 THEN @i_id2
                            WHEN 3 THEN @i_id3
                            WHEN 4 THEN @i_id4
                            WHEN 5 THEN @i_id5
                            WHEN 6 THEN @i_id6
                            WHEN 7 THEN @i_id7
                            WHEN 8 THEN @i_id8
                            WHEN 9 THEN @i_id9
                            WHEN 10 THEN @i_id10
                            WHEN 11 THEN @i_id11
                            WHEN 12 THEN @i_id12
                            WHEN 13 THEN @i_id13
                            WHEN 14 THEN @i_id14
                            WHEN 15 THEN @i_id15
                        END,
            @li_s_w_id = CASE @li_no
                            WHEN 1 THEN @s_w_id1
                            WHEN 2 THEN @s_w_id2
                            WHEN 3 THEN @s_w_id3
                            WHEN 4 THEN @s_w_id4
                            WHEN 5 THEN @s_w_id5
                            WHEN 6 THEN @s_w_id6
                            WHEN 7 THEN @s_w_id7
                            WHEN 8 THEN @s_w_id8
                            WHEN 9 THEN @s_w_id9
                            WHEN 10 THEN
@s_w_id10
                            WHEN 11 THEN
@s_w_id11
                            WHEN 12 THEN
@s_w_id12
                            WHEN 13 THEN
@s_w_id13
                            WHEN 14 THEN
@s_w_id14

                            WHEN 15 THEN
@s_w_id15
                        END,

            @li_qty = CASE @li_no
                            WHEN 1 THEN @ol_qty1
                            WHEN 2 THEN @ol_qty2
                            WHEN 3 THEN @ol_qty3
                            WHEN 4 THEN @ol_qty4
                            WHEN 5 THEN @ol_qty5
                            WHEN 6 THEN @ol_qty6
                            WHEN 7 THEN @ol_qty7
                            WHEN 8 THEN @ol_qty8
                            WHEN 9 THEN @ol_qty9
                            WHEN 10 THEN
@ol_qty10
                            WHEN 11 THEN
@ol_qty11
                            WHEN 12 THEN
@ol_qty12
                            WHEN 13 THEN
@ol_qty13
                            WHEN 14 THEN
@ol_qty14
                            WHEN 15 THEN
@ol_qty15
                        END

--------------------------------------
-- get item data (no one updates item)
--------------------------------------
        SELECT  @i_price  = i_price,
                @i_name   = i_name,
                @i_data   = i_data
        FROM    item WITH (repeatableread)
        WHERE   i_id      = @li_id

---------------------
-- update stock values
---------------------
        UPDATE stock
        SET    s_ytd          = s_ytd + @li_qty,
               @s_quantity    = s_quantity   =
s_quantity - @li_qty +
                                CASE WHEN
(s_quantity - @li_qty < 10) THEN 91 ELSE 0 END,
               s_order_cnt    = s_order_cnt + 1,
               s_remote_cnt   = s_remote_cnt +
                                CASE WHEN
(@li_s_w_id = @w_id) THEN 0 ELSE 1 END,
               @s_data        = s_data,
               @s_dist        = CASE @d_id
                                    WHEN 1  THEN
s_dist_01
                                    WHEN 2  THEN
s_dist_02
                                    WHEN 3  THEN
s_dist_03
                                    WHEN 4  THEN
s_dist_04
                                    WHEN 5  THEN
s_dist_05

                                    WHEN 6  THEN
s_dist_06
                                    WHEN 7  THEN
s_dist_07
                                    WHEN 8  THEN
s_dist_08
                                    WHEN 9  THEN
s_dist_09
                                    WHEN 10 THEN
s_dist_10
                                 END
        WHERE   s_i_id        = @li_id AND
                s_w_id        = @li_s_w_id

-------------------------------------------------
----------------
-- if there actually is a stock (and item) with
these ids, go to work
-------------------------------------------------
----------------
        IF (@@rowcount > 0)
        BEGIN
-------------------------------------------------
------
-- insert order_line data (using data from item and
stock)
-------------------------------------------------
------
            INSERT INTO order_line VALUES(  @o_id,
                                            @d_id,

                                            @w_id,
                                            @li_no,
                                            @li_id,
                                            'dec 31,
1899',
                                            @i_price
* @li_qty,

@li_s_w_id,
                                            @li_qty,
                                            @s_dist)

---------------------------------
-- send line-item data to client
---------------------------------
            SELECT  @i_name,
                    @s_quantity,
                    b_g = CASE  WHEN (
(patindex('%ORIGINAL%',@i_data) > 0) AND

(patindex('%ORIGINAL%',@s_data) > 0) )

THEN 'B' ELSE 'G' END,
                    @i_price,
                    @i_price * @li_qty
                    END
                ELSE
                BEGIN
-------------------------------------------------
-----
```

```
-- no item (or stock) found - triggers rollback
condition
-------------------------------------------------
-----
          SELECT  '',0,'',0,0
          SELECT  @commit_flag   = 0
                    END
     END
-------------------------------------------------
--
-- get customer last name, discount, and credit
rating
-------------------------------------------------
--
     SELECT  @c_last    = c_last,
             @c_discount = c_discount,
             @c_credit  = c_credit,
             @c_id_local = c_id
     FROM    customer WITH (repeatableread)
     WHERE   c_id      = @c_id AND
             c_w_id    = @w_id AND
             c_d_id    = @d_id

-------------------------------------
-- insert fresh row into orders table
-------------------------------------
     INSERT INTO orders VALUES ( @o_id,
                                 @d_id,
                                 @w_id,
                                 @c_id_local,
                                 0,
                                 @o_ol_cnt,
                                 @o_all_local,
                                 @o_entry_d)

----------------------------------------------
-- insert corresponding row into new-order table
----------------------------------------------
     INSERT INTO new_order VALUES (  @o_id,
                                     @d_id,
                                     @w_id)

-----------------------
-- select warehouse tax
-----------------------
     SELECT  @w_tax = w_tax
     FROM    warehouse WITH (repeatableread)
     WHERE   w_id    = @w_id

     IF (@commit_flag = 1)

                 COMMIT TRANSACTION n
     ELSE
------------------------------
-- all that work for nuthin!!!
------------------------------
          ROLLBACK TRANSACTION n

------------------------------
-- return order data to client
------------------------------
     SELECT  @w_tax,
             @d_tax,
```

```
             @o_id,
             @c_last,
             @c_discount,
             @c_credit,
             @o_entry_d,
             @commit_flag
END
GO

SET QUOTED_IDENTIFIER OFF
GO

SET ANSI_NULLS ON
GO
```

null-txns.sql

```
-------------------------------------------------
------------
--
--
-- File:   NULL-TXNS.SQL
--
--         Microsoft TPC-C Benchmark Kit Ver. 4.68
--
--         Copyright Microsoft, 2006
--
--
--
--         This script will create stored procs
which         --
--         accept the same parameters and return
correctly    --
--         formed results sets to match the standard
TPC-C        --
--         stored procs.  Of course, the advantage
is that      --
--         these stored procs place almost no load
on           --
--         SQL Server and do not require a database.
--
--
--
--         Interface Level:    4.10.000
--
--
--
-------------------------------------------------
------------
USE tpcc
GO

IF EXISTS ( SELECT name FROM sysobjects WHERE name =
'tpcc_delivery' )
    DROP PROCEDURE tpcc_delivery
GO
IF EXISTS ( SELECT name FROM sysobjects WHERE name =
'tpcc_neworder' )
    DROP PROCEDURE tpcc_neworder
GO
```

```
IF EXISTS ( SELECT name FROM sysobjects WHERE name =
'tpcc_orderstatus' )
    DROP PROCEDURE tpcc_orderstatus
GO
IF EXISTS ( SELECT name FROM sysobjects WHERE name =
'tpcc_payment' )
    DROP PROCEDURE tpcc_payment
GO
IF EXISTS ( SELECT name FROM sysobjects WHERE name =
'tpcc_stocklevel' )
    DROP PROCEDURE tpcc_stocklevel
GO
IF EXISTS ( SELECT name FROM sysobjects WHERE name =
'tpcc_version' )
    DROP PROCEDURE tpcc_version
GO
IF EXISTS ( SELECT name FROM sysobjects WHERE name =
'order_line_null' )
    DROP PROCEDURE order_line_null
GO

CREATE PROCEDURE    tpcc_delivery
                    @w_id          int,

                    @o_carrier_id   smallint

AS

DECLARE @d_id      tinyint,
        @o_id      int,
        @c_id      int,
        @total     numeric(12,2),
        @oid1      int,
        @oid2      int,
        @oid3      int,
        @oid4      int,
        @oid5      int,
        @oid6      int,
        @oid7      int,
        @oid8      int,
        @oid9      int,
        @oid10     int,
        @delaytime  varchar(30)

-------------------------------------------------
-- uniform random delay of 0 - 1 second; avg = 0.50
-------------------------------------------------
SELECT  @delaytime = '00:00:0' +
CAST(CAST((RAND()*1.00) AS decimal(4,3)) AS char(5))

WAITFOR delay @delaytime

SELECT  3001, 3001, 3001, 3001, 3001, 3001, 3001,
3001, 3001, 3001
GO

CREATE PROCEDURE    tpcc_neworder
                    @w_id          int,
                    @d_id          tinyint,
                    @c_id          int,
                    @o_ol_cnt      tinyint,
                    @o_all_local   tinyint,
```

```
                    @i_id1  int = 0, @s_w_id1 int
= 0, @ol_qty1 smallint = 0,
                    @i_id2  int = 0, @s_w_id2 int
= 0, @ol_qty2 smallint = 0,
                    @i_id3  int = 0, @s_w_id3 int
= 0, @ol_qty3 smallint = 0,
                    @i_id4  int = 0, @s_w_id4 int
= 0, @ol_qty4 smallint = 0,
                    @i_id5  int = 0, @s_w_id5 int
= 0, @ol_qty5 smallint = 0,
                    @i_id6  int = 0, @s_w_id6 int
= 0, @ol_qty6 smallint = 0,
                    @i_id7  int = 0, @s_w_id7 int
= 0, @ol_qty7 smallint = 0,
                    @i_id8  int = 0, @s_w_id8 int
= 0, @ol_qty8 smallint = 0,
                    @i_id9  int = 0, @s_w_id9 int
= 0, @ol_qty9 smallint = 0,
                    @i_id10 int = 0, @s_w_id10
int = 0, ol_qty10 smallint = 0,
                    @i_id11 int = 0, @s_w_id11
int = 0, @ol_qty11 smallint = 0,
                    @i_id12 int = 0, @s_w_id12
int = 0, @ol_qty12 smallint = 0,
                    @i_id13 int = 0, @s_w_id13
int = 0, @ol_qty13 smallint = 0,
                    @i_id14 int = 0, @s_w_id14
int = 0, @ol_qty14 smallint = 0,
                    @i_id15 int = 0, @s_w_id15
int = 0, @ol_qty15 smallint = 0


AS
DECLARE @w_tax          numeric(4,4),
        @d_tax          numeric(4,4),
        @c_last         char(16),
        @c_credit       char(2),
        @c_discount     numeric(4,4),
        @i_price        numeric(5,2),
        @i_name         char(24),
        @o_entry_d      datetime,
        @li_no          int,
        @o_id           int,
        @commit_flag    tinyint,
        @li_id          int,
        @li_qty         smallint,
        @delaytime      varchar(30)

BEGIN
    -----------------------------------------------
---
    -- uniform random delay of 0 - 0.6 second; avg =
0.3
    -----------------------------------------------
---
    SELECT  @delaytime  = '00:00:0' +
CAST(CAST((RAND()*0.60) AS decimal(4,3)) AS char(5))

    WAITFOR delay @delaytime

    ---------------------
    -- process orderlines
```

```
---------------------
SELECT @commit_flag     = 1,
       @li_no           = 0

WHILE (@li_no < @o_ol_cnt)
BEGIN
    SELECT  @li_id  = CASE @li_no
                            WHEN  1 THEN @i_id1
                            WHEN  2 THEN @i_id2
                            WHEN  3 THEN @i_id3
                            WHEN  4 THEN @i_id4
                            WHEN  5 THEN @i_id5
                            WHEN  6 THEN @i_id6
                            WHEN  7 THEN @i_id7
                            WHEN  8 THEN @i_id8
                            WHEN  9 THEN @i_id9
                            WHEN 10 THEN @i_id10
                            WHEN 11 THEN @i_id11
                            WHEN 12 THEN @i_id12
                            WHEN 13 THEN @i_id13
                            WHEN 14 THEN @i_id14
                            WHEN 15 THEN @i_id15
                      END

    SELECT  @li_no      = @li_no + 1


    SELECT  @i_price    = 23.45, @li_qty = @li_no

    IF (@li_id = 999999)
    BEGIN
        SELECT '',0,'',0,0

        SELECT  @commit_flag = 0
    END
    ELSE
    BEGIN
        SELECT 'Item Name blah',
               17,
               'G',
               @i_price,
               @i_price * @li_qty
    END
END

-------------------------------
-- return order data to client
-------------------------------
SELECT @w_tax       = 0.1234,
       @d_tax       = 0.0987,
       @o_id        = 3001,
       @c_last      = 'BAROUGHTABLE',
       @c_discount = 0.2198,
       @c_credit    = 'GC',
       @o_entry_d   = GETDATE()

SELECT @w_tax,
       @d_tax,
       @o_id,
       @c_last,
       @c_discount,
       @c_credit,
       @o_entry_d,
```

```
            @commit_flag

END
GO

CREATE PROCEDURE    tpcc_orderstatus
                        @w_id       int,
                        @d_id       tinyint,

                        @c_id       int,
                        @c_last     char(16) = ''

AS
DECLARE @c_balance      numeric(12,2),
        @c_first        char(16),
        @c_middle       char(2),
        @o_id           int,
        @o_entry_d      datetime,
        @o_carrier_id   smallint,
        @ol_cnt         smallint,
        @delaytime      varchar(30)

---------------------------------------------------
-- uniform random delay of 0 - 0.2 second; avg = 0.1
---------------------------------------------------
SELECT @delaytime  = '00:00:0' +
CAST(CAST((RAND()*0.20) AS decimal(4,3)) AS char(5))

WAITFOR delay @delaytime

SELECT @c_id        = 113,
       @c_balance   = -10.00,
       @c_first     = '8YCodgytqCj8',
       @c_middle    = 'OE',
       @c_last      = 'OUGHTOUGHTABLE',
       @o_id        = 3456,
       @o_entry_d = GETDATE(),
       @o_carrier_id  = 1

SELECT @ol_cnt = (RAND() * 11) + 5

SET    ROWCOUNT @ol_cnt

SELECT  ol_supply_w_id,
        ol_i_id,
        ol_quantity,
        ol_amount,
        ol_delivery_d
FROM    order_line_null

SELECT  @c_id,
        @c_last,
        @c_first,
        @c_middle,
        @o_entry_d,
        @o_carrier_id,
        @c_balance,
        @o_id
GO

CREATE PROCEDURE    tpcc_payment
```

```
                    @w_id        int,
                    @c_w_id      int,
                    @h_amount    numeric(6,2),
                    @d_id        tinyint,
                    @c_d_id      tinyint,
                    @c_id        int,
                    @c_last      char(16) = ''

AS
DECLARE @w_street_1      char(20),
        @w_street_2      char(20),
        @w_city          char(20),
        @w_state         char(2),
        @w_zip           char(9),
        @w_name          char(10),
        @d_street_1      char(20),
        @d_street_2      char(20),
        @d_city          char(20),
        @d_state         char(2),
        @d_zip           char(9),
        @d_name          char(10),
        @c_first         char(16),
        @c_middle        char(2),
        @c_street_1      char(20),
        @c_street_2      char(20),
        @c_city          char(20),
        @c_state         char(2),
        @c_zip           char(9),
        @c_phone         char(16),
        @c_since         datetime,
        @c_credit        char(2),
        @c_credit_lim    numeric(12,2),
        @c_balance       numeric(12,2),
        @c_discount      numeric(4,4),
        @data            char(500),
        @c_data          char(500),
        @datetime        datetime,
        @w_ytd           numeric(12,2),
        @d_ytd           numeric(12,2),
        @cnt             smallint,
        @val             smallint,
        @screen_data              char(200),
        @d_id_local      tinyint,
        @w_id_local      int,
        @c_id_local      int,
        @delaytime       varchar(30)

--------------------------------------------------
-- uniform random delay of 0 - 0.3 second; avg = 0.15
--------------------------------------------------
SELECT  @delaytime = '00:00:0' +
CAST(CAST((RAND()*0.20) AS decimal(4,3)) AS char(5))

WAITFOR delay @delaytime

SELECT  @screen_data    = ''

-----------------------------------------
-- get customer info and update balances
-----------------------------------------
SELECT  @d_street_1 = 'rqSHHakqyV',
        @d_street_2 = 'zZ98nW3BR2s',
```

```
        @d_city      = 'ArNr4GNFV9',
        @d_state     = 'aV',
        @d_zip       = '453511111'

---------------------------------------------
-- get warehouse data and update year-to-date
---------------------------------------------
SELECT  @w_street_1 = 'rqSHHakqyV',
        @w_street_2 = 'zZ98nW3BR2s',
        @w_city      = 'ArNr4GNFV9',
        @w_state     = 'aV',
        @w_zip       = '453511111'

SELECT  @c_id               = 123,
        @c_balance          = -10000.00,
        @c_first            = 'KmR03Xureb',
        @c_middle           = 'OE',
        @c_last             = 'BAROUGHTBAR',
        @c_street_1         = 'QpGdOHjv8mR9vNI8V',
        @c_street_2         = 'dzKoCObBqbC3yu',
        @c_city             = 'zAKZXdC037FQxq',
        @c_state            = 'QA',
        @c_zip              = '700311111',
        @c_phone            = '2967264064528555',
        @c_credit           = 'GC',
        @c_credit_lim       = 50000.00,
        @c_discount         = 0.3069,
        @c_since            = GETDATE(),
        @datetime           = GETDATE()

------------------------
-- return data to client
------------------------
SELECT  @c_id,
        @c_last,
        @datetime,
        @w_street_1,
        @w_street_2,
        @w_city,
        @w_state,
        @w_zip,
        @d_street_1,
        @d_street_2,
        @d_city,
        @d_state,
        @d_zip,
        @c_first,
        @c_middle,
        @c_street_1,
        @c_street_2,
        @c_city,
        @c_state,
        @c_zip,
        @c_phone,
        @c_since,
        @c_credit,
        @c_credit_lim,
        @c_discount,
        @c_balance,
        @screen_data
GO

CREATE PROCEDURE    tpcc_stocklevel
```

```
                    @w_id        int,
                    @d_id        tinyint,
                    @threshhold  smallint
AS
DECLARE @delaytime  varchar(30)

--------------------------------------------------
-- uniform random delay of 0 - 3.6 second; avg = 1.8
--------------------------------------------------
SELECT  @delaytime = '00:00:0' +
CAST(CAST((RAND()*0.20) AS decimal(4,3)) AS char(5))

WAITFOR delay @delaytime

SELECT  49
GO

CREATE PROCEDURE tpcc_version

AS
DECLARE @version     char(8)

BEGIN
    SELECT  @version = '4.10.000'

    SELECT  @version AS 'Version'
END
GO

CREATE TABLE    order_line_null (
                                    [ol_i_id] [int]
NOT NULL ,
                                    [ol_supply_w_id]
[int] NOT NULL ,
                                    [ol_delivery_d]
[datetime] NOT NULL ,
                                    [ol_quantity]
[smallint] NOT NULL ,
                                    [ol_amount]
[numeric](6, 2) NOT NULL
) ON [PRIMARY]
GO

INSERT INTO order_line_null VALUES ( 101, 1,
GETDATE(), 1, 123.45 )
INSERT INTO order_line_null VALUES ( 102, 1,
GETDATE(), 2, 123.45 )
INSERT INTO order_line_null VALUES ( 103, 1,
GETDATE(), 3, 123.45 )
INSERT INTO order_line_null VALUES ( 104, 1,
GETDATE(), 4, 123.45 )
INSERT INTO order_line_null VALUES ( 105, 1,
GETDATE(), 5, 123.45 )
INSERT INTO order_line_null VALUES ( 106, 1,
GETDATE(), 1, 123.45 )
INSERT INTO order_line_null VALUES ( 107, 1,
GETDATE(), 2, 123.45 )
INSERT INTO order_line_null VALUES ( 108, 1,
GETDATE(), 3, 123.45 )
INSERT INTO order_line_null VALUES ( 109, 1,
GETDATE(), 4, 123.45 )
INSERT INTO order_line_null VALUES ( 110, 1,
GETDATE(), 5, 123.45 )
```

```
INSERT INTO order_line_null VALUES ( 111, 1,
GETDATE(), 1, 123.45 )
INSERT INTO order_line_null VALUES ( 112, 1,
GETDATE(), 2, 123.45 )
INSERT INTO order_line_null VALUES ( 113, 1,
GETDATE(), 3, 123.45 )
INSERT INTO order_line_null VALUES ( 114, 1,
GETDATE(), 4, 123.45 )
INSERT INTO order_line_null VALUES ( 115, 1,
GETDATE(), 5, 123.45 )
GO
```

ordstat.sql

```
--------------------------------------------------
------------
--
--
--   File:   ORDSTAT.SQL
--
--           Microsoft TPC-C Benchmark Kit Ver. 4.68
--
--           Copyright Microsoft, 2006
--
--
--
--           Creates order status stored procedure
--
--
--
--           Interface Level:    4.20.000
--
--
--
--------------------------------------------------
------------
SET QUOTED_IDENTIFIER OFF
GO

SET ANSI_NULLS ON
GO

USE tpcc
GO

IF EXISTS ( SELECT name FROM sysobjects WHERE name =
'tpcc_orderstatus' )
    DROP PROCEDURE tpcc_orderstatus
GO

CREATE PROCEDURE    tpcc_orderstatus
                    @w_id       int,
                    @d_id       tinyint,

                    @c_id       int,
                    @c_last     char(16) = ''

AS
DECLARE @c_balance      money,
```

```
        @c_first        char(16),
        @c_middle       char(2),
        @o_id           int,
        @o_entry_d      datetime,
        @o_carrier_id   smallint,
        @cnt            smallint

BEGIN TRANSACTION o
    IF (@c_id = 0)
    BEGIN
        --------------------------------------------
        --  get customer id and info using last name
        --------------------------------------------
        SELECT  @cnt        = (count(*)+1)/2
        FROM    customer WITH (repeatableread)
        WHERE   c_last = @c_last AND
                c_w_id = @w_id AND
                c_d_id = @d_id

        SET     rowcount @cnt

        SELECT  @c_id        = c_id,
                @c_balance   = c_balance,
                @c_first     = c_first,
                @c_last      = c_last,
                @c_middle    = c_middle
        FROM    customer WITH (repeatableread)
        WHERE   c_last       = @c_last AND
                c_w_id       = @w_id AND
                c_d_id       = @d_id
        ORDER   BY c_w_id, c_d_id, c_last, c_first

        SET rowcount 0
    END
    ELSE
    BEGIN
        -----------------------------
        --  get customer info if by id
        -----------------------------
        SELECT  @c_balance = c_balance,
                @c_first   = c_first,
                @c_middle  = c_middle,
                @c_last    = c_last
        FROM    customer WITH (repeatableread)
        WHERE   c_id       = @c_id AND
                c_d_id     = @d_id AND
                c_w_id     = @w_id

        SELECT  @cnt            = @@rowcount
    END

    ----------------------
    --  if no such customer
    ----------------------
    IF (@cnt = 0)
    BEGIN
        RAISERROR('Customer not found',18,1)
        GOTO custnotfound
    END

    ------------------
    --  get order info
    ------------------
```

```
    SELECT  @o_id           = o_id,
            @o_entry_d      = o_entry_d,
            @o_carrier_id   = o_carrier_id

    FROM    orders WITH (serializable)
    WHERE   o_c_id          = @c_id AND
            o_d_id          = @d_id AND
            o_w_id          = @w_id
    ORDER   BY o_id ASC

    -------------------------------------------
    --  select order lines for the current order
    -------------------------------------------
    SELECT  ol_supply_w_id,
            ol_i_id,
            ol_quantity,
            ol_amount,
            ol_delivery_d
    FROM    order_line WITH (repeatableread)
    WHERE   ol_o_id = @o_id AND
            ol_d_id = @d_id AND
            ol_w_id = @w_id

custnotfound:

COMMIT TRANSACTION o

------------------------
--  return data to client
------------------------
SELECT  @c_id,
        @c_last,
        @c_first,
        @c_middle,

        @o_entry_d,
        @o_carrier_id,
        @c_balance,
        @o_id
GO
```

payment.sql

```
--------------------------------------------------
------------
--
--
--   File:   PAYMENT.SQL
--
--           Microsoft TPC-C Benchmark Kit Ver. 4.68
--
--           Copyright Microsoft, 2006
--
--
--
--           Creates payment stored procedure
--
--
--
```

```
--            Interface Level:    4.20.000
--
--
--
--------------------------------------------------
-------------
SET QUOTED_IDENTIFIER OFF
GO

SET ANSI_NULLS ON
GO

USE tpcc
GO

IF EXISTS ( SELECT name FROM sysobjects WHERE name =
'tpcc_payment' )
    DROP PROCEDURE tpcc_payment
GO

CREATE PROCEDURE    tpcc_payment
                    @w_id       int,
                    @c_w_id     int,
                    @h_amount   smallmoney,
                    @d_id       tinyint,
                    @c_d_id     tinyint,
                    @c_id       int,
                    @c_last     char(16) = ""


AS
DECLARE @w_street_1     char(20),
        @w_street_2     char(20),
        @w_city         char(20),
        @w_state        char(2),
        @w_zip          char(9),
        @w_name         char(10),
        @d_street_1     char(20),
        @d_street_2     char(20),
        @d_city         char(20),
        @d_state        char(2),
        @d_zip          char(9),
        @d_name         char(10),
        @c_first        char(16),
        @c_middle       char(2),
        @c_street_1     char(20),
        @c_street_2     char(20),
        @c_city         char(20),
        @c_state        char(2),
        @c_zip          char(9),
        @c_phone        char(16),
        @c_since        datetime,
        @c_credit       char(2),
        @c_credit_lim   money,
        @c_balance      money,
        @c_discount     smallmoney,
        @c_data         char(42),
        @datetime       datetime,
        @w_ytd          money,
        @d_ytd          money,
        @cnt            smallint,
        @val            smallint,
        @screen_data    char(200),
```

```
        @d_id_local     tinyint,
        @w_id_local     int,
        @c_id_local     int

SELECT  @screen_data    = ""

BEGIN TRANSACTION p
    -- get payment date
    SELECT  @datetime = GETDATE()

    IF (@c_id = 0)
    BEGIN
        -- get customer id and info using last name
        SELECT  @cnt    = COUNT(*)
        FROM    customer WITH (repeatableread)
        WHERE   c_last = @c_last AND
                            c_w_id = @c_w_id AND
                            c_d_id = @c_d_id



        SELECT  @val    = (@cnt + 1) / 2

        SET     rowcount @val

        SELECT  @c_id   = c_id
        FROM    customer WITH (repeatableread)
        WHERE   c_last = @c_last AND
                            c_w_id = @c_w_id AND
                            c_d_id = @c_d_id
        ORDER   BY c_last, c_first

        SET     rowcount 0
    END

    -- get customer info and update balances

    UPDATE  customer
    SET     @c_balance      = c_balance = c_balance -
@h_amount,
            c_payment_cnt   = c_payment_cnt + 1,
            c_ytd_payment   = c_ytd_payment +
@h_amount,
            @c_first        = c_first,
            @c_middle       = c_middle,
            @c_last         = c_last,
            @c_street_1     = c_street_1,
            @c_street_2     = c_street_2,
            @c_city         = c_city,
            @c_state        = c_state,
            @c_zip          = c_zip,
            @c_phone        = c_phone,
            @c_credit       = c_credit,
            @c_credit_lim   = c_credit_lim,
            @c_discount     = c_discount,
            @c_since        = c_since,
            @c_id_local     = c_id
    WHERE   c_id            = @c_id AND
            c_w_id          = @c_w_id AND
            c_d_id          = @c_d_id

    -- if customer has bad credit get some more info
    IF (@c_credit = "BC")
```

```
    BEGIN
        --          compute new info
        SELECT  @c_data =   convert(char(5),@c_id) +
                            convert(char(4),@c_d_id)
+
                            convert(char(5),@c_w_id)
+
                            convert(char(4),@d_id) +
                            convert(char(5),@w_id) +
convert(char(19),@h_amount)

        -- update customer info
        UPDATE  customer
        SET     c_data          = @c_data +
substring(c_data, 1, 458),
                @screen_data    = @c_data +
substring(c_data, 1, 158)
        WHERE   c_id            = @c_id AND
                c_w_id          = @c_w_id AND
                c_d_id          = @c_d_id
    END

    -- get district data and update year-to-date
    UPDATE  district
    SET     d_ytd           = d_ytd + @h_amount,
            @d_street_1 = d_street_1,
            @d_street_2 = d_street_2,
            @d_city     = d_city,
            @d_state    = d_state,
            @d_zip      = d_zip,
            @d_name     = d_name,
            @d_id_local = d_id
    WHERE   d_w_id      = @w_id AND
            d_id        = @d_id

    -- get warehouse data and update year-to-date
    UPDATE  warehouse
    SET     w_ytd           = w_ytd + @h_amount,
            @w_street_1 = w_street_1,
            @w_street_2 = w_street_2,
            @w_city     = w_city,
            @w_state    = w_state,
            @w_zip      = w_zip,
            @w_name     = w_name,
            @w_id_local = w_id
    WHERE   w_id        = @w_id

    -- create history record
        INSERT INTO         history VALUES
(@c_id_local,
                            @c_d_id,
                            @c_w_id,
                            @d_id_local,
                            @w_id_local,
                            @datetime,
                            @h_amount,
                            @w_name + '    ' +
@d_name)

    COMMIT TRANSACTION p

    -- return data to client
```

```sql
SELECT  @c_id,
        @c_last,
        @datetime,
        @w_street_1,
        @w_street_2,
        @w_city,
        @w_state,
        @w_zip,
        @d_street_1,
        @d_street_2,
        @d_city,
        @d_state,
        @d_zip,
        @c_first,
        @c_middle,
        @c_street_1,
        @c_street_2,
        @c_city,
        @c_state,
        @c_zip,
        @c_phone,
        @c_since,
        @c_credit,
        @c_credit_lim,
        @c_discount,
        @c_balance,
        @screen_data
GO

SET QUOTED_IDENTIFIER OFF
GO

SET ANSI_NULLS ON
GO
```

random.c

```c
//      File:           RANDOM.C
//                              Microsoft
TPC-C Kit Ver. 4.62
//                              Copyright
Microsoft, 1996, 1997, 1998, 1999, 2000, 2001, 2002,
2005
//      Purpose:  Random number generation routines
for database loader


// Includes
#include "tpcc.h"
#include "math.h"

// Defines
#define A       16807
#define M       2147483647
#define Q       127773      /* M div A */
#define R       2836        /* M mod A */
#define Thread      __declspec(thread)

// Globals
```

```c
long        Thread Seed = 0;         /* thread local seed
*/

/*****************************************************
***************************
*
*
* random -
*
*       Implements a GOOD pseudo random number
generator.  This generator      *
*       will/should? run the complete period before
repeating.                  *
*
*
* Copied from:
*
*       Random Numbers Generators: Good Ones Are Hard
to Find.                   *
*       Communications of the ACM - October 1988
Volume 31 Number 10           *
*
*
* Machine Dependencies:
*
*       long must be 2 ^ 31 - 1 or greater.
*
*
*
*****************************************************
***************************/

/*****************************************************
***************************
* seed - load the Seed value used in irand and drand.
Should be used before  *
*       first call to irand or drand.
*
*****************************************************
***************************/

void seed(long val)
{

#ifdef DEBUG
    printf("[%ld]DBG: Entering seed()...\n", (int)
GetCurrentThreadId());
        printf("Old Seed %ld New Seed %ld\n",Seed,
val);
#endif

    if ( val < 0 )
            val = abs(val);

    Seed = val;

}


/*****************************************************
***************************
*
*
```

```c
* irand - returns a 32 bit integer pseudo random
number with a period of      *
*       1 to 2 ^ 32 - 1.
*
*
*
* parameters:
*
*       none.
*
*
*
* returns:
*
*       32 bit integer - defined as long ( see above
).                             *
*
*
* side effects:
*
*       seed get recomputed.
*
*****************************************************
***********************/

long irand()
{
    register long    s;       /* copy of seed */
    register long    test;    /* test flag */
    register long    hi;      /* tmp value for speed
*/
    register long    lo;      /* tmp value for speed
*/

#ifdef DEBUG
    printf("[%ld]DBG: Entering irand()...\n", (int)
GetCurrentThreadId());
#endif

    s = Seed;
    hi = s / Q;
    lo = s % Q;

    test = A * lo - R * hi;
    if ( test > 0 )
            Seed = test;
    else
            Seed = test + M;

    return( Seed );
}


/*****************************************************
***************************
*
*
* drand - returns a double pseudo random number
between 0.0 and 1.0.          *
*       See irand.
*
*****************************************************
***********************/
```

```c
double drand()
{

#ifdef DEBUG
    printf("[%ld]DBG: Entering drand()...\n", (int)
GetCurrentThreadId());
#endif

    return( (double)irand() / 2147483647.0);
}


//=====================================================
====================
// Function   : RandomNumber
//
// Description:
//=====================================================
====================
long RandomNumber(long lower, long upper)
{
    long rand_num;

#ifdef DEBUG
    printf("[%ld]DBG: Entering RandomNumber()...\n",
(int) GetCurrentThreadId());
#endif

        if ( upper == lower )        /* pgd 08-13-
96 perf enhancement */
                return lower;

        upper++;

    if ( upper <= lower )
                rand_num = upper;
    else
                rand_num = lower + irand() %
(upper - lower); /* pgd 08-13-96 perf enhancement */


#ifdef DEBUG
    printf("[%ld]DBG: RandomNumber between %ld & %ld
==> %ld\n",
                                        (int)
GetCurrentThreadId(), lower, upper, rand_num);
#endif


    return rand_num;
}


#if 0

//Orginal code pgd 08/13/96

long RandomNumber(long lower,
                                        long upper)
{
    long rand_num;

#ifdef DEBUG
```

```c
    printf("[%ld]DBG: Entering RandomNumber()...\n",
(int) GetCurrentThreadId());
#endif

        upper++;

    if ((upper <= lower))
                rand_num = upper;
    else
                rand_num = lower + irand() %
((upper > lower) ? upper - lower : upper);

#ifdef DEBUG
    printf("[%ld]DBG: RandomNumber between %ld & %ld
==> %ld\n",
                                        (int)
GetCurrentThreadId(), lower, upper, rand_num);
#endif


    return rand_num;

}
#endif

//=====================================================
====================
// Function   : NURand
//
// Description:
//=====================================================
====================
long NURand(int iConst,
                long x,
                long y,
                long C)
{
    long rand_num;

#ifdef DEBUG
    printf("[%ld]DBG: Entering NURand()...\n", (int)
GetCurrentThreadId());
#endif

    rand_num = (((RandomNumber(0,iConst) |
RandomNumber(x,y)) + C) % (y-x+1))+x;

#ifdef DEBUG
    printf("[%ld]DBG: NURand: num = %d\n", (int)
GetCurrentThreadId(), rand_num);
#endif

    return rand_num;
}
```

removedb.sql

```sql
-------------------------------------------------
-------------
--
--
--  File:   REMOVEDB.SQL
--
--      Microsoft TPC-C Benchmark Kit Ver. 4.61
--
--      Copyright Microsoft, 2005
--
--
-------------------------------------------------
-------------

USE master
GO

-------------------------------------------------
-------------
-- remove any existing database and backup files
-------------------------------------------------
-------------
EXEC sp_dbremove tpcc, dropdev
GO

EXEC sp_dropdevice 'tpccback8'
GO
EXEC sp_dropdevice 'tpccback9'
GO
EXEC sp_dropdevice 'tpccback10'
GO
EXEC sp_dropdevice 'tpccback11'
GO
EXEC sp_dropdevice 'tpccback12'
GO
EXEC sp_dropdevice 'tpccback13'
GO
EXEC sp_dropdevice 'tpccback14'
GO
```

restore.cmd

```
osql -E -i restore.sql
```

restore.sql

```sql
-------------------------------------------------
-------------
--
--
--  File:   RESTORE.SQL
--
```

```
--          Microsoft TPC-C Benchmark Kit Ver. 4.61
--
--          Copyright Microsoft, 2005
--
--
--
-------------------------------------------------
------------

DECLARE @startdate  DATETIME,
        @enddate    DATETIME

SELECT  @startdate = GETDATE()
SELECT  'Start date:',
                CONVERT(VARCHAR(30),@startdate,
21)

LOAD DATABASE tpcc FROM tpccback8, tpccback9,
tpccback10, tpccback11, tpccback12, tpccback13,
tpccback14 WITH stats = 1, replace

SELECT  @enddate = GETDATE()
SELECT  'End date: ',
                CONVERT(VARCHAR(30),@enddate, 21)
SELECT  'Elapsed time (in seconds): ',
                DATEDIFF(second, @startdate,
@enddate)
GO
```

RunSQLCfg.sql

```
-------------------------------------------------
------------
--
--
--  File:   RUNSQLCFG.SQL
--
--          Microsoft TPC-C Benchmark Kit Ver. 4.68
--
--          Copyright Microsoft, 2006
--
--
--          Sets suggested runtime server
configuration    --
--          parameters
--
--
-------------------------------------------------
------------
EXEC sp_configure 'show advanced option', 1
GO

RECONFIGURE WITH OVERRIDE
GO

-------------------------------------------------
--------------------
```

```
-- change this value to approximately the number of
connected users
-------------------------------------------------
--------------------
EXEC sp_configure 'max worker threads',255

-------------------------------------------------
--------------------
-- increase priority of user threads
-------------------------------------------------
--------------------
EXEC sp_configure 'priority boost',1

-------------------------------------------------
--------------------
-- disable automatic checkpointing
-------------------------------------------------
--------------------
EXEC sp_configure 'recovery interval',32767

-------------------------------------------------
--------------------
-- change to a mask appropriate for the number of
processors on the server
-------------------------------------------------
--------------------
EXEC sp_configure 'affinity mask',0xf

-------------------------------------------------
--------------------
-- enable fibers
-------------------------------------------------
--------------------
EXEC sp_configure 'lightweight pooling',1
GO

RECONFIGURE WITH OVERRIDE
GO
```

sqlshutdown.sql

```
-------------------------------------------------
------------
--
--
--  File:   SQLSHUTDOWN.SQL
--
--          Microsoft TPC-C Benchmark Kit Ver. 4.68
--
--          Copyright Microsoft, 2006
--
--
--          Checkpoints tpcc database and issues a
shutdown     --
--
--
-------------------------------------------------
------------
USE tpcc
```

```
GO

CHECKPOINT
GO

SHUTDOWN
GO
```

stocklev.sql

```
-------------------------------------------------
------------
--
--
--  File:   STOCKLEV.SQL
--
--          Microsoft TPC-C Benchmark Kit Ver. 4.68
--
--          Copyright Microsoft, 2006
--
--
--          Creates stock level stored procedure
--
--
--          Interface Level:    4.20.000
--
--
-------------------------------------------------
------------
SET QUOTED_IDENTIFIER OFF
GO

SET ANSI_NULLS ON
GO

USE tpcc
GO

IF EXISTS ( SELECT name FROM sysobjects WHERE name =
'tpcc_stocklevel' )
    DROP PROCEDURE tpcc_stocklevel
GO

CREATE PROCEDURE    tpcc_stocklevel
                        @w_id          int,
                        @d_id          tinyint,
                        @threshhold    smallint

AS
DECLARE @o_id_low   int,
        @o_id_high  int

SELECT  @o_id_low   = (d_next_o_id - 20),
        @o_id_high  = (d_next_o_id - 1)
FROM    district
WHERE   d_w_id      = @w_id AND
        d_id        = @d_id
```

```sql
SELECT  COUNT(DISTINCT(s_i_id))
FROM    stock,
        order_line
WHERE   ol_w_id   = @w_id AND
        ol_d_id   = @d_id and
        ol_o_id   BETWEEN @o_id_low AND
                          @o_id_high AND
        s_w_id    = ol_w_id AND
        s_i_id    = ol_i_id AND
        s_quantity  < @threshhold
OPTION(ORDER GROUP)
GO

SET QUOTED_IDENTIFIER OFF
GO

SET ANSI_NULLS ON
GO
```

strings.c

```c
//      File:           STRINGS.C
//                              Microsoft
TPC-C Kit Ver. 4.51
//                              Copyright
Microsoft, 1996, 1997, 1998, 1999, 2000, 2001, 2002,
2003
//      Purpose:  Source file for database loader
string functions


// Includes
#include "tpcc.h"
#include <string.h>
#include <ctype.h>

//=====================================================
====================
//
// Function name: MakeAddress
//
//=====================================================
====================

void MakeAddress(char *street_1,
                                    char
*street_2,
                                    char *city,
                                    char *state,
                                    char *zip)
{
#ifdef DEBUG
    printf("[%ld]DBG: Entering MakeAddress()\n",
(int) GetCurrentThreadId());
#endif

    MakeAlphaString (10, 20, ADDRESS_LEN, street_1);
    MakeAlphaString (10, 20, ADDRESS_LEN, street_2);
    MakeAlphaString (10, 20, ADDRESS_LEN, city);
    MakeAlphaString ( 2,  2, STATE_LEN, state);
    MakeZipNumberString( 9,  9, ZIP_LEN, zip);

#ifdef DEBUG
    printf("[%ld]DBG: MakeAddress: street_1: %s,
street_2: %s, city: %s, state: %s, zip: %s\n",
                                    (int)
GetCurrentThreadId(), street_1, street_2, city,
state, zip);
#endif

    return;

}


//=====================================================
====================
//
// Function name: LastName
//
//=====================================================
====================

void LastName(int  num,
                          char *name)
{
    static char *n[] =
    {
                    "BAR" , "OUGHT", "ABLE" , "PRI"
, "PRES",
                    "ESE" , "ANTI" , "CALLY",
"ATION", "EING"
    };

#ifdef DEBUG
    printf("[%ld]DBG: Entering LastName()\n", (int)
GetCurrentThreadId());
#endif

    if ((num >= 0) && (num < 1000))
    {
                    strcpy(name, n[(num/100)%10]);
                    strcat(name, n[(num/10)%10]);
                    strcat(name, n[(num/1)%10]);

                    if (strlen(name) < LAST_NAME_LEN)
                    {
            PaddString(LAST_NAME_LEN, name);
                    }
    }
    else
    {
                    printf("\nError in LastName()...
num <%ld> out of range (0,999)\n", num);
                    exit(-1);
    }

#ifdef DEBUG
```

```c
    printf("[%ld]DBG: LastName: num = [%d] ==>
[%d][%d][%d]\n",
                                    (int)
GetCurrentThreadId(), num, num/100, (num/10)%10,
num%10);
        printf("[%ld]DBG: LastName: String = %s\n",
(int) GetCurrentThreadId(), name);
#endif

    return;

}


//=====================================================
====================
//
// Function name: MakeAlphaString
//
//=====================================================
====================

//philipdu 08/13/96 Changed MakeAlphaString to use A-
Z, a-z, and 0-9 in
//accordance with spec see below:
//The spec says:
//4.3.2.2 The notation random a-string [x .. y]
//(respectively, n-string [x .. y]) represents a
string of random alphanumeric
//(respectively, numeric) characters of a random
length of minimum x, maximum y,
//and mean (y+x)/2. Alphanumerics are A..Z, a..z, and
0..9.  The only other
//requirement is that the character set used "must be
able to represent a minimum
//of 128 different characters".  We are using 8-bit
chars, so this is a non issue.
//It is completely unreasonable to stuff non-printing
chars into the text fields.
//-CLevine 08/13/96

int MakeAlphaString( int  x, int  y, int  z, char
*str)
{
        int             len;
        int             i;
    char    cc = 'a';
        static   char chArray[] =
"0123456789ABCDEFGHIJKLMNOPQRSTUVWXYZabcdefghijklmnop
qrstuvwxyz";
        static   int    chArrayMax = 61;

#ifdef DEBUG
    printf("[%ld]DBG: Entering MakeAlphaString()\n",
(int) GetCurrentThreadId());
#endif

        len= RandomNumber(x, y);

        for (i=0; i<len; i++)
                str[i] =
chArray[RandomNumber(0,chArrayMax)];
        str[len] = 0;
```

```c
        return len;
}

int MakeAlphaStringPadded( int  minLen, int  maxLen,
int  padLen, char *str)
{
        int             len;
        int             i;
        char    cc = 'a';
        static  char chArray[] =
"0123456789ABCDEFGHIJKLMNOPQRSTUVWXYZabcdefghijklmnop
qrstuvwxyz";
        static  int     chArrayMax = 61;

#ifdef DEBUG
    printf("[%ld]DBG: Entering
MakeAlphaStringPadded()\n", (int)
GetCurrentThreadId());
#endif

        len= RandomNumber(minLen, maxLen);

        for (i=0; i<len; i++)
                str[i] =
chArray[RandomNumber(0,chArrayMax)];
        if (len < padLen)
                memset(str+len, ' ', padLen -
len);
        str[padLen] = 0;
    return padLen;
}


//=====================================================
===================
//
// Function name: MakeOriginalAlphaString
//
//=====================================================
===================

int MakeOriginalAlphaString(int  x,

            int  y,

                int  z,

            char *str,

        int  percent)
{
    int             len;
    int             val;
    int             start;

#ifdef DEBUG
    printf("[%ld]DBG: Entering
MakeOriginalAlphaString()\n", (int)
GetCurrentThreadId());
#endif
```

```c
    // verify prercentage is valid
    if ((percent < 0) || (percent > 100))
    {
                printf("MakeOrigianlAlphaString:
Invalid percentage: %d\n", percent);
                exit(-1);
    }

    // verify string is at least 8 chars in length
    if (x < 8)
    {
                printf("MakeOriginalAlphaString:
string length must be >= 8\n");
                exit(-1);
    }

    // Make Alpha String
    len = MakeAlphaString(x,y, z, str);

    val = RandomNumber(1,100);
    if (val <= percent)
    {
                start = RandomNumber(0, len - 8);
                strncpy(str + start, "ORIGINAL",
8);
    }

#ifdef DEBUG
    printf("[%ld]DBG: MakeOriginalAlphaString: :
%s\n",
                                (int)
GetCurrentThreadId(), str);
#endif

    return len;
}


//=====================================================
===================
//
// Function name: MakeNumberString
//
//=====================================================
===================
int MakeNumberString(int  x, int  y, int  z, char
*str)
{
        char tmp[16];

        //MakeNumberString is always called
MakeZipNumberString(16, 16, 16, string)

        memset(str, '0', 16);
        itoa(RandomNumber(0, 99999999), tmp, 10);
        memcpy(str, tmp, strlen(tmp));

        itoa(RandomNumber(0, 99999999), tmp, 10);
        memcpy(str+8, tmp, strlen(tmp));

        str[16] = 0;
```

```c
    return 16;
}

//=====================================================
===================
//
// Function name: MakeZipNumberString
//
//=====================================================
===================
int MakeZipNumberString(int  x, int  y, int  z, char
*str)
{
        char tmp[16];

        //MakeZipNumberString is always called
MakeZipNumberString(9, 9, 9, string)

        strcpy(str, "000011111");

        itoa(RandomNumber(0, 9999), tmp, 10);
        memcpy(str, tmp, strlen(tmp));

    return 9;
}


//=====================================================
===================
//
// Function name: InitString
//
//=====================================================
===================
void InitString(char *str, int len)
{
#ifdef DEBUG
    printf("[%ld]DBG: Entering InitString()\n", (int)
GetCurrentThreadId());
#endif

        memset(str, ' ', len);
    str[len] = 0;
}


//=====================================================
===================
// Function name: InitAddress
//
// Description:
//
//=====================================================
===================

void InitAddress(char *street_1, char *street_2, char
*city, char *state, char *zip)
{
        memset(street_1, ' ', ADDRESS_LEN+1);
        memset(street_2, ' ', ADDRESS_LEN+1);
        memset(city, ' ', ADDRESS_LEN+1);
```

```c
            street_1[ADDRESS_LEN+1] = 0;
            street_2[ADDRESS_LEN+1] = 0;
            city[ADDRESS_LEN+1]     = 0;

        memset(state, ' ', STATE_LEN+1);
        state[STATE_LEN+1] = 0;

        memset(zip, ' ', ZIP_LEN+1);
        zip[ZIP_LEN+1] = 0;
}


//===================================================
===================
//
// Function name: PaddString
//
//===================================================
===================

void PaddString(int max, char *name)
{
        int             len;

        len = strlen(name);
        if ( len < max )
                memset(name+len, ' ', max - len);
        name[max] = 0;

        return;
}
```

tables.sql

```sql
----------------------------------------------------
------------
--
--
--  File:    TABLES.SQL
--
--          Microsoft TPC-C Benchmark Kit Ver. 4.68
--
--          Copyright Microsoft, 2006
--
--
--
--          Creates TPC-C tables
--
----------------------------------------------------
------------

SET ANSI_NULL_DFLT_OFF ON
GO

USE tpcc
GO

----------------------------------
-- Remove all existing TPC-C tables
----------------------------------
```

```sql
if exists ( select name from sysobjects where name =
'warehouse' )
        drop table warehouse
go
if exists ( select name from sysobjects where name =
'district' )
        drop table district
go
if exists ( select name from sysobjects where name =
'customer' )
        drop table customer
go
if exists ( select name from sysobjects where name =
'history' )
        drop table history
go
if exists ( select name from sysobjects where name =
'new_order' )
        drop table new_order
go
if exists ( select name from sysobjects where name =
'orders' )
        drop table orders
go
if exists ( select name from sysobjects where name =
'order_line' )
        drop table order_line
go
if exists ( select name from sysobjects where name =
'item' )
        drop table item
go
if exists ( select name from sysobjects where name =
'stock' )
        drop table stock
go

--------------------
-- Create new tables
--------------------
create table warehouse
(
        w_id            int,
        w_ytd           money,
        w_tax           smallmoney,
        w_name          char(10),
        w_street_1      char(20),
        w_street_2      char(20),
        w_city          char(20),
        w_state         char(2),
        w_zip           char(9)
) on MSSQL_misc_fg
go

create table district
(
        d_id            tinyint,
        d_w_id          int,
        d_ytd           money,
        d_next_o_id             int,

        d_tax           smallmoney,
        d_name          char(10),
```

```sql
        d_street_1      char(20),
        d_street_2      char(20),
        d_city          char(20),
        d_state         char(2),
        d_zip           char(9)
) on MSSQL_misc_fg
go

create table customer
(
        c_id            int,
        c_d_id          tinyint,
        c_w_id          int,
        c_discount      smallmoney,
        c_credit_lim    money,
        c_last          char(16),
        c_first         char(16),
        c_credit        char(2),
        c_balance       money,
        c_ytd_payment   money,
        c_payment_cnt   smallint,
        c_delivery_cnt  smallint,
        c_street_1      char(20),
        c_street_2      char(20),
        c_city          char(20),
        c_state         char(2),
        c_zip           char(9),
        c_phone         char(16),
        c_since         datetime,
        c_middle        char(2),
        c_data          char(500)
) on MSSQL_cust_fg
go

-- Use the following table option if using c_data
varchar(max)
-- sp_tableoption 'customer','large value types out
of row','1'
-- go

create table history
(
        h_c_id          int,
        h_c_d_id        tinyint,
        h_c_w_id        int,
        h_d_id          tinyint,
        h_w_id          int,
        h_date          datetime,
        h_amount        smallmoney,
        h_data          char(24)
) on MSSQL_misc_fg
go

create table new_order
(
        no_o_id         int,
        no_d_id         tinyint,
        no_w_id         int
) on MSSQL_misc_fg
go

create table orders
(
```

```
        o_id            int,
        o_d_id          tinyint,
        o_w_id          int,
        o_c_id          int,
        o_carrier_id    tinyint,
        o_ol_cnt        tinyint,
        o_all_local     tinyint,
        o_entry_d       datetime
) on MSSQL_misc_fg
go

create table order_line
(
        ol_o_id         int,
        ol_d_id         tinyint,
        ol_w_id         int,
        ol_number       tinyint,
        ol_i_id         int,
        ol_delivery_d   datetime,
        ol_amount       smallmoney,
        ol_supply_w_id  int,
        ol_quantity     smallint,
        ol_dist_info    char(24)
) on MSSQL_ol_fg
go

create table item
(
        i_id            int,
        i_name          char(24),
        i_price         smallmoney,
        i_data          char(50),
        i_im_id         int
) on MSSQL_misc_fg
go

create table stock
(
        s_i_id          int,
        s_w_id          int,
        s_quantity      smallint,
        s_ytd           int,
        s_order_cnt     smallint,
        s_remote_cnt    smallint,
        s_data          char(50),
        s_dist_01       char(24),
        s_dist_02       char(24),
        s_dist_03       char(24),
        s_dist_04       char(24),
        s_dist_05       char(24),
        s_dist_06       char(24),
        s_dist_07       char(24),
        s_dist_08       char(24),
        s_dist_09       char(24),
        s_dist_10       char(24)
) on MSSQL_stk_fg
go
```

time.c

```
//      File:           TIME.C          Microsoft
TPC-C Kit Ver. 4.62
//                                      Copyright
Microsoft, 1996, 1997, 1998, 1999, 2000, 2001, 2002,
2005
//      Purpose:  Source file for time functions


// Includes
#include "tpcc.h"

// Globals
static long start_sec;


//=====================================================
====================
//
// Function name: TimeNow
//
//=====================================================
====================

long TimeNow()
{
    long            time_now;
    struct _timeb el_time;

#ifdef DEBUG
    printf("[%ld]DBG: Entering TimeNow()\n", (int)
GetCurrentThreadId());
#endif

    _ftime(&el_time);

    time_now = ((el_time.time - start_sec) * 1000) +
el_time.millitm;

    return time_now;
}
```

tpcc.h

```
//      File:           TPCC.H          Microsoft
TPC-C Kit Ver. 4.51
//                                      Copyright
Microsoft, 1996, 1997, 1998, 1999, 2000, 2001, 2002,
2003, 2005
//      Purpose:  Header file for TPC-C database
loader


// Build number of TPC Benchmark Kit
```

```
#define TPCKIT_VER  "4.51"

// General headers
#include <windows.h>
#include <winbase.h>
#include <stdlib.h>
#include <stdio.h>
#include <process.h>
#include <stddef.h>
#include <stdarg.h>
#include <string.h>
#include <time.h>
#include <sys\timeb.h>
#include <sys\types.h>
#include <math.h>

// ODBC headers
#include <sql.h>
#include <sqlext.h>
#include <odbcss.h>

// General constants
#define MILLI                           1000
#define FALSE                           0
#define TRUE                            1
#define UNDEF
        -1
#define MINPRINTASCII
32
#define MAXPRINTASCII
126

// Default environment constants
#define SERVER                          ""
#define DATABASE
        "tpcc"
#define USER
        "sa"
#define PASSWORD                        ""

// Default loader arguments
#define BATCH
        10000
#define DEFLDPACKSIZE
        32768
#define LOADER_RES_FILE
        "C:\\MSTPCC.450\\SETUP\\LOGS\\load.out"
#define LOADER_LOG_PATH
        "C:\\MSTPCC.450\\SETUP\\LOGS\\"
#define LOADER_NURAND_C
        123
#define DEF_STARTING_WAREHOUSE          1
#define BUILD_INDEX
        1       // build both data and indexes
#define INDEX_ORDER
        1       // build indexes before load
#define SCALE_DOWN
        0   // build a normal scale database
#define INDEX_SCRIPT_PATH
        "scripts"

typedef struct
{
```

```
        char
            *server;
        char
            *database;
        char
            *user;
        char
            *password;
        BOOL
            tables_all;                          //
set if loading all tables
        BOOL
            table_item;                          //
set if loading ITEM table specifically
        BOOL
            table_warehouse;    // set if loading
WAREHOUSE, DISTRICT, and STOCK
        BOOL
            table_customer;         // set if
loading CUSTOMER and HISTORY
        BOOL
            table_orders;           // set if
loading NEW-ORDER, ORDERS, ORDER-LINE
        long
            num_warehouses;
        long
            batch;
        long
            verbose;
        long
            pack_size;
        char
            *loader_res_file;
        char
            *log_path;
        char
            *synch_servername;
        long
            case_sensitivity;
        long
            starting_warehouse;
        long
            build_index;
        long
            index_order;
        long
            scale_down;
        char
            *index_script_path;
} TPCCLDR_ARGS;

// String length constants
        #define SERVER_NAME_LEN          20
        #define DATABASE_NAME_LEN        20
        #define USER_NAME_LEN            20
        #define PASSWORD_LEN             20
        #define TABLE_NAME_LEN           20
        #define I_DATA_LEN               50
        #define I_NAME_LEN               24
        #define BRAND_LEN                 1
        #define LAST_NAME_LEN            16
        #define W_NAME_LEN               10
        #define ADDRESS_LEN              20
```

```
        #define STATE_LEN                 2
        #define ZIP_LEN                   9
        #define S_DIST_LEN               24
        #define S_DATA_LEN               50
        #define D_NAME_LEN               10
        #define FIRST_NAME_LEN           16
        #define MIDDLE_NAME_LEN           2
        #define PHONE_LEN                16
        #define CREDIT_LEN                2
        #define C_DATA_LEN              500
        #define H_DATA_LEN               24
        #define DIST_INFO_LEN            24
        #define MAX_OL_NEW_ORDER_ITEMS   15
        #define MAX_OL_ORDER_STATUS_ITEMS 15
        #define STATUS_LEN               25
        #define OL_DIST_INFO_LEN
24
        #define C_SINCE_LEN
            23
        #define H_DATE_LEN
            23
        #define OL_DELIVERY_D_LEN
23
        #define O_ENTRY_D_LEN            23


// Functions in random.c
void     seed();
long     irand();
double   drand();
void     WUCreate();
short    WURand();
long     RandomNumber(long lower, long upper);

// Functions in getargs.c;
void     GetArgsLoader();
void     GetArgsLoaderUsage();

// Functions in time.c
long     TimeNow();

// Functions in strings.c
void     MakeAddress();
void     LastName();
int      MakeAlphaString();
int              MakeAlphaStringPadded();
int      MakeOriginalAlphaString();
int      MakeNumberString();
int      MakeZipNumberString();
void     InitString();
void     InitAddress();
void     PaddString();
```

tpccldr.c

```
//====================================================
====================
//      File:               TPCCLDR.C
//                          Microsoft
TPC-C Kit Ver. 4.51
```

```
//                          Copyright
Microsoft, 1996, 1997, 1998, 1999,
//                          2000, 2001,
2002, 2003
//      Purpose:  Source file for TPC-C database
loader
//====================================================
====================
// Includes
#include "tpcc.h"
#include "search.h"

// Defines
#define MAXITEMS                100000
#define MAXITEMS_SCALE_DOWN              100
#define CUSTOMERS_PER_DISTRICT  3000
#define CUSTOMERS_SCALE_DOWN  30
#define DISTRICT_PER_WAREHOUSE  10
#define ORDERS_PER_DISTRICT     3000
#define ORDERS_SCALE_DOWN       30
#define MAX_CUSTOMER_THREADS    2
#define MAX_ORDER_THREADS       3
#define MAX_MAIN_THREADS        4
#define MAX_SQL_ERRORS                  10

// Functions declarations
void HandleErrorDBC (SQLHDBC  hdbc1);
long NURand();
void LoadItem();
void LoadWarehouse();
void Stock();
void District();
void LoadCustomer();
void CustomerBufInit();
void CustomerBufLoad();
void LoadCustomerTable();
void LoadHistoryTable();
void LoadOrders();
void OrdersBufInit();
void OrdersBufLoad();
void LoadOrdersTable();
void LoadNewOrderTable();
void LoadOrderLineTable();
void GetPermutation();
void CheckForCommit();
void CheckForCommit_Big();
void OpenConnections();
void BuildIndex();
void FormatDate ();

// Shared memory structures
typedef struct
{
        double                          ol;
        long            ol_i_id;
        long
            ol_supply_w_id;
        short           ol_quantity;
        double          ol_amount;
        char
ol_dist_info[DIST_INFO_LEN+1];
        char
            ol_delivery_d[OL_DELIVERY_D_LEN+1];
```

```
} ORDER_LINE_STRUCT;                        char                                    long                           first_new_order;
                                            c_last[LAST_NAME_LEN+1];                long                           last_new_order;
typedef struct                              char
{                                           c_first[FIRST_NAME_LEN+1];              TPCCLDR_ARGS    *aptr, args;
    long               o_id;            long                    c_id;
    short              o_d_id;          } CUSTOMER_SORT_STRUCT;                     //=================================================
        long                                                                        ====================
        o_w_id;                             typedef struct                          //
    long               o_c_id;          {                                       // Function name: main
    short              o_carrier_id;        long                time_start;         //
    short              o_ol_cnt;         } LOADER_TIME_STRUCT;                       //=================================================
    short              o_all_local;                                                 ====================
        ORDER_LINE_STRUCT   o_ol[15];                                               int main(int  argc, char **argv)
} ORDERS_STRUCT;                            // Global variables                      {
                                            char    szLastError[300];
typedef struct                                                                              DWORD
{                                           HENV    henv;                       dwThreadID[MAX_MAIN_THREADS];
    long                            c_id;                                           HANDLE          hThread[MAX_MAIN_THREADS];
    short                           c_d_id;   HDBC    v_hdbc;                        FILE            *fLoader;
        long                                            // for SQL Server version    char            buffer[255];
        c_w_id;                         verification                                int                             i;
        char                            HDBC    i_hdbc1;
        c_first[FIRST_NAME_LEN+1];                  // for ITEM table                for (i=0; i<MAX_MAIN_THREADS; i++)
    char                                HDBC    w_hdbc1;                                    hThread[i] = NULL;
        c_middle[MIDDLE_NAME_LEN+1];                // for WAREHOUSE, DISTRICT, STOCK
    char                                HDBC    c_hdbc1;
        c_last[LAST_NAME_LEN+1];                    // for CUSTOMER              printf("\n*******************************************
    char                                HDBC    c_hdbc2;                        ********");
        c_street_1[ADDRESS_LEN+1];                  // for HISTORY                       printf("\n*
    char                                HDBC    o_hdbc1;                        *");
        c_street_2[ADDRESS_LEN+1];                  // for ORDERS                        printf("\n*  Microsoft SQL Server
    char                                HDBC    o_hdbc2;                        *");
        c_city[ADDRESS_LEN+1];                      // for NEW-ORDER                     printf("\n*
    char                                                                        *");
        c_state[STATE_LEN+1];           HDBC    o_hdbc3;                                printf("\n*  TPC-C BENCHMARK KIT:  Database
    char                                            // for ORDER-LINE           loader          *");
        c_zip[ZIP_LEN+1];                                                               printf("\n*  Version %s
    char                                HSTMT   v_hstmt;                        *", TPCKIT_VER);
        c_phone[PHONE_LEN+1];                       // for SQL Server version verification    printf("\n*
    char                                HSTMT   i_hstmt1;                       *");
        c_credit[CREDIT_LEN+1];         HSTMT   w_hstmt1;                               printf("\n*********************************
    double                              HSTMT   c_hstmt1, c_hstmt2;             ******************\n\n");
        c_credit_lim;                   HSTMT   o_hstmt1, o_hstmt2, o_hstmt3;
    double                                                                          // process command line arguments
        c_discount;                     int             total_db_errors;            aptr = &args;
        char                                                                        GetArgsLoader(argc, argv, aptr);
        c_balance[6];                   ORDERS_STRUCT    orders_buf[ORDERS_PER_DISTRICT];
    double                              CUSTOMER_STRUCT                                 printf("Build interface is ODBC.\n");
        c_ytd_payment;                          customer_buf[CUSTOMERS_PER_DISTRICT];
        short                           long                orders_rows_loaded;         if (aptr->build_index == 0)
        c_payment_cnt;                  double              new_order_rows_loaded;          printf("Data load only - no index
        short                           double              order_line_rows_loaded;     creation.\n");
        c_delivery_cnt;                 long                history_rows_loaded;            else
        char                            long                customer_rows_loaded;               printf("Data load and index
        c_data[C_DATA_LEN+1];           double              stock_rows_loaded;          creation.\n");
        double                          long                district_rows_loaded;
        h_amount;                       long                item_rows_loaded;           if (aptr->index_order == 0)
    char                                long                warehouse_rows_loaded;          printf("Clustered indexes will be
        h_data[H_DATA_LEN+1];           long                main_time_start;        created after bulk load.\n");
} CUSTOMER_STRUCT;                      long                main_time_end;              else
                                        long                max_items;                      printf("Clustered indexes will be
typedef struct                          long                customers_per_district;     created before bulk load.\n");
{                                       long                orders_per_district;
```

```c
        // set database scale values
        if (aptr->scale_down == 1)
        {
                printf("*** Scaled Down Database
***\n");

                max_items = MAXITEMS_SCALE_DOWN;
                customers_per_district =
CUSTOMERS_SCALE_DOWN;
                orders_per_district =
ORDERS_SCALE_DOWN;
                first_new_order = 0;
                last_new_order  = 30;
        }
        else
        {
                max_items = MAXITEMS;
                customers_per_district =
CUSTOMERS_PER_DISTRICT;
                orders_per_district =
ORDERS_PER_DISTRICT;
                first_new_order = 2100;
                last_new_order  = 3000;
        }

        // open connections to SQL Server
        OpenConnections();

        // open file for loader results
        fLoader = fopen(aptr->loader_res_file,
"w");

    if (fLoader == NULL)
        {
                printf("Error, loader result file
open failed.");
                exit(-1);
        }

    // start loading data
    sprintf(buffer,"TPC-C load started for %ld
warehouses.\n",aptr->num_warehouses);
        if      (aptr->scale_down == 1)
        {
                sprintf(buffer,"SCALED DOWN
DATABASE.\n");
        }

        printf("%s",buffer);
        fprintf(fLoader,"%s",buffer);

        main_time_start = (TimeNow() / MILLI);

        // start parallel load threads
        if (aptr->tables_all || aptr->table_item)
        {
                fprintf(fLoader, "\nStarting
loader threads for: item\n");

                hThread[0] = CreateThread(NULL,

                        0,

(LPTHREAD_START_ROUTINE) LoadItem,

                        NULL,

                        0,

                        &dwThreadID[0]);

                if (hThread[0] == NULL)
                {
                        printf("Error, failed
in creating creating thread = 0.\n");
                        exit(-1);
                }
        }

        if (aptr->tables_all || aptr-
>table_warehouse)
        {
                fprintf(fLoader, "Starting loader
threads for: warehouse\n");

                hThread[1] = CreateThread(NULL,

                        0,

(LPTHREAD_START_ROUTINE) LoadWarehouse,

                        NULL,

                        0,

                        &dwThreadID[1]);

                if (hThread[1] == NULL)
                {
                        printf("Error, failed
in creating creating thread = 1.\n");
                        exit(-1);
                }
        }

        if (aptr->tables_all || aptr-
>table_customer)
        {
                fprintf(fLoader, "Starting loader
threads for: customer\n");

                hThread[2] = CreateThread(NULL,

                        0,

(LPTHREAD_START_ROUTINE) LoadCustomer,

                        NULL,

                        0,

                        &dwThreadID[2]);

                if (hThread[2] == NULL)
                {
                        printf("Error, failed
in creating creating main thread = 2.\n");
                        exit(-1);
                }
        }

        if (aptr->tables_all || aptr->table_orders)
        {
                fprintf(fLoader, "Starting loader
threads for: orders\n");

                hThread[3] = CreateThread(NULL,

                        0,

(LPTHREAD_START_ROUTINE) LoadOrders,

                        NULL,

                        0,

                        &dwThreadID[3]);

                if (hThread[3] == NULL)
                {
                        printf("Error, failed
in creating creating main thread = 3.\n");
                        exit(-1);
                }
        }

        // Wait for threads to finish...
        for (i=0; i<MAX_MAIN_THREADS; i++)
        {
                if (hThread[i] != NULL)
                {
                        WaitForSingleObject(
hThread[i], INFINITE );

                CloseHandle(hThread[i]);
                        hThread[i] = NULL;
                }
        }

        main_time_end = (TimeNow() / MILLI);

    sprintf(buffer,"\nTPC-C load completed
successfully in %ld minutes.\n",
                        (main_time_end -
main_time_start)/60);

        printf("%s",buffer);
        fprintf(fLoader, "%s", buffer);

        fclose(fLoader);

        SQLFreeEnv(henv);

    exit(0);
```

```
        return 0;
}


//===================================================
====================
//
// Function name: LoadItem
//
//===================================================
====================
void LoadItem()
{
    int                 i;
        long            i_id;
        long            i_im_id;
    char            i_name[I_NAME_LEN+1];
    double          i_price;
    char            i_data[I_DATA_LEN+1];
        char            name[20];
        long            time_start;
        RETCODE         rc;
        DBINT           rcint;
        char            bcphint[128];
        char            err_log_path[256];

        // Seed with unique number
        seed(11);

        printf("Loading item table...\n");

        //if build index before load
        if ((aptr->build_index == 1) && (aptr-
>index_order == 1))
                BuildIndex("idxitmcl");

        InitString(i_name, I_NAME_LEN+1);
        InitString(i_data, I_DATA_LEN+1);

        sprintf(name, "%s..%s", aptr->database,
"item");

        strcpy(err_log_path,aptr->log_path);
        strcat(err_log_path,"item.err");
        rc = bcp_init(i_hdbc1, name, NULL,
err_log_path , DB_IN);
        if (rc != SUCCEED)
                HandleErrorDBC(i_hdbc1);

        if ((aptr->build_index == 1) && (aptr-
>index_order == 1))
        {
                sprintf(bcphint, "tablock, order
(i_id), ROWS_PER_BATCH = 100000");
                rc = bcp_control(i_hdbc1,
BCPHINTS, (void*) bcphint);
                if (rc != SUCCEED)

HandleErrorDBC(i_hdbc1);
        }

        i = 0;
```

```
        rc = bcp_bind(i_hdbc1, (BYTE *) &i_id, 0,
SQL_VARLEN_DATA, NULL, 0, SQLINT4, ++i);
                if (rc != SUCCEED)
                        HandleErrorDBC(i_hdbc1);
        rc = bcp_bind(i_hdbc1, (BYTE *) i_name, 0,
I_NAME_LEN, NULL, 0, 0, ++i);
                if (rc != SUCCEED)
                        HandleErrorDBC(i_hdbc1);
        rc = bcp_bind(i_hdbc1, (BYTE *) &i_price,
0, SQL_VARLEN_DATA, NULL, 0, SQLFLT8, ++i);
                if (rc != SUCCEED)
                        HandleErrorDBC(i_hdbc1);
        rc = bcp_bind(i_hdbc1, (BYTE *) i_data, 0,
SQL_VARLEN_DATA, "", 1, 0, ++i);
                if (rc != SUCCEED)
                        HandleErrorDBC(i_hdbc1);
        rc = bcp_bind(i_hdbc1, (BYTE *) &i_im_id,
0, SQL_VARLEN_DATA, NULL, 0, SQLINT4, ++i);
                if (rc != SUCCEED)
                        HandleErrorDBC(i_hdbc1);

        time_start = (TimeNow() / MILLI);

        item_rows_loaded = 0;

        for (i_id = 1; i_id <= max_items; i_id++)
        {
                i_im_id = RandomNumber(1L,
10000L);

                MakeAlphaStringPadded(14, 24,
I_NAME_LEN, i_name);

                i_price = ((float)
RandomNumber(100L, 10000L))/100.0;

                MakeOriginalAlphaString(26, 50,
I_DATA_LEN, i_data, 10);

                rc = bcp_sendrow(i_hdbc1);

                if (rc != SUCCEED)

HandleErrorDBC(i_hdbc1);

                item_rows_loaded++;
                CheckForCommit(i_hdbc1, i_hstmt1,
item_rows_loaded, "item", &time_start);
        }

        rcint = bcp_done(i_hdbc1);
        if (rcint < 0)
                HandleErrorDBC(i_hdbc1);


        printf("Finished loading item table.\n");


        SQLFreeStmt(i_hstmt1, SQL_DROP);
        SQLDisconnect(i_hdbc1);
        SQLFreeConnect(i_hdbc1);

        // if build index after load
```

```
        if ((aptr->build_index == 1) && (aptr-
>index_order == 0))
                BuildIndex("idxitmcl");

}

//===================================================
====================
//
// Function   : LoadWarehouse
//
// Loads WAREHOUSE table and loads Stock and District
as Warehouses are created
//
//===================================================
====================
void LoadWarehouse()
{
        int             i;
        long    w_id;
    char w_name[W_NAME_LEN+1];
    char w_street_1[ADDRESS_LEN+1];
    char w_street_2[ADDRESS_LEN+1];
    char w_city[ADDRESS_LEN+1];
    char w_state[STATE_LEN+1];
    char w_zip[ZIP_LEN+1];
    double  w_tax;
    double  w_ytd;
        char    name[20];
        long    time_start;
        RETCODE rc;
        DBINT   rcint;
        char    bcphint[128];
        char    err_log_path[256];

        // Seed with unique number
        seed(2);

        printf("Loading warehouse table...\n");

        // if build index before load...
        if ((aptr->build_index == 1) && (aptr-
>index_order == 1))
                BuildIndex("idxwarcl");

        InitString(w_name, W_NAME_LEN+1);
        InitAddress(w_street_1, w_street_2, w_city,
w_state, w_zip);

        sprintf(name, "%s..%s", aptr->database,
"warehouse");

        strcpy(err_log_path,aptr->log_path);
        strcat(err_log_path,"whouse.err");
        rc = bcp_init(w_hdbc1, name, NULL,
err_log_path, DB_IN);

        if (rc != SUCCEED)
                HandleErrorDBC(w_hdbc1);

        if ((aptr->build_index == 1) && (aptr-
>index_order == 1))
        {
```

```
        sprintf(bcphint, "tablock, order
(w_id), ROWS_PER_BATCH = %d", aptr->num_warehouses);
                rc = bcp_control(w_hdbc1,
BCPHINTS, (void*) bcphint);
                if (rc != SUCCEED)

        HandleErrorDBC(w_hdbc1);
        }

        i = 0;
        rc = bcp_bind(w_hdbc1, (BYTE *) &w_id, 0,
SQL_VARLEN_DATA, NULL, 0, SQLINT4, ++i);
                if (rc != SUCCEED)
                        HandleErrorDBC(w_hdbc1);
        rc = bcp_bind(w_hdbc1, (BYTE *) &w_ytd, 0,
SQL_VARLEN_DATA, NULL, 0, SQLFLT8, ++i);
                if (rc != SUCCEED)
                        HandleErrorDBC(w_hdbc1);
        rc = bcp_bind(w_hdbc1, (BYTE *) &w_tax, 0,
SQL_VARLEN_DATA, NULL, 0, SQLFLT8, ++i);
                if (rc != SUCCEED)
                        HandleErrorDBC(w_hdbc1);
        rc = bcp_bind(w_hdbc1, (BYTE *) w_name, 0,
W_NAME_LEN, NULL, 0, 0, ++i);
                if (rc != SUCCEED)
                        HandleErrorDBC(w_hdbc1);
        rc = bcp_bind(w_hdbc1, (BYTE *) w_street_1,
0, ADDRESS_LEN, NULL, 0, 0, ++i);
                if (rc != SUCCEED)
                        HandleErrorDBC(w_hdbc1);
        rc = bcp_bind(w_hdbc1, (BYTE *) w_street_2,
0, ADDRESS_LEN, NULL, 0, 0, ++i);
                if (rc != SUCCEED)
                        HandleErrorDBC(w_hdbc1);
        rc = bcp_bind(w_hdbc1, (BYTE *) w_city, 0,
ADDRESS_LEN, NULL, 0, 0, ++i);
                if (rc != SUCCEED)
                        HandleErrorDBC(w_hdbc1);
        rc = bcp_bind(w_hdbc1, (BYTE *) w_state, 0,
STATE_LEN, NULL, 0, 0, ++i);
                if (rc != SUCCEED)
                        HandleErrorDBC(w_hdbc1);
        rc = bcp_bind(w_hdbc1, (BYTE *) w_zip, 0,
ZIP_LEN, NULL, 0, 0, ++i);
                if (rc != SUCCEED)
                        HandleErrorDBC(w_hdbc1);

        time_start = (TimeNow() / MILLI);

        warehouse_rows_loaded = 0;

        for (w_id = (long)aptr->starting_warehouse;
w_id <= aptr->num_warehouses; w_id++)
                {
                        MakeAlphaStringPadded(6,10,
W_NAME_LEN, w_name);

                        MakeAddress(w_street_1,
w_street_2, w_city, w_state, w_zip);

                        w_tax = ((float)
RandomNumber(0L,2000L))/10000.00;
```

```
                w_ytd = 300000.00;

                rc = bcp_sendrow(w_hdbc1);
                if (rc != SUCCEED)

        HandleErrorDBC(w_hdbc1);

                warehouse_rows_loaded++;
                CheckForCommit(w_hdbc1, i_hstmt1,
warehouse_rows_loaded, "warehouse", &time_start);
                }

        rcint = bcp_done(w_hdbc1);
        if (rcint < 0)
                HandleErrorDBC(w_hdbc1);

        printf("Finished loading warehouse
table.\n");

        // if build index after load...
        if ((aptr->build_index == 1) && (aptr-
>index_order == 0))
                        BuildIndex("idxwarcl");

        stock_rows_loaded = 0;
        district_rows_loaded = 0;

        District();
        Stock();
}

//==================================================
====================
//
// Function   : District
//
//==================================================
====================
void District()
{
    int          i;
        short        d_id;
        long         d_w_id;
    char d_name[D_NAME_LEN+1];
    char d_street_1[ADDRESS_LEN+1];
    char d_street_2[ADDRESS_LEN+1];
    char d_city[ADDRESS_LEN+1];
    char d_state[STATE_LEN+1];
    char d_zip[ZIP_LEN+1];
    double       d_tax;
    double       d_ytd;
        char         name[20];
    long d_next_o_id;
        long         time_start;
        long         w_id;
        RETCODE      rc;
        DBINT        rcint;
        char         bcphint[128];
        char         err_log_path[256];

        // Seed with unique number
        seed(4);
```

```
        printf("Loading district table...\n");

        // build index before load
        if ((aptr->build_index == 1) && (aptr-
>index_order == 1))
                        BuildIndex("idxdiscl");

        InitString(d_name, D_NAME_LEN+1);
        InitAddress(d_street_1, d_street_2, d_city,
d_state, d_zip);
        sprintf(name, "%s..%s", aptr->database,
"district");

        strcpy(err_log_path,aptr->log_path);
        strcat(err_log_path,"district.err");
        rc = bcp_init(w_hdbc1, name, NULL,
err_log_path, DB_IN);
        if (rc != SUCCEED)
                        HandleErrorDBC(w_hdbc1);

        if ((aptr->build_index == 1) && (aptr-
>index_order == 1))
        {
                        sprintf(bcphint, "tablock, order
(d_w_id, d_id), ROWS_PER_BATCH = %u", (aptr-
>num_warehouses * 10));
                        rc = bcp_control(w_hdbc1,
BCPHINTS, (void*) bcphint);
                        if (rc != SUCCEED)

        HandleErrorDBC(w_hdbc1);
        }

        i = 0;
        rc = bcp_bind(w_hdbc1, (BYTE *) &d_id, 0,
SQL_VARLEN_DATA, NULL, 0, SQLINT2, ++i);
                if (rc != SUCCEED)
                        HandleErrorDBC(w_hdbc1);
        rc = bcp_bind(w_hdbc1, (BYTE *) &d_w_id, 0,
SQL_VARLEN_DATA, NULL, 0, SQLINT4, ++i);
                if (rc != SUCCEED)
                        HandleErrorDBC(w_hdbc1);
        rc = bcp_bind(w_hdbc1, (BYTE *) &d_ytd, 0,
SQL_VARLEN_DATA, NULL, 0, SQLFLT8, ++i);
                if (rc != SUCCEED)
                        HandleErrorDBC(w_hdbc1);
        rc = bcp_bind(w_hdbc1, (BYTE *)
&d_next_o_id, 0, SQL_VARLEN_DATA, NULL, 0, SQLINT4,
++i);
                if (rc != SUCCEED)
                        HandleErrorDBC(w_hdbc1);
        rc = bcp_bind(w_hdbc1, (BYTE *) &d_tax, 0,
SQL_VARLEN_DATA, NULL, 0, SQLFLT8, ++i);
                if (rc != SUCCEED)
                        HandleErrorDBC(w_hdbc1);
        rc = bcp_bind(w_hdbc1, (BYTE *) d_name, 0,
D_NAME_LEN, NULL, 0, 0, ++i);
                if (rc != SUCCEED)
                        HandleErrorDBC(w_hdbc1);
        rc = bcp_bind(w_hdbc1, (BYTE *) d_street_1,
0, ADDRESS_LEN, NULL, 0, 0, ++i);
                if (rc != SUCCEED)
```

```
            HandleErrorDBC(w_hdbc1);
        rc = bcp_bind(w_hdbc1, (BYTE *) d_street_2,
0, ADDRESS_LEN, NULL, 0, 0, ++i);
        if (rc != SUCCEED)
                HandleErrorDBC(w_hdbc1);
        rc = bcp_bind(w_hdbc1, (BYTE *) d_city, 0,
ADDRESS_LEN, NULL, 0, 0, ++i);
        if (rc != SUCCEED)
                HandleErrorDBC(w_hdbc1);
        rc = bcp_bind(w_hdbc1, (BYTE *) d_state, 0,
STATE_LEN, NULL, 0, 0, ++i);
        if (rc != SUCCEED)
                HandleErrorDBC(w_hdbc1);
        rc = bcp_bind(w_hdbc1, (BYTE *) d_zip, 0,
ZIP_LEN, NULL, 0, 0, ++i);
        if (rc != SUCCEED)
                HandleErrorDBC(w_hdbc1);

        d_ytd  = 30000.0;

        d_next_o_id = orders_per_district+1;

        time_start = (TimeNow() / MILLI);

        for (w_id = aptr->starting_warehouse; w_id
<= aptr->num_warehouses; w_id++)
        {
                d_w_id = w_id;

                for (d_id = 1; d_id <=
DISTRICT_PER_WAREHOUSE; d_id++)
                {
        MakeAlphaStringPadded(6,10,D_NAME_LEN,
d_name);

                        MakeAddress(d_street_1,
d_street_2, d_city, d_state, d_zip);

                        d_tax = ((float)
RandomNumber(0L,2000L))/10000.00;

                        rc =
bcp_sendrow(w_hdbc1);
                        if (rc != SUCCEED)

        HandleErrorDBC(w_hdbc1);

                        district_rows_loaded++;
                        CheckForCommit(w_hdbc1,
w_hstmt1, district_rows_loaded, "district",
&time_start);
                }
        }

        rcint = bcp_done(w_hdbc1);
        if (rcint < 0)
                HandleErrorDBC(w_hdbc1);

        printf("Finished loading district
table.\n");
```

```
        // if build index after load...
        if ((aptr->build_index == 1) && (aptr-
>index_order == 0))
                        BuildIndex("idxdiscl");

    return;
}

//==================================================
===================
//
// Function   : Stock
//
//==================================================
===================
void Stock()
{
        int            i;
        long      s_i_id;
        long      s_w_id;
    short s_quantity;
    char  s_dist_01[S_DIST_LEN+1];
    char  s_dist_02[S_DIST_LEN+1];
    char  s_dist_03[S_DIST_LEN+1];
    char  s_dist_04[S_DIST_LEN+1];
    char  s_dist_05[S_DIST_LEN+1];
    char  s_dist_06[S_DIST_LEN+1];
    char  s_dist_07[S_DIST_LEN+1];
    char  s_dist_08[S_DIST_LEN+1];
    char  s_dist_09[S_DIST_LEN+1];
    char  s_dist_10[S_DIST_LEN+1];
    long  s_ytd;
    short s_order_cnt;
    short s_remote_cnt;
    char  s_data[S_DATA_LEN+1];
    short len;
        char       name[20];
        long       time_start;
        RETCODE    rc;
        DBINT      rcint;
        char       bcphint[128];
        char       err_log_path[256];

        // Seed with unique number
        seed(3);

        // if build index before load...
        if ((aptr->build_index == 1) && (aptr-
>index_order == 1))
                        BuildIndex("idxstkcl");

        sprintf(name, "%s..%s", aptr->database,
"stock");

        strcpy(err_log_path,aptr->log_path);
        strcat(err_log_path,"stock.err");
        rc = bcp_init(w_hdbc1, name, NULL,
err_log_path, DB_IN);
        if (rc != SUCCEED)
                HandleErrorDBC(w_hdbc1);

        if ((aptr->build_index == 1) && (aptr-
>index_order == 1))
```

```
        {
                sprintf(bcphint, "tablock, order
(s_i_id, s_w_id), ROWS_PER_BATCH = %u", (aptr-
>num_warehouses * 100000));
                rc = bcp_control(w_hdbc1,
BCPHINTS, (void*) bcphint);
                if (rc != SUCCEED)

        HandleErrorDBC(w_hdbc1);
        }

        i = 0;
        rc = bcp_bind(w_hdbc1, (BYTE *) &s_i_id, 0,
SQL_VARLEN_DATA, NULL, 0, SQLINT4, ++i);
        if (rc != SUCCEED)
                HandleErrorDBC(w_hdbc1);
        rc = bcp_bind(w_hdbc1, (BYTE *) &s_w_id, 0,
SQL_VARLEN_DATA, NULL, 0, SQLINT4, ++i);
        if (rc != SUCCEED)
                HandleErrorDBC(w_hdbc1);
        rc = bcp_bind(w_hdbc1, (BYTE *)
&s_quantity, 0, SQL_VARLEN_DATA, NULL, 0, SQLINT2,
++i);
        if (rc != SUCCEED)
                HandleErrorDBC(w_hdbc1);
        rc = bcp_bind(w_hdbc1, (BYTE *) &s_ytd, 0,
SQL_VARLEN_DATA, NULL, 0, SQLINT4, ++i);
        if (rc != SUCCEED)
                HandleErrorDBC(w_hdbc1);
        rc = bcp_bind(w_hdbc1, (BYTE *)
&s_order_cnt, 0, SQL_VARLEN_DATA, NULL, 0, SQLINT2,
++i);
        if (rc != SUCCEED)
                HandleErrorDBC(w_hdbc1);
        rc = bcp_bind(w_hdbc1, (BYTE *)
&s_remote_cnt, 0, SQL_VARLEN_DATA, NULL, 0, SQLINT2,
++i);
        if (rc != SUCCEED)
                HandleErrorDBC(w_hdbc1);
        rc = bcp_bind(w_hdbc1, (BYTE *) s_data, 0,
SQL_VARLEN_DATA, "", 1, 0, ++i);
        if (rc != SUCCEED)
                HandleErrorDBC(w_hdbc1);
        rc = bcp_bind(w_hdbc1, (BYTE *) s_dist_01,
0, S_DIST_LEN, NULL, 0, 0, ++i);
        if (rc != SUCCEED)
                HandleErrorDBC(w_hdbc1);
        rc = bcp_bind(w_hdbc1, (BYTE *) s_dist_02,
0, S_DIST_LEN, NULL, 0, 0, ++i);
        if (rc != SUCCEED)
                HandleErrorDBC(w_hdbc1);
        rc = bcp_bind(w_hdbc1, (BYTE *) s_dist_03,
0, S_DIST_LEN, NULL, 0, 0, ++i);
        if (rc != SUCCEED)
                HandleErrorDBC(w_hdbc1);
        rc = bcp_bind(w_hdbc1, (BYTE *) s_dist_04,
0, S_DIST_LEN, NULL, 0, 0, ++i);
        if (rc != SUCCEED)
                HandleErrorDBC(w_hdbc1);
        rc = bcp_bind(w_hdbc1, (BYTE *) s_dist_05,
0, S_DIST_LEN, NULL, 0, 0, ++i);
        if (rc != SUCCEED)
                HandleErrorDBC(w_hdbc1);
```

```
        rc = bcp_bind(w_hdbc1, (BYTE *) s_dist_06,
0, S_DIST_LEN, NULL, 0, 0, ++i);
            if (rc != SUCCEED)
                    HandleErrorDBC(w_hdbc1);
        rc = bcp_bind(w_hdbc1, (BYTE *) s_dist_07,
0, S_DIST_LEN, NULL, 0, 0, ++i);
            if (rc != SUCCEED)
                    HandleErrorDBC(w_hdbc1);
        rc = bcp_bind(w_hdbc1, (BYTE *) s_dist_08,
0, S_DIST_LEN, NULL, 0, 0, ++i);
            if (rc != SUCCEED)
                    HandleErrorDBC(w_hdbc1);
        rc = bcp_bind(w_hdbc1, (BYTE *) s_dist_09,
0, S_DIST_LEN, NULL, 0, 0, ++i);
            if (rc != SUCCEED)
                    HandleErrorDBC(w_hdbc1);
        rc = bcp_bind(w_hdbc1, (BYTE *) s_dist_10,
0, S_DIST_LEN, NULL, 0, 0, ++i);
            if (rc != SUCCEED)
                    HandleErrorDBC(w_hdbc1);

        s_ytd = s_order_cnt = s_remote_cnt = 0;

        time_start = (TimeNow() / MILLI);

        printf("...Loading stock table\n");

        for (s_i_id=1; s_i_id <= max_items;
s_i_id++)
        {
                for (s_w_id = (long)aptr-
>starting_warehouse; s_w_id <= aptr->num_warehouses;
s_w_id++)
                {
                        s_quantity =
(short)RandomNumber(10L,100L);
                        len =
MakeAlphaString(24,24,S_DIST_LEN, s_dist_01);
                        len =
MakeAlphaString(24,24,S_DIST_LEN, s_dist_02);
                        len =
MakeAlphaString(24,24,S_DIST_LEN, s_dist_03);
                        len =
MakeAlphaString(24,24,S_DIST_LEN, s_dist_04);
                        len =
MakeAlphaString(24,24,S_DIST_LEN, s_dist_05);
                        len =
MakeAlphaString(24,24,S_DIST_LEN, s_dist_06);
                        len =
MakeAlphaString(24,24,S_DIST_LEN, s_dist_07);
                        len =
MakeAlphaString(24,24,S_DIST_LEN, s_dist_08);
                        len =
MakeAlphaString(24,24,S_DIST_LEN, s_dist_09);
                        len =
MakeAlphaString(24,24,S_DIST_LEN, s_dist_10);

                        len =
MakeOriginalAlphaString(26,50, S_DATA_LEN,
s_data,10);
```

```
                                rc =
bcp_sendrow(w_hdbc1);
                                if (rc != SUCCEED)

        HandleErrorDBC(w_hdbc1);

                                stock_rows_loaded++;

        CheckForCommit_Big(w_hdbc1, w_hstmt1,
stock_rows_loaded, "stock", &time_start);
                        }
                }

        rcint = bcp_done(w_hdbc1);
        if (rcint < 0)
                HandleErrorDBC(w_hdbc1);


        printf("Finished loading stock table.\n");

        SQLFreeStmt(w_hstmt1, SQL_DROP);
        SQLDisconnect(w_hdbc1);
        SQLFreeConnect(w_hdbc1);

        // if build index after load...
        if ((aptr->build_index == 1) && (aptr-
>index_order == 0))
                BuildIndex("idxstkcl");

        return;
}

//=====================================================
====================
//
// Function   : LoadCustomer
//
//=====================================================
====================
void LoadCustomer()
{
        LOADER_TIME_STRUCT
customer_time_start;
        LOADER_TIME_STRUCT       history_time_start;
        long
w_id;
    short                        d_id;
        DWORD
dwThreadID[MAX_CUSTOMER_THREADS];
        HANDLE
hThread[MAX_CUSTOMER_THREADS];
        char                          name[20];
        RETCODE
rc;
        DBINT
rcint;
        char
bcphint[128];
        char
cmd[256];
        int
                num_procs;
```

```
        char
        err_log_path_cust[256];
        char
        err_log_path_hist[256];

        // Seed with unique number
        seed(5);

        printf("Loading customer and history
tables...\n");

        // if build index before load...
        if ((aptr->build_index == 1) && (aptr-
>index_order == 1))
        {
                BuildIndex("idxcuscl");
                // check the number of
processors on this system
                // if 8 or more processors, then
build index on History.
                // if less than 8 processors, do
not build the index
                num_procs = atoi(getenv(
"NUMBER_OF_PROCESSORS" ));
                if ( num_procs >= 8 )
                        BuildIndex("idxhiscl");
        }

        // Initialize bulk copy
        sprintf(name, "%s..%s", aptr->database,
"customer");

        strcpy(err_log_path_cust,aptr->log_path);
        strcat(err_log_path_cust,"customer.err");
        rc = bcp_init(c_hdbc1, name, NULL,
err_log_path_cust, DB_IN);
        if (rc != SUCCEED)
                HandleErrorDBC(c_hdbc1);

        if ((aptr->build_index == 1) && (aptr-
>index_order == 1))
        {
                sprintf(bcphint, "tablock, order
(c_w_id, c_d_id, c_id), ROWS_PER_BATCH = %u", (aptr-
>num_warehouses * 30000));
                rc = bcp_control(c_hdbc1,
BCPHINTS, (void*) bcphint);
                if (rc != SUCCEED)

        HandleErrorDBC(c_hdbc1);
        }

        sprintf(name, "%s..%s", aptr->database,
"history");

        rc = bcp_init(c_hdbc2, name, NULL,
"logs\\history.err", DB_IN);
        strcpy(err_log_path_hist,aptr->log_path);
        strcat(err_log_path_hist,"history.err");
        rc = bcp_init(c_hdbc2, name, NULL,
err_log_path_hist, DB_IN);
        if (rc != SUCCEED)
                HandleErrorDBC(c_hdbc2);
```

```
        sprintf(bcphint, "tablock");
        rc = bcp_control(c_hdbc2, BCPHINTS, (void*)
bcphint);
        if (rc != SUCCEED)
                HandleErrorDBC(c_hdbc2);

        customer_rows_loaded    = 0;
        history_rows_loaded     = 0;

        CustomerBufInit();

        customer_time_start.time_start = (TimeNow()
/ MILLI);
        history_time_start.time_start = (TimeNow()
/ MILLI);

        for (w_id = (long)aptr->starting_warehouse;
w_id <= aptr->num_warehouses; w_id++)
        {
                for (d_id = 1; d_id <=
DISTRICT_PER_WAREHOUSE; d_id++)
                {
                        CustomerBufLoad(d_id,
w_id);
                        // Start parallel
loading threads here...
                        // Start customer table
thread
                        printf("...Loading
customer table for: d_id = %d, w_id = %d\n", d_id,
w_id);
                        hThread[0] =
CreateThread(NULL,

                                                0,

(LPTHREAD_START_ROUTINE) LoadCustomerTable,

&customer_time_start,

                                                0,

&dwThreadID[0]);

                        if (hThread[0] == NULL)
                        {
                printf("Error, failed in creating creating
thread = 0.\n");
                                        exit(-1);
                        }
                        // Start History table
thread
```

```
                        printf("...Loading
history table for: d_id = %d, w_id = %d\n", d_id,
w_id);

                        hThread[1] =
CreateThread(NULL,

                                                0,

(LPTHREAD_START_ROUTINE) LoadHistoryTable,

&history_time_start,

                                                0,

&dwThreadID[1]);

                        if (hThread[1] == NULL)
                        {
                printf("Error, failed in creating creating
thread = 1.\n");
                                        exit(-1);
                        }
                        WaitForSingleObject(
hThread[0], INFINITE );
                        WaitForSingleObject(
hThread[1], INFINITE );
                        if
(CloseHandle(hThread[0]) == FALSE)
                        {
                printf("Error, failed in closing customer
thread handle with errno: %d\n", GetLastError());
                        }
                        if
(CloseHandle(hThread[1]) == FALSE)
                        {
                printf("Error, failed in closing history
thread handle with errno: %d\n", GetLastError());
                        }
                }
        }
        // flush the bulk connection
        rcint = bcp_done(c_hdbc1);
        if (rcint < 0)
                HandleErrorDBC(c_hdbc1);

        rcint = bcp_done(c_hdbc2);
        if (rcint < 0)
                HandleErrorDBC(c_hdbc2);
```

```
        printf("Finished loading customer
table.\n");

        // if build index after load...
        if ((aptr->build_index == 1) && (aptr-
>index_order == 0))
        {
                BuildIndex("idxcuscl");
                // check the number of processors
on this system
                // if 8 or more processors, then
build index on History.
                // if less than 8 processors, do
not build the index
                num_procs = atoi(getenv(
"NUMBER_OF_PROCESSORS" ));
                if (num_procs >= 8)
                        BuildIndex("idxhiscl");
        }

        // build non-clustered index
        if (aptr->build_index == 1)
                BuildIndex("idxcusnc");

        // Output the NURAND used for the loader
into C_FIRST for C_ID = 1,
        // C_W_ID = 1, and C_D_ID = 1
        sprintf(cmd, "osql -S%s -U%s -P%s -d%s -e -
Q\"update customer set c_first = 'C_LOAD = %d' where
c_id = 1 and c_w_id = 1 and c_d_id = 1\" >
%snurand_load.log",
                                        aptr->server,
                                        aptr->user,
                                        aptr-
>password,
                                        aptr-
>database,

                LOADER_NURAND_C,
                                        aptr-
>log_path);

        system(cmd);

        SQLFreeStmt(c_hstmt1, SQL_DROP);
        SQLDisconnect(c_hdbc1);
        SQLFreeConnect(c_hdbc1);

        SQLFreeStmt(c_hstmt2, SQL_DROP);
        SQLDisconnect(c_hdbc2);
        SQLFreeConnect(c_hdbc2);

    return;
}

//=====================================================
====================
//
// Function   : CustomerBufInit
//
//=====================================================
====================
void CustomerBufInit()
```

```
{
        long    i;

        for (i=0;i<customers_per_district;i++)
        {
                customer_buf[i].c_id = 0;
                customer_buf[i].c_d_id = 0;
                customer_buf[i].c_w_id = 0;

        strcpy(customer_buf[i].c_first,"");

        strcpy(customer_buf[i].c_middle,"");

        strcpy(customer_buf[i].c_last,"");

        strcpy(customer_buf[i].c_street_1,"");

        strcpy(customer_buf[i].c_street_2,"");

        strcpy(customer_buf[i].c_city,"");

        strcpy(customer_buf[i].c_state,"");
                strcpy(customer_buf[i].c_zip,"");

        strcpy(customer_buf[i].c_phone,"");

        strcpy(customer_buf[i].c_credit,"");

                customer_buf[i].c_credit_lim = 0;
                customer_buf[i].c_discount =
(float) 0;

        strcpy(customer_buf[i].c_balance,"");

                customer_buf[i].c_ytd_payment =
0;
                customer_buf[i].c_payment_cnt =
0;
                customer_buf[i].c_delivery_cnt =
0;

        strcpy(customer_buf[i].c_data,"");

                customer_buf[i].h_amount = 0;

        strcpy(customer_buf[i].h_data,"");
        }
}
//====================================================
====================
//
// Function   : CustomerBufLoad
//
// Fills shared buffer for HISTORY and CUSTOMER
//====================================================
====================
void CustomerBufLoad(int d_id, long w_id)
```

```
{
        long                            i;
        CUSTOMER_SORT_STRUCT
c[CUSTOMERS_PER_DISTRICT];

        for (i=0;i<customers_per_district;i++)
        {
                if (i < 1000)
                        LastName(i,
c[i].c_last);
                else
                LastName(NURand(255,0,999,LOADER_NURAND_C),
c[i].c_last);

                MakeAlphaStringPadded(8,16,FIRST_NAME_LEN,
c[i].c_first);

                c[i].c_id = i+1;
        }

        printf("...Loading customer buffer for:
d_id = %d, w_id = %d\n",
                        d_id, w_id);

        for (i=0;i<customers_per_district;i++)
        {
                customer_buf[i].c_d_id = d_id;
                customer_buf[i].c_w_id = w_id;
                customer_buf[i].h_amount = 10.0;
                customer_buf[i].c_ytd_payment =
10.0;
                customer_buf[i].c_payment_cnt =
1;
                customer_buf[i].c_delivery_cnt =
0;
                customer_buf[i].c_id = c[i].c_id;
                strcpy(customer_buf[i].c_first,
c[i].c_first);
                strcpy(customer_buf[i].c_last,
c[i].c_last);
                customer_buf[i].c_middle[0] =
'O';
                customer_buf[i].c_middle[1] =
'E';

        MakeAddress(customer_buf[i].c_street_1,
customer_buf[i].c_street_2,

customer_buf[i].c_city,

customer_buf[i].c_state,

customer_buf[i].c_zip);
                MakeNumberString(16, 16,
PHONE_LEN, customer_buf[i].c_phone);

                if (RandomNumber(1L, 100L) > 10)

        customer_buf[i].c_credit[0] = 'G';
                else
```

```
        customer_buf[i].c_credit[0] = 'B';
                customer_buf[i].c_credit[1] =
'C';
                customer_buf[i].c_credit_lim =
50000.0;
                customer_buf[i].c_discount =
((float) RandomNumber(0L, 5000L)) / 10000.0;

        strcpy(customer_buf[i].c_balance,"-10.0");
                MakeAlphaStringPadded(300, 500,
C_DATA_LEN, customer_buf[i].c_data);

                // Generate HISTORY data
                MakeAlphaStringPadded(12, 24,
H_DATA_LEN, customer_buf[i].h_data);
        }
}
//====================================================
====================
//
// Function   : LoadCustomerTable
//
//====================================================
====================
void LoadCustomerTable(LOADER_TIME_STRUCT
*customer_time_start)
{
        long                i;
    long        c_id;
    short       c_d_id;
    long                    c_w_id;
    char        c_first[FIRST_NAME_LEN+1];
    char        c_middle[MIDDLE_NAME_LEN+1];
    char        c_last[LAST_NAME_LEN+1];
    char        c_street_1[ADDRESS_LEN+1];
    char        c_street_2[ADDRESS_LEN+1];
    char        c_city[ADDRESS_LEN+1];
    char        c_state[STATE_LEN+1];
    char        c_zip[ZIP_LEN+1];
    char        c_phone[PHONE_LEN+1];
    char        c_credit[CREDIT_LEN+1];
    double      c_credit_lim;
    double      c_discount;
        char                c_balance[6];
    double      c_ytd_payment;
    short       c_payment_cnt;
    short       c_delivery_cnt;
    char        c_data[C_DATA_LEN+1];
        char                c_since[C_SINCE_LEN+1];

        RETCODE         rc;

    i = 0;
    rc = bcp_bind(c_hdbc1, (BYTE *) &c_id, 0,
SQL_VARLEN_DATA, NULL, 0, SQLINT4, ++i);
        if (rc != SUCCEED)
                HandleErrorDBC(c_hdbc1);
    rc = bcp_bind(c_hdbc1, (BYTE *) &c_d_id, 0,
SQL_VARLEN_DATA, NULL, 0, SQLINT2, ++i);
        if (rc != SUCCEED)
```

```c
            HandleErrorDBC(c_hdbc1);
    rc = bcp_bind(c_hdbc1, (BYTE *) &c_w_id, 0,
SQL_VARLEN_DATA, NULL, 0, SQLINT4, ++i);
        if (rc != SUCCEED)
            HandleErrorDBC(c_hdbc1);
    rc = bcp_bind(c_hdbc1, (BYTE *) &c_discount, 0,
SQL_VARLEN_DATA, NULL, 0, SQLFLT8, ++i);
        if (rc != SUCCEED)
            HandleErrorDBC(c_hdbc1);
    rc = bcp_bind(c_hdbc1, (BYTE *) &c_credit_lim, 0,
SQL_VARLEN_DATA, NULL, 0, SQLFLT8, ++i);
        if (rc != SUCCEED)
            HandleErrorDBC(c_hdbc1);
    rc = bcp_bind(c_hdbc1, (BYTE *) c_last, 0,
LAST_NAME_LEN, NULL, 0, 0, ++i);
        if (rc != SUCCEED)
            HandleErrorDBC(c_hdbc1);
    rc = bcp_bind(c_hdbc1, (BYTE *) c_first, 0,
FIRST_NAME_LEN, NULL, 0, 0, ++i);
        if (rc != SUCCEED)
            HandleErrorDBC(c_hdbc1);
    rc = bcp_bind(c_hdbc1, (BYTE *) c_credit, 0,
CREDIT_LEN, NULL, 0, 0, ++i);
        if (rc != SUCCEED)
            HandleErrorDBC(c_hdbc1);
    rc = bcp_bind(c_hdbc1, (BYTE *) c_balance, 0, 5,
NULL, 0, SQLCHARACTER, ++i);
        if (rc != SUCCEED)
            HandleErrorDBC(c_hdbc1);
    rc = bcp_bind(c_hdbc1, (BYTE *) &c_ytd_payment,
0, SQL_VARLEN_DATA, NULL, 0, SQLFLT8, ++i);
        if (rc != SUCCEED)
            HandleErrorDBC(c_hdbc1);
    rc = bcp_bind(c_hdbc1, (BYTE *) &c_payment_cnt,
0, SQL_VARLEN_DATA, NULL, 0, SQLINT2, ++i);
        if (rc != SUCCEED)
            HandleErrorDBC(c_hdbc1);
    rc = bcp_bind(c_hdbc1, (BYTE *)
&c_delivery_cnt,0, SQL_VARLEN_DATA, NULL, 0, SQLINT2,
++i);
        if (rc != SUCCEED)
            HandleErrorDBC(c_hdbc1);
    rc = bcp_bind(c_hdbc1, (BYTE *) c_street_1, 0,
ADDRESS_LEN, NULL, 0, 0, ++i);
        if (rc != SUCCEED)
            HandleErrorDBC(c_hdbc1);
    rc = bcp_bind(c_hdbc1, (BYTE *) c_street_2, 0,
ADDRESS_LEN, NULL,0,0, ++i);
        if (rc != SUCCEED)
            HandleErrorDBC(c_hdbc1);
    rc = bcp_bind(c_hdbc1, (BYTE *) c_city, 0,
ADDRESS_LEN, NULL, 0, 0, ++i);
        if (rc != SUCCEED)
            HandleErrorDBC(c_hdbc1);
    rc = bcp_bind(c_hdbc1, (BYTE *) c_state, 0,
STATE_LEN, NULL, 0, 0, ++i);
        if (rc != SUCCEED)
            HandleErrorDBC(c_hdbc1);
    rc = bcp_bind(c_hdbc1, (BYTE *) c_zip, 0,
ZIP_LEN, NULL, 0, 0, ++i);
        if (rc != SUCCEED)
            HandleErrorDBC(c_hdbc1);

    rc = bcp_bind(c_hdbc1, (BYTE *) c_phone, 0,
PHONE_LEN, NULL, 0, 0, ++i);
        if (rc != SUCCEED)
            HandleErrorDBC(c_hdbc1);
    rc = bcp_bind(c_hdbc1, (BYTE *) &c_since,
0, C_SINCE_LEN, NULL, 0, SQLCHARACTER, ++i);
        if (rc != SUCCEED)
            HandleErrorDBC(c_hdbc1);
    rc = bcp_bind(c_hdbc1, (BYTE *) c_middle,
0, MIDDLE_NAME_LEN,NULL, 0, 0, ++i);
        if (rc != SUCCEED)
            HandleErrorDBC(c_hdbc1);
    rc = bcp_bind(c_hdbc1, (BYTE *) c_data, 0,
C_DATA_LEN, NULL, 0, 0, ++i);
        if (rc != SUCCEED)
            HandleErrorDBC(c_hdbc1);

    for (i = 0; i < customers_per_district; i++)
    {
            c_id = customer_buf[i].c_id;
            c_d_id = customer_buf[i].c_d_id;
            c_w_id = customer_buf[i].c_w_id;

            strcpy(c_first,
customer_buf[i].c_first);
            strcpy(c_middle,
customer_buf[i].c_middle);
            strcpy(c_last,
customer_buf[i].c_last);
            strcpy(c_street_1,
customer_buf[i].c_street_1);
            strcpy(c_street_2,
customer_buf[i].c_street_2);
            strcpy(c_city,
customer_buf[i].c_city);
            strcpy(c_state,
customer_buf[i].c_state);
            strcpy(c_zip,
customer_buf[i].c_zip);
            strcpy(c_phone,
customer_buf[i].c_phone);
            strcpy(c_credit,
customer_buf[i].c_credit);

            FormatDate(&c_since);


            c_credit_lim =
customer_buf[i].c_credit_lim;
            c_discount =
customer_buf[i].c_discount;
            strcpy(c_balance,
customer_buf[i].c_balance);
            c_ytd_payment =
customer_buf[i].c_ytd_payment;
            c_payment_cnt =
customer_buf[i].c_payment_cnt;
            c_delivery_cnt =
customer_buf[i].c_delivery_cnt;
            strcpy(c_data,
customer_buf[i].c_data);

            // Send data to server

            rc = bcp_sendrow(c_hdbc1);
            if (rc != SUCCEED)

        HandleErrorDBC(c_hdbc1);

            customer_rows_loaded++;
            CheckForCommit(c_hdbc1, c_hstmt1,
customer_rows_loaded, "customer",
&customer_time_start->time_start);
    }
}

//===================================================
====================
//
// Function   : LoadHistoryTable
//
//===================================================
====================
void LoadHistoryTable(LOADER_TIME_STRUCT
*history_time_start)
{
        long                i;
    long        c_id;
    short       c_d_id;
        long                c_w_id;
        double    h_amount;
    char        h_data[H_DATA_LEN+1];
        char                h_date[H_DATE_LEN+1];

        RETCODE            rc;

        i = 0;
    rc = bcp_bind(c_hdbc2, (BYTE *) &c_id, 0,
SQL_VARLEN_DATA, NULL, 0, SQLINT4, ++i);
        if (rc != SUCCEED)
            HandleErrorDBC(c_hdbc2);
    rc = bcp_bind(c_hdbc2, (BYTE *) &c_d_id, 0,
SQL_VARLEN_DATA, NULL, 0, SQLINT2, ++i);
        if (rc != SUCCEED)
            HandleErrorDBC(c_hdbc2);
    rc = bcp_bind(c_hdbc2, (BYTE *) &c_w_id, 0,
SQL_VARLEN_DATA, NULL, 0, SQLINT4, ++i);
        if (rc != SUCCEED)
            HandleErrorDBC(c_hdbc2);
    rc = bcp_bind(c_hdbc2, (BYTE *) &c_d_id, 0,
SQL_VARLEN_DATA, NULL, 0, SQLINT2, ++i);
        if (rc != SUCCEED)
            HandleErrorDBC(c_hdbc2);
    rc = bcp_bind(c_hdbc2, (BYTE *) &c_w_id, 0,
SQL_VARLEN_DATA, NULL, 0, SQLINT4, ++i);
        if (rc != SUCCEED)
            HandleErrorDBC(c_hdbc2);
    rc = bcp_bind(c_hdbc2, (BYTE *) &h_date, 0,
H_DATE_LEN, NULL, 0, SQLCHARACTER, ++i);
        if (rc != SUCCEED)
            HandleErrorDBC(c_hdbc2);
    rc = bcp_bind(c_hdbc2, (BYTE *) &h_amount, 0,
SQL_VARLEN_DATA, NULL, 0, SQLFLT8, ++i);
        if (rc != SUCCEED)
            HandleErrorDBC(c_hdbc2);
    rc = bcp_bind(c_hdbc2, (BYTE *) h_data, 0,
H_DATA_LEN, NULL, 0, 0, ++i);
```

```c
        if (rc != SUCCEED)
                HandleErrorDBC(c_hdbc2);

    for (i = 0; i < customers_per_district; i++)
    {
                c_id = customer_buf[i].c_id;
                c_d_id = customer_buf[i].c_d_id;
                c_w_id = customer_buf[i].c_w_id;
                h_amount =
customer_buf[i].h_amount;
                strcpy(h_data,
customer_buf[i].h_data);

                FormatDate(&h_date);

                // send to server
                rc = bcp_sendrow(c_hdbc2);
                if (rc != SUCCEED)

        HandleErrorDBC(c_hdbc2);

                history_rows_loaded++;
                CheckForCommit(c_hdbc2, c_hstmt2,
history_rows_loaded, "history", &history_time_start-
>time_start);
        }
}
//====================================================
=========-================
//
// Function   : LoadOrders
//
//====================================================
========================
void LoadOrders()
{
        LOADER_TIME_STRUCT      orders_time_start;
        LOADER_TIME_STRUCT
new_order_time_start;
        LOADER_TIME_STRUCT
order_line_time_start;
        long
        w_id;
    short                   d_id;
        DWORD
        dwThreadID[MAX_ORDER_THREADS];
        HANDLE
        hThread[MAX_ORDER_THREADS];
        char                        name[20];
        RETCODE
        rc;
        char
        bcphint[128];
        char
        err_log_path_ord[256];
        char
        err_log_path_nord[256];
        char
        err_log_path_ordl[256];
```

```c
        // seed with unique number
        seed(6);

        printf("Loading orders...\n");

        // if build index before load...
        if ((aptr->build_index == 1) && (aptr-
>index_order == 1))
        {
                        BuildIndex("idxordcl");
                        BuildIndex("idxnodcl");
                        BuildIndex("idxodlcl");
        }

        // initialize bulk copy
        sprintf(name, "%s..%s", aptr->database,
"orders");

        rc = bcp_init(o_hdbc1, name, NULL,
"logs\\orders.err", DB_IN);
                strcpy(err_log_path_ord,aptr->log_path);
                strcat(err_log_path_ord,"orders.err");
                rc = bcp_init(o_hdbc1, name, NULL,
err_log_path_ord, DB_IN);
                if (rc != SUCCEED)
                        HandleErrorDBC(o_hdbc1);

                if ((aptr->build_index == 1) && (aptr-
>index_order == 1))
                {
                        sprintf(bcphint, "tablock, order
(o_w_id, o_d_id, o_id), ROWS_PER_BATCH = %u", (aptr-
>num_warehouses * 30000));
                        rc = bcp_control(o_hdbc1,
BCPHINTS, (void*) bcphint);
                                if (rc != SUCCEED)

        HandleErrorDBC(o_hdbc1);
                }

        sprintf(name, "%s..%s", aptr->database,
"new_order");

        rc = bcp_init(o_hdbc2, name, NULL,
"logs\\neword.err", DB_IN);
                strcpy(err_log_path_nord,aptr->log_path);
                strcat(err_log_path_nord,"neword.err");
                rc = bcp_init(o_hdbc2, name, NULL,
err_log_path_nord, DB_IN);
                if (rc != SUCCEED)
                        HandleErrorDBC(o_hdbc2);

                if ((aptr->build_index == 1) && (aptr-
>index_order == 1))
                {
                        sprintf(bcphint, "tablock, order
(no_w_id, no_d_id, no_o_id), ROWS_PER_BATCH = %u",
(aptr->num_warehouses * 9000));
                        rc = bcp_control(o_hdbc2,
BCPHINTS, (void*) bcphint);
                                if (rc != SUCCEED)
```

```c
                HandleErrorDBC(o_hdbc2);
                }

        sprintf(name, "%s..%s", aptr->database,
"order_line");

        rc = bcp_init(o_hdbc3, name, NULL,
"logs\\ordline.err", DB_IN);
                strcpy(err_log_path_ordl,aptr->log_path);
                strcat(err_log_path_ordl,"ordline.err");
                rc = bcp_init(o_hdbc3, name, NULL,
err_log_path_ordl, DB_IN);
                if (rc != SUCCEED)
                        HandleErrorDBC(o_hdbc3);

        if ((aptr->build_index == 1) && (aptr-
>index_order == 1))
        {
                sprintf(bcphint, "tablock, order
(ol_w_id, ol_d_id, ol_o_id, ol_number),
ROWS_PER_BATCH = %u", (aptr->num_warehouses *
300000));
                rc = bcp_control(o_hdbc3,
BCPHINTS, (void*) bcphint);
                        if (rc != SUCCEED)

        HandleErrorDBC(o_hdbc3);
        }

        orders_rows_loaded      = 0;
        new_order_rows_loaded   = 0;
        order_line_rows_loaded  = 0;

        OrdersBufInit();

        orders_time_start.time_start = (TimeNow() /
MILLI);
        new_order_time_start.time_start =
(TimeNow() / MILLI);
        order_line_time_start.time_start =
(TimeNow() / MILLI);

        for (w_id = (long)aptr->starting_warehouse;
w_id <= aptr->num_warehouses; w_id++)
        {
                for (d_id = 1; d_id <=
DISTRICT_PER_WAREHOUSE; d_id++)
                {

                        OrdersBufLoad(d_id,
w_id);

                        // start parallel
loading threads here...
                        // start Orders table
thread
                        printf("...Loading
Order Table for: d_id = %d, w_id = %d\n", d_id,
w_id);

                        hThread[0] =
CreateThread(NULL,
```

```
                                             0,

(LPTHREAD_START_ROUTINE) LoadOrdersTable,

&orders_time_start,

                                             0,

&dwThreadID[0]);

                        if (hThread[0] == NULL)
                        {
        printf("Error, failed in creating creating
thread = 0.\n");
                                exit(-1);
                        }
                        // start NewOrder table
thread
                        printf("...Loading New-
Order Table for: d_id = %d, w_id = %d\n", d_id,
w_id);
                        hThread[1] =
CreateThread(NULL,

                                             0,

(LPTHREAD_START_ROUTINE) LoadNewOrderTable,

&new_order_time_start,

                                             0,

&dwThreadID[1]);

                        if (hThread[1] == NULL)
                        {
        printf("Error, failed in creating creating
thread = 1.\n");
                                exit(-1);
                        }
                        // start Order-Line
table thread
                        printf("...Loading
Order-Line Table for: d_id = %d, w_id = %d\n", d_id,
w_id);
                        hThread[2] =
CreateThread(NULL,

                                             0,
```

```
(LPTHREAD_START_ROUTINE) LoadOrderLineTable,

&order_line_time_start,

                                             0,

&dwThreadID[2]);

                        if (hThread[2] == NULL)
                        {
        printf("Error, failed in creating creating
thread = 2.\n");
                                exit(-1);
                        }
                        WaitForSingleObject(
hThread[0], INFINITE );
                        WaitForSingleObject(
hThread[1], INFINITE );
                        WaitForSingleObject(
hThread[2], INFINITE );
                        if
(CloseHandle(hThread[0]) == FALSE)
                        {
        printf("Error, failed in closing Orders
thread handle with errno: %d\n", GetLastError());
                        }
                        if
(CloseHandle(hThread[1]) == FALSE)
                        {
        printf("Error, failed in closing NewOrder
thread handle with errno: %d\n", GetLastError());
                        }
                        if
(CloseHandle(hThread[2]) == FALSE)
                        {
        printf("Error, failed in closing OrderLine
thread handle with errno: %d\n", GetLastError());
                        }
                }
        }
        printf("Finished loading orders.\n");

    return;
}

//=====================================================
===================
//
// Function   : OrdersBufInit
//
```

```
// Clears shared buffer for ORDERS, NEWORDER, and
ORDERLINE
//
//=====================================================
===================
void OrdersBufInit()
{
        int     i;
        int               j;

        for (i=0;i<orders_per_district;i++)
        {
                orders_buf[i].o_id = 0;
                orders_buf[i].o_d_id = 0;
                orders_buf[i].o_w_id = 0;
                orders_buf[i].o_c_id = 0;
                orders_buf[i].o_carrier_id = 0;
                orders_buf[i].o_ol_cnt = 0;
                orders_buf[i].o_all_local = 0;

                for (j=0;j<=14;j++)
                {

        orders_buf[i].o_ol[j].ol = 0;

        orders_buf[i].o_ol[j].ol_i_id = 0;

        orders_buf[i].o_ol[j].ol_supply_w_id = 0;

        orders_buf[i].o_ol[j].ol_quantity = 0;

        orders_buf[i].o_ol[j].ol_amount = 0;

        strcpy(orders_buf[i].o_ol[j].ol_dist_info,"
");
                }
        }
}

//=====================================================
===================
//
// Function   : OrdersBufLoad
//
// Fills shared buffer for ORDERS, NEWORDER, and
ORDERLINE
//
//=====================================================
===================
void OrdersBufLoad(short d_id, long w_id)
{
        int     cust[ORDERS_PER_DISTRICT+1];
        long    o_id;
        long     ol;

        printf("...Loading Order Buffer for: d_id =
%d, w_id = %d\n",
                        d_id, w_id);

        GetPermutation(cust, orders_per_district);
```

```
        for
(o_id=0;o_id<orders_per_district;o_id++)
                {
                        // Generate ORDER and NEW-ORDER
data
                        orders_buf[o_id].o_d_id = d_id;
                        orders_buf[o_id].o_w_id = w_id;
                        orders_buf[o_id].o_id = o_id+1;
                        orders_buf[o_id].o_c_id =
cust[o_id+1];
                        orders_buf[o_id].o_ol_cnt =
(short)RandomNumber(5L, 15L);

                        if (o_id < first_new_order)
                        {

        orders_buf[o_id].o_carrier_id =
(short)RandomNumber(1L, 10L);

        orders_buf[o_id].o_all_local  = 1;
                        }
                        else
                        {

        orders_buf[o_id].o_carrier_id = 0;

        orders_buf[o_id].o_all_local  = 1;
                        }

                        for (ol=0;
ol<orders_buf[o_id].o_ol_cnt; ol++)
                        {

        orders_buf[o_id].o_ol[ol].ol = ol+1;

        orders_buf[o_id].o_ol[ol].ol_i_id =
RandomNumber(1L, max_items);

        orders_buf[o_id].o_ol[ol].ol_supply_w_id =
w_id;

        orders_buf[o_id].o_ol[ol].ol_quantity = 5;
                                MakeAlphaString(24, 24,
OL_DIST_INFO_LEN,
&orders_buf[o_id].o_ol[ol].ol_dist_info);

                                // Generate ORDER-LINE
data
                                if (o_id <
first_new_order)
                                {

        orders_buf[o_id].o_ol[ol].ol_amount = 0;
                                        // Added to
insure ol_delivery_d set properly during load

        FormatDate(&orders_buf[o_id].o_ol[ol].ol_de
livery_d);

                                }
                                else
                                {
```

```
                        orders_buf[o_id].o_ol[ol].ol_amount =
RandomNumber(1,999999)/100.0;
                                                // Added to
insure ol_delivery_d set properly during load

                                                // odbc
datetime format
                                strcpy(orders_buf[o_id].o_ol[ol].ol_deliver
y_d,"1899-12-31 00:00:00.000");
                                }
                        }
                }
}

//===================================================
====================
//
// Function   : LoadOrdersTable
//
//===================================================
====================
void LoadOrdersTable(LOADER_TIME_STRUCT
*orders_time_start)
{
        int             i;
    long        o_id;
        short       o_d_id;
        long                o_w_id;
    long        o_c_id;
    short       o_carrier_id;
    short       o_ol_cnt;
    short       o_all_local;
        char
o_entry_d[O_ENTRY_D_LEN+1];
        RETCODE             rc;
        DBINT               rcint;

        // bind ORDER data
    i = 0;
        rc = bcp_bind(o_hdbc1, (BYTE *) &o_id, 0,
SQL_VARLEN_DATA, NULL, 0, SQLINT4, ++i);
                if (rc != SUCCEED)
                        HandleErrorDBC(o_hdbc1);
        rc = bcp_bind(o_hdbc1, (BYTE *) &o_d_id, 0,
SQL_VARLEN_DATA, NULL, 0, SQLINT2, ++i);
                if (rc != SUCCEED)
                        HandleErrorDBC(o_hdbc1);
        rc = bcp_bind(o_hdbc1, (BYTE *) &o_w_id, 0,
SQL_VARLEN_DATA, NULL, 0, SQLINT4, ++i);
                if (rc != SUCCEED)
                        HandleErrorDBC(o_hdbc1);
        rc = bcp_bind(o_hdbc1, (BYTE *) &o_c_id, 0,
SQL_VARLEN_DATA, NULL, 0, SQLINT4, ++i);
                if (rc != SUCCEED)
                        HandleErrorDBC(o_hdbc1);
        rc = bcp_bind(o_hdbc1, (BYTE *) &o_carrier_id, 0,
SQL_VARLEN_DATA, NULL, 0, SQLINT2, ++i);
                if (rc != SUCCEED)
                        HandleErrorDBC(o_hdbc1);
        rc = bcp_bind(o_hdbc1, (BYTE *) &o_ol_cnt, 0,
SQL_VARLEN_DATA, NULL, 0, SQLINT2, ++i);
```

```
                if (rc != SUCCEED)
                        HandleErrorDBC(o_hdbc1);
        rc = bcp_bind(o_hdbc1, (BYTE *) &o_all_local, 0,
SQL_VARLEN_DATA, NULL, 0, SQLINT2, ++i);
                if (rc != SUCCEED)
                        HandleErrorDBC(o_hdbc1);
        rc = bcp_bind(o_hdbc1, (BYTE *) &o_entry_d,
0, O_ENTRY_D_LEN, NULL, 0, SQLCHARACTER, ++i);
                if (rc != SUCCEED)
                        HandleErrorDBC(o_hdbc1);

        for (i = 0; i < orders_per_district; i++)
        {
                o_id             =
orders_buf[i].o_id;
                o_d_id           =
orders_buf[i].o_d_id;
                o_w_id           =
orders_buf[i].o_w_id;
                o_c_id           =
orders_buf[i].o_c_id;
                o_carrier_id =
orders_buf[i].o_carrier_id;
                o_ol_cnt         =
orders_buf[i].o_ol_cnt;
                o_all_local  =
orders_buf[i].o_all_local;

                FormatDate(&o_entry_d);

                // send data to server
                rc = bcp_sendrow(o_hdbc1);
                if (rc != SUCCEED)

        HandleErrorDBC(o_hdbc1);

                orders_rows_loaded++;
                CheckForCommit(o_hdbc1, o_hstmt1,
orders_rows_loaded, "orders", &orders_time_start-
>time_start);
        }

        if ((o_w_id == aptr->num_warehouses) &&
(o_d_id == 10))
        {
                rcint = bcp_done(o_hdbc1);

                if (rcint < 0)

        HandleErrorDBC(o_hdbc1);

                SQLFreeStmt(o_hstmt1, SQL_DROP);
                SQLDisconnect(o_hdbc1);
                SQLFreeConnect(o_hdbc1);

                // if build index after load...
                if ((aptr->build_index == 1) &&
(aptr->index_order == 0))
                        BuildIndex("idxordcl");

                // build non-clustered index
                if (aptr->build_index == 1)
```

```
                    BuildIndex("idxordnc");
        }
}

//===================================================
====================
//
// Function   : LoadNewOrderTable
//
//===================================================
====================
void LoadNewOrderTable(LOADER_TIME_STRUCT
*new_order_time_start)
{
        long                    i;
    long        o_id;
    short       o_d_id;
        long                    o_w_id;
        RETCODE                 rc;
        DBINT                   rcint;

        // Bind NEW-ORDER data
        i = 0;
        rc = bcp_bind(o_hdbc2, (BYTE *) &o_id, 0,
SQL_VARLEN_DATA, NULL, 0, SQLINT4, ++i);
            if (rc != SUCCEED)
                    HandleErrorDBC(o_hdbc2);
        rc = bcp_bind(o_hdbc2, (BYTE *) &o_d_id, 0,
SQL_VARLEN_DATA, NULL, 0, SQLINT2, ++i);
            if (rc != SUCCEED)
                    HandleErrorDBC(o_hdbc2);
        rc = bcp_bind(o_hdbc2, (BYTE *) &o_w_id, 0,
SQL_VARLEN_DATA, NULL, 0, SQLINT4, ++i);
            if (rc != SUCCEED)
                    HandleErrorDBC(o_hdbc2);

        for (i = first_new_order; i <
last_new_order; i++)
            {
                    o_id    = orders_buf[i].o_id;
                    o_d_id  = orders_buf[i].o_d_id;
                    o_w_id  = orders_buf[i].o_w_id;

                    rc = bcp_sendrow(o_hdbc2);
                    if (rc != SUCCEED)


        HandleErrorDBC(o_hdbc2);

                    new_order_rows_loaded++;

                    CheckForCommit_Big(o_hdbc2,
o_hstmt2, new_order_rows_loaded, "new_order",
&new_order_time_start->time_start);
            }

        if ((o_w_id == aptr->num_warehouses) &&
(o_d_id == 10))
            {
                    rcint = bcp_done(o_hdbc2);

                    if (rcint < 0)
```

```
            HandleErrorDBC(o_hdbc2);

                    SQLFreeStmt(o_hstmt2, SQL_DROP);
                    SQLDisconnect(o_hdbc2);
                    SQLFreeConnect(o_hdbc2);

                    // if build index after load...
                    if ((aptr->build_index == 1) &&
(aptr->index_order == 0))
                            BuildIndex("idxnodcl");
            }
}

//===================================================
====================
//
// Function   : LoadOrderLineTable
//
//===================================================
====================
void LoadOrderLineTable(LOADER_TIME_STRUCT
*order_line_time_start)
{
        long                    i;
        long                    j;
    long        o_id;
        short       o_d_id;
        long                    o_w_id;
        double                  ol;
        long        ol_i_id;
        long                    ol_supply_w_id;
    short       ol_quantity;
    double      ol_amount;
    char        ol_dist_info[DIST_INFO_LEN+1];
        char        ol_delivery_d[OL_DELIVERY_D_LEN+1];
        RETCODE                 rc;
        DBINT                   rcint;

        // bind ORDER-LINE data
        i = 0;
        rc = bcp_bind(o_hdbc3, (BYTE *) &o_id, 0,
SQL_VARLEN_DATA, NULL, 0, SQLINT4, ++i);
            if (rc != SUCCEED)
                    HandleErrorDBC(o_hdbc3);
        rc = bcp_bind(o_hdbc3, (BYTE *) &o_d_id, 0,
SQL_VARLEN_DATA, NULL, 0, SQLINT2, ++i);
            if (rc != SUCCEED)
                    HandleErrorDBC(o_hdbc3);
        rc = bcp_bind(o_hdbc3, (BYTE *) &o_w_id, 0,
SQL_VARLEN_DATA, NULL, 0, SQLINT4, ++i);
            if (rc != SUCCEED)
                    HandleErrorDBC(o_hdbc3);
        rc = bcp_bind(o_hdbc3, (BYTE *) &ol, 0,
SQL_VARLEN_DATA, NULL, 0, SQLFLT8, ++i);
            if (rc != SUCCEED)
                    HandleErrorDBC(o_hdbc3);
        rc = bcp_bind(o_hdbc3, (BYTE *) &ol_i_id, 0,
SQL_VARLEN_DATA, NULL, 0, SQLINT4, ++i);
            if (rc != SUCCEED)
                    HandleErrorDBC(o_hdbc3);
```

```
        rc = bcp_bind(o_hdbc3, (BYTE *)
&ol_delivery_d, 0, OL_DELIVERY_D_LEN, NULL, 0,
SQLCHARACTER, ++i);
            if (rc != SUCCEED)
                    HandleErrorDBC(o_hdbc3);
        rc = bcp_bind(o_hdbc3, (BYTE *) &ol_amount, 0,
SQL_VARLEN_DATA, NULL, 0, SQLFLT8, ++i);
            if (rc != SUCCEED)
                    HandleErrorDBC(o_hdbc3);
        rc = bcp_bind(o_hdbc3, (BYTE *)
&ol_supply_w_id, 0, SQL_VARLEN_DATA, NULL, 0,
SQLINT4, ++i);
            if (rc != SUCCEED)
                    HandleErrorDBC(o_hdbc3);
        rc = bcp_bind(o_hdbc3, (BYTE *) &ol_quantity, 0,
SQL_VARLEN_DATA, NULL, 0, SQLINT2, ++i);
            if (rc != SUCCEED)
                    HandleErrorDBC(o_hdbc3);
        rc = bcp_bind(o_hdbc3, (BYTE *) ol_dist_info, 0,
DIST_INFO_LEN, NULL, 0, 0, ++i);
            if (rc != SUCCEED)
                    HandleErrorDBC(o_hdbc3);

        for (i = 0; i < orders_per_district; i++)
            {
                    o_id    = orders_buf[i].o_id;
                    o_d_id = orders_buf[i].o_d_id;
                    o_w_id = orders_buf[i].o_w_id;

                    for (j=0; j <
orders_buf[i].o_ol_cnt; j++)
                        {
                                ol              =
orders_buf[i].o_ol[j].ol;
                                ol_i_id         =
orders_buf[i].o_ol[j].ol_i_id;
                                ol_supply_w_id =
orders_buf[i].o_ol[j].ol_supply_w_id;
                                ol_quantity     =
orders_buf[i].o_ol[j].ol_quantity;
                                ol_amount       =
orders_buf[i].o_ol[j].ol_amount;

                strcpy(ol_delivery_d,orders_buf[i].o_ol[j].
ol_delivery_d);

                strcpy(ol_dist_info,orders_buf[i].o_ol[j].o
l_dist_info);

                                rc =
bcp_sendrow(o_hdbc3);
                                if (rc != SUCCEED)

                HandleErrorDBC(o_hdbc3);

                order_line_rows_loaded++;

                CheckForCommit_Big(o_hdbc3, o_hstmt3,
```

```
order_line_rows_loaded, "order_line",
&order_line_time_start->time_start);
                        }
                }

                if ((o_w_id == aptr->num_warehouses) &&
(o_d_id == 10))
                {
                        rcint = bcp_done(o_hdbc3);

                        if (rcint < 0)

                HandleErrorDBC(o_hdbc3);

                        SQLFreeStmt(o_hstmt3, SQL_DROP);
                        SQLDisconnect(o_hdbc3);
                        SQLFreeConnect(o_hdbc3);

                        // if build index after load...
                        if ((aptr->build_index == 1) &&
(aptr->index_order == 0))
                                BuildIndex("idxodlcl");
                }
}

//=====================================================
====================
//
// Function   : GetPermutation
//
//=====================================================
====================
void GetPermutation(int perm[], int n)
{
        int i, r, t;

        for (i=1;i<=n;i++)
                perm[i] = i;

        for (i=1;i<=n;i++)
        {
                r = RandomNumber(i,n);
                t = perm[i];
                perm[i] = perm[r];
                perm[r] = t;
        }
}

//=====================================================
====================
//
// Function   : CheckForCommit
//
//=====================================================
====================
void CheckForCommit(HDBC hdbc,

        HSTMT hstmt,

        long rows_loaded,

        char *table_name,
```

```
                                                long
*time_start)
{
    long  time_end, time_diff;

    if ( !(rows_loaded % aptr->batch) )
    {
                        time_end = (TimeNow() / MILLI);
                        time_diff = time_end -
*time_start;

                        printf("-> Loaded %ld rows into
%s in %ld sec - Total = %d (%.2f rps)\n",
                                        aptr->batch,
                                        table_name,
                                                time_diff,
                                        rows_loaded,
                                                (float) aptr-
>batch / (time_diff ? time_diff : 1L));

                        *time_start = time_end;
    }

    return;
}

//=====================================================
====================
//
// Function   : CheckForCommit_Big
//
//=====================================================
====================
void CheckForCommit_Big(HDBC hdbc,

        HSTMT hstmt,

        double rows_loaded,

        char *table_name,
                                                long
*time_start)
{
    long  time_end, time_diff;

    if ( !(fmod(rows_loaded,aptr->batch) ) )
    {
                        time_end = (TimeNow() / MILLI);
                        time_diff = time_end -
*time_start;

                        printf("-> Loaded %ld rows into
%s in %ld sec - Total = %.0f (%.2f rps)\n",
                                        aptr->batch,
                                        table_name,
                                                time_diff,
                                        rows_loaded,
                                                (float) aptr-
>batch / (time_diff ? time_diff : 1L));

                        *time_start = time_end;
```

```
        }

    return;
}

//=====================================================
====================
//
// Function   : OpenConnections
//
//=====================================================
====================
void OpenConnections()
{
        RETCODE         rc;

        char
        szDriverString[300];
        char
        szDriverStringOut[1024];
        SQLSMALLINT
        cbDriverStringOut;

        SQLAllocHandle(SQL_HANDLE_ENV,
SQL_NULL_HANDLE, &henv );

        SQLSetEnvAttr(henv, SQL_ATTR_ODBC_VERSION,
(void*)SQL_OV_ODBC3, 0 );

        SQLAllocHandle(SQL_HANDLE_DBC, henv ,
&i_hdbc1);
        SQLAllocHandle(SQL_HANDLE_DBC, henv ,
&w_hdbc1);
        SQLAllocHandle(SQL_HANDLE_DBC, henv ,
&c_hdbc1);
        SQLAllocHandle(SQL_HANDLE_DBC, henv ,
&c_hdbc2);
        SQLAllocHandle(SQL_HANDLE_DBC, henv ,
&o_hdbc1);
        SQLAllocHandle(SQL_HANDLE_DBC, henv ,
&o_hdbc2);
        SQLAllocHandle(SQL_HANDLE_DBC, henv ,
&o_hdbc3);

        SQLSetConnectAttr(i_hdbc1, SQL_COPT_SS_BCP,
(void *)SQL_BCP_ON, SQL_IS_INTEGER );
        SQLSetConnectAttr(w_hdbc1, SQL_COPT_SS_BCP,
(void *)SQL_BCP_ON, SQL_IS_INTEGER );
        SQLSetConnectAttr(c_hdbc1, SQL_COPT_SS_BCP,
(void *)SQL_BCP_ON, SQL_IS_INTEGER );
        SQLSetConnectAttr(c_hdbc2, SQL_COPT_SS_BCP,
(void *)SQL_BCP_ON, SQL_IS_INTEGER );
        SQLSetConnectAttr(o_hdbc1, SQL_COPT_SS_BCP,
(void *)SQL_BCP_ON, SQL_IS_INTEGER );
        SQLSetConnectAttr(o_hdbc2, SQL_COPT_SS_BCP,
(void *)SQL_BCP_ON, SQL_IS_INTEGER );
        SQLSetConnectAttr(o_hdbc3, SQL_COPT_SS_BCP,
(void *)SQL_BCP_ON, SQL_IS_INTEGER );

        // Open connections to SQL Server
        // Connection 1
```

```
        sprintf( szDriverString , "DRIVER={SQL
Server};SERVER=%s;UID=%s;PWD=%s;DATABASE=%s" ,

        aptr->server,

        aptr->user,

        aptr->password,

        aptr->database );
        rc = SQLSetConnectOption (i_hdbc1,
SQL_PACKET_SIZE, aptr->pack_size);
        if (rc != SUCCEED)
                HandleErrorDBC(i_hdbc1);

        rc = SQLDriverConnect ( i_hdbc1,

NULL,

        (SQLCHAR*)&szDriverString[0] ,

        SQL_NTS,

        (SQLCHAR*)&szDriverStringOut[0],

        sizeof(szDriverStringOut),

        &cbDriverStringOut,

        SQL_DRIVER_NOPROMPT );
        if ( (rc != SUCCEED) &&
                (rc != SQL_SUCCESS_WITH_INFO) )
        {
                HandleErrorDBC(i_hdbc1);
                printf("TPC-C Loader
aborted!\n");
                exit(9);
        }
        // Connection 2
        sprintf( szDriverString , "DRIVER={SQL
Server};SERVER=%s;UID=%s;PWD=%s;DATABASE=%s" ,

        aptr->server,

        aptr->user,

        aptr->password,

        aptr->database );

        rc = SQLSetConnectOption (w_hdbc1,
SQL_PACKET_SIZE, aptr->pack_size);

        if (rc != SUCCEED)
                HandleErrorDBC(w_hdbc1);

        rc = SQLDriverConnect ( w_hdbc1,

                NULL,

                (SQLCHAR*)&szDriverString[0] ,
```

```
        SQL_NTS,

        (SQLCHAR*)&szDriverStringOut[0],

        sizeof(szDriverStringOut),

        &cbDriverStringOut,

        SQL_DRIVER_NOPROMPT );

        if ( (rc != SUCCEED) &&
                (rc != SQL_SUCCESS_WITH_INFO) )
        {
                HandleErrorDBC(w_hdbc1);
                printf("TPC-C Loader
aborted!\n");

                exit(9);
        }
        // Connection 3
        sprintf( szDriverString , "DRIVER={SQL
Server};SERVER=%s;UID=%s;PWD=%s;DATABASE=%s" ,

        aptr->server,

        aptr->user,

        aptr->password,

        aptr->database );

        rc = SQLSetConnectOption (c_hdbc1,
SQL_PACKET_SIZE, aptr->pack_size);
        if (rc != SUCCEED)
                HandleErrorDBC(c_hdbc1);

        rc = SQLDriverConnect ( c_hdbc1,

                NULL,

                (SQLCHAR*)&szDriverString[0] ,

                SQL_NTS,

                (SQLCHAR*)&szDriverStringOut[0],

                sizeof(szDriverStringOut),

                &cbDriverStringOut,

                SQL_DRIVER_NOPROMPT );
        if ( (rc != SUCCEED) &&
                (rc != SQL_SUCCESS_WITH_INFO) )
        {
                HandleErrorDBC(c_hdbc1);
                printf("TPC-C Loader
aborted!\n");

                exit(9);
        }
        // Connection 4
```

```
        sprintf( szDriverString , "DRIVER={SQL
Server};SERVER=%s;UID=%s;PWD=%s;DATABASE=%s" ,

        aptr->server,

        aptr->user,

        aptr->password,

        aptr->database );
        rc = SQLSetConnectOption (c_hdbc2,
SQL_PACKET_SIZE, aptr->pack_size);
        if (rc != SUCCEED)
                HandleErrorDBC(c_hdbc2);

        rc = SQLDriverConnect ( c_hdbc2,

                NULL,

                (SQLCHAR*)&szDriverString[0] ,

                SQL_NTS,

                (SQLCHAR*)&szDriverStringOut[0],

                sizeof(szDriverStringOut),

                &cbDriverStringOut,

                SQL_DRIVER_NOPROMPT );
        if ( (rc != SUCCEED) &&
                (rc != SQL_SUCCESS_WITH_INFO) )
        {
                HandleErrorDBC(c_hdbc2);
                printf("TPC-C Loader
aborted!\n");
                exit(9);
        }
        // Connection 5
        sprintf( szDriverString , "DRIVER={SQL
Server};SERVER=%s;UID=%s;PWD=%s;DATABASE=%s" ,

        aptr->server,

        aptr->user,

        aptr->password,

        aptr->database );

        rc = SQLSetConnectOption (o_hdbc1,
SQL_PACKET_SIZE, aptr->pack_size);
        if (rc != SUCCEED)
                HandleErrorDBC(o_hdbc1);

        rc = SQLDriverConnect ( o_hdbc1,

                NULL,

                (SQLCHAR*)&szDriverString[0] ,
```

```
                SQL_NTS,

                (SQLCHAR*)&szDriverStringOut[0],

                sizeof(szDriverStringOut),

                &cbDriverStringOut,

                SQL_DRIVER_NOPROMPT );
        if ( (rc != SUCCEED) &&
                (rc != SQL_SUCCESS_WITH_INFO) )
        {
                HandleErrorDBC(o_hdbc1);
                printf("TPC-C Loader
aborted!\n");
                exit(9);
        }

        // Connection 6
        sprintf( szDriverString , "DRIVER={SQL
Server};SERVER=%s;UID=%s;PWD=%s;DATABASE=%s" ,

        aptr->server,

        aptr->user,

        aptr->password,

        aptr->database );

        rc = SQLSetConnectOption (o_hdbc2,
SQL_PACKET_SIZE, aptr->pack_size);
        if (rc != SUCCEED)
                HandleErrorDBC(o_hdbc2);

        rc = SQLDriverConnect ( o_hdbc2,

                NULL,

                (SQLCHAR*)&szDriverString[0] ,

                SQL_NTS,

                (SQLCHAR*)&szDriverStringOut[0],

                sizeof(szDriverStringOut),

                &cbDriverStringOut,

                SQL_DRIVER_NOPROMPT );
        if ( (rc != SUCCEED) &&
                (rc != SQL_SUCCESS_WITH_INFO) )
        {
                HandleErrorDBC(o_hdbc2);
                printf("TPC-C Loader
aborted!\n");
                exit(9);
        }

        // Connection 7
        sprintf( szDriverString , "DRIVER={SQL
Server};SERVER=%s;UID=%s;PWD=%s;DATABASE=%s" ,
```

```
        aptr->server,

        aptr->user,

        aptr->password,

        aptr->database );
        rc = SQLSetConnectOption (o_hdbc3,
SQL_PACKET_SIZE, aptr->pack_size);
        if (rc != SUCCEED)
                HandleErrorDBC(o_hdbc3);

        rc = SQLDriverConnect ( o_hdbc3,

                NULL,

                (SQLCHAR*)&szDriverString[0] ,

                SQL_NTS,

                (SQLCHAR*)&szDriverStringOut[0],

                sizeof(szDriverStringOut),

                &cbDriverStringOut,

                SQL_DRIVER_NOPROMPT );
        if ( (rc != SUCCEED) &&
                (rc != SQL_SUCCESS_WITH_INFO) )
        {
                HandleErrorDBC(o_hdbc3);
                printf("TPC-C Loader
aborted!\n");
                exit(9);
        }
}

//=====================================
====================
//
// Function name: BuildIndex
//
//=====================================
====================
void BuildIndex(char         *index_script)
{
        char      cmd[256];

        printf("Starting index creation:
%s\n",index_script);

        sprintf(cmd, "osql -S%s -U%s -P%s -e -
i%s\\%s.sql > %s%s.log",
                                        aptr->server,
                                        aptr->user,
                                        aptr-
>password,
                                        aptr-
>index_script_path,
                                        index_script,
```

```
                                        aptr-
>log_path,

                index_script);

                system(cmd);

                printf("Finished index creation:
%s\n",index_script);
}
//=======================================================
====================
//
// Function name: HandleErrorDBC
//
//=======================================================
====================
void HandleErrorDBC (SQLHDBC  hdbc1)
{
        SQLCHAR             SqlState[6],
Msg[SQL_MAX_MESSAGE_LENGTH];
        SQLLEN              NativeError;
        SQLSMALLINT i, MsgLen;
        SQLRETURN   rc2;
        char                timebuf[128];
        char                datebuf[128];
        char                err_log_path[256];
        FILE                *fp1;

        i = 1;
        while (( rc2 = SQLGetDiagRec(SQL_HANDLE_DBC
, hdbc1, i, SqlState , &NativeError,
                                                Msg,
sizeof(Msg) , &MsgLen )) != SQL_NO_DATA )
        {
                sprintf( szLastError , "%s" ,
Msg );

                _strtime(timebuf);
                _strdate(datebuf);

                printf( "[%s : %s]
%s\n==>SQLState: %s\n" , datebuf, timebuf,
szLastError, SqlState);

                strcpy(err_log_path,aptr-
>log_path);

        strcat(err_log_path,"tpccldr.err");
                fp1 = fopen(err_log_path,"a+");
                if (fp1 == NULL)
                        printf("ERROR:  Unable
to open errorlog file.\n");
                else
                {
                        fprintf(fp1, "[%s : %s]
%s\nSQLState: %s\n" , datebuf, timebuf, szLastError,
SqlState);
                        fclose(fp1);
                }
```

```
            i++;
        }
}

//====================================================
===================
//
// Function   : HandleErrorSTMT
//
//====================================================
===================
void HandleErrorSTMT (HSTMT  hstmt1)
{
        SQLCHAR            SqlState[6],
Msg[SQL_MAX_MESSAGE_LENGTH];
        SQLLEN             NativeError;
        SQLSMALLINT i, MsgLen;
        SQLRETURN   rc2;
        char               timebuf[128];
        char               datebuf[128];
        char               err_log_path[256];
        FILE               *fp1;

        i = 1;
        while (( rc2 =
SQLGetDiagRec(SQL_HANDLE_STMT , hstmt1, i, SqlState ,
&NativeError,
                                           Msg,
sizeof(Msg) , &MsgLen )) != SQL_NO_DATA )
        {
                if (total_db_errors >=
MAX_SQL_ERRORS)
                {
                        printf(">>>>> Maximum
SQL errors of %d exceeded.  Terminating
TPCCLDR.<<<<<\n",total_db_errors);
                        exit(9);
                }
                total_db_errors++;

                sprintf( szLastError , "%s" ,
Msg );

                _strtime(timebuf);
                _strdate(datebuf);

                printf( "[%s : %s] %s\nSQLState:
%s\n" , datebuf, timebuf, szLastError, SqlState);

                strcpy(err_log_path,aptr-
>log_path);
        strcat(err_log_path,"tpccldr.err");
                fp1 = fopen(err_log_path,"a+");
                if (fp1 == NULL)
                        printf("ERROR:  Unable
to open errorlog file.\n");
                else
                {
                        fprintf(fp1, "[%s : %s]
%s\nSQLState: %s\n" , datebuf, timebuf, szLastError,
SqlState);
                        fclose(fp1);
```

```
        }
                i++;
        }
}

//====================================================
===================
//
// Function   : FormatDate
//
//====================================================
===================
void FormatDate ( char* szTimeCOutput )
{
        struct tm when;
        time_t now;

        time( &now );
        when = *localtime( &now );

        mktime( &when );

        // odbc datetime format
        strftime( szTimeCOutput , 30 , "%Y-%m-%d
%H:%M:%S.000", &when );

        return;
}
```

tpcc_neworder_new.sql

```
----------------------------------------------------
------------
--
--
-- File:   TPCC_NEWORDER_NEW.SQL
--
--          Microsoft TPC-C Benchmark Kit Ver. 4.68
--
--          Copyright Microsoft, 2006
--
--
--
--          This acid stored procedure implements the
neworder  --
--          transaction.  It outputs timestamps at
the           --
--          beginning of the transaction, before the
commit  --
--          delay, and after the commit.
--
--
--
----------------------------------------------------
------------
SET QUOTED_IDENTIFIER OFF
GO
SET ANSI_NULLS OFF
GO
```

```
USE tpcc
GO

IF EXISTS ( SELECT name FROM sysobjects WHERE name =
'tpcc_neworder_new' )
    DROP PROCEDURE tpcc_neworder_new
GO

-- neworder_new v2.5 6/23/05 PeterCa
-- 1q stock/order_line/client.  upd district & ins
neworder.
-- cust/warehouse select together, ins order
separate
-- uses rownumber to distinct w any transform
-- uses in-memory sort for distinct on iid,wid
-- uses charindex
-- will rollback if (@i_idX,@s_w_idX pairs not
unique) OR (@i_idX not unique).

CREATE PROCEDURE    tpcc_neworder_new
                @w_id           int,
                @d_id           tinyint,
                @c_id           int,
                @o_ol_cnt       tinyint,
                @o_all_local    tinyint,
                @i_id1 int = 0, @s_w_id1
int = 0, @ol_qty1  smallint = 0,
                @i_id2 int = 0, @s_w_id2
int = 0, @ol_qty2  smallint = 0,
                @i_id3 int = 0, @s_w_id3
int = 0, @ol_qty3  smallint = 0,
                @i_id4 int = 0, @s_w_id4
int = 0, @ol_qty4  smallint = 0,
                @i_id5 int = 0, @s_w_id5
int = 0, @ol_qty5  smallint = 0,
                @i_id6 int = 0, @s_w_id6
int = 0, @ol_qty6  smallint = 0,
                @i_id7 int = 0, @s_w_id7
int = 0, @ol_qty7  smallint = 0,
                @i_id8 int = 0, @s_w_id8
int = 0, @ol_qty8  smallint = 0,
                @i_id9 int = 0, @s_w_id9
int = 0, @ol_qty9  smallint = 0,
                @i_id10 int = 0, @s_w_id10
int = 0, @ol_qty10 smallint = 0,
                @i_id11 int = 0, @s_w_id11
int = 0, @ol_qty11 smallint = 0,
                @i_id12 int = 0, @s_w_id12
int = 0, @ol_qty12 smallint = 0,
                @i_id13 int = 0, @s_w_id13
int = 0, @ol_qty13 smallint = 0,
                @i_id14 int = 0, @s_w_id14
int = 0, @ol_qty14 smallint = 0,
                @i_id15 int = 0, @s_w_id15
int = 0, @ol_qty15 smallint = 0

AS
BEGIN
DECLARE @o_id           int,
    @d_tax          smallmoney,
```

```
        @o_entry_d      datetime,
        @commit_flag    tinyint

BEGIN TRANSACTION n
    -- get district tax and next availible order id
and update
    -- insert corresponding row into new-order table
    -- plus initialize local variables

    UPDATE  district
    SET     @d_tax          = d_tax,
            @o_id           = d_next_o_id,
            d_next_o_id     = d_next_o_id + 1,
            @o_entry_d      = GETDATE(),
            @commit_flag    = 1
    OUTPUT  deleted.d_next_o_id,
            @d_id,
            @w_id
    INTO    new_order
    WHERE   d_w_id          = @w_id AND
            d_id            = @d_id

    -- update stock from stock join (item join
(params))
    -- output to orderline, output to client
    -- NOTE: @@rowcount != @ol_o_cnt
    --    if (@i_idX,@s_w_idX pairs not unique) OR
(@i_idX not unique).

    UPDATE  stock
    SET     s_ytd           = s_ytd + info.ol_qty,
            s_quantity      = s_quantity -
info.ol_qty +
                            CASE WHEN (s_quantity -
info.ol_qty < 10) THEN 91 ELSE 0 END,
            s_order_cnt     = s_order_cnt + 1,
            s_remote_cnt    = s_remote_cnt +
                                            CASE
WHEN (info.w_id = @w_id) THEN 0 ELSE 1 END

    OUTPUT  @o_id,
            @d_id,
            @w_id,
            info.lino,
            info.i_id,
            "dec 31, 1899",
                info.i_price * info.ol_qty,
                info.w_id,
            info.ol_qty,
            CASE    @d_id    WHEN 1  THEN
inserted.s_dist_01
                            WHEN 2  THEN
inserted.s_dist_02
                            WHEN 3  THEN
inserted.s_dist_03
                            WHEN 4  THEN
inserted.s_dist_04
                            WHEN 5  THEN
inserted.s_dist_05
                            WHEN 6  THEN
inserted.s_dist_06
                            WHEN 7  THEN
inserted.s_dist_07
                            WHEN 8  THEN
inserted.s_dist_08
                            WHEN 9  THEN
inserted.s_dist_09
                            WHEN 10 THEN
inserted.s_dist_10
                    END
    INTO    order_line

    OUTPUT  info.i_name,inserted.s_quantity,
            CASE WHEN
((charindex("ORIGINAL",info.i_data) > 0) AND

(charindex("ORIGINAL",inserted.s_data) > 0) )
                    THEN "B" ELSE "G" END,
            info.i_price,
            info.i_price*info.ol_qty
    FROM    stock INNER JOIN
            (SELECT iid,
                    wid,
                    lino,
                    ol_qty,
                    i_price,
                    i_name,
                    i_data
            FROM    (SELECT iid,
                    wid,
                    lino,
                    qty,
                                    row_number()
OVER (PARTITION BY iid,wid ORDER BY iid,wid)
                    FROM    (SELECT
@i_id1,@s_w_id1,1,@ol_qty1    UNION ALL
                                    SELECT
@i_id2,@s_w_id2,2,@ol_qty2    UNION ALL
                                    SELECT
@i_id3,@s_w_id3,3,@ol_qty3    UNION ALL
                                    SELECT
@i_id4,@s_w_id4,4,@ol_qty4    UNION ALL
                                    SELECT
@i_id5,@s_w_id5,5,@ol_qty5    UNION ALL
                                    SELECT
@i_id6,@s_w_id6,6,@ol_qty6    UNION ALL
                                    SELECT
@i_id7,@s_w_id7,7,@ol_qty7    UNION ALL
                                    SELECT
@i_id8,@s_w_id8,8,@ol_qty8    UNION ALL
                                    SELECT
@i_id9,@s_w_id9,9,@ol_qty9    UNION ALL
                                    SELECT
@i_id10,@s_w_id10,10,@ol_qty10  UNION ALL
                                    SELECT
@i_id11,@s_w_id11,11,@ol_qty11  UNION ALL
                                    SELECT
@i_id12,@s_w_id12,12,@ol_qty12  UNION ALL
                                    SELECT
@i_id13,@s_w_id13,13,@ol_qty13  UNION ALL
                                    SELECT
@i_id14,@s_w_id14,14,@ol_qty14  UNION ALL
                                    SELECT
@i_id15,@s_w_id15,15,@ol_qty15) AS
uo1(iid,wid,lino,qty)

                                    ) AS
o1(iid,wid,lino,ol_qty,rownum)
                        INNER JOIN
                            item (repeatableread) ON
i_id   = iid  AND -- filters out invalid items

rownum = 1
                    ) AS
info(i_id,w_id,lino,ol_qty,i_price,i_name,i_data)
            ON  s_i_id  = info.i_id AND
                s_w_id  = info.w_id

    IF (@@rowcount <> @o_ol_cnt) -- must have an
invalid item
        SELECT  @commit_flag = 0  -- 2.4.2.3 requires
rest to proceed

    -- insert fresh row into orders table
    INSERT INTO orders VALUES  (  @o_id,
                                  @d_id,
                                  @w_id,
                                  @c_id,
                                  0,
                                  @o_ol_cnt,
                                  @o_all_local,
                                  @o_entry_d)
    -- get customer last name, discount, and credit
rating
    -- get warehouse tax
    -- return order_data to client
    SELECT  w_tax,
            @d_tax,
            @o_id,
            c_last,
            c_discount,
            c_credit,
            @o_entry_d,
            @commit_flag
    FROM    warehouse(repeatableread),
            customer(repeatableread)
    WHERE   w_id   = @w_id AND
            c_id   = @c_id AND
            c_w_id = @w_id AND
            c_d_id = @d_id

        -- @@rowcount checks that previous select
found a valid customer
    IF (@@rowcount = 0)
    BEGIN
                RAISERROR( 'Invalid Customer ID',
11, 1 )
        ROLLBACK TRANSACTION n
    END
        ELSE IF (@commit_flag = 1)
        COMMIT TRANSACTION n
    ELSE    -- all that work for nothing.
        ROLLBACK TRANSACTION  n

END
GO
```

VerifyTpccLoad.sql

```sql
------------------------------------------------
-------------
--
--
-- File:    VerifyTPCCLoad.SQL
--
--        Microsoft TPC-C Benchmark Kit Ver. 4.68
--
--        Copyright Microsoft, 2006
--
--
--
------------------------------------------------
-------------
SET NOCOUNT ON
PRINT   ' '
SELECT  CONVERT(CHAR(30), GETDATE(), 21)
PRINT   ' '

USE     tpcc
GO

IF  EXISTS  (SELECT name
            FROM    sysobjects
            WHERE   name    = 'TPCC_INFO' AND
                    type    = 'U')
    DROP TABLE TPCC_INFO
GO
PRINT   'WAREHOUSE TABLE'
SELECT  count_big(*)
FROM    warehouse
GO

PRINT   'DISTRICT TABLE = (10 * No of warehouses)'
SELECT  count_big(*)
FROM    district
GO

PRINT   'ITEM TABLE = 100,000'
SELECT  count_big(*)
FROM    item
GO

PRINT   'CUSTOMER TABLE = (30,000 * No of
warehouses)'
SELECT  count_big(*)
FROM    customer
GO

PRINT   'ORDERS TABLE = (30,000 * No of warehouses)'
SELECT  count_big(*)
FROM    orders
GO

PRINT   'HISTORY TABLE = (30,000 * No of warehouses)'
SELECT  count_big(*)
FROM    history
GO
```

```sql
PRINT   'STOCK TABLE = (100,000 * No of warehouses)'
SELECT  count_big(*)
FROM    stock
GO

PRINT   'ORDER_LINE TABLE = (300,000 * No of
warehouses + some change)'
SELECT  count_big(*)
FROM    order_line
GO

PRINT   'NEW_ORDER TABLE = (9000 * No of warehouses)'
SELECT  count_big(*)
FROM    new_order
GO

CREATE TABLE TPCC_INFO
    (  INFO_DATE                datetime,
       NUM_WAREHOUSE            bigint,
       WAREHOUSE_TARGET         bigint,
       NUM_DISTRICT             bigint,
       DISTRICT_TARGET          bigint,
       NUM_ITEM                 bigint,
       ITEM_TARGET              bigint,
       NUM_CUSTOMER             bigint,
       CUSTOMER_TARGET          bigint,
       NUM_ORDERS               bigint,
       ORDERS_TARGET            bigint,
       ORDERS_TARGET_LOW        bigint,
       ORDERS_TARGET_HIGH       bigint,
       NUM_ORDER_LINE           bigint,
       ORDER_LINE_TARGET        bigint,
       ORDER_LINE_TARGET_LOW    bigint,
       ORDER_LINE_TARGET_HIGH   bigint,
       NUM_NEW_ORDER            bigint,
       NEW_ORDER_TARGET         bigint,
       NEW_ORDER_TARGET_LOW     bigint,
       NEW_ORDER_TARGET_HIGH    bigint,
       NUM_HISTORY              bigint,
       HISTORY_TARGET           bigint,
       NUM_STOCK                bigint,
       STOCK_TARGET             bigint)
GO

DECLARE @NUM_WAREHOUSE           bigint,
        @WAREHOUSE_TARGET        bigint,
        @NUM_DISTRICT            bigint,
        @DISTRICT_TARGET         bigint,
        @NUM_ITEM                bigint,
        @ITEM_TARGET             bigint,
        @NUM_CUSTOMER            bigint,
        @CUSTOMER_TARGET         bigint,
        @NUM_ORDERS              bigint,
        @ORDERS_TARGET           bigint,
        @ORDERS_TARGET_LOW       bigint,
        @ORDERS_TARGET_HIGH      bigint,
        @NUM_ORDER_LINE          bigint,
        @ORDER_LINE_TARGET       bigint,
        @ORDER_LINE_TARGET_LOW   bigint,
        @ORDER_LINE_TARGET_HIGH  bigint,
        @NUM_NEW_ORDER           bigint,
        @NEW_ORDER_TARGET        bigint,
        @NEW_ORDER_TARGET_LOW    bigint,
```

```sql
        @NEW_ORDER_TARGET_HIGH   bigint,
        @NUM_HISTORY             bigint,
        @HISTORY_TARGET          bigint,
        @NUM_STOCK               bigint,
        @STOCK_TARGET            bigint

-- set the local variables prior to inserting them
into the TPCC_INFO table
SELECT  @NUM_WAREHOUSE   = COUNT_BIG(*)
FROM    warehouse

SELECT  @NUM_DISTRICT    = COUNT_BIG(*)
FROM    district

SELECT  @NUM_ITEM        = COUNT_BIG(*)
FROM    item

SELECT  @NUM_CUSTOMER    = COUNT_BIG(*)
FROM    customer

SELECT  @NUM_ORDERS      = COUNT_BIG(*)
FROM    orders

SELECT  @NUM_ORDER_LINE  = COUNT_BIG(*)
FROM    order_line

SELECT  @NUM_NEW_ORDER   = COUNT_BIG(*)
FROM    new_order

SELECT  @NUM_HISTORY     = COUNT_BIG(*)
FROM    history

SELECT  @NUM_STOCK       = COUNT_BIG(*)
FROM    stock

--- now calculate and set the target values
SELECT  @WAREHOUSE_TARGET    = @NUM_WAREHOUSE,
        @DISTRICT_TARGET     = @NUM_WAREHOUSE *
10,
        @ITEM_TARGET         = 100000,
        @CUSTOMER_TARGET     = @NUM_WAREHOUSE *
30000,
        @ORDERS_TARGET       = @NUM_WAREHOUSE *
30000,
        @ORDERS_TARGET_LOW   = @ORDERS_TARGET -
FLOOR(@ORDERS_TARGET * .01),
        @ORDERS_TARGET_HIGH  = @ORDERS_TARGET +
FLOOR(@ORDERS_TARGET * .01),
        @ORDER_LINE_TARGET   = @NUM_WAREHOUSE *
300000,
        @ORDER_LINE_TARGET_LOW = @ORDER_LINE_TARGET
- FLOOR(@ORDER_LINE_TARGET * .01),
        @ORDER_LINE_TARGET_HIGH = @ORDER_LINE_TARGET
+ FLOOR(@ORDER_LINE_TARGET * .01),
        @NEW_ORDER_TARGET    = @NUM_WAREHOUSE *
9000,
        @NEW_ORDER_TARGET_LOW  = @NEW_ORDER_TARGET -
FLOOR(@NEW_ORDER_TARGET * .01),
        @NEW_ORDER_TARGET_HIGH = @NEW_ORDER_TARGET +
FLOOR(@NEW_ORDER_TARGET * .01),
        @HISTORY_TARGET      = @NUM_WAREHOUSE *
30000,
```

```
        @STOCK_TARGET          = @NUM_WAREHOUSE *
100000

--- insert the values into TPCC_INFO
INSERT INTO TPCC_INFO VALUES   (GETDATE(),
                        @NUM_WAREHOUSE,
                        @WAREHOUSE_TARGET,
                        @NUM_DISTRICT,
                        @DISTRICT_TARGET,
                        @NUM_ITEM,
                        @ITEM_TARGET,
                        @NUM_CUSTOMER,
                        @CUSTOMER_TARGET,
                        @NUM_ORDERS,
                        @ORDERS_TARGET,
                        @ORDERS_TARGET_LOW,
                        @ORDERS_TARGET_HIGH,
                        @NUM_ORDER_LINE,
                        @ORDER_LINE_TARGET,

@ORDER_LINE_TARGET_LOW,

@ORDER_LINE_TARGET_HIGH,
                        @NUM_NEW_ORDER,
                        @NEW_ORDER_TARGET,

@NEW_ORDER_TARGET_LOW,

@NEW_ORDER_TARGET_HIGH,
                        @NUM_HISTORY,
                        @HISTORY_TARGET,
                        @NUM_STOCK,
                        @STOCK_TARGET)
GO

--- output the row counts from the build
PRINT   ''
PRINT   ''
PRINT   '--------------------------'
PRINT   '|    WAREHOUSE TABLE     |'
PRINT   '--------------------------'
SELECT  TOP 1
        CONVERT(CHAR(30),INFO_DATE,21)  AS  'Date',
        NUM_WAREHOUSE               AS
'Warehouse Rows',
        WAREHOUSE_TARGET            AS
     'Warehouse Target',
        CASE WHEN (NUM_WAREHOUSE = WAREHOUSE_TARGET)
             THEN 'OK!'
             ELSE 'ERROR!!!'
        END                         AS
'Warehouse Message'
FROM    TPCC_INFO
GO

PRINT   ''
PRINT   ''
PRINT   '--------------------------'
PRINT   '|     DISTRICT TABLE     |'
PRINT   '--------------------------'
SELECT  TOP 1
        CONVERT(CHAR(30),INFO_DATE,21)  AS  'Date',
```

```
        NUM_DISTRICT                AS  'District
Rows',
        DISTRICT_TARGET             AS
        'District Target',
        CASE WHEN (NUM_DISTRICT = DISTRICT_TARGET)
             THEN 'OK!'
             ELSE 'ERROR!!!'
        END                         AS  'District
Message'
FROM    TPCC_INFO
GO

PRINT   ''
PRINT   ''
PRINT   '--------------------------'
PRINT   '|       ITEM TABLE       |'
PRINT   '--------------------------'
SELECT  TOP 1
        CONVERT(CHAR(30),INFO_DATE,21)  AS  'Date',
        NUM_ITEM                    AS  'Item
Rows',
        ITEM_TARGET                 AS
        'Item Target',
        CASE WHEN (NUM_ITEM = ITEM_TARGET)
             THEN 'OK!'
             ELSE 'ERROR!!!'
        END                         AS  'Item
Message'
FROM    TPCC_INFO
GO

PRINT   ''
PRINT   ''
PRINT   '--------------------------'
PRINT   '|     CUSTOMER TABLE     |'
PRINT   '--------------------------'
SELECT  TOP 1
        CONVERT(CHAR(30),INFO_DATE,21)  AS  'Date',
        NUM_CUSTOMER                AS  'Customer
Rows',
        CUSTOMER_TARGET             AS
        'Customer Target',
        CASE WHEN (NUM_CUSTOMER = CUSTOMER_TARGET)
             THEN 'OK!'
             ELSE 'ERROR!!!'
        END                         AS  'Customer
Message'
FROM    TPCC_INFO
GO

PRINT   ''
PRINT   ''
PRINT   '--------------------------'
PRINT   '|      ORDERS TABLE      |'
PRINT   '--------------------------'
SELECT  TOP 1
        CONVERT(CHAR(30),INFO_DATE,21)  AS  'Date',
        NUM_ORDERS                  AS  'Orders
Rows',
        ORDERS_TARGET               AS
        'Orders Target',
        CASE WHEN (NUM_ORDERS = ORDERS_TARGET)
             THEN 'OK!'
```

```
             WHEN (NUM_ORDERS BETWEEN
ORDERS_TARGET_LOW AND ORDERS_TARGET_HIGH)
             THEN 'OK! (within 1%)'
             ELSE 'ERROR!!!'
        END                         AS  'Orders
Message'
FROM    TPCC_INFO
GO

PRINT   ''
PRINT   ''
PRINT   '--------------------------'
PRINT   '|    ORDER LINE TABLE    |'
PRINT   '--------------------------'
SELECT  TOP 1
        CONVERT(CHAR(30),INFO_DATE,21)  AS  'Date',
        NUM_ORDER_LINE              AS  'Order
Line Rows',
        ORDER_LINE_TARGET           AS
        'Order Line Target',
        CASE WHEN (NUM_ORDER_LINE =
ORDER_LINE_TARGET)
             THEN 'OK!'
             WHEN (NUM_ORDER_LINE BETWEEN
ORDER_LINE_TARGET_LOW AND ORDER_LINE_TARGET_HIGH)
             THEN 'OK! (within 1%)'
             ELSE 'ERROR!!!'
        END                         AS  'Order
Line Message'
FROM    TPCC_INFO
GO

PRINT   ''
PRINT   ''
PRINT   '--------------------------'
PRINT   '|     NEW ORDER TABLE    |'
PRINT   '--------------------------'
SELECT  TOP 1
        CONVERT(CHAR(30),INFO_DATE,21)  AS  'Date',
        NUM_NEW_ORDER               AS  'New
Order Rows',
        NEW_ORDER_TARGET            AS
        'New Order Target',
        CASE WHEN (NUM_NEW_ORDER = NEW_ORDER_TARGET)
             THEN 'OK!'
             WHEN (NUM_NEW_ORDER BETWEEN
NEW_ORDER_TARGET_LOW AND NEW_ORDER_TARGET_HIGH)
             THEN 'OK! (within 1%)'
             ELSE 'ERROR!!!'
        END                         AS  'New
Order Message'
FROM    TPCC_INFO
GO

PRINT   ''
PRINT   ''
PRINT   '--------------------------'
PRINT   '|      HISTORY TABLE     |'
PRINT   '--------------------------'
SELECT  TOP 1
        CONVERT(CHAR(30),INFO_DATE,21)  AS  'Date',
        NUM_HISTORY                 AS  'History
Rows',
```

```
        HISTORY_TARGET                  AS
          'History Target',
        CASE WHEN (NUM_HISTORY = HISTORY_TARGET)
            THEN 'OK!'
            ELSE 'ERROR!!!'
        END                             AS 'History
Message'
FROM    TPCC_INFO
GO

PRINT   ''
PRINT   ''
PRINT   '---------------------------'
PRINT   '|      STOCK TABLE        |'
PRINT   '---------------------------'
SELECT  TOP 1
        CONVERT(CHAR(30),INFO_DATE,21)  AS  'Date',
        NUM_STOCK                       AS 'Stock
Rows',
        STOCK_TARGET                    AS
          'Stock Target',
        CASE WHEN (NUM_STOCK = STOCK_TARGET)
            THEN 'OK!'
            ELSE 'ERROR!!!'
        END                             AS 'Stock
Message'
FROM    TPCC_INFO
GO

------------------
-- Check Indexes
------------------
USE tpcc
GO

PRINT   ''
PRINT   ''
PRINT   '---------------------------'
PRINT   '|      TPC-C INDEXES      |'
PRINT   '---------------------------'
EXEC    sp_helpindex    warehouse
EXEC    sp_helpindex    district
EXEC    sp_helpindex    item
EXEC    sp_helpindex    customer
EXEC    sp_helpindex    orders
EXEC    sp_helpindex    order_line
EXEC    sp_helpindex    new_order
EXEC    sp_helpindex    history
EXEC    sp_helpindex    stock
GO
```

version.sql

```
--------------------------------------------------
-------------
--
--
-- File:  VERSION.SQL
--
```

```
--          Microsoft TPC-C Benchmark Kit Ver. 4.68
--
--          Copyright Microsoft, 2006
--
--
--
--          Extracts current version of SQL Server
--
--
--
--------------------------------------------------
-------------
USE master
GO

SELECT  CONVERT(char(20),
SERVERPROPERTY('ProductVersion')),
        CONVERT(char(20),
SERVERPROPERTY('ProductLevel')),
        CONVERT(char(29), SERVERPROPERTY('Edition'))
GO

SELECT  CONVERT(char(30), GETDATE(), 21)
GO
```

Appendix C:
Tunable Parameters

benchcraft_profile.txt

Profile: venom_97920_96cl_108000
File Path: C:\Program
Files\BenchCraft\venom_97920_96cl_108000.xml
Version: 5

Number of Engines: 96

Name: d2
Description:
Directory: c:\blog\rte2.log
Machine: n1
Parameter Set: FullSpeed
Index: 100000000
Seed: 4678
Configured Users: 10200
Pipe Name: DRIVER53164609
Connect Rate: 100000
Start Rate: 100000
Max. Concurrency: 10200
Concurrency Rate: 20
CLIENT_NURAND: 25
CPU: 1
Additional Options:

Name: d1
Description:
Directory: c:\blog\rte1.log
Machine: n1
Parameter Set: FullSpeed
Index: 120000000
Seed: 4678
Configured Users: 10200
Pipe Name: DRIVER44265281
Connect Rate: 100000
Start Rate: 100000
Max. Concurrency: 10200
Concurrency Rate: 20
CLIENT_NURAND: 25
CPU: 0
Additional Options:

Name: d3
Description:
Directory: c:\blog\rte3.log
Machine: n1
Parameter Set: FullSpeed
Index: 140000000
Seed: 4678
Configured Users: 10200
Pipe Name: DRIVER3439676359
Connect Rate: 100000
Start Rate: 100000
Max. Concurrency: 10200
Concurrency Rate: 20
CLIENT_NURAND: 25
CPU: 2
Additional Options:

Name: d4
Description:
Directory: c:\blog\rte4.log
Machine: n64
Parameter Set: FullSpeed
Index: 160000000
Seed: 4678
Configured Users: 10200
Pipe Name: DRIVER4439706187
Connect Rate: 100000
Start Rate: 100000
Max. Concurrency: 10200
Concurrency Rate: 20
CLIENT_NURAND: 25
CPU: 1
Additional Options:

Name: d5
Description:
Directory: c:\blog\rte5.log
Machine: n64
Parameter Set: FullSpeed
Index: 180000000
Seed: 4678
Configured Users: 10200
Pipe Name: DRIVER5346413218
Connect Rate: 100000
Start Rate: 100000
Max. Concurrency: 10200
Concurrency Rate: 20
CLIENT_NURAND: 25
CPU: 1
Additional Options:

Name: d6
Description:
Directory: c:\blog\rte6.log
Machine: n64
Parameter Set: FullSpeed
Index: 200000000
Seed: 4678
Configured Users: 10200
Pipe Name: DRIVER62226046
Connect Rate: 100000
Start Rate: 100000
Max. Concurrency: 10200
Concurrency Rate: 20
CLIENT_NURAND: 25
CPU: 2
Additional Options:

Name: d7
Description:
Directory: c:\blog\rte7.log
Machine: n3
Parameter Set: FullSpeed
Index: 220000000
Seed: 4678
Configured Users: 10200
Pipe Name: DRIVER72289718
Connect Rate: 100000
Start Rate: 100000
Max. Concurrency: 10200

Concurrency Rate: 20
CLIENT_NURAND: 25
CPU: 0
Additional Options:

Name: d8
Description:
Directory: c:\blog\rte8.log
Machine: n3
Parameter Set: FullSpeed
Index: 240000000
Seed: 4678
Configured Users: 10200
Pipe Name: DRIVER82325578
Connect Rate: 100000
Start Rate: 100000
Max. Concurrency: 10200
Concurrency Rate: 20
CLIENT_NURAND: 25
CPU: 1
Additional Options:

Name: d9
Description:
Directory: c:\blog\rte9.log
Machine: n3
Parameter Set: FullSpeed
Index: 260000000
Seed: 4678
Configured Users: 10200
Pipe Name: DRIVER92360187
Connect Rate: 100000
Start Rate: 100000
Max. Concurrency: 10200
Concurrency Rate: 20
CLIENT_NURAND: 25
CPU: 2
Additional Options:

Name: d10
Description:
Directory: c:\blog\rte10.log
Machine: n4
Parameter Set: FullSpeed
Index: 280000000
Seed: 4678
Configured Users: 10200
Pipe Name: DRIVER102399796
Connect Rate: 100000
Start Rate: 100000
Max. Concurrency: 10200
Concurrency Rate: 20
CLIENT_NURAND: 25
CPU: 0
Additional Options:

Name: d11
Description:
Directory: c:\blog\rte11.log
Machine: n4
Parameter Set: FullSpeed
Index: 300000000
Seed: 4678

```
Configured Users: 10200                    Directory: c:\blog\rte15.log              CPU: 2
Pipe Name: DRIVER1122682203                Machine: n25                             Additional Options:
Connect Rate: 100000                       Parameter Set: FullSpeed
Start Rate: 100000                         Index: 380000000                         Name: d19
Max. Concurrency: 10200                    Seed: 4678                               Description:
Concurrency Rate: 20                       Configured Users: 10200                  Directory: c:\blog\rte19.log
CLIENT_NURAND: 25                          Pipe Name: DRIVER15-1438852265           Machine: n29
CPU: 1                                     Connect Rate: 100000                     Parameter Set: FullSpeed
Additional Options:                        Start Rate: 100000                       Index: 460000000
                                           Max. Concurrency: 10200                  Seed: 4678
Name: d12                                  Concurrency Rate: 20                     Configured Users: 10200
Description:                               CLIENT_NURAND: 25                        Pipe Name: DRIVER19-57030562
Directory: c:\blog\rte12.log               CPU: 2                                   Connect Rate: 100000
Machine: n4                                Additional Options:                      Start Rate: 100000
Parameter Set: FullSpeed                                                            Max. Concurrency: 10200
Index: 320000000                           Name: d16                                Concurrency Rate: 20
Seed: 4678                                 Description:                             CLIENT_NURAND: 25
Configured Users: 10200                    Directory: c:\blog\rte16.log             CPU: 0
Pipe Name: DRIVER1222731546                Machine: n28                             Additional Options:
Connect Rate: 100000                       Parameter Set: FullSpeed
Start Rate: 100000                         Index: 400000000                         Name: d20
Max. Concurrency: 10200                    Seed: 4678                               Description:
Concurrency Rate: 20                       Configured Users: 10200                  Directory: c:\blog\rte20.log
CLIENT_NURAND: 25                          Pipe Name: DRIVER16-1438790906           Machine: n29
CPU: 2                                     Connect Rate: 100000                     Parameter Set: FullSpeed
Additional Options:                        Start Rate: 100000                       Index: 480000000
                                           Max. Concurrency: 10200                  Seed: 4678
Name: d13                                  Concurrency Rate: 20                     Configured Users: 10200
Description:                               CLIENT_NURAND: 25                        Pipe Name: DRIVER20-56992625
Directory: c:\blog\rte13.log               CPU: 0                                   Connect Rate: 100000
Machine: n25                               Additional Options:                      Start Rate: 100000
Parameter Set: FullSpeed                                                            Max. Concurrency: 10200
Index: 340000000                           Name: d17                                Concurrency Rate: 20
Seed: 4678                                 Description:                             CLIENT_NURAND: 25
Configured Users: 10200                    Directory: c:\blog\rte17.log             CPU: 1
Pipe Name: DRIVER13-1439076421             Machine: n28                             Additional Options:
Connect Rate: 100000                       Parameter Set: FullSpeed
Start Rate: 100000                         Index: 420000000                         Name: d21
Max. Concurrency: 10200                    Seed: 4678                               Description:
Concurrency Rate: 20                       Configured Users: 10200                  Directory: c:\blog\rte21.log
CLIENT_NURAND: 25                          Pipe Name: DRIVER17-57150250             Machine: n29
CPU: 0                                     Connect Rate: 100000                     Parameter Set: FullSpeed
Additional Options:                        Start Rate: 100000                       Index: 500000000
                                           Max. Concurrency: 10200                  Seed: 4678
Name: d14                                  Concurrency Rate: 20                     Configured Users: 10200
Description:                               CLIENT_NURAND: 25                        Pipe Name: DRIVER2191781
Directory: c:\blog\rte14.log               CPU: 1                                   Connect Rate: 100000
Machine: n25                               Additional Options:                      Start Rate: 100000
Parameter Set: FullSpeed                                                            Max. Concurrency: 10200
Index: 360000000                           Name: d18                                Concurrency Rate: 20
Seed: 4678                                 Description:                             CLIENT_NURAND: 25
Configured Users: 10200                    Directory: c:\blog\rte18.log             CPU: 2
Pipe Name: DRIVER14-1438943656             Machine: n28                             Additional Options:
Connect Rate: 100000                       Parameter Set: FullSpeed
Start Rate: 100000                         Index: 440000000                         Name: d22
Max. Concurrency: 10200                    Seed: 4678                               Description:
Concurrency Rate: 20                       Configured Users: 10200                  Directory: c:\blog\rte22.log
CLIENT_NURAND: 25                          Pipe Name: DRIVER18-57076468             Machine: n30
CPU: 1                                     Connect Rate: 100000                     Parameter Set: FullSpeed
Additional Options:                        Start Rate: 100000                       Index: 520000000
                                           Max. Concurrency: 10200                  Seed: 4678
Name: d15                                  Concurrency Rate: 20                     Configured Users: 10200
Description:                               CLIENT_NURAND: 25                        Pipe Name: DRIVER221814250
```

```
Connect Rate: 100000
Start Rate: 100000
Max. Concurrency: 10200
Concurrency Rate: 20
CLIENT_NURAND: 25
CPU: 0
Additional Options:

Name: d23
Description:
Directory: c:\blog\rte23.log
Machine: n30
Parameter Set: FullSpeed
Index: 540000000
Seed: 4678
Configured Users: 10200
Pipe Name: DRIVER231877968
Connect Rate: 100000
Start Rate: 100000
Max. Concurrency: 10200
Concurrency Rate: 20
CLIENT_NURAND: 25
CPU: 1
Additional Options:

Name: d24
Description:
Directory: c:\blog\rte24.log
Machine: n30
Parameter Set: FullSpeed
Index: 560000000
Seed: 4678
Configured Users: 10200
Pipe Name: DRIVER242206343
Connect Rate: 100000
Start Rate: 100000
Max. Concurrency: 10200
Concurrency Rate: 20
CLIENT_NURAND: 25
CPU: 2
Additional Options:

Name: d25
Description:
Directory: c:\blog\rte25.log
Machine: n31
Parameter Set: FullSpeed
Index: 580000000
Seed: 4678
Configured Users: 10200
Pipe Name: DRIVER252251500
Connect Rate: 100000
Start Rate: 100000
Max. Concurrency: 10200
Concurrency Rate: 20
CLIENT_NURAND: 25
CPU: 0
Additional Options:

Name: d26
Description:
Directory: c:\blog\rte26.log
Machine: n31
```

```
Parameter Set: FullSpeed
Index: 600000000
Seed: 4678
Configured Users: 10200
Pipe Name: DRIVER262289250
Connect Rate: 100000
Start Rate: 100000
Max. Concurrency: 10200
Concurrency Rate: 20
CLIENT_NURAND: 25
CPU: 1
Additional Options:

Name: d27
Description:
Directory: c:\blog\rte27.log
Machine: n31
Parameter Set: FullSpeed
Index: 620000000
Seed: 4678
Configured Users: 10200
Pipe Name: DRIVER272340437
Connect Rate: 100000
Start Rate: 100000
Max. Concurrency: 10200
Concurrency Rate: 20
CLIENT_NURAND: 25
CPU: 2
Additional Options:

Name: d28
Description:
Directory: c:\blog\rte28.log
Machine: n32
Parameter Set: FullSpeed
Index: 640000000
Seed: 4678
Configured Users: 10200
Pipe Name: DRIVER282382234
Connect Rate: 100000
Start Rate: 100000
Max. Concurrency: 10200
Concurrency Rate: 20
CLIENT_NURAND: 25
CPU: 0
Additional Options:

Name: d29
Description:
Directory: c:\blog\rte29.log
Machine: n32
Parameter Set: FullSpeed
Index: 660000000
Seed: 4678
Configured Users: 10200
Pipe Name: DRIVER292416328
Connect Rate: 100000
Start Rate: 100000
Max. Concurrency: 10200
Concurrency Rate: 20
CLIENT_NURAND: 25
CPU: 1
Additional Options:
```

```
Name: d30
Description:
Directory: c:\blog\rte30.log
Machine: n32
Parameter Set: FullSpeed
Index: 680000000
Seed: 4678
Configured Users: 10200
Pipe Name: DRIVER302463687
Connect Rate: 100000
Start Rate: 100000
Max. Concurrency: 10200
Concurrency Rate: 20
CLIENT_NURAND: 25
CPU: 2
Additional Options:

Name: d31
Description:
Directory: c:\blog\rte31.log
Machine: n33
Parameter Set: FullSpeed
Index: 700000000
Seed: 4678
Configured Users: 10200
Pipe Name: DRIVER3155814328
Connect Rate: 100000
Start Rate: 100000
Max. Concurrency: 10200
Concurrency Rate: 20
CLIENT_NURAND: 25
CPU: 0
Additional Options:

Name: d32
Description:
Directory: c:\blog\rte32.log
Machine: n33
Parameter Set: FullSpeed
Index: 720000000
Seed: 4678
Configured Users: 10200
Pipe Name: DRIVER3255892765
Connect Rate: 100000
Start Rate: 100000
Max. Concurrency: 10200
Concurrency Rate: 20
CLIENT_NURAND: 25
CPU: 1
Additional Options:

Name: d33
Description:
Directory: c:\blog\rte33.log
Machine: n33
Parameter Set: FullSpeed
Index: 740000000
Seed: 4678
Configured Users: 10200
Pipe Name: DRIVER3355948500
Connect Rate: 100000
Start Rate: 100000
```

```
Max. Concurrency: 10200
Concurrency Rate: 20
CLIENT_NURAND: 25
CPU: 2
Additional Options:

Name: d34
Description:
Directory: c:\blog\rte34.log
Machine: n34
Parameter Set: FullSpeed
Index: 760000000
Seed: 4678
Configured Users: 10200
Pipe Name: DRIVER3455990593
Connect Rate: 100000
Start Rate: 100000
Max. Concurrency: 10200
Concurrency Rate: 20
CLIENT_NURAND: 25
CPU: 0
Additional Options:

Name: d35
Description:
Directory: c:\blog\rte35.log
Machine: n34
Parameter Set: FullSpeed
Index: 780000000
Seed: 4678
Configured Users: 10200
Pipe Name: DRIVER3556027390
Connect Rate: 100000
Start Rate: 100000
Max. Concurrency: 10200
Concurrency Rate: 20
CLIENT_NURAND: 25
CPU: 1
Additional Options:

Name: d36
Description:
Directory: c:\blog\rte36.log
Machine: n34
Parameter Set: FullSpeed
Index: 800000000
Seed: 4678
Configured Users: 10200
Pipe Name: DRIVER3656077062
Connect Rate: 100000
Start Rate: 100000
Max. Concurrency: 10200
Concurrency Rate: 20
CLIENT_NURAND: 25
CPU: 2
Additional Options:

Name: d37
Description:
Directory: c:\blog\rte37.log
Machine: n35
Parameter Set: FullSpeed
Index: 820000000
```

```
Seed: 4678
Configured Users: 10200
Pipe Name: DRIVER37766536203
Connect Rate: 100000
Start Rate: 100000
Max. Concurrency: 10200
Concurrency Rate: 20
CLIENT_NURAND: 25
CPU: 0
Additional Options:

Name: d38
Description:
Directory: c:\blog\rte38.log
Machine: n35
Parameter Set: FullSpeed
Index: 840000000
Seed: 4678
Configured Users: 10200
Pipe Name: DRIVER38766654375
Connect Rate: 100000
Start Rate: 100000
Max. Concurrency: 10200
Concurrency Rate: 20
CLIENT_NURAND: 25
CPU: 1
Additional Options:

Name: d39
Description:
Directory: c:\blog\rte39.log
Machine: n35
Parameter Set: FullSpeed
Index: 860000000
Seed: 4678
Configured Users: 10200
Pipe Name: DRIVER39766760968
Connect Rate: 100000
Start Rate: 100000
Max. Concurrency: 10200
Concurrency Rate: 20
CLIENT_NURAND: 25
CPU: 2
Additional Options:

Name: d40
Description:
Directory: c:\blog\rte40.log
Machine: n36
Parameter Set: FullSpeed
Index: 880000000
Seed: 4678
Configured Users: 10200
Pipe Name: DRIVER40766820328
Connect Rate: 100000
Start Rate: 100000
Max. Concurrency: 10200
Concurrency Rate: 20
CLIENT_NURAND: 25
CPU: 1
Additional Options:

Name: d41
```

```
Description:
Directory: c:\blog\rte38.log
Machine: n36
Parameter Set: FullSpeed
Index: 900000000
Seed: 4678
Configured Users: 10200
Pipe Name: DRIVER41766909890
Connect Rate: 100000
Start Rate: 100000
Max. Concurrency: 10200
Concurrency Rate: 20
CLIENT_NURAND: 25
CPU: 1
Additional Options:

Name: d42
Description:
Directory: c:\blog\rte42.log
Machine: n36
Parameter Set: FullSpeed
Index: 920000000
Seed: 4678
Configured Users: 10200
Pipe Name: DRIVER42766941343
Connect Rate: 100000
Start Rate: 100000
Max. Concurrency: 10200
Concurrency Rate: 20
CLIENT_NURAND: 25
CPU: 2
Additional Options:

Name: d43
Description:
Directory: c:\blog\rte43.log
Machine: n37
Parameter Set: FullSpeed
Index: 940000000
Seed: 4678
Configured Users: 10200
Pipe Name: DRIVER43766990906
Connect Rate: 100000
Start Rate: 100000
Max. Concurrency: 10200
Concurrency Rate: 20
CLIENT_NURAND: 25
CPU: 0
Additional Options:

Name: d44
Description:
Directory: c:\blog\rte44.log
Machine: n37
Parameter Set: FullSpeed
Index: 960000000
Seed: 4678
Configured Users: 10200
Pipe Name: DRIVER44767023437
Connect Rate: 100000
Start Rate: 100000
Max. Concurrency: 10200
Concurrency Rate: 20
```

CLIENT_NURAND: 25
CPU: 1
Additional Options:

Name: d45
Description:
Directory: c:\blog\rte45.log
Machine: n37
Parameter Set: FullSpeed
Index: 980000000
Seed: 4678
Configured Users: 10200
Pipe Name: DRIVER45767085000
Connect Rate: 100000
Start Rate: 100000
Max. Concurrency: 10200
Concurrency Rate: 20
CLIENT_NURAND: 25
CPU: 2
Additional Options:

Name: d46
Description:
Directory: c:\blog\rte46.log
Machine: n38
Parameter Set: FullSpeed
Index: 1000000000
Seed: 4678
Configured Users: 10200
Pipe Name: DRIVER46767120687
Connect Rate: 100000
Start Rate: 100000
Max. Concurrency: 10200
Concurrency Rate: 20
CLIENT_NURAND: 25
CPU: 0
Additional Options:

Name: d47
Description:
Directory: c:\blog\rte47.log
Machine: n38
Parameter Set: FullSpeed
Index: 1020000000
Seed: 4678
Configured Users: 10200
Pipe Name: DRIVER47767168296
Connect Rate: 100000
Start Rate: 100000
Max. Concurrency: 10200
Concurrency Rate: 20
CLIENT_NURAND: 25
CPU: 1
Additional Options:

Name: d48
Description:
Directory: c:\blog\rte48.log
Machine: n38
Parameter Set: FullSpeed
Index: 1040000000
Seed: 4678
Configured Users: 10200

Pipe Name: DRIVER48767212015
Connect Rate: 100000
Start Rate: 100000
Max. Concurrency: 10200
Concurrency Rate: 20
CLIENT_NURAND: 25
CPU: 2
Additional Options:

Name: d49
Description:
Directory: c:\blog\rte49.log
Machine: n39
Parameter Set: FullSpeed
Index: 1060000000
Seed: 4678
Configured Users: 10200
Pipe Name: DRIVER49778610406
Connect Rate: 100000
Start Rate: 100000
Max. Concurrency: 10200
Concurrency Rate: 20
CLIENT_NURAND: 25
CPU: 0
Additional Options:

Name: d50
Description:
Directory: c:\blog\rte50.log
Machine: n39
Parameter Set: FullSpeed
Index: 1080000000
Seed: 4678
Configured Users: 10200
Pipe Name: DRIVER50778666593
Connect Rate: 100000
Start Rate: 100000
Max. Concurrency: 10200
Concurrency Rate: 20
CLIENT_NURAND: 25
CPU: 1
Additional Options:

Name: d51
Description:
Directory: c:\blog\rte51.log
Machine: n39
Parameter Set: FullSpeed
Index: 1100000000
Seed: 4678
Configured Users: 10200
Pipe Name: DRIVER51778705953
Connect Rate: 100000
Start Rate: 100000
Max. Concurrency: 10200
Concurrency Rate: 20
CLIENT_NURAND: 25
CPU: 2
Additional Options:

Name: d52
Description:
Directory: c:\blog\rte52.log

Machine: n41
Parameter Set: FullSpeed
Index: 1120000000
Seed: 4678
Configured Users: 10200
Pipe Name: DRIVER52778774546
Connect Rate: 100000
Start Rate: 100000
Max. Concurrency: 10200
Concurrency Rate: 20
CLIENT_NURAND: 25
CPU: 0
Additional Options:

Name: d53
Description:
Directory: c:\blog\rte53.log
Machine: n41
Parameter Set: FullSpeed
Index: 1140000000
Seed: 4678
Configured Users: 10200
Pipe Name: DRIVER53778801906
Connect Rate: 100000
Start Rate: 100000
Max. Concurrency: 10200
Concurrency Rate: 20
CLIENT_NURAND: 25
CPU: 1
Additional Options:

Name: d54
Description:
Directory: c:\blog\rte54.log
Machine: n41
Parameter Set: FullSpeed
Index: 1160000000
Seed: 4678
Configured Users: 10200
Pipe Name: DRIVER54778828968
Connect Rate: 100000
Start Rate: 100000
Max. Concurrency: 10200
Concurrency Rate: 20
CLIENT_NURAND: 25
CPU: 2
Additional Options:

Name: d55
Description:
Directory: c:\blog\rte55.log
Machine: n42
Parameter Set: FullSpeed
Index: 1180000000
Seed: 4678
Configured Users: 10200
Pipe Name: DRIVER55778888203
Connect Rate: 100000
Start Rate: 100000
Max. Concurrency: 10200
Concurrency Rate: 20
CLIENT_NURAND: 25
CPU: 0

Additional Options:

Name: d56
Description:
Directory: c:\blog\rte56.log
Machine: n42
Parameter Set: FullSpeed
Index: 1200000000
Seed: 4678
Configured Users: 10200
Pipe Name: DRIVER56778926656
Connect Rate: 100000
Start Rate: 100000
Max. Concurrency: 10200
Concurrency Rate: 20
CLIENT_NURAND: 25
CPU: 1
Additional Options:

Name: d57
Description:
Directory: c:\blog\rte57.log
Machine: n42
Parameter Set: FullSpeed
Index: 1220000000
Seed: 4678
Configured Users: 10200
Pipe Name: DRIVER57778954765
Connect Rate: 100000
Start Rate: 100000
Max. Concurrency: 10200
Concurrency Rate: 20
CLIENT_NURAND: 25
CPU: 2
Additional Options:

Name: d58
Description:
Directory: c:\blog\rte58.log
Machine: n43
Parameter Set: FullSpeed
Index: 1240000000
Seed: 4678
Configured Users: 10200
Pipe Name: DRIVER58778987609
Connect Rate: 100000
Start Rate: 100000
Max. Concurrency: 10200
Concurrency Rate: 20
CLIENT_NURAND: 25
CPU: 0
Additional Options:

Name: d59
Description:
Directory: c:\blog\rte59.log
Machine: n43
Parameter Set: FullSpeed
Index: 1260000000
Seed: 4678
Configured Users: 10200
Pipe Name: DRIVER59779021390
Connect Rate: 100000

Start Rate: 100000
Max. Concurrency: 10200
Concurrency Rate: 20
CLIENT_NURAND: 25
CPU: 1
Additional Options:

Name: d60
Description:
Directory: c:\blog\rte60.log
Machine: n43
Parameter Set: FullSpeed
Index: 1280000000
Seed: 4678
Configured Users: 10200
Pipe Name: DRIVER60779145406
Connect Rate: 100000
Start Rate: 100000
Max. Concurrency: 10200
Concurrency Rate: 20
CLIENT_NURAND: 25
CPU: 2
Additional Options:

Name: d61
Description:
Directory: c:\blog\rte61.log
Machine: n56
Parameter Set: FullSpeed
Index: 1300000000
Seed: 4678
Configured Users: 10200
Pipe Name: DRIVER613345406
Connect Rate: 100000
Start Rate: 100000
Max. Concurrency: 10200
Concurrency Rate: 20
CLIENT_NURAND: 25
CPU: 0
Additional Options:

Name: d62
Description:
Directory: c:\blog\rte62.log
Machine: n56
Parameter Set: FullSpeed
Index: 1320000000
Seed: 4678
Configured Users: 10200
Pipe Name: DRIVER623453375
Connect Rate: 100000
Start Rate: 100000
Max. Concurrency: 10200
Concurrency Rate: 20
CLIENT_NURAND: 25
CPU: 1
Additional Options:

Name: d63
Description:
Directory: c:\blog\rte63.log
Machine: n56
Parameter Set: FullSpeed

Index: 1340000000
Seed: 4678
Configured Users: 10200
Pipe Name: DRIVER633501687
Connect Rate: 100000
Start Rate: 100000
Max. Concurrency: 10200
Concurrency Rate: 20
CLIENT_NURAND: 25
CPU: 2
Additional Options:

Name: d64
Description:
Directory: c:\blog\rte64.log
Machine: n57
Parameter Set: FullSpeed
Index: 1360000000
Seed: 4678
Configured Users: 10200
Pipe Name: DRIVER643542156
Connect Rate: 100000
Start Rate: 100000
Max. Concurrency: 10200
Concurrency Rate: 20
CLIENT_NURAND: 25
CPU: 0
Additional Options:

Name: d65
Description:
Directory: c:\blog\rte65.log
Machine: n57
Parameter Set: FullSpeed
Index: 1380000000
Seed: 4678
Configured Users: 10200
Pipe Name: DRIVER653612937
Connect Rate: 100000
Start Rate: 100000
Max. Concurrency: 10200
Concurrency Rate: 20
CLIENT_NURAND: 25
CPU: 1
Additional Options:

Name: d66
Description:
Directory: c:\blog\rte66.log
Machine: n57
Parameter Set: FullSpeed
Index: 1400000000
Seed: 4678
Configured Users: 10200
Pipe Name: DRIVER663655140
Connect Rate: 100000
Start Rate: 100000
Max. Concurrency: 10200
Concurrency Rate: 20
CLIENT_NURAND: 25
CPU: 2
Additional Options:

```
Name: d67                               Concurrency Rate: 20                    Configured Users: 10200
Description:                            CLIENT_NURAND: 25                       Pipe Name: DRIVER742768187
Directory: c:\blog\rte67.log           CPU: 0                                  Connect Rate: 100000
Machine: n58                           Additional Options:                     Start Rate: 100000
Parameter Set: FullSpeed                                                       Max. Concurrency: 10200
Index: 1420000000                      Name: d71                               Concurrency Rate: 20
Seed: 4678                             Description:                            CLIENT_NURAND: 25
Configured Users: 10200                Directory: c:\blog\rte71.log            CPU: 1
Pipe Name: DRIVER673761906             Machine: n59                            Additional Options:
Connect Rate: 100000                   Parameter Set: FullSpeed
Start Rate: 100000                     Index: 1500000000                       Name: d75
Max. Concurrency: 10200                Seed: 4678                             Description:
Concurrency Rate: 20                   Configured Users: 10200                Directory: c:\blog\rte75.log
CLIENT_NURAND: 25                      Pipe Name: DRIVER713949343             Machine: n60
CPU: 0                                 Connect Rate: 100000                   Parameter Set: FullSpeed
Additional Options:                    Start Rate: 100000                     Index: 1580000000
                                       Max. Concurrency: 10200                Seed: 4678
Name: d68                               Concurrency Rate: 20                    Configured Users: 10200
Description:                            CLIENT_NURAND: 25                       Pipe Name: DRIVER752779937
Directory: c:\blog\rte68.log           CPU: 1                                  Connect Rate: 100000
Machine: n58                           Additional Options:                     Start Rate: 100000
Parameter Set: FullSpeed                                                       Max. Concurrency: 10200
Index: 1440000000                      Name: d72                               Concurrency Rate: 20
Seed: 4678                             Description:                            CLIENT_NURAND: 25
Configured Users: 10200                Directory: c:\blog\rte72.log            CPU: 2
Pipe Name: DRIVER683819031             Machine: n59                            Additional Options:
Connect Rate: 100000                   Parameter Set: FullSpeed
Start Rate: 100000                     Index: 1520000000                       Name: d76
Max. Concurrency: 10200                Seed: 4678                             Description:
Concurrency Rate: 20                   Configured Users: 10200                Directory: c:\blog\rte76.log
CLIENT_NURAND: 25                      Pipe Name: DRIVER723985750             Machine: n61
CPU: 1                                 Connect Rate: 100000                   Parameter Set: FullSpeed
Additional Options:                    Start Rate: 100000                     Index: 1600000000
                                       Max. Concurrency: 10200                Seed: 4678
Name: d69                               Concurrency Rate: 20                    Configured Users: 10200
Description:                            CLIENT_NURAND: 25                       Pipe Name: DRIVER762790703
Directory: c:\blog\rte69.log           CPU: 2                                  Connect Rate: 100000
Machine: n58                           Additional Options:                     Start Rate: 100000
Parameter Set: FullSpeed                                                       Max. Concurrency: 10200
Index: 1460000000                      Name: d73                               Concurrency Rate: 20
Seed: 4678                             Description:                            CLIENT_NURAND: 25
Configured Users: 10200                Directory: c:\blog\rte73.log            CPU: 0
Pipe Name: DRIVER693865343             Machine: n60                            Additional Options:
Connect Rate: 100000                   Parameter Set: FullSpeed
Start Rate: 100000                     Index: 1540000000                       Name: d77
Max. Concurrency: 10200                Seed: 4678                             Description:
Concurrency Rate: 20                   Configured Users: 10200                Directory: c:\blog\rte77.log
CLIENT_NURAND: 25                      Pipe Name: DRIVER732742140             Machine: n61
CPU: 2                                 Connect Rate: 100000                   Parameter Set: FullSpeed
Additional Options:                    Start Rate: 100000                     Index: 1620000000
                                       Max. Concurrency: 10200                Seed: 4678
Name: d70                               Concurrency Rate: 20                    Configured Users: 10200
Description:                            CLIENT_NURAND: 25                       Pipe Name: DRIVER772802046
Directory: c:\blog\rte70.log           CPU: 0                                  Connect Rate: 100000
Machine: n59                           Additional Options:                     Start Rate: 100000
Parameter Set: FullSpeed                                                       Max. Concurrency: 10200
Index: 1480000000                      Name: d74                               Concurrency Rate: 20
Seed: 4678                             Description:                            CLIENT_NURAND: 25
Configured Users: 10200                Directory: c:\blog\rte74.log            CPU: 1
Pipe Name: DRIVER703910750             Machine: n60                            Additional Options:
Connect Rate: 100000                   Parameter Set: FullSpeed
Start Rate: 100000                     Index: 1560000000                       Name: d78
Max. Concurrency: 10200                Seed: 4678                             Description:
```

```
Directory: c:\blog\rte78.log              CPU: 2                                    Connect Rate: 100000
Machine: n61                              Additional Options:                       Start Rate: 100000
Parameter Set: FullSpeed                                                            Max. Concurrency: 10200
Index: 1640000000                         Name: d82                                 Concurrency Rate: 20
Seed: 4678                                Description:                              CLIENT_NURAND: 25
Configured Users: 10200                   Directory: c:\blog\rte82.log              CPU: 0
Pipe Name: DRIVER782810718                Machine: n63                              Additional Options:
Connect Rate: 100000                      Parameter Set: FullSpeed
Start Rate: 100000                        Index: 1720000000                         Name: d86
Max. Concurrency: 10200                   Seed: 4678                                Description:
Concurrency Rate: 20                      Configured Users: 10200                   Directory: c:\blog\rte86.log
CLIENT_NURAND: 25                         Pipe Name: DRIVER823364343                Machine: n65
CPU: 2                                    Connect Rate: 100000                      Parameter Set: FullSpeed
Additional Options:                       Start Rate: 100000                        Index: 1800000000
                                          Max. Concurrency: 10200                   Seed: 4678
Name: d79                                 Concurrency Rate: 20                      Configured Users: 10200
Description:                              CLIENT_NURAND: 25                         Pipe Name: DRIVER8654864968
Directory: c:\blog\rte79.log              CPU: 0                                    Connect Rate: 100000
Machine: n62                              Additional Options:                       Start Rate: 100000
Parameter Set: FullSpeed                                                            Max. Concurrency: 10200
Index: 1660000000                         Name: d83                                 Concurrency Rate: 20
Seed: 4678                                Description:                              CLIENT_NURAND: 25
Configured Users: 10200                   Directory: c:\blog\rte83.log              CPU: 1
Pipe Name: DRIVER792820421                Machine: n63                              Additional Options:
Connect Rate: 100000                      Parameter Set: FullSpeed
Start Rate: 100000                        Index: 1740000000                         Name: d87
Max. Concurrency: 10200                   Seed: 4678                                Description:
Concurrency Rate: 20                      Configured Users: 10200                   Directory: c:\blog\rte87.log
CLIENT_NURAND: 25                         Pipe Name: DRIVER833381656                Machine: n65
CPU: 0                                    Connect Rate: 100000                      Parameter Set: FullSpeed
Additional Options:                       Start Rate: 100000                        Index: 1820000000
                                          Max. Concurrency: 10200                   Seed: 4678
Name: d80                                 Concurrency Rate: 20                      Configured Users: 10200
Description:                              CLIENT_NURAND: 25                         Pipe Name: DRIVER8754901734
Directory: c:\blog\rte80.log              CPU: 1                                    Connect Rate: 100000
Machine: n62                              Additional Options:                       Start Rate: 100000
Parameter Set: FullSpeed                                                            Max. Concurrency: 10200
Index: 1680000000                         Name: d84                                 Concurrency Rate: 20
Seed: 4678                                Description:                              CLIENT_NURAND: 25
Configured Users: 10200                   Directory: c:\blog\rte84.log              CPU: 2
Pipe Name: DRIVER802842390                Machine: n63                              Additional Options:
Connect Rate: 100000                      Parameter Set: FullSpeed
Start Rate: 100000                        Index: 1760000000                         Name: d88
Max. Concurrency: 10200                   Seed: 4678                                Description:
Concurrency Rate: 20                      Configured Users: 10200                   Directory: c:\blog\rte88.log
CLIENT_NURAND: 25                         Pipe Name: DRIVER843392562                Machine: n66
CPU: 1                                    Connect Rate: 100000                      Parameter Set: FullSpeed
Additional Options:                       Start Rate: 100000                        Index: 1840000000
                                          Max. Concurrency: 10200                   Seed: 4678
Name: d81                                 Concurrency Rate: 20                      Configured Users: 10200
Description:                              CLIENT_NURAND: 25                         Pipe Name: DRIVER8855059343
Directory: c:\blog\rte81.log              CPU: 2                                    Connect Rate: 100000
Machine: n62                              Additional Options:                       Start Rate: 100000
Parameter Set: FullSpeed                                                            Max. Concurrency: 10200
Index: 1700000000                         Name: d85                                 Concurrency Rate: 20
Seed: 4678                                Description:                              CLIENT_NURAND: 25
Configured Users: 10200                   Directory: c:\blog\rte85.log              CPU: 0
Pipe Name: DRIVER812851328                Machine: n65                              Additional Options:
Connect Rate: 100000                      Parameter Set: FullSpeed
Start Rate: 100000                        Index: 1780000000                         Name: d89
Max. Concurrency: 10200                   Seed: 4678                                Description:
Concurrency Rate: 20                      Configured Users: 10200                   Directory: c:\blog\rte89.log
CLIENT_NURAND: 25                         Pipe Name: DRIVER8554757562               Machine: n66
```

Parameter Set: FullSpeed
Index: 1860000000
Seed: 4678
Configured Users: 10200
Pipe Name: DRIVER8955092343
Connect Rate: 100000
Start Rate: 100000
Max. Concurrency: 10200
Concurrency Rate: 20
CLIENT_NURAND: 25
CPU: 1
Additional Options:

Name: d90
Description:
Directory: c:\blog\rte90.log
Machine: n66
Parameter Set: FullSpeed
Index: 1880000000
Seed: 4678
Configured Users: 10200
Pipe Name: DRIVER9055486578
Connect Rate: 100000
Start Rate: 100000
Max. Concurrency: 10200
Concurrency Rate: 20
CLIENT_NURAND: 25
CPU: 2
Additional Options:

Name: d91
Description:
Directory: c:\blog\rte91.log
Machine: n67
Parameter Set: FullSpeed
Index: 1900000000
Seed: 4678
Configured Users: 10200
Pipe Name: DRIVER9155534031
Connect Rate: 100000
Start Rate: 100000
Max. Concurrency: 10200
Concurrency Rate: 20
CLIENT_NURAND: 25
CPU: 0
Additional Options:

Name: d92
Description:
Directory: c:\blog\rte92.log
Machine: n67
Parameter Set: FullSpeed
Index: 1920000000
Seed: 4678
Configured Users: 10200
Pipe Name: DRIVER9255579359
Connect Rate: 100000
Start Rate: 100000
Max. Concurrency: 10200
Concurrency Rate: 20
CLIENT_NURAND: 25
CPU: 1
Additional Options:

Name: d93
Description:
Directory: c:\blog\rte93.log
Machine: n67
Parameter Set: FullSpeed
Index: 1940000000
Seed: 4678
Configured Users: 10200
Pipe Name: DRIVER9355620406
Connect Rate: 100000
Start Rate: 100000
Max. Concurrency: 10200
Concurrency Rate: 20
CLIENT_NURAND: 25
CPU: 2
Additional Options:

Name: d94
Description:
Directory: c:\blog\rte94.log
Machine: n68
Parameter Set: FullSpeed
Index: 1960000000
Seed: 4678
Configured Users: 10200
Pipe Name: DRIVER9455653265
Connect Rate: 100000
Start Rate: 100000
Max. Concurrency: 10200
Concurrency Rate: 20
CLIENT_NURAND: 25
CPU: 0
Additional Options:

Name: d95
Description:
Directory: c:\blog\rte95.log
Machine: n68
Parameter Set: FullSpeed
Index: 1980000000
Seed: 4678
Configured Users: 10200
Pipe Name: DRIVER9555683343
Connect Rate: 100000
Start Rate: 100000
Max. Concurrency: 10200
Concurrency Rate: 20
CLIENT_NURAND: 25
CPU: 1
Additional Options:

Name: d96
Description:
Directory: c:\blog\rte96.log
Machine: n68
Parameter Set: FullSpeed
Index: 2000000000
Seed: 4678
Configured Users: 10200
Pipe Name: DRIVER9655715281
Connect Rate: 100000
Start Rate: 100000

Max. Concurrency: 10200
Concurrency Rate: 20
CLIENT_NURAND: 25
CPU: 2
Additional Options:

Number of User groups: 96

Driver Engine: d1
IIS Server: cr121
SQL Server:
tcp:130.168.208.31,2001
Database: tpcc
User: sa
Protocol: HTML
w_id Range: 1 – 1020
w_id Min Warehouse: 1
w_id Max Warehouse: 97920
Scale: Normal
User Count: 10200
District id: 1
Scale Down: No

Driver Engine: d2
IIS Server: cr121
SQL Server:
tcp:130.168.208.31,2001
Database: tpcc
User: sa
Protocol: HTML
w_id Range: 1021 – 2040
w_id Min Warehouse: 1
w_id Max Warehouse: 97920
Scale: Normal
User Count: 10200
District id: 1
Scale Down: No

Driver Engine: d3
IIS Server: cr121
SQL Server:
tcp:130.168.208.31,2001
Database: tpcc
User: sa
Protocol: HTML
w_id Range: 2041 – 3060
w_id Min Warehouse: 1
w_id Max Warehouse: 97920
Scale: Normal
User Count: 10200
District id: 1
Scale Down: No

Driver Engine: d4
IIS Server: cr121
SQL Server:
tcp:130.168.208.31,2001
Database: tpcc
User: sa
Protocol: HTML
w_id Range: 3061 – 4080
w_id Min Warehouse: 1
w_id Max Warehouse: 97920

Scale: Normal
User Count: 10200
District id: 1
Scale Down: No

Driver Engine: d5
IIS Server: cr122
SQL Server:
tcp:130.168.208.31,2001
Database: tpcc
User: sa
Protocol: HTML
w_id Range: 4081 - 5100
w_id Min Warehouse: 1
w_id Max Warehouse: 97920
Scale: Normal
User Count: 10200
District id: 1
Scale Down: No

Driver Engine: d6
IIS Server: cr122
SQL Server:
tcp:130.168.208.31,2001
Database: tpcc
User: sa
Protocol: HTML
w_id Range: 5101 - 6120
w_id Min Warehouse: 1
w_id Max Warehouse: 97920
Scale: Normal
User Count: 10200
District id: 1
Scale Down: No

Driver Engine: d7
IIS Server: cr122
SQL Server:
tcp:130.168.208.31,2001
Database: tpcc
User: sa
Protocol: HTML
w_id Range: 6121 - 7140
w_id Min Warehouse: 1
w_id Max Warehouse: 97920
Scale: Normal
User Count: 10200
District id: 1
Scale Down: No

Driver Engine: d8
IIS Server: cr122
SQL Server:
tcp:130.168.208.31,2001
Database: tpcc
User: sa
Protocol: HTML
w_id Range: 7141 - 8160
w_id Min Warehouse: 1
w_id Max Warehouse: 97920
Scale: Normal
User Count: 10200
District id: 1

Scale Down: No

Driver Engine: d9
IIS Server: cr123
SQL Server:
tcp:130.168.208.31,2001
Database: tpcc
User: sa
Protocol: HTML
w_id Range: 8161 - 9180
w_id Min Warehouse: 1
w_id Max Warehouse: 97920
Scale: Normal
User Count: 10200
District id: 1
Scale Down: No

Driver Engine: d10
IIS Server: cr123
SQL Server:
tcp:130.168.208.31,2001
Database: tpcc
User: sa
Protocol: HTML
w_id Range: 9181 - 10200
w_id Min Warehouse: 1
w_id Max Warehouse: 97920
Scale: Normal
User Count: 10200
District id: 1
Scale Down: No

Driver Engine: d11
IIS Server: cr123
SQL Server:
tcp:130.168.208.31,2001
Database: tpcc
User: sa
Protocol: HTML
w_id Range: 10201 - 11220
w_id Min Warehouse: 1
w_id Max Warehouse: 97920
Scale: Normal
User Count: 10200
District id: 1
Scale Down: No

Driver Engine: d12
IIS Server: cr123
SQL Server:
tcp:130.168.208.31,2001
Database: tpcc
User: sa
Protocol: HTML
w_id Range: 11221 - 12240
w_id Min Warehouse: 1
w_id Max Warehouse: 97920
Scale: Normal
User Count: 10200
District id: 1
Scale Down: No

Driver Engine: d13

IIS Server: cr124
SQL Server:
tcp:130.168.208.31,2002
Database: tpcc
User: sa
Protocol: HTML
w_id Range: 12241 - 13260
w_id Min Warehouse: 1
w_id Max Warehouse: 97920
Scale: Normal
User Count: 10200
District id: 1
Scale Down: No

Driver Engine: d14
IIS Server: cr124
SQL Server:
tcp:130.168.208.31,2002
Database: tpcc
User: sa
Protocol: HTML
w_id Range: 13261 - 14280
w_id Min Warehouse: 1
w_id Max Warehouse: 97920
Scale: Normal
User Count: 10200
District id: 1
Scale Down: No

Driver Engine: d15
IIS Server: cr124
SQL Server:
tcp:130.168.208.31,2002
Database: tpcc
User: sa
Protocol: HTML
w_id Range: 14281 - 15300
w_id Min Warehouse: 1
w_id Max Warehouse: 97920
Scale: Normal
User Count: 10200
District id: 1
Scale Down: No

Driver Engine: d16
IIS Server: cr124
SQL Server:
tcp:130.168.208.31,2002
Database: tpcc
User: sa
Protocol: HTML
w_id Range: 15301 - 16320
w_id Min Warehouse: 1
w_id Max Warehouse: 97920
Scale: Normal
User Count: 10200
District id: 1
Scale Down: No

Driver Engine: d17
IIS Server: cr125
SQL Server:
tcp:130.168.208.31,2002

```
Database: tpcc
User: sa
Protocol: HTML
w_id Range: 16321 - 17340
w_id Min Warehouse: 1
w_id Max Warehouse: 97920
Scale: Normal
User Count: 10200
District id: 1
Scale Down: No

Driver Engine: d18
IIS Server: cr125
SQL Server:
tcp:130.168.208.31,2002
Database: tpcc
User: sa
Protocol: HTML
w_id Range: 17341 - 18360
w_id Min Warehouse: 1
w_id Max Warehouse: 97920
Scale: Normal
User Count: 10200
District id: 1
Scale Down: No

Driver Engine: d19
IIS Server: cr125
SQL Server:
tcp:130.168.208.31,2002
Database: tpcc
User: sa
Protocol: HTML
w_id Range: 18361 - 19380
w_id Min Warehouse: 1
w_id Max Warehouse: 97920
Scale: Normal
User Count: 10200
District id: 1
Scale Down: No

Driver Engine: d20
IIS Server: cr125
SQL Server:
tcp:130.168.208.31,2002
Database: tpcc
User: sa
Protocol: HTML
w_id Range: 19381 - 20400
w_id Min Warehouse: 1
w_id Max Warehouse: 97920
Scale: Normal
User Count: 10200
District id: 1
Scale Down: No

Driver Engine: d21
IIS Server: cr126
SQL Server:
tcp:130.168.208.31,2002
Database: tpcc
User: sa
Protocol: HTML
```

```
w_id Range: 20401 - 21420
w_id Min Warehouse: 1
w_id Max Warehouse: 97920
Scale: Normal
User Count: 10200
District id: 1
Scale Down: No

Driver Engine: d22
IIS Server: cr126
SQL Server:
tcp:130.168.208.31,2002
Database: tpcc
User: sa
Protocol: HTML
w_id Range: 21421 - 22440
w_id Min Warehouse: 1
w_id Max Warehouse: 97920
Scale: Normal
User Count: 10200
District id: 1
Scale Down: No

Driver Engine: d23
IIS Server: cr126
SQL Server:
tcp:130.168.208.31,2002
Database: tpcc
User: sa
Protocol: HTML
w_id Range: 22441 - 23460
w_id Min Warehouse: 1
w_id Max Warehouse: 97920
Scale: Normal
User Count: 10200
District id: 1
Scale Down: No

Driver Engine: d24
IIS Server: cr126
SQL Server:
tcp:130.168.208.31,2002
Database: tpcc
User: sa
Protocol: HTML
w_id Range: 23461 - 24480
w_id Min Warehouse: 1
w_id Max Warehouse: 97920
Scale: Normal
User Count: 10200
District id: 1
Scale Down: No

Driver Engine: d25
IIS Server: cr127
SQL Server:
tcp:130.168.208.32,2003
Database: tpcc
User: sa
Protocol: HTML
w_id Range: 24481 - 25500
w_id Min Warehouse: 1
w_id Max Warehouse: 97920
```

```
Scale: Normal
User Count: 10200
District id: 1
Scale Down: No

Driver Engine: d26
IIS Server: cr127
SQL Server:
tcp:130.168.208.32,2003
Database: tpcc
User: sa
Protocol: HTML
w_id Range: 25501 - 26520
w_id Min Warehouse: 1
w_id Max Warehouse: 97920
Scale: Normal
User Count: 10200
District id: 1
Scale Down: No

Driver Engine: d27
IIS Server: cr127
SQL Server:
tcp:130.168.208.32,2003
Database: tpcc
User: sa
Protocol: HTML
w_id Range: 26521 - 27540
w_id Min Warehouse: 1
w_id Max Warehouse: 97920
Scale: Normal
User Count: 10200
District id: 1
Scale Down: No

Driver Engine: d28
IIS Server: cr127
SQL Server:
tcp:130.168.208.32,2003
Database: tpcc
User: sa
Protocol: HTML
w_id Range: 27541 - 28560
w_id Min Warehouse: 1
w_id Max Warehouse: 97920
Scale: Normal
User Count: 10200
District id: 1
Scale Down: No

Driver Engine: d29
IIS Server: cr128
SQL Server:
tcp:130.168.208.32,2003
Database: tpcc
User: sa
Protocol: HTML
w_id Range: 28561 - 29580
w_id Min Warehouse: 1
w_id Max Warehouse: 97920
Scale: Normal
User Count: 10200
District id: 1
```

```
              Scale Down: No                         IIS Server: cr129                      Database: tpcc
                                                     SQL Server:                            User: sa
         Driver Engine: d30               tcp:130.168.208.32,2003                           Protocol: HTML
         IIS Server: cr128                        Database: tpcc                            w_id Range: 37741 - 38760
         SQL Server:                               User: sa                                 w_id Min Warehouse: 1
tcp:130.168.208.32,2003                            Protocol: HTML                           w_id Max Warehouse: 97920
         Database: tpcc                            w_id Range: 33661 - 34680                 Scale: Normal
         User: sa                                  w_id Min Warehouse: 1                     User Count: 10200
         Protocol: HTML                            w_id Max Warehouse: 97920                 District id: 1
         w_id Range: 29581 - 30600                 Scale: Normal                             Scale Down: No
         w_id Min Warehouse: 1                     User Count: 10200
         w_id Max Warehouse: 97920                 District id: 1                       Driver Engine: d39
         Scale: Normal                             Scale Down: No                           IIS Server: cr130
         User Count: 10200                                                                  SQL Server:
         District id: 1                       Driver Engine: d35               tcp:130.168.208.32,2004
         Scale Down: No                           IIS Server: cr129                          Database: tpcc
                                                  SQL Server:                                User: sa
         Driver Engine: d31               tcp:130.168.208.32,2003                           Protocol: HTML
         IIS Server: cr128                        Database: tpcc                            w_id Range: 38761 - 39780
         SQL Server:                               User: sa                                 w_id Min Warehouse: 1
tcp:130.168.208.32,2003                            Protocol: HTML                           w_id Max Warehouse: 97920
         Database: tpcc                            w_id Range: 34681 - 35700                 Scale: Normal
         User: sa                                  w_id Min Warehouse: 1                     User Count: 10200
         Protocol: HTML                            w_id Max Warehouse: 97920                 District id: 1
         w_id Range: 30601 - 31620                 Scale: Normal                             Scale Down: No
         w_id Min Warehouse: 1                     User Count: 10200
         w_id Max Warehouse: 97920                 District id: 1                       Driver Engine: d40
         Scale: Normal                             Scale Down: No                           IIS Server: cr130
         User Count: 10200                                                                  SQL Server:
         District id: 1                       Driver Engine: d36               tcp:130.168.208.32,2004
         Scale Down: No                           IIS Server: cr129                          Database: tpcc
                                                  SQL Server:                                User: sa
         Driver Engine: d32               tcp:130.168.208.32,2003                           Protocol: HTML
         IIS Server: cr128                        Database: tpcc                            w_id Range: 39781 - 40800
         SQL Server:                               User: sa                                 w_id Min Warehouse: 1
tcp:130.168.208.32,2003                            Protocol: HTML                           w_id Max Warehouse: 97920
         Database: tpcc                            w_id Range: 35701 - 36720                 Scale: Normal
         User: sa                                  w_id Min Warehouse: 1                     User Count: 10200
         Protocol: HTML                            w_id Max Warehouse: 97920                 District id: 1
         w_id Range: 31621 - 32640                 Scale: Normal                             Scale Down: No
         w_id Min Warehouse: 1                     User Count: 10200
         w_id Max Warehouse: 97920                 District id: 1                       Driver Engine: d41
         Scale: Normal                             Scale Down: No                           IIS Server: cr131
         User Count: 10200                                                                  SQL Server:
         District id: 1                       Driver Engine: d37               tcp:130.168.208.32,2004
         Scale Down: No                           IIS Server: cr130                          Database: tpcc
                                                  SQL Server:                                User: sa
         Driver Engine: d33               tcp:130.168.208.32,2004                           Protocol: HTML
         IIS Server: cr129                        Database: tpcc                            w_id Range: 40801 - 41820
         SQL Server:                               User: sa                                 w_id Min Warehouse: 1
tcp:130.168.208.32,2003                            Protocol: HTML                           w_id Max Warehouse: 97920
         Database: tpcc                            w_id Range: 36721 - 37740                 Scale: Normal
         User: sa                                  w_id Min Warehouse: 1                     User Count: 10200
         Protocol: HTML                            w_id Max Warehouse: 97920                 District id: 1
         w_id Range: 32641 - 33660                 Scale: Normal                             Scale Down: No
         w_id Min Warehouse: 1                     User Count: 10200
         w_id Max Warehouse: 97920                 District id: 1                       Driver Engine: d42
         Scale: Normal                             Scale Down: No                           IIS Server: cr131
         User Count: 10200                                                                  SQL Server:
         District id: 1                       Driver Engine: d38               tcp:130.168.208.32,2004
         Scale Down: No                           IIS Server: cr130                          Database: tpcc
                                                  SQL Server:                                User: sa
         Driver Engine: d34               tcp:130.168.208.32,2004                           Protocol: HTML
```

w_id Range: 41821 - 42840
w_id Min Warehouse: 1
w_id Max Warehouse: 97920
Scale: Normal
User Count: 10200
District id: 1
Scale Down: No

Driver Engine: d43
IIS Server: cr131
SQL Server:
tcp:130.168.208.32,2004
    Database: tpcc
    User: sa
    Protocol: HTML
    w_id Range: 42841 - 43860
    w_id Min Warehouse: 1
    w_id Max Warehouse: 97920
    Scale: Normal
    User Count: 10200
    District id: 1
    Scale Down: No

Driver Engine: d44
IIS Server: cr131
SQL Server:
tcp:130.168.208.32,2004
    Database: tpcc
    User: sa
    Protocol: HTML
    w_id Range: 43861 - 44880
    w_id Min Warehouse: 1
    w_id Max Warehouse: 97920
    Scale: Normal
    User Count: 10200
    District id: 1
    Scale Down: No

Driver Engine: d45
IIS Server: cr132
SQL Server:
tcp:130.168.208.32,2004
    Database: tpcc
    User: sa
    Protocol: HTML
    w_id Range: 44881 - 45900
    w_id Min Warehouse: 1
    w_id Max Warehouse: 97920
    Scale: Normal
    User Count: 10200
    District id: 1
    Scale Down: No

Driver Engine: d46
IIS Server: cr132
SQL Server:
tcp:130.168.208.32,2004
    Database: tpcc
    User: sa
    Protocol: HTML
    w_id Range: 45901 - 46920
    w_id Min Warehouse: 1
    w_id Max Warehouse: 97920

Scale: Normal
User Count: 10200
District id: 1
Scale Down: No

Driver Engine: d47
IIS Server: cr132
SQL Server:
tcp:130.168.208.32,2004
    Database: tpcc
    User: sa
    Protocol: HTML
    w_id Range: 46921 - 47940
    w_id Min Warehouse: 1
    w_id Max Warehouse: 97920
    Scale: Normal
    User Count: 10200
    District id: 1
    Scale Down: No

Driver Engine: d48
IIS Server: cr132
SQL Server:
tcp:130.168.208.32,2004
    Database: tpcc
    User: sa
    Protocol: HTML
    w_id Range: 47941 - 48960
    w_id Min Warehouse: 1
    w_id Max Warehouse: 97920
    Scale: Normal
    User Count: 10200
    District id: 1
    Scale Down: No

Driver Engine: d49
IIS Server: cr133
SQL Server:
tcp:130.168.208.33,2005
    Database: tpcc
    User: sa
    Protocol: HTML
    w_id Range: 48961 - 49980
    w_id Min Warehouse: 1
    w_id Max Warehouse: 97920
    Scale: Normal
    User Count: 10200
    District id: 1
    Scale Down: No

Driver Engine: d50
IIS Server: cr133
SQL Server:
tcp:130.168.208.33,2005
    Database: tpcc
    User: sa
    Protocol: HTML
    w_id Range: 49981 - 51000
    w_id Min Warehouse: 1
    w_id Max Warehouse: 97920
    Scale: Normal
    User Count: 10200
    District id: 1

Scale Down: No

Driver Engine: d51
IIS Server: cr133
SQL Server:
tcp:130.168.208.33,2005
    Database: tpcc
    User: sa
    Protocol: HTML
    w_id Range: 51001 - 52020
    w_id Min Warehouse: 1
    w_id Max Warehouse: 97920
    Scale: Normal
    User Count: 10200
    District id: 1
    Scale Down: No

Driver Engine: d52
IIS Server: cr133
SQL Server:
tcp:130.168.208.33,2005
    Database: tpcc
    User: sa
    Protocol: HTML
    w_id Range: 52021 - 53040
    w_id Min Warehouse: 1
    w_id Max Warehouse: 97920
    Scale: Normal
    User Count: 10200
    District id: 1
    Scale Down: No

Driver Engine: d53
IIS Server: cr134
SQL Server:
tcp:130.168.208.33,2005
    Database: tpcc
    User: sa
    Protocol: HTML
    w_id Range: 53041 - 54060
    w_id Min Warehouse: 1
    w_id Max Warehouse: 97920
    Scale: Normal
    User Count: 10200
    District id: 1
    Scale Down: No

Driver Engine: d54
IIS Server: cr134
SQL Server:
tcp:130.168.208.33,2005
    Database: tpcc
    User: sa
    Protocol: HTML
    w_id Range: 54061 - 55080
    w_id Min Warehouse: 1
    w_id Max Warehouse: 97920
    Scale: Normal
    User Count: 10200
    District id: 1
    Scale Down: No

Driver Engine: d55

```
              IIS Server: cr134                        Database: tpcc                              w_id Range: 63241 - 64260
              SQL Server:                              User: sa                                    w_id Min Warehouse: 1
tcp:130.168.208.33,2005                               Protocol: HTML                              w_id Max Warehouse: 97920
              Database: tpcc                           w_id Range: 59161 - 60180                   Scale: Normal
              User: sa                                 w_id Min Warehouse: 1                       User Count: 10200
              Protocol: HTML                           w_id Max Warehouse: 97920                   District id: 1
              w_id Range: 55081 - 56100                Scale: Normal                               Scale Down: No
              w_id Min Warehouse: 1                    User Count: 10200
              w_id Max Warehouse: 97920                District id: 1                              Driver Engine: d64
              Scale: Normal                            Scale Down: No                              IIS Server: cr136
              User Count: 10200                                                                    SQL Server:
              District id: 1                           Driver Engine: d60                 tcp:130.168.208.33,2006
              Scale Down: No                           IIS Server: cr135                           Database: tpcc
                                                       SQL Server:                                 User: sa
              Driver Engine: d56               tcp:130.168.208.33,2005                             Protocol: HTML
              IIS Server: cr134                        Database: tpcc                              w_id Range: 64261 - 65280
              SQL Server:                              User: sa                                    w_id Min Warehouse: 1
tcp:130.168.208.33,2005                               Protocol: HTML                              w_id Max Warehouse: 97920
              Database: tpcc                           w_id Range: 60181 - 61200                   Scale: Normal
              User: sa                                 w_id Min Warehouse: 1                       User Count: 10200
              Protocol: HTML                           w_id Max Warehouse: 97920                   District id: 1
              w_id Range: 56101 - 57120                Scale: Normal                               Scale Down: No
              w_id Min Warehouse: 1                    User Count: 10200
              w_id Max Warehouse: 97920                District id: 1                              Driver Engine: d65
              Scale: Normal                            Scale Down: No                              IIS Server: cr93
              User Count: 10200                                                                    SQL Server:
              District id: 1                           Driver Engine: d61                 tcp:130.168.208.33,2006
              Scale Down: No                           IIS Server: cr136                           Database: tpcc
                                                       SQL Server:                                 User: sa
              Driver Engine: d57               tcp:130.168.208.33,2006                             Protocol: HTML
              IIS Server: cr135                        Database: tpcc                              w_id Range: 65281 - 66300
              SQL Server:                              User: sa                                    w_id Min Warehouse: 1
tcp:130.168.208.33,2005                               Protocol: HTML                              w_id Max Warehouse: 97920
              Database: tpcc                           w_id Range: 61201 - 62220                   Scale: Normal
              User: sa                                 w_id Min Warehouse: 1                       User Count: 10200
              Protocol: HTML                           w_id Max Warehouse: 97920                   District id: 1
              w_id Range: 57121 - 58140                Scale: Normal                               Scale Down: No
              w_id Min Warehouse: 1                    User Count: 10200
              w_id Max Warehouse: 97920                District id: 1                              Driver Engine: d66
              Scale: Normal                            Scale Down: No                              IIS Server: cr93
              User Count: 10200                                                                    SQL Server:
              District id: 1                           Driver Engine: d62                 tcp:130.168.208.33,2006
              Scale Down: No                           IIS Server: cr136                           Database: tpcc
                                                       SQL Server:                                 User: sa
              Driver Engine: d58               tcp:130.168.208.33,2006                             Protocol: HTML
              IIS Server: cr135                        Database: tpcc                              w_id Range: 66301 - 67320
              SQL Server:                              User: sa                                    w_id Min Warehouse: 1
tcp:130.168.208.33,2005                               Protocol: HTML                              w_id Max Warehouse: 97920
              Database: tpcc                           w_id Range: 62221 - 63240                   Scale: Normal
              User: sa                                 w_id Min Warehouse: 1                       User Count: 10200
              Protocol: HTML                           w_id Max Warehouse: 97920                   District id: 1
              w_id Range: 58141 - 59160                Scale: Normal                               Scale Down: No
              w_id Min Warehouse: 1                    User Count: 10200
              w_id Max Warehouse: 97920                District id: 1                              Driver Engine: d67
              Scale: Normal                            Scale Down: No                              IIS Server: cr93
              User Count: 10200                                                                    SQL Server:
              District id: 1                           Driver Engine: d63                 tcp:130.168.208.33,2006
              Scale Down: No                           IIS Server: cr136                           Database: tpcc
                                                       SQL Server:                                 User: sa
              Driver Engine: d59               tcp:130.168.208.33,2006                             Protocol: HTML
              IIS Server: cr135                        Database: tpcc                              w_id Range: 67321 - 68340
              SQL Server:                              User: sa                                    w_id Min Warehouse: 1
tcp:130.168.208.33,2005                               Protocol: HTML                              w_id Max Warehouse: 97920
```

```
         Scale: Normal                                   Scale Down: No                                          IIS Server: cr95
         User Count: 10200                                                                                        SQL Server:
         District id: 1                                   Driver Engine: d72                            tcp:130.168.208.34,2007
         Scale Down: No                                   IIS Server: cr94                                          Database: tpcc
                                                          SQL Server:                                               User: sa
         Driver Engine: d68                     tcp:130.168.208.33,2006                                             Protocol: HTML
         IIS Server: cr93                                   Database: tpcc                                          w_id Range: 76501 - 77520
         SQL Server:                                        User: sa                                                w_id Min Warehouse: 1
tcp:130.168.208.33,2006                                     Protocol: HTML                                          w_id Max Warehouse: 97920
           Database: tpcc                                   w_id Range: 72421 - 73440                               Scale: Normal
           User: sa                                         w_id Min Warehouse: 1                                   User Count: 10200
           Protocol: HTML                                   w_id Max Warehouse: 97920                               District id: 1
           w_id Range: 68341 - 69360                        Scale: Normal                                           Scale Down: No
           w_id Min Warehouse: 1                            User Count: 10200
           w_id Max Warehouse: 97920                        District id: 1                                        Driver Engine: d77
           Scale: Normal                                    Scale Down: No                                          IIS Server: cr96
           User Count: 10200                                                                                        SQL Server:
           District id: 1                                 Driver Engine: d73                            tcp:130.168.208.34,2007
           Scale Down: No                                   IIS Server: cr95                                         Database: tpcc
                                                            SQL Server:                                              User: sa
         Driver Engine: d69                       tcp:130.168.208.34,2007                                            Protocol: HTML
         IIS Server: cr94                                   Database: tpcc                                           w_id Range: 77521 - 78540
         SQL Server:                                        User: sa                                                 w_id Min Warehouse: 1
tcp:130.168.208.33,2006                                     Protocol: HTML                                           w_id Max Warehouse: 97920
           Database: tpcc                                   w_id Range: 73441 - 74460                                Scale: Normal
           User: sa                                         w_id Min Warehouse: 1                                    User Count: 10200
           Protocol: HTML                                   w_id Max Warehouse: 97920                                District id: 1
           w_id Range: 69361 - 70380                        Scale: Normal                                            Scale Down: No
           w_id Min Warehouse: 1                            User Count: 10200
           w_id Max Warehouse: 97920                        District id: 1                                         Driver Engine: d78
           Scale: Normal                                    Scale Down: No                                           IIS Server: cr96
           User Count: 10200                                                                                         SQL Server:
           District id: 1                                 Driver Engine: d74                            tcp:130.168.208.34,2007
           Scale Down: No                                   IIS Server: cr95                                         Database: tpcc
                                                            SQL Server:                                              User: sa
         Driver Engine: d70                       tcp:130.168.208.34,2007                                            Protocol: HTML
         IIS Server: cr94                                   Database: tpcc                                           w_id Range: 78541 - 79560
         SQL Server:                                        User: sa                                                 w_id Min Warehouse: 1
tcp:130.168.208.33,2006                                     Protocol: HTML                                           w_id Max Warehouse: 97920
           Database: tpcc                                   w_id Range: 74461 - 75480                                Scale: Normal
           User: sa                                         w_id Min Warehouse: 1                                    User Count: 10200
           Protocol: HTML                                   w_id Max Warehouse: 97920                                District id: 1
           w_id Range: 70381 - 71400                        Scale: Normal                                            Scale Down: No
           w_id Min Warehouse: 1                            User Count: 10200
           w_id Max Warehouse: 97920                        District id: 1                                         Driver Engine: d79
           Scale: Normal                                    Scale Down: No                                           IIS Server: cr96
           User Count: 10200                                                                                         SQL Server:
           District id: 1                                 Driver Engine: d75                            tcp:130.168.208.34,2007
           Scale Down: No                                   IIS Server: cr95                                         Database: tpcc
                                                            SQL Server:                                              User: sa
         Driver Engine: d71                       tcp:130.168.208.34,2007                                            Protocol: HTML
         IIS Server: cr94                                   Database: tpcc                                           w_id Range: 79561 - 80580
         SQL Server:                                        User: sa                                                 w_id Min Warehouse: 1
tcp:130.168.208.33,2006                                     Protocol: HTML                                           w_id Max Warehouse: 97920
           Database: tpcc                                   w_id Range: 75481 - 76500                                Scale: Normal
           User: sa                                         w_id Min Warehouse: 1                                    User Count: 10200
           Protocol: HTML                                   w_id Max Warehouse: 97920                                District id: 1
           w_id Range: 71401 - 72420                        Scale: Normal                                            Scale Down: No
           w_id Min Warehouse: 1                            User Count: 10200
           w_id Max Warehouse: 97920                        District id: 1                                         Driver Engine: d80
           Scale: Normal                                    Scale Down: No                                           IIS Server: cr96
           User Count: 10200                                                                                         SQL Server:
           District id: 1                                 Driver Engine: d76                            tcp:130.168.208.34,2007
```

```
Database: tpcc                          w_id Range: 84661 - 85680                Scale: Normal
User: sa                                 w_id Min Warehouse: 1                    User Count: 10200
Protocol: HTML                           w_id Max Warehouse: 97920                District id: 1
w_id Range: 80581 - 81600                Scale: Normal                           Scale Down: No
w_id Min Warehouse: 1                    User Count: 10200
w_id Max Warehouse: 97920                District id: 1                          Driver Engine: d89
Scale: Normal                            Scale Down: No                          IIS Server: cr107
User Count: 10200                                                                SQL Server:
District id: 1                           Driver Engine: d85                      tcp:130.168.208.34,2008
Scale Down: No                           IIS Server: cr106                        Database: tpcc
                                         SQL Server:                              User: sa
Driver Engine: d81                       tcp:130.168.208.34,2008                  Protocol: HTML
IIS Server: cr105                         Database: tpcc                          w_id Range: 89761 - 90780
SQL Server:                               User: sa                                w_id Min Warehouse: 1
tcp:130.168.208.34,2007                   Protocol: HTML                          w_id Max Warehouse: 97920
 Database: tpcc                           w_id Range: 85681 - 86700               Scale: Normal
 User: sa                                 w_id Min Warehouse: 1                   User Count: 10200
 Protocol: HTML                           w_id Max Warehouse: 97920               District id: 1
 w_id Range: 81601 - 82620               Scale: Normal                           Scale Down: No
 w_id Min Warehouse: 1                    User Count: 10200
 w_id Max Warehouse: 97920                District id: 1                          Driver Engine: d90
 Scale: Normal                            Scale Down: No                          IIS Server: cr107
 User Count: 10200                                                               SQL Server:
 District id: 1                           Driver Engine: d86                      tcp:130.168.208.34,2008
 Scale Down: No                           IIS Server: cr106                        Database: tpcc
                                          SQL Server:                              User: sa
Driver Engine: d82                       tcp:130.168.208.34,2008                   Protocol: HTML
IIS Server: cr105                         Database: tpcc                          w_id Range: 90781 - 91800
SQL Server:                               User: sa                                w_id Min Warehouse: 1
tcp:130.168.208.34,2007                   Protocol: HTML                          w_id Max Warehouse: 97920
 Database: tpcc                           w_id Range: 86701 - 87720               Scale: Normal
 User: sa                                 w_id Min Warehouse: 1                   User Count: 10200
 Protocol: HTML                           w_id Max Warehouse: 97920               District id: 1
 w_id Range: 82621 - 83640               Scale: Normal                           Scale Down: No
 w_id Min Warehouse: 1                    User Count: 10200
 w_id Max Warehouse: 97920                District id: 1                          Driver Engine: d91
 Scale: Normal                            Scale Down: No                          IIS Server: cr107
 User Count: 10200                                                               SQL Server:
 District id: 1                           Driver Engine: d87                      tcp:130.168.208.34,2008
 Scale Down: No                           IIS Server: cr106                        Database: tpcc
                                          SQL Server:                              User: sa
Driver Engine: d83                       tcp:130.168.208.34,2008                   Protocol: HTML
IIS Server: cr105                         Database: tpcc                          w_id Range: 91801 - 92820
SQL Server:                               User: sa                                w_id Min Warehouse: 1
tcp:130.168.208.34,2007                   Protocol: HTML                          w_id Max Warehouse: 97920
 Database: tpcc                           w_id Range: 87721 - 88740               Scale: Normal
 User: sa                                 w_id Min Warehouse: 1                   User Count: 10200
 Protocol: HTML                           w_id Max Warehouse: 97920               District id: 1
 w_id Range: 83641 - 84660               Scale: Normal                           Scale Down: No
 w_id Min Warehouse: 1                    User Count: 10200
 w_id Max Warehouse: 97920                District id: 1                          Driver Engine: d92
 Scale: Normal                            Scale Down: No                          IIS Server: cr107
 User Count: 10200                                                               SQL Server:
 District id: 1                           Driver Engine: d88                      tcp:130.168.208.34,2008
 Scale Down: No                           IIS Server: cr106                        Database: tpcc
                                          SQL Server:                              User: sa
Driver Engine: d84                       tcp:130.168.208.34,2008                   Protocol: HTML
IIS Server: cr105                         Database: tpcc                          w_id Range: 92821 - 93840
SQL Server:                               User: sa                                w_id Min Warehouse: 1
tcp:130.168.208.34,2007                   Protocol: HTML                          w_id Max Warehouse: 97920
 Database: tpcc                           w_id Range: 88741 - 89760               Scale: Normal
 User: sa                                 w_id Min Warehouse: 1                   User Count: 10200
 Protocol: HTML                           w_id Max Warehouse: 97920               District id: 1
```

Scale Down: No

Driver Engine: d93
IIS Server: cr108
SQL Server:
tcp:130.168.208.34,2008
Database: tpcc
User: sa
Protocol: HTML
w_id Range: 93841 - 94860
w_id Min Warehouse: 1
w_id Max Warehouse: 97920
Scale: Normal
User Count: 10200
District id: 1
Scale Down: No

Driver Engine: d94
IIS Server: cr108
SQL Server:
tcp:130.168.208.34,2008
Database: tpcc
User: sa
Protocol: HTML
w_id Range: 94861 - 95880
w_id Min Warehouse: 1
w_id Max Warehouse: 97920
Scale: Normal
User Count: 10200
District id: 1
Scale Down: No

Driver Engine: d95
IIS Server: cr108
SQL Server:
tcp:130.168.208.34,2008
Database: tpcc
User: sa
Protocol: HTML
w_id Range: 95881 - 96900
w_id Min Warehouse: 1
w_id Max Warehouse: 97920
Scale: Normal
User Count: 10200
District id: 1
Scale Down: No

Driver Engine: d96
IIS Server: cr108
SQL Server:
tcp:130.168.208.34,2008
Database: tpcc
User: sa
Protocol: HTML
w_id Range: 96901 - 97920
w_id Min Warehouse: 1
w_id Max Warehouse: 97920
Scale: Normal
User Count: 10200
District id: 1
Scale Down: No

Number of Parameter Sets: 61

~Default
Default Parameter Set

				Txn	Think
Key	RT	RT	Menu		Weight	Time
Time	Delay	Fence	Delay		
			New Order	10.00	
12.05	18.01	0.10	5.00	0.10
			Payment	10.00	
12.05	3.01	0.10	5.00	0.10
			Delivery	1.00	
5.05	2.01	0.10	5.00	0.10
			Stock Level	1.00	
5.05	2.01	0.10	20.00	0.10
			Order Status	1.00	
10.05	2.01	0.10	5.00	0.10

Tuned Distribution

				Txn	Think
Key	RT	RT	Menu		Weight	Time
Time	Delay	Fence	Delay		
			New Order	44.75	
12.05	18.01	0.10	5.00	0.10
			Payment	43.10	
12.05	3.01	0.10	5.00	0.10
			Delivery	4.05	
5.05	2.01	0.10	5.00	0.10
			Stock Level	4.05	
5.05	2.01	0.10	20.00	0.10
			Order Status	4.05	
10.05	2.01	0.10	5.00	0.10

No Think

				Txn	Think
Key	RT	RT	Menu		Weight	Time
Time	Delay	Fence	Delay		
			New Order	10.00	
0.00	0.00	0.00	5.00	0.00
			Payment	10.00	
0.00	0.00	0.00	5.00	0.00
			Delivery	1.00	
0.00	0.00	0.00	5.00	0.00
			Stock Level	1.00	
0.00	0.00	0.00	20.00	0.00
			Order Status	1.00	
0.00	0.00	0.00	5.00	0.00

0.95

				Txn	Think
Key	RT	RT	Menu		Weight	Time
Time	Delay	Fence	Delay		
			New Order	44.75	
13.00	18.01	0.10	5.00	0.10
			Payment	43.10	
13.00	3.01	0.10	5.00	0.10

			Delivery	4.05	
6.00	2.01	0.10	5.00	0.10
			Stock Level	4.05	
6.00	2.01	0.10	20.00	0.10
			Order Status	4.05	
11.00	2.01	0.10	5.00	0.10

0.9

				Txn	Think
Key	RT	RT	Menu		Weight	Time
Time	Delay	Fence	Delay		
			New Order	44.83	
16.00	18.01	0.10	5.00	0.10
			Payment	43.05	
16.00	3.01	0.10	5.00	0.10
			Delivery	4.04	
9.00	2.01	0.10	5.00	0.10
			Stock Level	4.04	
9.00	2.01	0.10	20.00	0.10
			Order Status	4.04	
14.00	2.01	0.10	5.00	0.10

3

				Txn	Think
Key	RT	RT	Menu		Weight	Time
Time	Delay	Fence	Delay		
			New Order	44.75	
36.15	0.00	0.10	5.00	0.10
			Payment	43.10	
36.15	0.00	0.10	5.00	0.10
			Delivery	4.05	
15.15	0.00	0.10	5.00	0.10
			Stock Level	4.05	
15.15	0.00	0.10	20.00	0.10
			Order Status	4.05	
30.15	0.00	0.10	5.00	0.10

4
4.0 tt

				Txn	Think
Key	RT	RT	Menu		Weight	Time
Time	Delay	Fence	Delay		
			New Order	44.75	
48.20	18.01	0.10	5.00	0.10
			Payment	43.10	
48.20	3.01	0.10	5.00	0.10
			Delivery	4.05	
20.20	2.01	0.10	5.00	0.10
			Stock Level	4.05	
20.20	2.01	0.10	20.00	0.10
			Order Status	4.05	
40.20	2.01	0.10	5.00	0.10

3.8
3.8 tt

| | | | | Txn | Think |
| Key | RT | RT | Menu | | Weight | Time |

```
                              Weight  Time
Time    Delay  Fence  Delay
                    New Order    44.75
45.70   18.01   0.10    5.00      0.10
                    Payment      43.10
45.70    3.01   0.10    5.00      0.10
                    Delivery      4.05
19.10    2.01   0.10    5.00      0.10
                    Stock Level   4.05
19.10    2.01   0.10   20.00      0.10
                    Order Status  4.05
38.10    2.01   0.10    5.00      0.10

              3.6
              3.6 tt
                         Txn      Think
Key    RT      RT     Menu
                    Weight  Time
Time    Delay  Fence  Delay
                    New Order    44.75
43.30   18.01   0.10    5.00      0.10
                    Payment      43.10
43.30    3.01   0.10    5.00      0.10
                    Delivery      4.05
18.10    2.01   0.10    5.00      0.10
                    Stock Level   4.05
18.10    2.01   0.10   20.00      0.10
                    Order Status  4.05
36.18    2.01   0.10    5.00      0.10

              3.4
              3.4 tt
                         Txn      Think
Key    RT      RT     Menu
                    Weight  Time
Time    Delay  Fence  Delay
                    New Order    44.75
40.90   18.01   0.10    5.00      0.10
                    Payment      43.10
40.90    3.01   0.10    5.00      0.10
                    Delivery      4.05
17.10    2.01   0.10    5.00      0.10
                    Stock Level   4.05
17.10    2.01   0.10   20.00      0.10
                    Order Status  4.05
17.10    2.01   0.10    5.00      0.10

              3.2
              3.2 tt
                         Txn      Think
Key    RT      RT     Menu
                    Weight  Time
Time    Delay  Fence  Delay
                    New Order    44.75
38.50   18.01   0.10    5.00      0.10
                    Payment      43.10
38.50    3.01   0.10    5.00      0.10
                    Delivery      4.05
16.10    2.01   0.10    5.00      0.10
                    Stock Level   4.05
16.10    2.01   0.10   20.00      0.10
                    Order Status  4.05
32.10    2.01   0.10    5.00      0.10

              2.8
              2.8 tt
                         Txn      Think
Key    RT      RT     Menu
                    Weight  Time
Time    Delay  Fence  Delay
                    New Order    44.75
33.74   18.01   0.10    5.00      0.10
                    Payment      43.10
33.74    3.01   0.10    5.00      0.10
                    Delivery      4.05
14.14    2.01   0.10    5.00      0.10
                    Stock Level   4.05
14.14    2.01   0.10   20.00      0.10
                    Order Status  4.05
28.14    2.01   0.10    5.00      0.10

              2.6
              2.6 tt
                         Txn      Think
Key    RT      RT     Menu
                    Weight  Time
Time    Delay  Fence  Delay
                    New Order    44.75
31.30   18.01   0.10    5.00      0.10
                    Payment      43.10
31.30    3.01   0.10    5.00      0.10
                    Delivery      4.05
13.10    2.01   0.10    5.00      0.10
                    Stock Level   4.05
13.10    2.01   0.10   20.00      0.10
                    Order Status  4.05
26.10    2.01   0.10    5.00      0.10

              2.4
              2.4 tt
                         Txn      Think
Key    RT      RT     Menu
                    Weight  Time
Time    Delay  Fence  Delay
                    New Order    44.75
28.90   18.01   0.10    5.00      0.10
                    Payment      43.10
28.90    3.01   0.10    5.00      0.10
                    Delivery      4.05
12.10    2.01   0.10    5.00      0.10
                    Stock Level   4.05
12.10    2.01   0.10   20.00      0.10
                    Order Status  4.05
24.10    2.01   0.10    5.00      0.10

              2.2
              2.2 tt
                         Txn      Think
Key    RT      RT     Menu
                    Weight  Time
Time    Delay  Fence  Delay
                    New Order    44.75
28.90   18.01   0.10    5.00      0.10
                    Payment      43.10
28.90    3.01   0.10    5.00      0.10

                    Delivery      4.05
12.10    2.01   0.10    5.00      0.10
                    Stock Level   4.05
12.10    2.01   0.10   20.00      0.10
                    Order Status  4.05
24.12    2.01   0.10    5.00      0.10

              2
              2.0 tt
                         Txn      Think
Key    RT      RT     Menu
                    Weight  Time
Time    Delay  Fence  Delay
                    New Order    44.75
24.10   18.01   0.10    5.00      0.10
                    Payment      43.10
24.10    3.01   0.10    5.00      0.10
                    Delivery      4.05
10.10    2.01   0.10    5.00      0.10
                    Stock Level   4.05
10.10    2.01   0.10   20.00      0.10
                    Order Status  4.05
20.10    2.01   0.10    5.00      0.10

              5
              5.0 tt
                         Txn      Think
Key    RT      RT     Menu
                    Weight  Time
Time    Delay  Fence  Delay
                    New Order    44.75
60.25   18.01   0.10    5.00      0.10
                    Payment      43.10
60.25    3.01   0.10    5.00      0.10
                    Delivery      4.05
25.25    2.01   0.10    5.00      0.10
                    Stock Level   4.05
25.25    2.01   0.10   20.00      0.10
                    Order Status  4.05
50.25    2.01   0.10    5.00      0.10

              4.5
              4.5 tt
                         Txn      Think
Key    RT      RT     Menu
                    Weight  Time
Time    Delay  Fence  Delay
                    New Order    44.75
54.20   18.01   0.10    5.00      0.10
                    Payment      43.10
54.20    3.01   0.10    5.00      0.10
                    Delivery      4.05
22.70    2.01   0.10    5.00      0.10
                    Stock Level   4.05
22.70    2.01   0.10   20.00      0.10
                    Order Status  4.05
45.20    2.01   0.10    5.00      0.10

              3.5
              3.5 tt
                         Txn      Think
Key    RT      RT     Menu
```

```
                                 Weight  Time
Time    Delay   Fence   Delay
                  New Order      44.75
42.10   18.01    0.10    5.00    0.10
                  Payment        43.10
42.10    3.01    0.10    5.00    0.10
                  Delivery        4.05
17.60    2.01    0.10    5.00    0.10
                  Stock Level     4.05
17.60    2.01    0.10   20.00    0.10
                  Order Status    4.05
35.10    2.01    0.10    5.00    0.10

                  1.8
                  1.8 tt
                                 Txn     Think
Key     RT      RT      Menu
                                 Weight  Time
Time    Delay   Fence   Delay
                  New Order      44.75
21.60   18.01    0.10    5.00    0.10
                  Payment        43.10
21.60    3.01    0.10    5.00    0.10
                  Delivery        4.05
9.09     2.01    0.10    5.00    0.10
                  Stock Level     4.05
9.09     2.01    0.10   20.00    0.10
                  Order Status    4.05
18.09    2.01    0.10    5.00    0.10

                  4.2
                  4.2 tt
                                 Txn     Think
Key     RT      RT      Menu
                                 Weight  Time
Time    Delay   Fence   Delay
                  New Order      44.75
54.20   18.01    0.10    5.00    0.10
                  Payment        43.10
54.20    3.01    0.10    5.00    0.10
                  Delivery        4.05
22.70    2.01    0.10    5.00    0.10
                  Stock Level     4.05
22.70    2.01    0.10   20.00    0.10
                  Order Status    4.05
45.20    2.01    0.10    5.00    0.10

                  1.6
                  1.6 tt
                                 Txn     Think
Key     RT      RT      Menu
                                 Weight  Time
Time    Delay   Fence   Delay
                  New Order      44.75
19.20   18.01    0.10    5.00    0.10
                  Payment        43.10
19.20    3.01    0.10    5.00    0.10
                  Delivery        4.05
8.08     2.01    0.10    5.00    0.10
                  Stock Level     4.05
8.08     2.01    0.10   20.00    0.10
                  Order Status    4.05
16.08    2.01    0.10    5.00    0.10


                  1.4
                  1.4 tt
                                 Txn     Think
Key     RT      RT      Menu
                                 Weight  Time
Time    Delay   Fence   Delay
                  New Order      44.75
16.87   18.01    0.10    5.00    0.10
                  Payment        43.10
16.87    3.01    0.10    5.00    0.10
                  Delivery        4.05
7.07     2.01    0.10    5.00    0.10
                  Stock Level     4.05
7.07     2.01    0.10   20.00    0.10
                  Order Status    4.05
14.07    2.01    0.10    5.00    0.10

                  1.2
                  1.2 tt
                                 Txn     Think
Key     RT      RT      Menu
                                 Weight  Time
Time    Delay   Fence   Delay
                  New Order      44.83
14.46   18.01    0.10    5.00    0.10
                  Payment        43.05
14.46    3.01    0.10    5.00    0.10
                  Delivery        4.04
6.06     2.01    0.10    5.00    0.10
                  Stock Level     4.04
6.06     2.01    0.10   20.00    0.10
                  Order Status    4.04
12.06    2.01    0.10    5.00    0.10

                  3.5
                  3.5 tt
                                 Txn     Think
Key     RT      RT      Menu
                                 Weight  Time
Time    Delay   Fence   Delay
                  New Order      44.75
42.10   18.01    0.10    5.00    0.10
                  Payment        43.10
42.10    3.01    0.10    5.00    0.10
                  Delivery        4.05
17.60    2.01    0.10    5.00    0.10
                  Stock Level     4.05
17.60    2.01    0.10   20.00    0.10
                  Order Status    4.05
35.10    2.01    0.10    5.00    0.10

                  1.9
                  1.9 tt
                                 Txn     Think
Key     RT      RT      Menu
                                 Weight  Time
Time    Delay   Fence   Delay
                  New Order      44.75
22.89   18.01    0.10    5.00    0.10
                  Payment        43.10
22.89    3.01    0.10    5.00    0.10


                  Delivery        4.05
9.59     2.01    0.10    5.00    0.10
                  Stock Level     4.05
9.59     2.01    0.10   20.00    0.10
                  Order Status    4.05
19.09    2.01    0.10    5.00    0.10

                  1.1
                  1.1 tt
                                 Txn     Think
Key     RT      RT      Menu
                                 Weight  Time
Time    Delay   Fence   Delay
                  New Order      44.83
13.25   18.01    0.10    5.00    0.10
                  Payment        43.05
13.25    3.01    0.10    5.00    0.10
                  Delivery        4.04
5.55     2.01    0.10    5.00    0.10
                  Stock Level     4.04
5.55     2.01    0.10   20.00    0.10
                  Order Status    4.04
11.05    2.01    0.10    5.00    0.10

                  1.05 better
                  1.05 tt better
                                 Txn     Think
Key     RT      RT      Menu
                                 Weight  Time
Time    Delay   Fence   Delay
                  New Order      44.92
12.65   18.01    0.10    5.00    0.10
                  Payment        43.01
12.65    3.01    0.10    5.00    0.10
                  Delivery        4.02
5.30     2.01    0.10    5.00    0.10
                  Stock Level     4.03
5.30     2.01    0.10   20.00    0.10
                  Order Status    4.02
10.55    2.01    0.10    5.00    0.10

                  1.09
                  1.09 tt
                                 Txn     Think
Key     RT      RT      Menu
                                 Weight  Time
Time    Delay   Fence   Delay
                  New Order      44.83
13.13   18.01    0.10    5.00    0.10
                  Payment        43.05
13.13    3.01    0.10    5.00    0.10
                  Delivery        4.04
5.50     2.01    0.10    5.00    0.10
                  Stock Level     4.04
5.50     2.01    0.10   20.00    0.10
                  Order Status    4.04
10.95    2.01    0.10    5.00    0.10

                  1.08
                  1.08 tt
                                 Txn     Think
Key     RT      RT      Menu
```

```
                              Weight  Time
Time    Delay  Fence  Delay
                    New Order      44.83
13.01   18.01   0.10    5.00    0.10
                    Payment        43.05
13.01   3.01    0.10    5.00    0.10
                    Delivery        4.04
5.45    2.01    0.10    5.00    0.10
                    Stock Level     4.04
5.45    2.01    0.10    20.00   0.10
                    Order Status    4.04
10.85   2.01    0.10    5.00    0.10

                    1.07
                    1.07 tt
                                 Txn    Think
Key     RT     RT     Menu
                              Weight  Time
Time    Delay  Fence  Delay
                    New Order      44.83
12.89   18.01   0.10    5.00    0.10
                    Payment        43.05
12.89   3.01    0.10    5.00    0.10
                    Delivery        4.04
5.40    2.01    0.10    5.00    0.10
                    Stock Level     4.04
5.40    2.01    0.10    20.00   0.10
                    Order Status    4.04
10.75   2.01    0.10    5.00    0.10

                    1.06
                    1.06 tt
                                 Txn    Think
Key     RT     RT     Menu
                              Weight  Time
Time    Delay  Fence  Delay
                    New Order      44.83
12.77   18.01   0.10    5.00    0.10
                    Payment        43.05
12.77   3.01    0.10    5.00    0.10
                    Delivery        4.04
5.35    2.01    0.10    5.00    0.10
                    Stock Level     4.04
5.35    2.01    0.10    20.00   0.10
                    Order Status    4.04
10.65   2.01    0.10    5.00    0.10

                    1.15
                    1.15 tt
                                 Txn    Think
Key     RT     RT     Menu
                              Weight  Time
Time    Delay  Fence  Delay
                    New Order      44.75
13.85   18.01   0.10    5.00    0.10
                    Payment        43.10
13.85   3.01    0.10    5.00    0.10
                    Delivery        4.05
5.80    2.01    0.10    5.00    0.10
                    Stock Level     4.05
5.80    2.01    0.10    20.00   0.10
                    Order Status    4.05
11.55   2.01    0.10    5.00    0.10

                    1.25
                    1.25 tt
                                 Txn    Think
Key     RT     RT     Menu
                              Weight  Time
Time    Delay  Fence  Delay
                    New Order      44.83
15.06   18.01   0.10    5.00    0.10
                    Payment        43.05
15.06   3.01    0.10    5.00    0.10
                    Delivery        4.04
6.31    2.01    0.10    5.00    0.10
                    Stock Level     4.04
6.31    2.01    0.10    20.00   0.10
                    Order Status    4.04
12.56   2.01    0.10    5.00    0.10

                    1.3
                    1.3 tt
                                 Txn    Think
Key     RT     RT     Menu
                              Weight  Time
Time    Delay  Fence  Delay
                    New Order      44.83
15.66   18.01   0.10    5.00    0.10
                    Payment        43.05
15.66   3.01    0.10    5.00    0.10
                    Delivery        4.04
6.56    2.01    0.10    5.00    0.10
                    Stock Level     4.04
6.56    2.01    0.10    20.00   0.10
                    Order Status    4.04
13.06   2.01    0.10    5.00    0.10

                    1.12
                    1.12 tt
                                 Txn    Think
Key     RT     RT     Menu
                              Weight  Time
Time    Delay  Fence  Delay
                    New Order      44.75
13.49   18.01   0.10    5.00    0.10
                    Payment        43.10
13.49   3.01    0.10    5.00    0.10
                    Delivery        4.05
5.65    2.01    0.10    5.00    0.10
                    Stock Level     4.05
5.65    2.01    0.10    20.00   0.10
                    Order Status    4.05
11.25   2.01    0.10    5.00    0.10

                    1.18
                    1.18 tt
                                 Txn    Think
Key     RT     RT     Menu
                              Weight  Time
Time    Delay  Fence  Delay
                    New Order      44.75
14.21   18.01   0.10    5.00    0.10
                    Payment        43.10
14.21   3.01    0.10    5.00    0.10

                    Delivery        4.05
5.95    2.01    0.10    5.00    0.10
                    Stock Level     4.05
5.95    2.01    0.10    20.00   0.10
                    Order Status    4.05
11.85   2.01    0.10    5.00    0.10

                    1.22
                    1.22 tt
                                 Txn    Think
Key     RT     RT     Menu
                              Weight  Time
Time    Delay  Fence  Delay
                    New Order      44.75
14.70   18.01   0.10    5.00    0.10
                    Payment        43.10
14.70   3.01    0.10    5.00    0.10
                    Delivery        4.05
6.16    2.01    0.10    5.00    0.10
                    Stock Level     4.05
6.16    2.01    0.10    20.00   0.10
                    Order Status    4.05
12.26   2.01    0.10    5.00    0.10

                    1.28
                    1.28 tt
                                 Txn    Think
Key     RT     RT     Menu
                              Weight  Time
Time    Delay  Fence  Delay
                    New Order      44.75
15.42   18.01   0.10    5.00    0.10
                    Payment        43.10
15.42   3.01    0.10    5.00    0.10
                    Delivery        4.05
6.46    2.01    0.10    5.00    0.10
                    Stock Level     4.05
6.46    2.01    0.10    20.00   0.10
                    Order Status    4.05
12.86   2.01    0.10    5.00    0.10

                    1.04
                    1.04 tt
                                 Txn    Think
Key     RT     RT     Menu
                              Weight  Time
Time    Delay  Fence  Delay
                    New Order      44.83
12.53   18.01   0.10    5.00    0.10
                    Payment        43.05
12.53   3.01    0.10    5.00    0.10
                    Delivery        4.04
5.25    2.01    0.10    5.00    0.10
                    Stock Level     4.04
5.25    2.01    0.10    20.00   0.10
                    Order Status    4.04
10.45   2.01    0.10    5.00    0.10

                    1.03
                    1.03 tt
                                 Txn    Think
Key     RT     RT     Menu
```

```
                              Weight Time
Time   Delay Fence Delay
                    New Order      44.83
12.41   18.01   0.10    5.00     0.10
                    Payment        43.05
12.41   3.01    0.10    5.00     0.10
                    Delivery       4.04
5.20    2.01    0.10    5.00     0.10
                    Stock Level    4.04
5.20    2.01    0.10    20.00    0.10
                    Order Status   4.04
10.35   2.01    0.10    5.00     0.10


                    1.02
                    1.02 tt
                              Txn    Think
Key   RT    RT    Menu
                              Weight Time
Time   Delay Fence Delay
                    New Order      44.83
12.29   18.01   0.10    5.00     0.10
                    Payment        43.05
12.29   3.01    0.10    5.00     0.10
                    Delivery       4.04
5.15    2.01    0.10    5.00     0.10
                    Stock Level    4.04
5.15    2.01    0.10    20.00    0.10
                    Order Status   4.04
10.25   2.01    0.10    5.00     0.10


                    1.01
                    1.01 tt
                              Txn    Think
Key   RT    RT    Menu
                              Weight Time
Time   Delay Fence Delay
                    New Order      44.83
12.17   18.01   0.10    5.00     0.10
                    Payment        43.05
12.17   3.01    0.10    5.00     0.10
                    Delivery       4.04
5.10    2.01    0.10    5.00     0.10
                    Stock Level    4.04
5.10    2.01    0.10    20.00    0.10
                    Order Status   4.04
10.15   2.01    0.10    5.00     0.10


                    5.5
                    5.5 tt
                              Txn    Think
Key   RT    RT    Menu
                              Weight Time
Time   Delay Fence Delay
                    New Order      44.83
66.28   18.01   0.10    5.00     0.10
                    Payment        43.05
66.28   3.01    0.10    5.00     0.10
                    Delivery       4.04
27.77   2.01    0.10    5.00     0.10
                    Stock Level    4.04
27.77   2.01    0.10    20.00    0.10
                    Order Status   4.04
55.27   2.01    0.10    5.00     0.10


                    6
                    6.0 tt
                              Txn    Think
Key   RT    RT    Menu
                              Weight Time
Time   Delay Fence Delay
                    New Order      44.83
72.30   18.01   0.10    5.00     0.10
                    Payment        43.05
72.30   3.01    0.10    5.00     0.10
                    Delivery       4.04
30.30   2.01    0.10    5.00     0.10
                    Stock Level    4.04
30.30   2.01    0.10    20.00    0.10
                    Order Status   4.04
60.30   2.01    0.10    5.00     0.10


                    6.5
                    6.5 tt
                              Txn    Think
Key   RT    RT    Menu
                              Weight Time
Time   Delay Fence Delay
                    New Order      44.83
79.53   18.01   0.10    5.00     0.10
                    Payment        43.05
79.53   3.01    0.10    5.00     0.10
                    Delivery       4.04
33.33   2.01    0.10    5.00     0.10
                    Stock Level    4.04
33.33   2.01    0.10    20.00    0.10
                    Order Status   4.04
66.33   2.01    0.10    5.00     0.10


                    7
                    7.0 tt
                              Txn    Think
Key   RT    RT    Menu
                              Weight Time
Time   Delay Fence Delay
                    New Order      44.83
84.35   18.01   0.10    5.00     0.10
                    Payment        43.05
84.35   3.01    0.10    5.00     0.10
                    Delivery       4.04
35.35   2.01    0.10    5.00     0.10
                    Stock Level    4.04
35.35   2.01    0.10    20.00    0.10
                    Order Status   4.04
70.35   2.01    0.10    5.00     0.10


                    7.5
                    7.5 tt
                              Txn    Think
Key   RT    RT    Menu
                              Weight Time
Time   Delay Fence Delay
                    New Order      44.83
90.38   18.01   0.10    5.00     0.10
                    Payment        43.05
90.38   3.01    0.10    5.00     0.10


                    Delivery       4.04
37.88   2.01    0.10    5.00     0.10
                    Stock Level    4.04
37.88   2.01    0.10    20.00    0.10
                    Order Status   4.04
75.38   2.01    0.10    5.00     0.10


                    8
                    8.0 tt
                              Txn    Think
Key   RT    RT    Menu
                              Weight Time
Time   Delay Fence Delay
                    New Order      44.83
96.40   18.01   0.10    5.00     0.10
                    Payment        43.05
96.40   3.01    0.10    5.00     0.10
                    Delivery       4.04
40.40   2.01    0.10    5.00     0.10
                    Stock Level    4.04
40.40   2.01    0.10    20.00    0.10
                    Order Status   4.04
80.40   2.01    0.10    5.00     0.10


                    8.5
                    8.5 tt
                              Txn    Think
Key   RT    RT    Menu
                              Weight Time
Time   Delay Fence Delay
                    New Order      44.83
102.43  18.01   0.10    5.00     0.10
                    Payment        43.05
192.43  3.01    0.10    5.00     0.10
                    Delivery       4.04
42.92   2.01    0.10    5.00     0.10
                    Stock Level    4.04
42.92   2.01    0.10    20.00    0.10
                    Order Status   4.04
85.42   2.01    0.10    5.00     0.10


                    9
                    9.0 tt
                              Txn    Think
Key   RT    RT    Menu
                              Weight Time
Time   Delay Fence Delay
                    New Order      44.83
108.45  18.01   0.10    5.00     0.10
                    Payment        43.05
108.45  3.01    0.10    5.00     0.10
                    Delivery       4.04
45.45   2.01    0.10    5.00     0.10
                    Stock Level    4.04
45.45   2.01    0.10    20.00    0.10
                    Order Status   4.04
90.45   2.01    0.10    5.00     0.10


                    9.5
                    9.5 tt
                              Txn    Think
Key   RT    RT    Menu
```

```
                          Weight  Time
Time    Delay  Fence  Delay
                 New Order      44.83
114.47   18.01   0.10   5.00    0.10
                 Payment        43.05
114.47    3.01   0.10   5.00    0.10
                 Delivery        4.04
 47.98    2.01   0.10   5.00    0.10
                 Stock Level     4.04
 47.98    2.01   0.10  20.00    0.10
                 Order Status    4.04
 95.47    2.01   0.10   5.00    0.10


                 10
                 10 tt
                                Txn     Think
Key     RT     RT    Menu
                               Weight  Time
Time    Delay  Fence  Delay
                 New Order      44.83
120.50   18.01   0.10   5.00    0.10
                 Payment        43.05
120.50    3.01   0.10   5.00    0.10
                 Delivery        4.04
 50.50    2.01   0.10   5.00    0.10
                 Stock Level     4.04
 50.50    2.01   0.10  20.00    0.10
                 Order Status    4.04
100.50    2.01   0.10   5.00    0.10


                 1.02 better
                 1.02 more agressive
                                Txn     Think
Key     RT     RT    Menu
                               Weight  Time
Time    Delay  Fence  Delay
                 New Order      44.92
 12.05   18.01   0.10   5.00    0.10
                 Payment        43.01
 12.05    3.01   0.10   5.00    0.10
                 Delivery        4.02
  5.05    2.01   0.10   5.00    0.10
                 Stock Level     4.03
  5.05    2.01   0.10  20.00    0.10
                 Order Status    4.02
 10.05    2.01   0.10   5.00    0.10


                 1.01 better
                 1.01 more agressive
                                Txn     Think
Key     RT     RT    Menu
                               Weight  Time
Time    Delay  Fence  Delay
                 New Order      44.92
 12.17   18.01   0.10   5.00    0.10
                 Payment        43.01
 12.17    3.01   0.10   5.00    0.10
                 Delivery        4.02
  5.10    2.01   0.10   5.00    0.10
                 Stock Level     4.03
  5.10    2.01   0.10  20.00    0.10
                 Order Status    4.02
 10.15    2.01   0.10   5.00    0.10


                 1.001
                 1.001
                                Txn     Think
Key     RT     RT    Menu
                               Weight  Time
Time    Delay  Fence  Delay
                 New Order      44.94
 12.06   18.01   0.10   5.00    0.10
                 Payment        43.03
 12.06    3.01   0.10   5.00    0.10
                 Delivery        4.01
  5.06    2.01   0.10   5.00    0.10
                 Stock Level     4.01
  5.06    2.01   0.10  20.00    0.10
                 Order Status    4.01
 10.06    2.01   0.10   5.00    0.10


                 FullSpeed
                 1.000 tt
                                Txn     Think
Key     RT     RT    Menu
                               Weight  Time
Time    Delay  Fence  Delay
                 New Order      44.94
 12.05   18.01   0.10   5.00    0.10
                 Payment        43.03
 12.05    3.01   0.10   5.00    0.10
                 Delivery        4.01
  5.05    2.01   0.10   5.00    0.10
                 Stock Level     4.01
  5.05    2.01   0.10  20.00    0.10
                 Order Status    4.01
 10.05    2.01   0.10   5.00    0.10


                 1.003 best
                 1.003 best
                                Txn     Think
Key     RT     RT    Menu
                               Weight  Time
Time    Delay  Fence  Delay
                 New Order      44.90
 12.09   18.01   0.10   5.00    0.10
                 Payment        43.05
 12.09    3.01   0.10   5.00    0.10
                 Delivery        4.01
  5.07    2.01   0.10   5.00    0.10
                 Stock Level     4.03
  5.07    2.01   0.10  20.00    0.10
                 Order Status    4.01
 10.08    2.01   0.10   5.00    0.10


                 ExtraKick
                 FullSpeedKick
                                Txn     Think
Key     RT     RT    Menu
                               Weight  Time
Time    Delay  Fence  Delay
                 New Order      44.93
 12.03   18.01   0.10   5.00    0.10
                 Payment        43.01
 12.03    3.01   0.10   5.00    0.10


                 Delivery        4.02
  5.03    2.01   0.10   5.00    0.10
                 Stock Level     4.02
  5.03    2.01   0.10  20.00    0.10
                 Order Status    4.02
 10.03    2.01   0.10   5.00    0.10


                 ovd_11
                                Txn     Think
Key     RT     RT    Menu
                               Weight  Time
Time    Delay  Fence  Delay
                 New Order      44.92
 10.85   18.00   0.10   5.00    0.10
                 Payment        43.01
 10.85    3.00   0.10   5.00    0.10
                 Delivery        4.02
  4.55    2.00   0.10   5.00    0.10
                 Stock Level     4.03
  4.55    2.00   0.10  20.00    0.10
                 Order Status    4.02
  9.05    2.00   0.10   5.00    0.10


                 ovd_10
                                Txn     Think
Key     RT     RT    Menu
                               Weight  Time
Time    Delay  Fence  Delay
                 New Order      44.92
 10.12   18.00   0.10   5.00    0.10
                 Payment        43.01
 10.12    3.00   0.10   5.00    0.10
                 Delivery        4.02
  4.24    2.00   0.10   5.00    0.10
                 Stock Level     4.03
  4.24    2.00   0.10  20.00    0.10
                 Order Status    4.02
  8.44    2.00   0.10   5.00    0.10
```

client-summary.txt

```
System Information report written at: 06/15/10
10:33:59
System Name: CL136
[System Summary]

Item      Value
OS Name   Microsoft Windows Server 2008 R2 Standard

Version    6.1.7600 Build 7600
Other OS Description    Not Available
OS Manufacturer    Microsoft Corporation
System Name        CL136
System Manufacturer Hewlett-Packard
System Model       ProLiant DL360 G6
System Type        x64-based PC
```

Processor Intel(R) Xeon(R) CPU   E5530 @
2.40GHz, 2400 Mhz, 4 Core(s), 4 Logical Processor(s)

BIOS Version/Date   Hewlett-Packard P64, 6/20/2009

SMBIOS Version   2.6
Windows Directory   C:\Windows
System Directory   C:\Windows\system32
Boot Device   \Device\HarddiskVolume1
Locale   United States
Hardware Abstraction Layer   Version =
"6.1.7600.16385"
User Name CL136\Administrator
Time Zone Central Daylight Time
Installed Physical Memory (RAM)   2.00 GB
Total Physical Memory   1.99 GB
Available Physical Memory   1.53 GB
Total Virtual Memory   3.98 GB
Available Virtual Memory   3.47 GB
Page File Space   1.99 GB
Page File C:\pagefile.sys

[Hardware Resources]

[Conflicts/Sharing]

Resource Device
I/O Port 0x00000000-0x000003AF   PCI bus
I/O Port 0x00000000-0x000003AF   Direct memory
access controller

IRQ 20   Intel(R) ICH10 Family USB Enhanced Host
Controller - 3A3A
IRQ 20   Intel(R) ICH10 Family USB Universal Host
Controller - 3A34

I/O Port 0x000003C0-0x000003DF   Standard VGA
Graphics Adapter
I/O Port 0x000003C0-0x000003DF   PCI bus

IRQ 10   IPMI Interface
IRQ 10   Base System Device
IRQ 10   Base System Device

I/O Port 0x00000070-0x00000071   System
CMOS/real time clock
I/O Port 0x00000070-0x00000071   Motherboard
resources

IRQ 22   Standard Universal PCI to USB Host
Controller
IRQ 22   Intel(R) ICH10 Family USB Universal Host
Controller - 3A36

Memory Address 0xE8000000-0xEFFFFFFF   Standard VGA
Graphics Adapter
Memory Address 0xE8000000-0xEFFFFFFF   Intel(R)
82801 PCI Bridge - 244E

IRQ 23   Intel(R) ICH10 Family USB Universal Host
Controller - 3A39

IRQ 23   Intel(R) ICH10 Family USB Universal Host
Controller - 3A35

Memory Address 0xFED00000-0xFED03FFF   PCI bus
Memory Address 0xFED00000-0xFED03FFF   PCI bus
Memory Address 0xFED00000-0xFED03FFF   High
precision event timer

Memory Address 0xF6000000-0xF7FFFFFF   Broadcom
BCM5709C NetXtreme II GigE
Memory Address 0xF6000000-0xF7FFFFFF   Intel(R)
5520/5500/X58 I/O Hub PCI Express Root Port 8 - 340F

Memory Address 0xA0000-0xBFFFF   Standard VGA
Graphics Adapter
Memory Address 0xA0000-0xBFFFF   PCI bus

I/O Port 0x00001000-0x00004FFF   PCI bus
I/O Port 0x00001000-0x00004FFF   Intel(R)
ICH10 Family USB Universal Host Controller - 3A34

I/O Port 0x000003B0-0x000003BB   Standard VGA
Graphics Adapter
I/O Port 0x000003B0-0x000003BB   PCI bus

[DMA]

Resource Device   Status
Channel 7 Direct memory access controller   OK

[Forced Hardware]

Device   PNP Device ID

[I/O]

Resource Device   Status
0x00000061-0x00000061   System speaker   OK

0x00001060-0x0000107F   Intel(R) ICH10 Family
USB Universal Host Controller - 3A39   OK
0x00003000-0x000030FF   Standard VGA Graphics
Adapter OK
0x000003B0-0x000003BB   Standard VGA Graphics
Adapter OK
0x000003B0-0x000003BB   PCI bus   OK
0x000003C0-0x000003DF   Standard VGA Graphics
Adapter OK
0x000003C0-0x000003DF   PCI bus   OK
0x0000002E-0x0000002F   Extended IO Bus   OK

0x00000620-0x0000065F   Extended IO Bus   OK

0x00000680-0x0000069F   Extended IO Bus   OK

0x00000600-0x0000061F   Extended IO Bus   OK

0x00000660-0x0000067F   Extended IO Bus   OK

0x00000300-0x0000031F   Extended IO Bus   OK

0x00001000-0x00004FFF   PCI bus   OK
0x00001000-0x00004FFF   Intel(R) ICH10 Family
USB Universal Host Controller - 3A34   OK
0x00000000-0x000003AF   PCI bus   OK
0x00000000-0x000003AF   Direct memory access
controller   OK
0x000003E0-0x00000CF7   PCI bus   OK
0x00000D00-0x00000FFF   PCI bus   OK
0x00000070-0x00000071   System CMOS/real time
clock   OK
0x00000070-0x00000071   Motherboard resources
OK
0x00000408-0x0000040F   Motherboard resources
OK
0x000004D0-0x000004D1   Motherboard resources
OK
0x00000020-0x0000003F   Motherboard resources
OK
0x000000A0-0x000000BF   Motherboard resources
OK
0x00000090-0x0000009F   Motherboard resources
OK
0x00000050-0x00000053   Motherboard resources
OK
0x00000700-0x0000071F   Motherboard resources
OK
0x00000880-0x000008FF   Motherboard resources
OK
0x00000900-0x0000097F   Motherboard resources
OK
0x00000010-0x0000001F   Motherboard resources
OK
0x00000C80-0x00000C83   Motherboard resources
OK
0x00000CD4-0x00000CD7   Motherboard resources
OK
0x00000F50-0x00000F58   Motherboard resources
OK
0x000000F0-0x000000F0   Motherboard resources
OK
0x00000CA0-0x00000CA1   Motherboard resources
OK
0x00000CA4-0x00000CA5   Motherboard resources
OK
0x000002F8-0x000002FF   Motherboard resources
OK
0x00002800-0x000028FF   Base System Device OK

0x00000CA2-0x00000CA3   Microsoft Generic IPMI
Compliant Device   OK
0x00000040-0x00000043   System timer   OK

0x00000080-0x0000008F   Direct memory access
controller   OK
0x000000C0-0x000000DF   Direct memory access
controller   OK
0x00004000-0x00004FFF   Intel(R) 5520/5500/X58
I/O Hub PCI Express Root Port 1 - 3408   OK
0x00003400-0x000034FF   Base System Device OK

```
0x00001020-0x0000103F        Intel(R) ICH10 Family
USB Universal Host Controller - 3A35     OK
0x00000060-0x00000060        Standard PS/2 Keyboard
                 OK
0x00000064-0x00000064        Standard PS/2 Keyboard
                 OK
0x00002000-0x00003FFF        Intel(R) 82801 PCI
Bridge - 244E        OK
0x000003F8-0x000003FF        Communications Port
(COM1)     OK
0x00003800-0x0000381F        Standard Universal PCI
to USB Host Controller        OK
0x00001040-0x0000105F        Intel(R) ICH10 Family
USB Universal Host Controller - 3A36     OK

[IRQs]

Resource  Device    Status
IRQ 4294967291     Intel(R) 5520/5500/X58 I/O Hub
PCI Express Root Port 3 - 340A        OK
IRQ 31    Broadcom BCM5709C NetXtreme II GigE    OK

IRQ 23    Intel(R) ICH10 Family USB Universal Host
Controller - 3A39    OK
IRQ 23    Intel(R) ICH10 Family USB Universal Host
Controller - 3A35    OK
IRQ 4294967290     Intel(R) 5520/X58 I/O Hub PCI
Express Root Port 4 - 340B    OK
IRQ 39    Broadcom BCM5709C NetXtreme II GigE    OK

IRQ 20    Intel(R) ICH10 Family USB Enhanced Host
Controller - 3A3A    OK
IRQ 20    Intel(R) ICH10 Family USB Universal Host
Controller - 3A34    OK
IRQ 4294967289     Intel(R) 5520/X58 I/O Hub PCI
Express Root Port 5 - 340C    OK
IRQ 10    IPMI Interface    OK
IRQ 10    Base System Device  OK
IRQ 10    Base System Device  OK
IRQ 4294967288     Intel(R) 5520/X58 I/O Hub PCI
Express Root Port 6 - 340D    OK
IRQ 12    PS/2 Compatible Mouse        OK
IRQ 81    Microsoft ACPI-Compliant System      OK
```

Resource	Device	Status		Resource	Device	Status
IRQ 82	Microsoft ACPI-Compliant System	OK		IRQ 122	Microsoft ACPI-Compliant System	OK
IRQ 91	Microsoft ACPI-Compliant System	OK		IRQ 123	Microsoft ACPI-Compliant System	OK
IRQ 92	Microsoft ACPI-Compliant System	OK		IRQ 124	Microsoft ACPI-Compliant System	OK
IRQ 93	Microsoft ACPI-Compliant System	OK		IRQ 125	Microsoft ACPI-Compliant System	OK
IRQ 94	Microsoft ACPI-Compliant System	OK		IRQ 126	Microsoft ACPI-Compliant System	OK
IRQ 95	Microsoft ACPI-Compliant System	OK		IRQ 127	Microsoft ACPI-Compliant System	OK
IRQ 96	Microsoft ACPI-Compliant System	OK		IRQ 128	Microsoft ACPI-Compliant System	OK
IRQ 97	Microsoft ACPI-Compliant System	OK		IRQ 129	Microsoft ACPI-Compliant System	OK
IRQ 98	Microsoft ACPI-Compliant System	OK		IRQ 130	Microsoft ACPI-Compliant System	OK
IRQ 99	Microsoft ACPI-Compliant System	OK		IRQ 131	Microsoft ACPI-Compliant System	OK
IRQ 100	Microsoft ACPI-Compliant System	OK		IRQ 132	Microsoft ACPI-Compliant System	OK
IRQ 101	Microsoft ACPI-Compliant System	OK		IRQ 133	Microsoft ACPI-Compliant System	OK
IRQ 102	Microsoft ACPI-Compliant System	OK		IRQ 134	Microsoft ACPI-Compliant System	OK
IRQ 103	Microsoft ACPI-Compliant System	OK		IRQ 135	Microsoft ACPI-Compliant System	OK
IRQ 104	Microsoft ACPI-Compliant System	OK		IRQ 136	Microsoft ACPI-Compliant System	OK
IRQ 105	Microsoft ACPI-Compliant System	OK		IRQ 137	Microsoft ACPI-Compliant System	OK
IRQ 106	Microsoft ACPI-Compliant System	OK		IRQ 138	Microsoft ACPI-Compliant System	OK
IRQ 107	Microsoft ACPI-Compliant System	OK		IRQ 139	Microsoft ACPI-Compliant System	OK
IRQ 108	Microsoft ACPI-Compliant System	OK		IRQ 140	Microsoft ACPI-Compliant System	OK
IRQ 109	Microsoft ACPI-Compliant System	OK		IRQ 141	Microsoft ACPI-Compliant System	OK
IRQ 110	Microsoft ACPI-Compliant System	OK		IRQ 142	Microsoft ACPI-Compliant System	OK
IRQ 111	Microsoft ACPI-Compliant System	OK		IRQ 143	Microsoft ACPI-Compliant System	OK
IRQ 112	Microsoft ACPI-Compliant System	OK		IRQ 144	Microsoft ACPI-Compliant System	OK
IRQ 113	Microsoft ACPI-Compliant System	OK		IRQ 145	Microsoft ACPI-Compliant System	OK
IRQ 114	Microsoft ACPI-Compliant System	OK		IRQ 146	Microsoft ACPI-Compliant System	OK
IRQ 115	Microsoft ACPI-Compliant System	OK		IRQ 147	Microsoft ACPI-Compliant System	OK
IRQ 116	Microsoft ACPI-Compliant System	OK		IRQ 148	Microsoft ACPI-Compliant System	OK
IRQ 117	Microsoft ACPI-Compliant System	OK		IRQ 149	Microsoft ACPI-Compliant System	OK
IRQ 118	Microsoft ACPI-Compliant System	OK		IRQ 150	Microsoft ACPI-Compliant System	OK
IRQ 119	Microsoft ACPI-Compliant System	OK		IRQ 151	Microsoft ACPI-Compliant System	OK
IRQ 120	Microsoft ACPI-Compliant System	OK		IRQ 152	Microsoft ACPI-Compliant System	OK
IRQ 121	Microsoft ACPI-Compliant System	OK				

Left-column IRQ entries (continued):

Resource	Device	Status
IRQ 83	Microsoft ACPI-Compliant System	OK
IRQ 84	Microsoft ACPI-Compliant System	OK
IRQ 85	Microsoft ACPI-Compliant System	OK
IRQ 86	Microsoft ACPI-Compliant System	OK
IRQ 87	Microsoft ACPI-Compliant System	OK
IRQ 88	Microsoft ACPI-Compliant System	OK
IRQ 89	Microsoft ACPI-Compliant System	OK
IRQ 90	Microsoft ACPI-Compliant System	OK

IRQ 153   Microsoft ACPI-Compliant System   OK
IRQ 154   Microsoft ACPI-Compliant System   OK
IRQ 155   Microsoft ACPI-Compliant System   OK
IRQ 156   Microsoft ACPI-Compliant System   OK
IRQ 157   Microsoft ACPI-Compliant System   OK
IRQ 158   Microsoft ACPI-Compliant System   OK
IRQ 159   Microsoft ACPI-Compliant System   OK
IRQ 160   Microsoft ACPI-Compliant System   OK
IRQ 161   Microsoft ACPI-Compliant System   OK
IRQ 162   Microsoft ACPI-Compliant System   OK
IRQ 163   Microsoft ACPI-Compliant System   OK
IRQ 164   Microsoft ACPI-Compliant System   OK
IRQ 165   Microsoft ACPI-Compliant System   OK
IRQ 166   Microsoft ACPI-Compliant System   OK
IRQ 167   Microsoft ACPI-Compliant System   OK
IRQ 168   Microsoft ACPI-Compliant System   OK
IRQ 169   Microsoft ACPI-Compliant System   OK
IRQ 170   Microsoft ACPI-Compliant System   OK
IRQ 171   Microsoft ACPI-Compliant System   OK
IRQ 172   Microsoft ACPI-Compliant System   OK
IRQ 173   Microsoft ACPI-Compliant System   OK
IRQ 174   Microsoft ACPI-Compliant System   OK
IRQ 175   Microsoft ACPI-Compliant System   OK
IRQ 176   Microsoft ACPI-Compliant System   OK
IRQ 177   Microsoft ACPI-Compliant System   OK
IRQ 178   Microsoft ACPI-Compliant System   OK
IRQ 179   Microsoft ACPI-Compliant System   OK
IRQ 180   Microsoft ACPI-Compliant System   OK
IRQ 181   Microsoft ACPI-Compliant System   OK
IRQ 182   Microsoft ACPI-Compliant System   OK
IRQ 183   Microsoft ACPI-Compliant System   OK

IRQ 184   Microsoft ACPI-Compliant System   OK
IRQ 185   Microsoft ACPI-Compliant System   OK
IRQ 186   Microsoft ACPI-Compliant System   OK
IRQ 187   Microsoft ACPI-Compliant System   OK
IRQ 188   Microsoft ACPI-Compliant System   OK
IRQ 189   Microsoft ACPI-Compliant System   OK
IRQ 190   Microsoft ACPI-Compliant System   OK
IRQ 4294967287   Intel(R) 5520/5500/X58 I/O Hub
PCI Express Root Port 7 - 340E   OK
IRQ 0   System timer   OK
IRQ 4294967293   Intel(R) 5520/5500/X58 I/O Hub
PCI Express Root Port 8 - 340F   OK
IRQ 4294967294   Intel(R) 5520/5500/X58 I/O Hub
PCI Express Root Port 1 - 3408   OK
IRQ 4294967286   Intel(R) 5520/5500/X58 I/O Hub
PCI Express Root Port 9 - 3410   OK
IRQ 4294967284   Smart Array Controller (Media
Driver)   OK
IRQ 1   Standard PS/2 Keyboard   OK
IRQ 4294967292   Intel(R) 5520/5500/X58 I/O Hub
PCI Express Root Port 2 - 3409   OK
IRQ 4294967285   Intel(R) 5520/5500/X58 I/O Hub
PCI Express Root Port 10 - 3411   OK
IRQ 4   Communications Port (COM1)   OK
IRQ 22   Standard Universal PCI to USB Host
Controller   OK
IRQ 22   Intel(R) ICH10 Family USB Universal Host
Controller - 3A36 OK

[Memory]

Resource Device   Status
0xF8000000-0xF9FFFFFF   Broadcom BCM5709C
NetXtreme II GigE   OK
0xF6000000-0xF7FFFFFF   Broadcom BCM5709C
NetXtreme II GigE   OK
0xF6000000-0xF7FFFFFF   Intel(R) 5520/5500/X58
I/O Hub PCI Express Root Port 8 - 340F OK
0xE8000000-0xEFFFFFFF   Standard VGA Graphics
Adapter   OK
0xE8000000-0xEFFFFFFF   Intel(R) 82801 PCI
Bridge - 244E   OK
0xF5FF0000-0xF5FFFFFF   Standard VGA Graphics
Adapter   OK
0xA0000-0xBFFFF   Standard VGA Graphics Adapter OK

0xA0000-0xBFFFF   PCI bus   OK
0xF5DF0000-0xF5DF03FF   Intel(R) ICH10 Family
USB Enhanced Host Controller - 3A3A   OK
0xE7000000-0xFBFFFFFF   PCI bus   OK
0xFED00000-0xFED03FFF   PCI bus   OK
0xFED00000-0xFED03FFF   PCI bus   OK
0xFED00000-0xFED03FFF   High precision event
timer   OK
0xF5EF0000-0xF5EF00FF   IPMI Interface   OK

0xE0000000-0xE3FFFFFF   Motherboard resources
          OK
0xFE000000-0xFEBFFFFF   Motherboard resources
          OK
0xE7FFE000-0xE7FFFFFF   Motherboard resources
          OK
0xF5FE0000-0xF5FE01FF   Base System Device OK
0xFBB00000-0xFBBFFFFF   Intel(R) 5520/5500/X58
I/O Hub PCI Express Root Port 1 - 3408 OK
0xF5FD0000-0xF5FD07FF   Base System Device OK
0xF5FC0000-0xF5FC3FFF   Base System Device OK
0xF5F00000-0xF5F7FFFF   Base System Device OK
0xFBC00000-0xFBBFFFFF   Smart Array Controller
(Media Driver)   OK
0xFBBF0000-0xFBBF0FFF   Smart Array Controller
(Media Driver)   OK
0xF5E00000-0xF5FFFFFF   Intel(R) 82801 PCI
Bridge - 244E   OK

[Components]

[Multimedia]

[Audio Codecs]

CODEC   Manufacturer   Description
          Status   File   Version   Size
          Creation Date
c:\windows\system32\msadp32.acm   Microsoft
Corporation   OK
          C:\Windows\system32\MSADP32.ACM
          6.1.7600.16385   23.50 KB (24,064 bytes)
          7/13/2009 7:18 PM
c:\windows\system32\imaadp32.acm   Microsoft
Corporation   OK
          C:\Windows\system32\IMAADP32.ACM
          6.1.7600.16385   21.50 KB (22,016 bytes)
          7/13/2009 7:18 PM
c:\windows\system32\msg711.acm   Microsoft
Corporation   OK
          C:\Windows\system32\MSG711.ACM
          6.1.7600.16385   14.50 KB (14,848 bytes)
          7/13/2009 7:18 PM
c:\windows\system32\msgsm32.acm   Microsoft
Corporation   OK
          C:\Windows\system32\MSGSM32.ACM
          6.1.7600.16385   28.50 KB (29,184 bytes)
          7/13/2009 7:18 PM

[Video Codecs]

CODEC   Manufacturer   Description
          Status   File   Version   Size
          Creation Date

c:\windows\system32\iyuv_32.dll   Microsoft
Corporation   OK
          C:\Windows\system32\IYUV_32.DLL
          6.1.7600.16385   52.50 KB (53,760 bytes)
          7/13/2009 7:06 PM
c:\windows\system32\msrle32.dll   Microsoft
Corporation   OK
          C:\Windows\system32\MSRLE32.DLL
          6.1.7600.16385   15.50 KB (15,872 bytes)
          7/13/2009 7:18 PM
c:\windows\system32\tsbyuv.dll   Microsoft
Corporation   OK
          C:\Windows\system32\TSBYUV.DLL
          6.1.7600.16385   14.00 KB (14,336 bytes)
          7/13/2009 7:06 PM
c:\windows\system32\msyuv.dll Microsoft Corporation
                         OK
          C:\Windows\system32\MSYUV.DLL
          6.1.7600.16385   24.00 KB (24,576 bytes)
          7/13/2009 7:06 PM
c:\windows\system32\msvidc32.dll   Microsoft
Corporation   OK
          C:\Windows\system32\MSVIDC32.DLL
          6.1.7600.16385   37.50 KB (38,400 bytes)
          7/13/2009 7:18 PM

[CD-ROM]

Item   Value

[Sound Device]

Item   Value

[Display]

Item   Value
Name   Standard VGA Graphics Adapter
PNP Device ID
          PCI\VEN_1002&DEV_515E&SUBSYS_31FB103C&REV_0
2\4&1712A4E7&0&18F0
Adapter Type   Not Available, (Standard display
types) compatible
Adapter Description Standard VGA Graphics Adapter
Adapter RAM   Not Available
Installed Drivers Not Available
Driver Version   6.1.7600.16385
INF File display.inf (vga section)
Color Planes   Not Available
Color Table Entries Not Available
Resolution   Not Available
Bits/Pixel   Not Available
Memory Address   0xE8000000-0xEFFFFFFF
I/O Port 0x00003000-0x000030FF
Memory Address   0xF5FF0000-0xF5FFFFFF
I/O Port 0x000003B0-0x000003BB
I/O Port 0x000003C0-0x000003DF
Memory Address   0xA0000-0xBFFFF
Driver   c:\windows\system32\drivers\vgapnp.sys
(6.1.7600.16385, 28.50 KB (29,184 bytes), 7/13/2009
6:38 PM)

[Infrared]

Item   Value

[Input]

[Keyboard]

Item   Value
Description   USB Input Device
Name   Enhanced (101- or 102-key)
Layout   00000409
PNP Device ID
          USB\VID_03F0&PID_1027&MI_00\7&1CCDAE06&0&00
00
Number of Function Keys   12
Driver   c:\windows\system32\drivers\hidusb.sys
(6.1.7600.16385, 29.50 KB (30,208 bytes), 7/13/2009
7:06 PM)

[Pointing Device]

Item   Value
Hardware Type   USB Input Device
Number of Buttons 0
Status   OK
PNP Device ID
          USB\VID_03F0&PID_1027&MI_01\7&1CCDAE06&0&00
01
Power Management Supported   No
Double Click Threshold   Not Available
Handedness   Not Available
Driver   c:\windows\system32\drivers\hidusb.sys
(6.1.7600.16385, 29.50 KB (30,208 bytes), 7/13/2009
7:06 PM)

[Modem]

Item   Value

[Network]

[Adapter]

Item   Value
Name   [00000000] WAN Miniport (SSTP)
Adapter Type   Not Available
Product Type   WAN Miniport (SSTP)
Installed Yes
PNP Device ID   ROOT\MS_SSTPMINIPORT\0000
Last Reset   6/15/2010 8:32 AM
Index   0
Service Name   RasSstp
IP Address   Not Available
IP Subnet Not Available
Default IP Gateway Not Available
DHCP Enabled   No
DHCP Server   Not Available
DHCP Lease Expires Not Available
DHCP Lease Obtained Not Available

MAC Address   Not Available
Driver   c:\windows\system32\drivers\rassstp.sys
(6.1.7600.16385, 82.00 KB (83,968 bytes), 7/13/2009
7:10 PM)

Name   [00000001] WAN Miniport (IKEv2)
Adapter Type   Not Available
Product Type   WAN Miniport (IKEv2)
Installed Yes
PNP Device ID   ROOT\MS_AGILEVPNMINIPORT\0000
Last Reset   6/15/2010 8:32 AM
Index   1
Service Name   RasAgileVpn
IP Address   Not Available
IP Subnet Not Available
Default IP Gateway Not Available
DHCP Enabled   No
DHCP Server   Not Available
DHCP Lease Expires Not Available
DHCP Lease Obtained Not Available
MAC Address   Not Available
Driver   c:\windows\system32\drivers\agilevpn.sys
(6.1.7600.16385, 59.00 KB (60,416 bytes), 7/13/2009
7:10 PM)

Name   [00000002] WAN Miniport (L2TP)
Adapter Type   Not Available
Product Type   WAN Miniport (L2TP)
Installed Yes
PNP Device ID   ROOT\MS_L2TPMINIPORT\0000
Last Reset   6/15/2010 8:32 AM
Index   2
Service Name   Rasl2tp
IP Address   Not Available
IP Subnet Not Available
Default IP Gateway Not Available
DHCP Enabled   No
DHCP Server   Not Available
DHCP Lease Expires Not Available
DHCP Lease Obtained Not Available
MAC Address   Not Available
Driver   c:\windows\system32\drivers\rasl2tp.sys
(6.1.7600.16385, 127.00 KB (130,048 bytes), 7/13/2009
7:10 PM)

Name   [00000003] WAN Miniport (PPTP)
Adapter Type   Not Available
Product Type   WAN Miniport (PPTP)
Installed Yes
PNP Device ID   ROOT\MS_PPTPMINIPORT\0000
Last Reset   6/15/2010 8:32 AM
Index   3
Service Name   PptpMiniport
IP Address   Not Available
IP Subnet Not Available
Default IP Gateway Not Available
DHCP Enabled   No
DHCP Server   Not Available
DHCP Lease Expires Not Available
DHCP Lease Obtained Not Available
MAC Address   Not Available

```
Driver    c:\windows\system32\drivers\raspptp.sys
(6.1.7600.16385, 109.00 KB (111,616 bytes), 7/13/2009
7:10 PM)

Name    [00000004] WAN Miniport (PPPOE)
Adapter Type          Not Available
Product Type          WAN Miniport (PPPOE)
Installed Yes
PNP Device ID         ROOT\MS_PPPOEMINIPORT\0000
Last Reset            6/15/2010 8:32 AM
Index    4
Service Name          RasPppoe
IP Address            Not Available
IP Subnet Not Available
Default IP Gateway Not Available
DHCP Enabled          No
DHCP Server           Not Available
DHCP Lease Expires Not Available
DHCP Lease Obtained Not Available
MAC Address           Not Available
Driver    c:\windows\system32\drivers\rasppppoe.sys
(6.1.7600.16385, 90.50 KB (92,672 bytes), 7/13/2009
7:10 PM)

Name    [00000005] WAN Miniport (IPv6)
Adapter Type          Not Available
Product Type          WAN Miniport (IPv6)
Installed Yes
PNP Device ID         ROOT\MS_NDISWANIPV6\0000
Last Reset            6/15/2010 8:32 AM
Index    5
Service Name          NdisWan
IP Address            Not Available
IP Subnet Not Available
Default IP Gateway Not Available
DHCP Enabled          No
DHCP Server           Not Available
DHCP Lease Expires Not Available
DHCP Lease Obtained Not Available
MAC Address           Not Available
Driver    c:\windows\system32\drivers\ndiswan.sys
(6.1.7600.16385, 160.50 KB (164,352 bytes), 7/13/2009
7:10 PM)

Name    [00000006] WAN Miniport (Network Monitor)

Adapter Type          Not Available
Product Type          WAN Miniport (Network Monitor)

Installed Yes
PNP Device ID         ROOT\MS_NDISWANBH\0000
Last Reset            6/15/2010 8:32 AM
Index    6
Service Name          NdisWan
IP Address            Not Available
IP Subnet Not Available
Default IP Gateway Not Available
DHCP Enabled          No
DHCP Server           Not Available
DHCP Lease Expires Not Available
DHCP Lease Obtained Not Available
MAC Address           Not Available
```

```
Driver    c:\windows\system32\drivers\ndiswan.sys
(6.1.7600.16385, 160.50 KB (164,352 bytes), 7/13/2009
7:10 PM)

Name    [00000007] Broadcom BCM5708C NetXtreme II
GigE (NDIS VBD Client)
Adapter Type          Not Available
Product Type          Broadcom BCM5708C NetXtreme II
GigE (NDIS VBD Client)
Installed Yes
PNP Device ID         Not Available
Last Reset            6/15/2010 8:32 AM
Index    7
Service Name          l2nd
IP Address            Not Available
IP Subnet Not Available
Default IP Gateway Not Available
DHCP Enabled          Yes
DHCP Server           Not Available
DHCP Lease Expires Not Available
DHCP Lease Obtained Not Available
MAC Address           Not Available

Name    [00000008] Broadcom BCM5708C NetXtreme II
GigE (NDIS VBD Client)
Adapter Type          Not Available
Product Type          Broadcom BCM5708C NetXtreme II
GigE (NDIS VBD Client)
Installed Yes
PNP Device ID         Not Available
Last Reset            6/15/2010 8:32 AM
Index    8
Service Name          l2nd
IP Address            Not Available
IP Subnet Not Available
Default IP Gateway Not Available
DHCP Enabled          Yes
DHCP Server           Not Available
DHCP Lease Expires Not Available
DHCP Lease Obtained Not Available
MAC Address           Not Available

Name    [00000009] WAN Miniport (IP)
Adapter Type          Not Available
Product Type          WAN Miniport (IP)
Installed Yes
PNP Device ID         ROOT\MS_NDISWANIP\0000
Last Reset            6/15/2010 8:32 AM
Index    9
Service Name          NdisWan
IP Address            Not Available
IP Subnet Not Available
Default IP Gateway Not Available
DHCP Enabled          No
DHCP Server           Not Available
DHCP Lease Expires Not Available
DHCP Lease Obtained Not Available
MAC Address           Not Available
Driver    c:\windows\system32\drivers\ndiswan.sys
(6.1.7600.16385, 160.50 KB (164,352 bytes), 7/13/2009
7:10 PM)

Name    [00000010] Microsoft ISATAP Adapter
```

```
Adapter Type          Tunnel
Product Type          Microsoft ISATAP Adapter
Installed Yes
PNP Device ID         ROOT\*ISATAP\0000
Last Reset            6/15/2010 8:32 AM
Index    10
Service Name          tunnel
IP Address            Not Available
IP Subnet Not Available
Default IP Gateway Not Available
DHCP Enabled          No
DHCP Server           Not Available
DHCP Lease Expires Not Available
DHCP Lease Obtained Not Available
MAC Address           Not Available
Driver    c:\windows\system32\drivers\tunnel.sys
(6.1.7600.16385, 122.50 KB (125,440 bytes), 7/13/2009
7:09 PM)

Name    [00000011] RAS Async Adapter
Adapter Type          Wide Area Network (WAN)
Product Type          RAS Async Adapter
Installed Yes
PNP Device ID         SW\{EEAB7790-C514-11D1-B42B-
00805FC1270E}\ASYNCMAC
Last Reset            6/15/2010 8:32 AM
Index    11
Service Name          AsyncMac
IP Address            Not Available
IP Subnet Not Available
Default IP Gateway Not Available
DHCP Enabled          No
DHCP Server           Not Available
DHCP Lease Expires Not Available
DHCP Lease Obtained Not Available
MAC Address           20:41:53:59:4E:FF
Driver    c:\windows\system32\drivers\asyncmac.sys
(6.1.7600.16385, 22.50 KB (23,040 bytes), 7/13/2009
7:10 PM)

Name    [00000012] Microsoft ISATAP Adapter
Adapter Type          Tunnel
Product Type          Microsoft ISATAP Adapter
Installed Yes
PNP Device ID         ROOT\*ISATAP\0001
Last Reset            6/15/2010 8:32 AM
Index    12
Service Name          tunnel
IP Address            Not Available
IP Subnet Not Available
Default IP Gateway Not Available
DHCP Enabled          No
DHCP Server           Not Available
DHCP Lease Expires Not Available
DHCP Lease Obtained Not Available
MAC Address           Not Available
Driver    c:\windows\system32\drivers\tunnel.sys
(6.1.7600.16385, 122.50 KB (125,440 bytes), 7/13/2009
7:09 PM)

Name    [00000013] Microsoft 6to4 Adapter
Adapter Type          Tunnel
Product Type          Microsoft 6to4 Adapter
```

```
Installed Yes                              Driver   c:\windows\system32\drivers\bxnd60a.sys      Adapter Type       Not Available
PNP Device ID      ROOT\*6TO4MP\0000       (4.8.4.0, 70.00 KB (71,680 bytes), 6/10/2009 3:34 PM)   Product Type       Intel(R) PRO/1000 PT Quad Port LP
Last Reset         6/15/2010 8:32 AM                                                             Server Adapter
Index    13                                                                                      Installed Yes
Service Name       tunnel                  Name     [00000016] Intel(R) PRO/1000 PT Quad Port    PNP Device ID      Not Available
IP Address         Not Available           LP Server Adapter                                     Last Reset         6/15/2010 8:32 AM
IP Subnet Not Available                     Adapter Type       Not Available                      Index    19
Default IP Gateway  Not Available           Product Type       Intel(R) PRO/1000 PT Quad Port LP  Service Name       e1express
DHCP Enabled       No                       Server Adapter                                       IP Address         Not Available
DHCP Server        Not Available            Installed Yes                                        IP Subnet Not Available
DHCP Lease Expires  Not Available           PNP Device ID      Not Available                      Default IP Gateway  Not Available
DHCP Lease Obtained Not Available           Last Reset         6/15/2010 8:32 AM                  DHCP Enabled       Yes
MAC Address        Not Available            Index    16                                          DHCP Server        Not Available
Driver   c:\windows\system32\drivers\tunnel.sys    Service Name       e1express                  DHCP Lease Expires  Not Available
(6.1.7600.16385, 122.50 KB (125,440 bytes), 7/13/2009  IP Address         Not Available          DHCP Lease Obtained Not Available
7:09 PM)                                    IP Subnet Not Available                               MAC Address        Not Available
                                            Default IP Gateway  Not Available
Name     [00000014] Broadcom BCM5709C NetXtreme II   DHCP Enabled       Yes                      Name     [00000020] Intel(R) PRO/1000 PT Quad Port
GigE (NDIS VBD Client)                      DHCP Server        Not Available                      LP Server Adapter
Adapter Type       Ethernet 802.3          DHCP Lease Expires  Not Available                      Adapter Type       Not Available
Product Type       Broadcom BCM5709C NetXtreme II   DHCP Lease Obtained Not Available            Product Type       Intel(R) PRO/1000 PT Quad Port LP
GigE (NDIS VBD Client)                      MAC Address        Not Available                      Server Adapter
Installed Yes                                                                                     Installed Yes
PNP Device ID                              Name     [00000017] Intel(R) PRO/1000 PT Quad Port    PNP Device ID      Not Available
         B06BDRV\L2ND&PCI_163914E4&SUBSYS_7055103C&R   LP Server Adapter                         Last Reset         6/15/2010 8:32 AM
EV_20\5&BE56314&0&20050200                  Adapter Type       Not Available                      Index    20
Last Reset         6/15/2010 8:32 AM        Product Type       Intel(R) PRO/1000 PT Quad Port LP  Service Name       e1express
Index    14                                 Server Adapter                                       IP Address         Not Available
Service Name       l2nd                    Installed Yes                                         IP Subnet Not Available
IP Address         130.168.40.136, 130.132.40.136   PNP Device ID      Not Available             Default IP Gateway  Not Available
                                            Last Reset         6/15/2010 8:32 AM                  DHCP Enabled       Yes
IP Subnet 255.255.0.0, 255.255.0.0          Index    17                                          DHCP Server        Not Available
Default IP Gateway  Not Available           Service Name       e1express                         DHCP Lease Expires  Not Available
DHCP Enabled       No                       IP Address         Not Available                     DHCP Lease Obtained Not Available
DHCP Server        Not Available            IP Subnet Not Available                               MAC Address        Not Available
DHCP Lease Expires  Not Available           Default IP Gateway  Not Available
DHCP Lease Obtained Not Available           DHCP Enabled       Yes                               Name     [00000021] Intel(R) PRO/1000 PT Quad Port
MAC Address        00:23:7D:E8:AC:86        DHCP Server        Not Available                     LP Server Adapter
Driver   c:\windows\system32\drivers\bxnd60a.sys    DHCP Lease Expires  Not Available            Adapter Type       Not Available
(4.8.4.0, 70.00 KB (71,680 bytes), 6/10/2009 3:34 PM)  DHCP Lease Obtained Not Available         Product Type       Intel(R) PRO/1000 PT Quad Port LP
                                            MAC Address        Not Available                      Server Adapter
                                                                                                 Installed Yes
Name     [00000015] Broadcom BCM5709C NetXtreme II   Name     [00000018] Intel(R) PRO/1000 PT Quad Port   PNP Device ID      Not Available
GigE (NDIS VBD Client)                      LP Server Adapter                                    Last Reset         6/15/2010 8:32 AM
Adapter Type       Ethernet 802.3          Adapter Type       Not Available                      Index    21
Product Type       Broadcom BCM5709C NetXtreme II   Product Type       Intel(R) PRO/1000 PT Quad Port LP  Service Name       e1express
GigE (NDIS VBD Client)                      Server Adapter                                       IP Address         Not Available
Installed Yes                               Installed Yes                                        IP Subnet Not Available
PNP Device ID                              PNP Device ID      Not Available                      Default IP Gateway  Not Available
         B06BDRV\L2ND&PCI_163914E4&SUBSYS_7055103C&R   Last Reset         6/15/2010 8:32 AM       DHCP Enabled       Yes
EV_20\5&171C3F49&0&20050200                 Index    18                                          DHCP Server        Not Available
Last Reset         6/15/2010 8:32 AM        Service Name       e1express                         DHCP Lease Expires  Not Available
Index    15                                 IP Address         Not Available                     DHCP Lease Obtained Not Available
Service Name       l2nd                    IP Subnet Not Available                               MAC Address        Not Available
IP Address         130.172.11.136           Default IP Gateway  Not Available
IP Subnet 255.255.0.0                       DHCP Enabled       Yes                               Name     [00000022] Intel(R) PRO/1000 PT Quad Port
Default IP Gateway  Not Available           DHCP Server        Not Available                     LP Server Adapter
DHCP Enabled       No                       DHCP Lease Expires  Not Available                     Adapter Type       Not Available
DHCP Server        Not Available            DHCP Lease Obtained Not Available                    Product Type       Intel(R) PRO/1000 PT Quad Port LP
DHCP Lease Expires  Not Available           MAC Address        Not Available                      Server Adapter
DHCP Lease Obtained Not Available                                                                Installed Yes
MAC Address        00:23:7D:E8:AC:84        Name     [00000019] Intel(R) PRO/1000 PT Quad Port    PNP Device ID      Not Available
                                            LP Server Adapter                                    Last Reset         6/15/2010 8:32 AM
```

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Index    22                                    DHCP Lease Expires  Not Available          Driver   c:\windows\system32\drivers\tunnel.sys
Service Name       e1express                   DHCP Lease Obtained Not Available          (6.1.7600.16385, 122.50 KB (125,440 bytes), 7/13/2009
IP Address         Not Available               MAC Address         Not Available          7:09 PM)
IP Subnet Not Available                        Driver   c:\windows\system32\drivers\tunnel.sys
Default IP Gateway  Not Available              (6.1.7600.16385, 122.50 KB (125,440 bytes), 7/13/2009   Name    [00000029] Microsoft ISATAP Adapter
DHCP Enabled        Yes                        7:09 PM)                                   Adapter Type       Tunnel
DHCP Server         Not Available                                                         Product Type       Microsoft ISATAP Adapter
DHCP Lease Expires  Not Available              Name    [00000026] Microsoft ISATAP Adapter   Installed Yes
DHCP Lease Obtained Not Available              Adapter Type       Tunnel                  PNP Device ID      ROOT\*ISATAP\0007
MAC Address         Not Available              Product Type       Microsoft ISATAP Adapter   Last Reset         6/15/2010 8:32 AM
                                               Installed Yes                              Index    29
Name    [00000023] Intel(R) PRO/1000 PT Quad Port   PNP Device ID      ROOT\*ISATAP\0004         Service Name       tunnel
LP Server Adapter                              Last Reset         6/15/2010 8:32 AM       IP Address         Not Available
Adapter Type       Not Available               Index    26                               IP Subnet Not Available
Product Type       Intel(R) PRO/1000 PT Quad Port LP   Service Name       tunnel         Default IP Gateway  Not Available
Server Adapter                                 IP Address         Not Available           DHCP Enabled        No
Installed Yes                                  IP Subnet Not Available                    DHCP Server         Not Available
PNP Device ID      Not Available               Default IP Gateway  Not Available          DHCP Lease Expires  Not Available
Last Reset         6/15/2010 8:32 AM           DHCP Enabled        No                     DHCP Lease Obtained Not Available
Index    23                                    DHCP Server         Not Available          MAC Address         Not Available
Service Name       e1express                   DHCP Lease Expires  Not Available          Driver   c:\windows\system32\drivers\tunnel.sys
IP Address         Not Available               DHCP Lease Obtained Not Available          (6.1.7600.16385, 122.50 KB (125,440 bytes), 7/13/2009
IP Subnet Not Available                        MAC Address         Not Available          7:09 PM)
Default IP Gateway  Not Available              Driver   c:\windows\system32\drivers\tunnel.sys
DHCP Enabled        Yes                        (6.1.7600.16385, 122.50 KB (125,440 bytes), 7/13/2009   Name    [00000030] Microsoft ISATAP Adapter
DHCP Server         Not Available              7:09 PM)                                   Adapter Type       Tunnel
DHCP Lease Expires  Not Available                                                         Product Type       Microsoft ISATAP Adapter
DHCP Lease Obtained Not Available              Name    [00000027] Microsoft ISATAP Adapter   Installed Yes
MAC Address         Not Available              Adapter Type       Tunnel                  PNP Device ID      ROOT\*ISATAP\0008
                                               Product Type       Microsoft ISATAP Adapter   Last Reset         6/15/2010 8:32 AM
Name    [00000024] Microsoft ISATAP Adapter   Installed Yes                              Index    30
Adapter Type       Tunnel                      PNP Device ID      ROOT\*ISATAP\0005         Service Name       tunnel
Product Type       Microsoft ISATAP Adapter   Last Reset         6/15/2010 8:32 AM       IP Address         Not Available
Installed Yes                                  Index    27                               IP Subnet Not Available
PNP Device ID      ROOT\*ISATAP\0002           Service Name       tunnel                  Default IP Gateway  Not Available
Last Reset         6/15/2010 8:32 AM           IP Address         Not Available           DHCP Enabled        No
Index    24                                    IP Subnet Not Available                    DHCP Server         Not Available
Service Name       tunnel                      Default IP Gateway  Not Available          DHCP Lease Expires  Not Available
IP Address         Not Available               DHCP Enabled        No                     DHCP Lease Obtained Not Available
IP Subnet Not Available                        DHCP Server         Not Available          MAC Address         Not Available
Default IP Gateway  Not Available              DHCP Lease Expires  Not Available          Driver   c:\windows\system32\drivers\tunnel.sys
DHCP Enabled        No                         DHCP Lease Obtained Not Available          (6.1.7600.16385, 122.50 KB (125,440 bytes), 7/13/2009
DHCP Server         Not Available              MAC Address         Not Available          7:09 PM)
DHCP Lease Expires  Not Available              Driver   c:\windows\system32\drivers\tunnel.sys
DHCP Lease Obtained Not Available              (6.1.7600.16385, 122.50 KB (125,440 bytes), 7/13/2009   Name    [00000031] Microsoft ISATAP Adapter
MAC Address         Not Available              7:09 PM)                                   Adapter Type       Tunnel
Driver   c:\windows\system32\drivers\tunnel.sys                                          Product Type       Microsoft ISATAP Adapter
(6.1.7600.16385, 122.50 KB (125,440 bytes), 7/13/2009   Name    [00000028] Microsoft ISATAP Adapter   Installed Yes
7:09 PM)                                       Adapter Type       Tunnel                  PNP Device ID      ROOT\*ISATAP\0009
                                               Product Type       Microsoft ISATAP Adapter   Last Reset         6/15/2010 8:32 AM
Name    [00000025] Microsoft ISATAP Adapter   Installed Yes                              Index    31
Adapter Type       Tunnel                      PNP Device ID      ROOT\*ISATAP\0006         Service Name       tunnel
Product Type       Microsoft ISATAP Adapter   Last Reset         6/15/2010 8:32 AM       IP Address         Not Available
Installed Yes                                  Index    28                               IP Subnet Not Available
PNP Device ID      ROOT\*ISATAP\0003           Service Name       tunnel                  Default IP Gateway  Not Available
Last Reset         6/15/2010 8:32 AM           IP Address         Not Available           DHCP Enabled        No
Index    25                                    IP Subnet Not Available                    DHCP Server         Not Available
Service Name       tunnel                      Default IP Gateway  Not Available          DHCP Lease Expires  Not Available
IP Address         Not Available               DHCP Enabled        No                     DHCP Lease Obtained Not Available
IP Subnet Not Available                        DHCP Server         Not Available          MAC Address         Not Available
Default IP Gateway  Not Available              DHCP Lease Expires  Not Available          Driver   c:\windows\system32\drivers\tunnel.sys
DHCP Enabled        No                         DHCP Lease Obtained Not Available          (6.1.7600.16385, 122.50 KB (125,440 bytes), 7/13/2009
DHCP Server         Not Available              MAC Address         Not Available          7:09 PM)
```

[Protocol]

Item   Value
Name   MSAFD Tcpip [TCP/IP]
Connectionless Service   No
Guarantees Delivery Yes
Guarantees Sequencing   Yes
Maximum Address Size   16 bytes
Maximum Message Size   0 bytes
Message Oriented   No
Minimum Address Size   16 bytes
Pseudo Stream Oriented   No
Supports Broadcasting   No
Supports Connect Data   No
Supports Disconnect Data   No
Supports Encryption No
Supports Expedited Data   Yes
Supports Graceful Closing   Yes
Supports Guaranteed Bandwidth No
Supports Multicasting   No

Name   MSAFD Tcpip [UDP/IP]
Connectionless Service   Yes
Guarantees Delivery No
Guarantees Sequencing   No
Maximum Address Size   16 bytes
Maximum Message Size   63.99 KB (65,527 bytes)

Message Oriented   Yes
Minimum Address Size   16 bytes
Pseudo Stream Oriented   No
Supports Broadcasting   Yes
Supports Connect Data   No
Supports Disconnect Data   No
Supports Encryption No
Supports Expedited Data   No
Supports Graceful Closing   No
Supports Guaranteed Bandwidth No
Supports Multicasting   Yes

Name   MSAFD Tcpip [TCP/IPv6]
Connectionless Service   No
Guarantees Delivery Yes
Guarantees Sequencing   Yes
Maximum Address Size   28 bytes
Maximum Message Size   0 bytes
Message Oriented   No
Minimum Address Size   28 bytes
Pseudo Stream Oriented   No
Supports Broadcasting   No
Supports Connect Data   No
Supports Disconnect Data   No
Supports Encryption No
Supports Expedited Data   Yes
Supports Graceful Closing   Yes
Supports Guaranteed Bandwidth No
Supports Multicasting   No

Name   MSAFD Tcpip [UDP/IPv6]
Connectionless Service   Yes
Guarantees Delivery No
Guarantees Sequencing   No

Maximum Address Size   28 bytes
Maximum Message Size   63.99 KB (65,527 bytes)

Message Oriented   Yes
Minimum Address Size   28 bytes
Pseudo Stream Oriented   No
Supports Broadcasting   Yes
Supports Connect Data   No
Supports Disconnect Data   No
Supports Encryption No
Supports Expedited Data   Yes
Supports Graceful Closing   No
Supports Guaranteed Bandwidth No
Supports Multicasting   Yes

Name   RSVP TCPv6 Service Provider
Connectionless Service   No
Guarantees Delivery Yes
Guarantees Sequencing   Yes
Maximum Address Size   28 bytes
Maximum Message Size   0 bytes
Message Oriented   No
Minimum Address Size   28 bytes
Pseudo Stream Oriented   No
Supports Broadcasting   No
Supports Connect Data   No
Supports Disconnect Data   No
Supports Encryption Yes
Supports Expedited Data   Yes
Supports Graceful Closing   Yes
Supports Guaranteed Bandwidth No
Supports Multicasting   No

Name   RSVP TCP Service Provider
Connectionless Service   No
Guarantees Delivery Yes
Guarantees Sequencing   Yes
Maximum Address Size   16 bytes
Maximum Message Size   0 bytes
Message Oriented   No
Minimum Address Size   16 bytes
Pseudo Stream Oriented   No
Supports Broadcasting   No
Supports Connect Data   No
Supports Disconnect Data   No
Supports Encryption Yes
Supports Expedited Data   Yes
Supports Graceful Closing   Yes
Supports Guaranteed Bandwidth No
Supports Multicasting   No

Name   RSVP UDPv6 Service Provider
Connectionless Service   Yes
Guarantees Delivery No
Guarantees Sequencing   No
Maximum Address Size   28 bytes
Maximum Message Size   63.99 KB (65,527 bytes)

Message Oriented   Yes
Minimum Address Size   28 bytes
Pseudo Stream Oriented   No
Supports Broadcasting   Yes
Supports Connect Data   No

Supports Disconnect Data   No
Supports Encryption Yes
Supports Expedited Data   No
Supports Graceful Closing   No
Supports Guaranteed Bandwidth No
Supports Multicasting   Yes

Name   RSVP UDP Service Provider
Connectionless Service   Yes
Guarantees Delivery No
Guarantees Sequencing   No
Maximum Address Size   16 bytes
Maximum Message Size   63.99 KB (65,527 bytes)

Message Oriented   Yes
Minimum Address Size   16 bytes
Pseudo Stream Oriented   No
Supports Broadcasting   Yes
Supports Connect Data   No
Supports Disconnect Data   No
Supports Encryption Yes
Supports Expedited Data   No
Supports Graceful Closing   No
Supports Guaranteed Bandwidth No
Supports Multicasting   Yes

[WinSock]

Item   Value
File   c:\windows\syswow64\wsock32.dll
Size   15.00 KB (15,360 bytes)
Version   6.1.7600.16385

File   c:\windows\system32\wsock32.dll
Size   18.00 KB (18,432 bytes)
Version   6.1.7600.16385

[Ports]

[Serial]

Item   Value
Name   Communications Port (COM1)
Status   OK
PNP Device ID   ACPI\PNP0501\0
Maximum Input Buffer Size   0
Maximum Output Buffer Size   No
Settable Baud Rate Yes
Settable Data Bits   Yes
Settable Flow Control   Yes
Settable Parity   Yes
Settable Parity Check   Yes
Settable Stop Bits Yes
Settable RLSD   Yes
Supports RLSD   Yes
Supports 16 Bit Mode   No
Supports Special Characters   No
Baud Rate 9600
Bits/Byte 8
Stop Bits 1
Parity   None

Busy   No
Abort Read/Write on Error   No
Binary Mode Enabled Yes
Continue XMit on XOff   No
CTS Outflow Control No
Discard NULL Bytes No
DSR Outflow Control 0
DSR Sensitivity   0
DTR Flow Control Type   Enable
EOF Character   0
Error Replace Character   0
Error Replacement Enabled   No
Event Character   0
Parity Check Enabled   No
RTS Flow Control Type   Enable
XOff Character   19
XOffXMit Threshold 512
XOn Character   17
XOnXMit Threshold   2048
XOnXOff InFlow Control   0
XOnXOff OutFlow Control   0
IRQ Channel   IRQ 4
I/O Port 0x000003F8-0x000003FF
Driver   c:\windows\system32\drivers\serial.sys
(6.1.7600.16385, 92.00 KB (94,208 bytes), 7/13/2009
7:00 PM)

[Parallel]

Item   Value

[Storage]

[Drives]

Item   Value
Drive   C:
Description   Local Fixed Disk
Compressed   No
File System   NTFS
Size   68.23 GB (73,265,049,600 bytes)
Free Space   54.71 GB (58,746,097,664 bytes)

Volume Name
Volume Serial Number   3293A570

[Disks]

Item   Value
Description   Disk drive
Manufacturer   (Standard disk drives)
Model   HP LOGICAL VOLUME SCSI Disk Device
Bytes/Sector   512
Media Loaded   Yes
Media Type   Fixed hard disk
Partitions   2
SCSI Bus 0
SCSI Logical Unit   0
SCSI Port 0
SCSI Target ID   4
Sectors/Track   32

Size   68.33 GB (73,372,631,040 bytes)
Total Cylinders   17,562
Total Sectors   143,305,920
Total Tracks   4,478,310
Tracks/Cylinder   255
Partition Disk #0, Partition #0
Partition Size   100.00 MB (104,857,600 bytes)
Partition Starting Offset   1,048,576 bytes
Partition Disk #0, Partition #1
Partition Size   68.23 GB (73,265,053,696 bytes)

Partition Starting Offset   105,906,176 bytes

[SCSI]

Item   Value
Name   Smart Array Controller (Media Driver)
Manufacturer   Hewlett-Packard Company
Status   OK
PNP Device ID
          PCI\VEN_103C&DEV_323A&SUBSYS_3245103C&REV_0
1\4&3251E38F&0&0008
Memory Address   0xFBC00000-0xFBFFFFFF
Memory Address   0xFBBF0000-0xFBBF0FFF
IRQ Channel   IRQ 4294967284
Driver   c:\windows\system32\drivers\hpsamd.sys
(6.12.4.64, 76.06 KB (77,888 bytes), 7/13/2009 4:59
PM)

[IDE]

Item   Value

[Printing]

Name   Driver   Port Name Server Name
Microsoft XPS Document Writer Microsoft XPS Document
Writer   XPSPort: Not Available

[Problem Devices]

Device   PNP Device ID   Error Code
IPMI Interface
          PCI\VEN_103C&DEV_3302&SUBSYS_3305103C&REV_0
0\4&1712A4E7&0&26F0 The drivers for this device are
not installed.
Base System Device
          PCI\VEN_0E11&DEV_B203&SUBSYS_3305103C&REV_0
3\4&1712A4E7&0&20F0 The drivers for this device are
not installed.
PS/2 Compatible Mouse
          ACPI\PNP0F13\4&23625D7F&0   This device
is not present, is not working properly, or does not
have all its drivers installed.
Base System Device
          PCI\VEN_0E11&DEV_B204&SUBSYS_3305103C&REV_0
3\4&1712A4E7&0&22F0 The drivers for this device are
not installed.
Standard PS/2 Keyboard
          ACPI\PNP0303\4&23625D7F&0   This device
is not present, is not working properly, or does not
have all its drivers installed.

[USB]

Device   PNP Device ID
Intel(R) ICH10 Family USB Universal Host Controller -
3A39
          PCI\VEN_8086&DEV_3A39&SUBSYS_330D103C&REV_0
0\3&33FD14CA&0&EB
Intel(R) ICH10 Family USB Enhanced Host Controller -
3A3A
          PCI\VEN_8086&DEV_3A3A&SUBSYS_330D103C&REV_0
0\3&33FD14CA&0&EF
Intel(R) ICH10 Family USB Universal Host Controller -
3A34
          PCI\VEN_8086&DEV_3A34&SUBSYS_330D103C&REV_0
0\3&33FD14CA&0&E8
Intel(R) ICH10 Family USB Universal Host Controller -
3A35
          PCI\VEN_8086&DEV_3A35&SUBSYS_330D103C&REV_0
0\3&33FD14CA&0&E9
Standard Universal PCI to USB Host Controller
          PCI\VEN_103C&DEV_3300&SUBSYS_3305103C&REV_0
0\4&1712A4E7&0&24F0
Intel(R) ICH10 Family USB Universal Host Controller -
3A36
          PCI\VEN_8086&DEV_3A36&SUBSYS_330D103C&REV_0
0\3&33FD14CA&0&EA

[Software Environment]

[System Drivers]

Name   Description   File   Type
          Started   Start Mode   State
          Status   Error Control   Accept Pause
          Accept Stop
1394ohci 1394 OHCI Compliant Host Controller
          c:\windows\system32\drivers\1394ohci.sys
          Kernel Driver   No   Manual
          Stopped   OK   Normal   No   No

acpi   Microsoft ACPI Driver
          c:\windows\system32\drivers\acpi.sys
          Kernel Driver   Yes   Boot
          Running   OK   Critical No   Yes

acpipmi   ACPI Power Meter Driver
          c:\windows\system32\drivers\acpipmi.sys
          Kernel Driver   No   Manual
          Stopped   OK   Normal   No   No

adp94xx   adp94xx
          c:\windows\system32\drivers\adp94xx.sys
          Kernel Driver   No   Manual
          Stopped   OK   Normal   No   No

adpahci   adpahci
          c:\windows\system32\drivers\adpahci.sys
          Kernel Driver   No   Manual
          Stopped   OK   Normal   No   No

```
adpu320   adpu320
          c:\windows\system32\drivers\adpu320.sys
          Kernel Driver      No      Manual
          Stopped  OK      Normal  No      No

afd       Ancillary Function Driver for Winsock
          c:\windows\system32\drivers\afd.sys
          Kernel Driver      Yes     System
          Running  OK      Normal  No      Yes

agp440    Intel AGP Bus Filter
          c:\windows\system32\drivers\agp440.sys
          Kernel Driver      No      Manual
          Stopped  OK      Normal  No      No

aliide    aliide
          c:\windows\system32\drivers\aliide.sys
          Kernel Driver      No      Manual
          Stopped  OK      Critical No     No

amdide    amdide
          c:\windows\system32\drivers\amdide.sys
          Kernel Driver      No      Manual
          Stopped  OK      Critical No     No

amdk8     AMD K8 Processor Driver
          c:\windows\system32\drivers\amdk8.sys
          Kernel Driver      No      Manual
          Stopped  OK      Normal  No      No

amdppm    AMD Processor Driver
          c:\windows\system32\drivers\amdppm.sys
          Kernel Driver      No      Manual
          Stopped  OK      Normal  No      No

amdsata   amdsata
          c:\windows\system32\drivers\amdsata.sys
          Kernel Driver      No      Manual
          Stopped  OK      Normal  No      No

amdsbs    amdsbs
          c:\windows\system32\drivers\amdsbs.sys
          Kernel Driver      No      Manual
          Stopped  OK      Normal  No      No

amdxata   amdxata
          c:\windows\system32\drivers\amdxata.sys
          Kernel Driver      Yes     Boot
          Running  OK      Normal  No      Yes

appid     AppID Driver
          c:\windows\system32\drivers\appid.sys
          Kernel Driver      No      Manual
          Stopped  OK      Normal  No      No

arc       arc
          c:\windows\system32\drivers\arc.sys
          Kernel Driver      No      Manual
          Stopped  OK      Normal  No      No

arcsas    arcsas
          c:\windows\system32\drivers\arcsas.sys
          Kernel Driver      No      Manual


                    Stopped  OK      Normal  No      No
asyncmac  RAS Asynchronous Media Driver
          c:\windows\system32\drivers\asyncmac.sys
          Kernel Driver      Yes     Manual
          Running  OK      Normal  No      Yes

atapi     IDE Channel
          c:\windows\system32\drivers\atapi.sys
          Kernel Driver      Yes     Boot
          Running  OK      Critical No     Yes

b06bdrv   Broadcom NetXtreme II VBD
          c:\windows\system32\drivers\bxvbda.sys
          Kernel Driver      Yes     Manual
          Running  OK      Normal  No      Yes

b57nd60a  Broadcom NetXtreme Gigabit Ethernet - NDIS
6.0       c:\windows\system32\drivers\b57nd60a.sys
          Kernel Driver      No      Manual
          Stopped  OK      Normal  No      No

beep      Beep
          c:\windows\system32\drivers\beep.sys
          Kernel Driver      No      Manual
          Stopped  OK      Normal  No      No

blbdrive  blbdrive
          c:\windows\system32\drivers\blbdrive.sys
          Kernel Driver      Yes     System
          Running  OK      Normal  No      Yes

bowser    Browser Support Driver
          c:\windows\system32\drivers\bowser.sys
          File System Driver Yes     Manual
          Running  OK      Normal  No      Yes

brfiltlo  Brother USB Mass-Storage Lower Filter
Driver    c:\windows\system32\drivers\brfiltlo.sys
          Kernel Driver      No      Manual
          Stopped  OK      Normal  No      No

brfiltup  Brother USB Mass-Storage Upper Filter
Driver    c:\windows\system32\drivers\brfiltup.sys
          Kernel Driver      No      Manual
          Stopped  OK      Normal  No      No

brserid   Brother MFC Serial Port Interface Driver
(WDM)     c:\windows\system32\drivers\brserid.sys
          Kernel Driver      No      Manual
          Stopped  OK      Normal  No      No

brserwdm  Brother WDM Serial driver
          c:\windows\system32\drivers\brserwdm.sys
          Kernel Driver      No      Manual
          Stopped  OK      Normal  No      No

brusbmdm  Brother MFC USB Fax Only Modem
          c:\windows\system32\drivers\brusbmdm.sys
          Kernel Driver      No      Manual
          Stopped  OK      Normal  No      No


brusbser  Brother MFC USB Serial WDM Driver
          c:\windows\system32\drivers\brusbser.sys
          Kernel Driver      No      Manual
          Stopped  OK      Normal  No      No

cdfs      CD/DVD File System Reader
          c:\windows\system32\drivers\cdfs.sys
          File System Driver No      Disabled
          Stopped  OK      Normal  No      No

cdrom     CD-ROM Driver
          c:\windows\system32\drivers\cdrom.sys
          Kernel Driver      No      System
          Stopped  OK      Normal  No      No

clfs      Common Log (CLFS)
          c:\windows\system32\drivers\clfs.sys  Kernel Driver
          Yes     Boot    Running  OK
          Critical No      Yes
cmbatt    Microsoft ACPI Control Method Battery
Driver    c:\windows\system32\drivers\cmbatt.sys
          Kernel Driver      No      Manual
          Stopped  OK      Normal  No      No

cmdide    cmdide
          c:\windows\system32\drivers\cmdide.sys
          Kernel Driver      No      Manual
          Stopped  OK      Critical No     No

cng       CNG
          c:\windows\system32\drivers\cng.sys
          Kernel Driver      Yes     Boot
          Running  OK      Critical No     Yes

compbatt  Compbatt
          c:\windows\system32\drivers\compbatt.sys
          Kernel Driver      No      Manual
          Stopped  OK      Critical No     No

compositebus      Composite Bus Enumerator Driver
          c:\windows\system32\drivers\compositebus.sy
s         Kernel Driver      Yes     Manual
          Running  OK      Normal  No      Yes

crcdisk   Crcdisk Filter Driver
          c:\windows\system32\drivers\crcdisk.sys
          Kernel Driver      No      Disabled
          Stopped  OK      Normal  No      No

dfsc      DFS Namespace Client Driver
          c:\windows\system32\drivers\dfsc.sys
          File System Driver Yes     System
          Running  OK      Normal  No      Yes

discache  System Attribute Cache
          c:\windows\system32\drivers\discache.sys
          Kernel Driver      Yes     System
          Running  OK      Normal  No      Yes

disk      Disk Driver
          c:\windows\system32\drivers\disk.sys
          Kernel Driver      Yes     Boot
```

```
                Running   OK      Normal   No    Yes        fsdepends File System Dependency Minifilter          intelppm  Intel Processor Driver
                                                                       c:\windows\system32\drivers\fsdepends.sys            c:\windows\system32\drivers\intelppm.sys
dxgkrnl   LDDM Graphics Subsystem                                      File System Driver  No      Manual                   Kernel Driver     Yes     Manual
          c:\windows\system32\drivers\dxgkrnl.sys                      Stopped  OK      Critical  No      No               Running   OK      Normal   No    Yes
          Kernel Driver     No      Manual
          Stopped  OK      Ignore   No      No         gagp30kx  Microsoft Generic AGPv3.0 Filter for K8    ioatdma   Intel(R) QuickData Technology Device
                                                       Processor Platforms                                  c:\windows\system32\drivers\qd260x64.sys
e1express Intel(R) PRO/1000 PCI Express Network                        c:\windows\system32\drivers\gagp30kx.sys             Kernel Driver     No      Manual
Connection Driver                                                      Kernel Driver     No      Manual                   Stopped  OK      Normal   No      No
          c:\windows\system32\drivers\e1e6032e.sys                     Stopped  OK      Normal   No      No
          Kernel Driver     No      Manual                                                                    ipfilterdriver    IP Traffic Filter Driver
          Stopped  OK      Normal   No      No         hdaudbus  Microsoft UAA Bus Driver for High                    c:\windows\system32\drivers\ipfltdrv.sys
                                                       Definition Audio                                     Kernel Driver     No      Manual
ebdrv     Broadcom NetXtreme II 10 GigE VBD                            c:\windows\system32\drivers\hdaudbus.sys             Stopped  OK      Normal   No      No
          c:\windows\system32\drivers\evbda.sys                        Kernel Driver     No      Manual
          Kernel Driver     No      Manual                            Stopped  OK      Normal   No      No       ipmidrv   IPMIDRV
          Stopped  OK      Normal   No      No                                                                    c:\windows\system32\drivers\ipmidrv.sys
                                                       hidbatt   HID UPS Battery Driver                               Kernel Driver     Yes     Manual
elxstor   elxstor                                                      c:\windows\system32\drivers\hidbatt.sys              Running   OK      Normal   No    Yes
          c:\windows\system32\drivers\elxstor.sys                      Kernel Driver     No      Manual
          Kernel Driver     No      Manual                            Stopped  OK      Normal   No      No       ipnat     IP Network Address Translator
          Stopped  OK      Normal   No      No                                                                    c:\windows\system32\drivers\ipnat.sys
                                                       hidusb    Microsoft HID Class Driver                           Kernel Driver     No      Manual
errdev    Microsoft Hardware Error Device Driver                       c:\windows\system32\drivers\hidusb.sys               Stopped  OK      Normal   No      No
          c:\windows\system32\drivers\errdev.sys                       Kernel Driver     Yes     Manual
          Kernel Driver     No      Manual                            Running   OK      Ignore   No    Yes       isapnp    isapnp
          Stopped  OK      Normal   No      No                                                                    c:\windows\system32\drivers\isapnp.sys
                                                       hpsamd    HpSAMD                                               Kernel Driver     No      Manual
exfat     exFAT File System Driver                                     c:\windows\system32\drivers\hpsamd.sys               Stopped  OK      Critical  No      No
          c:\windows\system32\drivers\exfat.sys                        Kernel Driver     Yes     Boot
          File System Driver  No      Manual                           Running   OK      Normal   No    Yes       iscsiprt  iScsiPort Driver
          Stopped  OK      Normal   No      No                                                                    c:\windows\system32\drivers\msiscsi.sys
                                                       http      HTTP                                                 Kernel Driver     No      Manual
fastfat   FAT12/16/32 File System Driver                               c:\windows\system32\drivers\http.sys                 Stopped  OK      Normal   No      No
          c:\windows\system32\drivers\fastfat.sys                      Kernel Driver     Yes     Manual
          File System Driver  No      Manual                           Running   OK      Normal   No    Yes       kbdclass  Keyboard Class Driver
          Stopped  OK      Normal   No      No                                                                    c:\windows\system32\drivers\kbdclass.sys
                                                       hwpolicy  Hardware Policy Driver                               Kernel Driver     Yes     Manual
fdc       Floppy Disk Controller Driver                                c:\windows\system32\drivers\hwpolicy.sys             Running   OK      Normal   No    Yes
          c:\windows\system32\drivers\fdc.sys                          Kernel Driver     Yes     Boot
          Kernel Driver     No      Manual                            Running   OK      Normal   No    Yes       kbdhid    Keyboard HID Driver
          Stopped  OK      Normal   No      No                                                                    c:\windows\system32\drivers\kbdhid.sys
                                                       i8042prt  i8042 Keyboard and PS/2 Mouse Port Driver            Kernel Driver     Yes     Manual
fileinfo  File Information FS MiniFilter                               c:\windows\system32\drivers\i8042prt.sys             Running   OK      Ignore   No    Yes
          c:\windows\system32\drivers\fileinfo.sys                     Kernel Driver     No      Manual
          File System Driver  No      Manual                           Stopped  OK      Normal   No      No       ksecdd    KSecDD
          Stopped  OK      Normal   No      No                                                                    c:\windows\system32\drivers\ksecdd.sys
                                                       iastorv   iaStorV                                              Kernel Driver     Yes     Boot
filetrace Filetrace                                                    c:\windows\system32\drivers\iastorv.sys              Running   OK      Critical  No    Yes
          c:\windows\system32\drivers\filetrace.sys                    Kernel Driver     No      Manual
          File System Driver  No      Manual                           Stopped  OK      Normal   No      No       ksecpkg   KSecPkg
          Stopped  OK      Normal   No      No                                                                    c:\windows\system32\drivers\ksecpkg.sys
                                                       iirsp     iirsp                                                Kernel Driver     Yes     Boot
flpydisk  Floppy Disk Driver                                           c:\windows\system32\drivers\iirsp.sys                Running   OK      Critical  No    Yes
          c:\windows\system32\drivers\flpydisk.sys                     Kernel Driver     No      Manual
          Kernel Driver     No      Manual                            Stopped  OK      Normal   No      No       ksthunk   Kernel Streaming Thunks
          Stopped  OK      Normal   No      No                                                                    c:\windows\system32\drivers\ksthunk.sys
                                                       intelide  intelide                                             Kernel Driver     No      Manual
fltmgr    FltMgr                                                       c:\windows\system32\drivers\intelide.sys             Stopped  OK      Normal   No      No
          c:\windows\system32\drivers\fltmgr.sys                       Kernel Driver     No      Manual
          File System Driver  Yes     Boot                             Stopped  OK      Critical  No      No      l2nd      Broadcom NetXtreme II BXND
          Running   OK      Critical  No    Yes                                                                   c:\windows\system32\drivers\bxnd60a.sys
                                                                                                                  Kernel Driver     Yes     Manual
```

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            Running   OK      Normal    No      Yes     mountmgr  Mount Point Manager                              Running   OK      Normal    No      Yes
lltdio    Link-Layer Topology Discovery Mapper I/O            c:\windows\system32\drivers\mountmgr.sys
Driver    c:\windows\system32\drivers\lltdio.sys             Kernel Driver     Yes     Boot       mtconfig  Microsoft Input Configuration Driver
          Kernel Driver     Yes     Auto                      Running   OK      Critical  No      Yes              c:\windows\system32\drivers\mtconfig.sys
          Running   OK      Normal    No      Yes     mpio      mpio                                               Kernel Driver     No      Manual
lsi_fc    LSI_FC                                               c:\windows\system32\drivers\mpio.sys               Stopped   OK      Normal    No      No
          c:\windows\system32\drivers\lsi_fc.sys             Kernel Driver     No      Manual
          Kernel Driver     No      Manual                    Stopped   OK      Normal    No      No     mup       Mup
          Stopped   OK      Normal    No      No     mpsdrv    Windows Firewall Authorization Driver                       c:\windows\system32\drivers\mup.sys
                                                               c:\windows\system32\drivers\mpsdrv.sys              File System Driver Yes    Boot
lsi_sas   LSI_SAS                                             Kernel Driver     Yes     Manual                    Running   OK      Normal    No      Yes
          c:\windows\system32\drivers\lsi_sas.sys             Running   OK      Normal    No      Yes     ndis      NDIS System Driver
          Kernel Driver     No      Manual             mrxsmb    SMB MiniRedirector Wrapper and Engine                     c:\windows\system32\drivers\ndis.sys
          Stopped   OK      Normal    No      No               c:\windows\system32\drivers\mrxsmb.sys             Kernel Driver     Yes     Boot
                                                               File System Driver Yes    Manual                    Running   OK      Critical  No      Yes
lsi_sas2  LSI_SAS2                                            Running   OK      Normal    No      Yes
          c:\windows\system32\drivers\lsi_sas2.sys    mrxsmb10  SMB 1.x MiniRedirector                             ndiscap   NDIS Capture LightWeight Filter
          Kernel Driver     No      Manual                     c:\windows\system32\drivers\mrxsmb10.sys                     c:\windows\system32\drivers\ndiscap.sys
          Stopped   OK      Normal    No      No               File System Driver Yes    Manual                    Kernel Driver     No      Manual
                                                               Running   OK      Normal    No      Yes              Stopped   OK      Normal    No      No
lsi_scsi  LSI_SCSI                                    mrxsmb20  SMB 2.0 MiniRedirector
          c:\windows\system32\drivers\lsi_scsi.sys             c:\windows\system32\drivers\mrxsmb20.sys   ndistapi  Remote Access NDIS TAPI Driver
          Kernel Driver     No      Manual                     File System Driver Yes    Manual                    c:\windows\system32\drivers\ndistapi.sys
          Stopped   OK      Normal    No      No               Running   OK      Normal    No      Yes              Kernel Driver     Yes     Manual
                                                                                                                    Running   OK      Normal    No      Yes
luafv     UAC File Virtualization                     msahci    msahci
          c:\windows\system32\drivers\luafv.sys               c:\windows\system32\drivers\msahci.sys     ndisuio   NDIS Usermode I/O Protocol
          File System Driver Yes    Auto                      Kernel Driver     No      Manual                     c:\windows\system32\drivers\ndisuio.sys
          Running   OK      Normal    No      Yes              Stopped   OK      Critical  No      No               Kernel Driver     No      Manual
megasas   megasas                                     msdsm     msdsm                                               Stopped   OK      Normal    No      No
          c:\windows\system32\drivers\megasas.sys             c:\windows\system32\drivers\msdsm.sys      ndiswan   Remote Access NDIS WAN Driver
          Kernel Driver     No      Manual                    Kernel Driver     No      Manual                     c:\windows\system32\drivers\ndiswan.sys
          Stopped   OK      Normal    No      No               Stopped   OK      Normal    No      No               Kernel Driver     Yes     Manual
                                                                                                                    Running   OK      Normal    No      Yes
megasr    MegaSR                                      msfs      Msfs
          c:\windows\system32\drivers\megasr.sys              c:\windows\system32\drivers\msfs.sys       ndproxy   NDIS Proxy
          Kernel Driver     No      Manual                    File System Driver Yes    System                     c:\windows\system32\drivers\ndproxy.sys
          Stopped   OK      Normal    No      No               Running   OK      Normal    No      Yes              Kernel Driver     Yes     Manual
                                                                                                                    Running   OK      Normal    No      Yes
modem     Modem                                       mshidkmdf Pass-through HID to KMDF Filter Driver
          c:\windows\system32\drivers\modem.sys               c:\windows\system32\drivers\mshidkmdf.sys  netbios   NetBIOS Interface
          Kernel Driver     No      Manual                    Kernel Driver     No      Manual                     c:\windows\system32\drivers\netbios.sys
          Stopped   OK      Ignore    No      No               Stopped   OK      Ignore    No      No               File System Driver Yes    System
                                                                                                                    Running   OK      Normal    No      Yes
monitor   Microsoft Monitor Class Function Driver     msisadrv  msisadrv
Service   c:\windows\system32\drivers\monitor.sys             c:\windows\system32\drivers\msisadrv.sys   netbt     NetBT
          Kernel Driver     Yes     Manual                    Kernel Driver     Yes     Boot                       c:\windows\system32\drivers\netbt.sys
          Running   OK      Normal    No      Yes              Running   OK      Critical  No      Yes              Kernel Driver     Yes     System
                                                                                                                    Running   OK      Normal    No      Yes
mouclass  Mouse Class Driver                          msrpc     MsRPC
          c:\windows\system32\drivers\mouclass.sys            c:\windows\system32\drivers\msrpc.sys      nfrd960   nfrd960
          Kernel Driver     Yes     Manual                    Kernel Driver     No      Manual                     c:\windows\system32\drivers\nfrd960.sys
          Running   OK      Normal    No      Yes              Stopped   OK      Normal    No      No               Kernel Driver     No      Manual
                                                                                                                    Stopped   OK      Normal    No      No
mouhid    Mouse HID Driver                            mssmbios  Microsoft System Management BIOS Driver
          c:\windows\system32\drivers\mouhid.sys              c:\windows\system32\drivers\mssmbios.sys   npfs      Npfs
          Kernel Driver     Yes     Manual                    Kernel Driver     Yes     System                     c:\windows\system32\drivers\npfs.sys
          Running   OK      Ignore    No      Yes                                                                   File System Driver Yes    System
                                                                                                                    Running   OK      Normal    No      Yes
```

nsiproxy NSI proxy service driver.
          c:\windows\system32\drivers\nsiproxy.sys
          Kernel Driver   Yes   System
          Running OK   Normal   No   Yes

ntfs   Ntfs
          c:\windows\system32\drivers\ntfs.sys
          File System Driver Yes   Manual
          Running OK   Normal   No   Yes

null   Null
          c:\windows\system32\drivers\null.sys
          Kernel Driver   Yes   System
          Running OK   Normal   No   Yes

nvraid   nvraid
          c:\windows\system32\drivers\nvraid.sys
          Kernel Driver   No   Manual
          Stopped OK   Normal   No   No

nvstor   nvstor
          c:\windows\system32\drivers\nvstor.sys
          Kernel Driver   No   Manual
          Stopped OK   Critical No   No

nv_agp   NVIDIA nForce AGP Bus Filter
          c:\windows\system32\drivers\nv_agp.sys
          Kernel Driver   No   Manual
          Stopped OK   Normal   No   No

ohci1394 1394 OHCI Compliant Host Controller
(Legacy) c:\windows\system32\drivers\ohci1394.sys
          Kernel Driver   No   Manual
          Stopped OK   Normal   No   No

parport   Parallel port driver
          c:\windows\system32\drivers\parport.sys
          Kernel Driver   No   Manual
          Stopped OK   Ignore   No   No

partmgr   Partition Manager
          c:\windows\system32\drivers\partmgr.sys
          Kernel Driver   Yes   Boot
          Running OK   Critical No   Yes

pci   PCI Bus Driver
          c:\windows\system32\drivers\pci.sys
          Kernel Driver   Yes   Boot
          Running OK   Critical No   Yes

pciide   pciide
          c:\windows\system32\drivers\pciide.sys
          Kernel Driver   Yes   Boot
          Running OK   Critical No   Yes

pcmcia   pcmcia
          c:\windows\system32\drivers\pcmcia.sys
          Kernel Driver   No   Manual
          Stopped OK   Normal   No   No

pcw   Performance Counters for Windows Driver
          c:\windows\system32\drivers\pcw.sys
          Kernel Driver   Yes   Boot

          Running OK   Normal   No   Yes

peauth   PEAUTH
          c:\windows\system32\drivers\peauth.sys
          Kernel Driver   Yes   Auto
          Running OK   Normal   No   Yes

pptpminiport   WAN Miniport (PPTP)
          c:\windows\system32\drivers\raspptp.sys
          Kernel Driver   Yes   Manual
          Running OK   Normal   No   Yes

processor Processor Driver
          c:\windows\system32\drivers\processr.sys
          Kernel Driver   No   Manual
          Stopped OK   Normal   No   No

psched   QoS Packet Scheduler
          c:\windows\system32\drivers\pacer.sys
          Kernel Driver   Yes   System
          Running OK   Normal   No   Yes

ql2300   ql2300
          c:\windows\system32\drivers\ql2300.sys
          Kernel Driver   No   Manual
          Stopped OK   Normal   No   No

ql40xx   ql40xx
          c:\windows\system32\drivers\ql40xx.sys
          Kernel Driver   No   Manual
          Stopped OK   Normal   No   No

rasacd   Remote Access Auto Connection Driver
          c:\windows\system32\drivers\rasacd.sys
          Kernel Driver   No   Manual
          Stopped OK   Normal   No   No

rasagilevpn   WAN Miniport (IKEv2)
          c:\windows\system32\drivers\agilevpn.sys
          Kernel Driver   Yes   Manual
          Running OK   Normal   No   Yes

rasl2tp   WAN Miniport (L2TP)
          c:\windows\system32\drivers\rasl2tp.sys
          Kernel Driver   Yes   Manual
          Running OK   Normal   No   Yes

raspppoe Remote Access PPPOE Driver
          c:\windows\system32\drivers\raspppoe.sys
          Kernel Driver   Yes   Manual
          Running OK   Normal   No   Yes

rassstp   WAN Miniport (SSTP)
          c:\windows\system32\drivers\rassstp.sys
          Kernel Driver   Yes   Manual
          Running OK   Normal   No   Yes

rdbss   Redirected Buffering Sub Sysytem
          c:\windows\system32\drivers\rdbss.sys
          File System Driver Yes   System
          Running OK   Normal   No   Yes

rdpbus   Remote Desktop Device Redirector Bus Driver
          c:\windows\system32\drivers\rdpbus.sys
          Kernel Driver   Yes   Manual
          Running OK   Normal   No   Yes

rdpcdd   RDPCDD
          c:\windows\system32\drivers\rdpcdd.sys
          Kernel Driver   Yes   System
          Running OK   Ignore   No   Yes

rdpdr   Terminal Server Device Redirector Driver
          c:\windows\system32\drivers\rdpdr.sys
          Kernel Driver   Yes   Manual
          Running OK   Normal   No   Yes

rdpencdd RDP Encoder Mirror Driver
          c:\windows\system32\drivers\rdpencdd.sys
          Kernel Driver   Yes   System
          Running OK   Ignore   No   Yes

rdprefmp Reflector Display Driver used to gain
access to graphics data
          c:\windows\system32\drivers\rdprefmp.sys
          Kernel Driver   Yes   System
          Running OK   Ignore   No   Yes

rdpwd   RDP Winstation Driver
          c:\windows\system32\drivers\rdpwd.sys
          Kernel Driver   Yes   Manual
          Running OK   Ignore   No   Yes

rspndr   Link-Layer Topology Discovery Responder
          c:\windows\system32\drivers\rspndr.sys
          Kernel Driver   Yes   Auto
          Running OK   Normal   No   Yes

s3cap   s3cap
          c:\windows\system32\drivers\vms3cap.sys
          Kernel Driver   No   Manual
          Stopped OK   Normal   No   No

sacdrv   sacdrv
          c:\windows\system32\drivers\sacdrv.sys
          Kernel Driver   No   Boot
          Stopped OK   Ignore   No   No

sbp2port sbp2port
          c:\windows\system32\drivers\sbp2port.sys
          Kernel Driver   No   Manual
          Stopped OK   Normal   No   No

scfilter Smart card PnP Class Filter Driver
          c:\windows\system32\drivers\scfilter.sys
          Kernel Driver   No   Manual
          Stopped OK   Normal   No   No

secdrv   Security Driver
          c:\windows\system32\drivers\secdrv.sys
          Kernel Driver   Yes   Auto
          Running OK   Normal   No   Yes

serenum   Serenum Filter Driver
          c:\windows\system32\drivers\serenum.sys

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                    Kernel Driver    Yes     Manual                          Running    OK      Normal    No        Yes        termdd    Terminal Device Driver
                    Running    OK   Normal    No        Yes                                                                               c:\windows\system32\drivers\termdd.sys
serial    Serial port driver                               srvnet    srvnet                                                              Kernel Driver    Yes     System
          c:\windows\system32\drivers\serial.sys                    c:\windows\system32\drivers\srvnet.sys                               Running    OK   Normal    No        Yes
          Kernel Driver    Yes     System                           File System Driver  Yes       Manual
          Running    OK   Ignore    No        Yes                    Running    OK   Normal    No        Yes        tssecsrv  Remote Desktop Services Security Filter
                                                                                                                   Driver    c:\windows\system32\drivers\tssecsrv.sys
sermouse  Serial Mouse Driver                              stexstor  stexstor                                                            Kernel Driver    Yes     Manual
          c:\windows\system32\drivers\sermouse.sys                   c:\windows\system32\drivers\stexstor.sys                             Running    OK   Ignore    No        Yes
          Kernel Driver    No      Manual                           Kernel Driver    No      Manual
          Stopped    OK   Normal    No        No                    Stopped    OK   Normal    No        No         tunnel    Microsoft Tunnel Miniport Adapter Driver
                                                                                                                             c:\windows\system32\drivers\tunnel.sys
sffdisk   SFF Storage Class Driver                         storflt   Disk Virtual Machine Bus Acceleration                               Kernel Driver    Yes     Manual
          c:\windows\system32\drivers\sffdisk.sys          Filter Driver                                                                 Running    OK   Normal    No        Yes
          Kernel Driver    No      Manual                            c:\windows\system32\drivers\vmstorfl.sys
          Stopped    OK   Normal    No        No                    Kernel Driver    Yes     Boot               uagp35    Microsoft AGPv3.5 Filter
                                                                     Running    OK   Normal    No        Yes                c:\windows\system32\drivers\uagp35.sys
sffp_mmc  SFF Storage Protocol Driver for MMC                                                                                Kernel Driver    No      Manual
          c:\windows\system32\drivers\sffp_mmc.sys         storvsc   storvsc                                                             Stopped    OK   Normal    No        No
          Kernel Driver    No      Manual                            c:\windows\system32\drivers\storvsc.sys
          Stopped    OK   Normal    No        No                    Kernel Driver    No      Manual             udfs      udfs
                                                                     Stopped    OK   Normal    No        No                c:\windows\system32\drivers\udfs.sys
sffp_sd   SFF Storage Protocol Driver for SDBus                                                                              File System Driver  No        Disabled
          c:\windows\system32\drivers\sffp_sd.sys          storvsp   storvsp                                                             Stopped    OK   Normal    No        No
          Kernel Driver    No      Manual                            c:\windows\system32\drivers\storvsp.sys
          Stopped    OK   Normal    No        No                    Kernel Driver    No      Manual             uliagpkx  Uli AGP Bus Filter
                                                                     Stopped    OK   Normal    No        No                c:\windows\system32\drivers\uliagpkx.sys
sfloppy   High-Capacity Floppy Disk Drive                                                                                    Kernel Driver    No      Manual
          c:\windows\system32\drivers\sfloppy.sys          swenum    Software Bus Driver                                                  Stopped    OK   Normal    No        No
          Kernel Driver    No      Manual                            c:\windows\system32\drivers\swenum.sys
          Stopped    OK   Normal    No        No                    Kernel Driver    Yes     Manual             umbus     UMBus Enumerator Driver
                                                                     Running    OK   Normal    No        Yes                c:\windows\system32\drivers\umbus.sys
sisraid2  SiSRaid2                                                                                                            Kernel Driver    Yes     Manual
          c:\windows\system32\drivers\sisraid2.sys         tcpip     TCP/IP Protocol Driver                                              Running    OK   Normal    No        Yes
          Kernel Driver    No      Manual                            c:\windows\system32\drivers\tcpip.sys
          Stopped    OK   Normal    No        No                    Kernel Driver    Yes     Boot               umpass    Microsoft UMPass Driver
                                                                     Running    OK   Normal    No        Yes                c:\windows\system32\drivers\umpass.sys
sisraid4  SiSRaid4                                                                                                            Kernel Driver    No      Manual
          c:\windows\system32\drivers\sisraid4.sys         tcpip6    Microsoft IPv6 Protocol Driver                                      Stopped    OK   Normal    No        No
          Kernel Driver    No      Manual                            c:\windows\system32\drivers\tcpip.sys
          Stopped    OK   Normal    No        No                    Kernel Driver    No      Manual             usbccgp   Microsoft USB Generic Parent Driver
                                                                     Stopped    OK   Normal    No        No                c:\windows\system32\drivers\usbccgp.sys
smb       Message-oriented TCP/IP and TCP/IPv6                                                                                Kernel Driver    Yes     Manual
Protocol (SMB session)                                     tcpipreg  TCP/IP Registry Compatibility                                       Running    OK   Normal    No        Yes
          c:\windows\system32\drivers\smb.sys                        c:\windows\system32\drivers\tcpipreg.sys
          Kernel Driver    No      Manual                           Kernel Driver    Yes     Auto               usbehci   Microsoft USB 2.0 Enhanced Host Controller
          Stopped    OK   Normal    No        No                    Running    OK   Normal    No        Yes     Miniport Driver
                                                                                                                             c:\windows\system32\drivers\usbehci.sys
spldr     Security Processor Loader Driver                 tdpipe    TDPIPE                                                              Kernel Driver    Yes     Manual
          c:\windows\system32\drivers\spldr.sys                      c:\windows\system32\drivers\tdpipe.sys                               Running    OK   Normal    No        Yes
          Kernel Driver    Yes     Boot                             Kernel Driver    No      Manual
          Running    OK   Critical  No        Yes                   Stopped    OK   Normal    No        No         usbhub    Microsoft USB Standard Hub Driver
                                                                                                                             c:\windows\system32\drivers\usbhub.sys
srv       Server SMB 1.xxx Driver                          tdtcp     TDTCP                                                               Kernel Driver    Yes     Manual
          c:\windows\system32\drivers\srv.sys                        c:\windows\system32\drivers\tdtcp.sys                                Running    OK   Normal    No        Yes
          File System Driver  Yes       Manual                      Kernel Driver    Yes     Manual
          Running    OK   Normal    No        Yes                   Running    OK   Normal    No        Yes        usbohci   Microsoft USB Open Host Controller Miniport
                                                                                                                   Driver    c:\windows\system32\drivers\usbohci.sys
srv2      Server SMB 2.xxx Driver                          tdx       NetIO Legacy TDI Support Driver                                     Kernel Driver    No      Manual
          c:\windows\system32\drivers\srv2.sys                       c:\windows\system32\drivers\tdx.sys                                  Stopped    OK   Normal    No        No
          File System Driver  Yes       Manual                      Kernel Driver    Yes     System
                                                                     Running    OK   Normal    No        Yes        usbprint  Microsoft USB PRINTER Class
                                                                                                                             c:\windows\system32\drivers\usbprint.sys
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                Kernel Driver    No    Manual              Running    OK    Critical  No    Yes      [Environment Variables]
                Stopped  OK    Normal  No    No
                                                    volsnap   Storage volumes                            Variable  Value       User Name
usbstor   USB Mass Storage Driver                             c:\windows\system32\drivers\volsnap.sys    ComSpec   %SystemRoot%\system32\cmd.exe <SYSTEM>
          c:\windows\system32\drivers\usbstor.sys             Kernel Driver    Yes    Boot              FP_NO_HOST_CHECK   NO       <SYSTEM>
          Kernel Driver    No    Manual                       Running    OK    Critical  No    Yes      OS        Windows_NT    <SYSTEM>
          Stopped  OK    Normal  No    No                                                              Path
                                                    vsmraid   vsmraid                                             %SystemRoot%\system32;%SystemRoot%;%SystemR
usbuhci   Microsoft USB Universal Host Controller             c:\windows\system32\drivers\vsmraid.sys    oot%\System32\Wbem;%SYSTEMROOT%\System32\WindowsPower
Miniport Driver                                               Kernel Driver    No    Manual             Shell\v1.0\;C:\Program Files (x86)\Microsoft SQL
          c:\windows\system32\drivers\usbuhci.sys             Stopped  OK    Normal  No    No           Server\80\Tools\Binn\;C:\Program Files
          Kernel Driver    Yes    Manual                                                                (x86)\Microsoft SQL Server\90\Tools\binn\;C:\Program
          Running    OK    Normal  No    Yes       wacompen  Wacom Serial Pen HID Driver                Files (x86)\Microsoft SQL
                                                              c:\windows\system32\drivers\wacompen.sys   Server\90\DTS\Binn\;C:\Program Files (x86)\Microsoft
vdrvroot  Microsoft Virtual Drive Enumerator Driver           Kernel Driver    No    Manual             SQL
          c:\windows\system32\drivers\vdrvroot.sys            Stopped  OK    Normal  No    No           Server\90\Tools\Binn\VSShell\Common7\IDE\;C:\Program
          Kernel Driver    Yes    Boot                                                                  Files (x86)\Microsoft Visual Studio
          Running    OK    Critical  No    Yes     wanarp    Remote Access IP ARP Driver                8\Common7\IDE\PrivateAssemblies\       <SYSTEM>
                                                              c:\windows\system32\drivers\wanarp.sys     PATHEXT
vga       vga                                                 Kernel Driver    No    Manual                       .COM;.EXE;.BAT;.CMD;.VBS;.VBE;.JS;.JSE;.WSF
          c:\windows\system32\drivers\vgapnp.sys              Stopped  OK    Normal  No    No           ;.WSH;.MSC       <SYSTEM>
          Kernel Driver    Yes    Manual                                                                PROCESSOR_ARCHITECTURE   AMD64   <SYSTEM>
          Running    OK    Ignore  No    Yes       wanarpv6  Remote Access IPv6 ARP Driver              TEMP      %SystemRoot%\TEMP  <SYSTEM>
                                                              c:\windows\system32\drivers\wanarp.sys     TMP       %SystemRoot%\TEMP  <SYSTEM>
vgasave   VgaSave                                             Kernel Driver    Yes    System            USERNAME  SYSTEM   <SYSTEM>
          c:\windows\system32\drivers\vga.sys                 Running    OK    Normal  No    Yes       windir    %SystemRoot%       <SYSTEM>
          Kernel Driver    Yes    System                                                               PSModulePath
          Running    OK    Ignore  No    Yes       wd        Wd                                                   %SystemRoot%\system32\WindowsPowerShell\v1.
                                                              c:\windows\system32\drivers\wd.sys         0\Modules\       <SYSTEM>
vhdmp     vhdmp                                               Kernel Driver    No    Manual             NUMBER_OF_PROCESSORS     4       <SYSTEM>
          c:\windows\system32\drivers\vhdmp.sys               Stopped  OK    Normal  No    No           PROCESSOR_LEVEL   6       <SYSTEM>
          Kernel Driver    No    Manual                                                                 PROCESSOR_IDENTIFIER     Intel64 Family 6 Model
          Stopped  OK    Normal  No    No          wdf01000  Kernel Mode Driver Frameworks service      26 Stepping 5, GenuineIntel   <SYSTEM>
                                                              c:\windows\system32\drivers\wdf01000.sys   PROCESSOR_REVISION   1a05       <SYSTEM>
viaide    viaide                                              Kernel Driver    Yes    Boot              lib       C:\Program Files\SQLXML 4.0\bin\
          c:\windows\system32\drivers\viaide.sys              Running    OK    Normal  No    Yes                 <SYSTEM>
          Kernel Driver    No    Manual                                                                 TEMP      %USERPROFILE%\AppData\Local\Temp       NT
          Stopped  OK    Critical  No    No        wfplwf    WFP Lightweight Filter                     AUTHORITY\SYSTEM
                                                              c:\windows\system32\drivers\wfplwf.sys     TMP       %USERPROFILE%\AppData\Local\Temp       NT
vid       Vid                                                 Kernel Driver    Yes    System            AUTHORITY\SYSTEM
          c:\windows\system32\drivers\vid.sys                 Running    OK    Normal  No    Yes       TEMP      %USERPROFILE%\AppData\Local\Temp       NT
          Kernel Driver    No    Manual                                                                 AUTHORITY\LOCAL SERVICE
          Stopped  OK    Normal  No    No          wimmount  WIMMount                                   TMP       %USERPROFILE%\AppData\Local\Temp       NT
                                                              c:\windows\system32\drivers\wimmount.sys   AUTHORITY\LOCAL SERVICE
vmbus     Virtual Machine Bus                                 File System Driver  No    Manual          TEMP      %USERPROFILE%\AppData\Local\Temp       NT
          c:\windows\system32\drivers\vmbus.sys               Stopped  OK    Normal  No    No           AUTHORITY\NETWORK SERVICE
          Kernel Driver    No    Manual                                                                 TMP       %USERPROFILE%\AppData\Local\Temp       NT
          Stopped  OK    Normal  No    No          wmiacpi   Microsoft Windows Management Interface for AUTHORITY\NETWORK SERVICE
                                                    ACPI      c:\windows\system32\drivers\wmiacpi.sys    TEMP      %USERPROFILE%\AppData\Local\Temp
vmbushid  VMBusHID                                            Kernel Driver    No    Manual                       CL136\Administrator
          c:\windows\system32\drivers\vmbushid.sys            Stopped  OK    Normal  No    No           TMP       %USERPROFILE%\AppData\Local\Temp
          Kernel Driver    No    Manual                                                                           CL136\Administrator
          Stopped  OK    Ignore  No    No          ws2ifsl   Winsock IFS Driver                         TEMP      %USERPROFILE%\AppData\Local\Temp       IIS
                                                              c:\windows\system32\drivers\ws2ifsl.sys    APPPOOL\Classic .NET AppPool
volmgr    Volume Manager Driver                               Kernel Driver    No    Disabled          TMP       %USERPROFILE%\AppData\Local\Temp       IIS
          c:\windows\system32\drivers\volmgr.sys              Stopped  OK    Normal  No    No           APPPOOL\Classic .NET AppPool
          Kernel Driver    Yes    Boot
          Running    OK    Critical  No    Yes     wudfpf    User Mode Driver Frameworks Platform Driver [Print Jobs]
                                                              c:\windows\system32\drivers\wudfpf.sys
volmgrx   Dynamic Volume Manager                              Kernel Driver    No    Manual             Document  Size      Owner      Notify    Status
          c:\windows\system32\drivers\volmgrx.sys             Stopped  OK    Normal  No    No                     Time Submitted     Start Time
          Kernel Driver    Yes    Boot                                                                            Until Time         Elapsed Time
                                                                                                                  Pages Printed      Job ID   Priority
```

```
          Parameters       Driver    Print
Processor Host Print Queue  Data Type Name

[Network Connections]

Local Name       Remote Name         Type
         Status  User Name

[Running Tasks]

Name     Path      Process ID          Priority Min
Working Set         Max Working Set     Start Time
         Version  Size      File Date
system idle process Not Available    0        0
         Not Available      Not Available      Not
Available Not Available      Not Available      Not
Available
system   Not Available      4         8       Not
Available Not Available      6/15/2010 8:32 AM  Not
Available Not Available      Not Available
smss.exe Not Available      236       11       200
         1380     6/15/2010 8:32 AM  Not Available
         Not Available      Not Available
csrss.exe c:\windows\system32\csrss.exe 324        13
         200      1380     6/15/2010 8:32 AM
         6.1.7600.16385      7.50 KB (7,680 bytes)
         7/13/2009 6:19 PM
wininit.exe         c:\windows\system32\wininit.exe
         376      13       200      1380
         6/15/2010 8:32 AM  6.1.7600.16385
         126.00 KB (129,024 bytes)     7/13/2009
6:52 PM
csrss.exe c:\windows\system32\csrss.exe 384        13
         200      6/15/2010 8:32 AM
         6.1.7600.16385      7.50 KB (7,680 bytes)
         7/13/2009 6:19 PM
services.exe        c:\windows\system32\services.exe
         432      9        200      1380
         6/15/2010 8:32 AM  6.1.7600.16385
         321.00 KB (328,704 bytes)     7/13/2009
6:19 PM
lsass.exe c:\windows\system32\lsass.exe 440        9
         200      1380     6/15/2010 8:32 AM
         6.1.7600.16385      30.50 KB (31,232 bytes)
         7/13/2009 6:20 PM
lsm.exe  c:\windows\system32\lsm.exe   448        8
         200      1380     6/15/2010 8:32 AM
         6.1.7600.16385      325.50 KB (333,312
bytes)    7/13/2009 7:17 PM
winlogon.exe        c:\windows\system32\winlogon.exe
         484      13       200      1380
         6/15/2010 8:32 AM  6.1.7600.16385
         380.00 KB (389,120 bytes)     7/13/2009
6:52 PM
svchost.exe         c:\windows\system32\svchost.exe
         580      8        200      1380
         6/15/2010 8:32 AM  6.1.7600.16385
         26.50 KB (27,136 bytes)       7/13/2009
6:31 PM
svchost.exe         c:\windows\system32\svchost.exe
         656      8        200      1380
         6/15/2010 8:32 AM  6.1.7600.16385

          26.50 KB (27,136 bytes)      7/13/2009
6:31 PM
svchost.exe         c:\windows\system32\svchost.exe
         764      8        200      1380
         6/15/2010 8:32 AM  6.1.7600.16385
         26.50 KB (27,136 bytes)       7/13/2009
6:31 PM
svchost.exe         c:\windows\system32\svchost.exe
         804      8        200      1380
         6/15/2010 8:32 AM  6.1.7600.16385
         26.50 KB (27,136 bytes)       7/13/2009
6:31 PM
svchost.exe         c:\windows\system32\svchost.exe
         856      8        200      1380
         6/15/2010 8:32 AM  6.1.7600.16385
         26.50 KB (27,136 bytes)       7/13/2009
6:31 PM
svchost.exe         c:\windows\system32\svchost.exe
         912      8        200      1380
         6/15/2010 8:32 AM  6.1.7600.16385
         26.50 KB (27,136 bytes)       7/13/2009
6:31 PM
svchost.exe         c:\windows\system32\svchost.exe
         952      8        200      1380
         6/15/2010 8:32 AM  6.1.7600.16385
         26.50 KB (27,136 bytes)       7/13/2009
6:31 PM
svchost.exe         c:\windows\system32\svchost.exe
         276      8        200      1380
         6/15/2010 8:32 AM  6.1.7600.16385
         26.50 KB (27,136 bytes)       7/13/2009
6:31 PM
spoolsv.exe         c:\windows\system32\spoolsv.exe
         932      8        200      1380
         6/15/2010 8:32 AM  6.1.7600.16385
         545.00 KB (558,080 bytes)     7/13/2009
7:39 PM
svchost.exe         c:\windows\system32\svchost.exe
         292      8        200      1380
         6/15/2010 8:32 AM  6.1.7600.16385
         26.50 KB (27,136 bytes)       7/13/2009
6:31 PM
smsvchost.exe
         c:\windows\microsoft.net\framework64\v3.0\w
indows communication foundation\smsvchost.exe
         1144     8        200      1380
         6/15/2010 8:32 AM  3.0.4506.4926
         113.83 KB (116,560 bytes)     7/13/2009
8:01 PM
taskhost.exe        c:\windows\system32\taskhost.exe
         1264     8        200      1380
         6/15/2010 8:32 AM  6.1.7600.16385
         67.50 KB (69,120 bytes)       7/13/2009
6:31 PM
dwm.exe  c:\windows\system32\dwm.exe   1328       8
         200      1380     6/15/2010 8:32 AM
         6.1.7600.16385      117.50 KB (120,320
bytes)    7/13/2009 6:37 PM
explorer.exe        c:\windows\explorer.exe
         1372     8        200      1380
         6/15/2010 8:32 AM  6.1.7600.16385
         2.74 MB (2,868,224 bytes)     7/13/2009
6:56 PM

svchost.exe         c:\windows\system32\svchost.exe
         1540     8        200      1380
         6/15/2010 8:32 AM  6.1.7600.16385
         26.50 KB (27,136 bytes)       7/13/2009
6:31 PM
svchost.exe         c:\windows\system32\svchost.exe
         1572     8        200      1380
         6/15/2010 8:32 AM  6.1.7600.16385
         26.50 KB (27,136 bytes)       7/13/2009
6:31 PM
svchost.exe         c:\windows\system32\svchost.exe
         2000     8        200      1380
         6/15/2010 8:32 AM  6.1.7600.16385
         26.50 KB (27,136 bytes)       7/13/2009
6:31 PM
svchost.exe         c:\windows\system32\svchost.exe
         848      8        200      1380
         6/15/2010 8:32 AM  6.1.7600.16385
         26.50 KB (27,136 bytes)       7/13/2009
6:31 PM
mmc.exe  c:\windows\system32\mmc.exe   1992       8
         200      1380     6/15/2010 8:33 AM
         6.1.7600.16385      2.04 MB (2,144,256
bytes)    7/13/2009 6:49 PM
trustedinstaller.exe
         c:\windows\servicing\trustedinstaller.exe
         2052     8        200      1380
         6/15/2010 8:33 AM  6.1.7600.16385
         189.50 KB (194,048 bytes)     7/13/2009
6:35 PM
sppsvc.exe          c:\windows\system32\sppsvc.exe
         2072     8        200      1380
         6/15/2010 8:33 AM  6.1.7600.16385
         3.36 MB (3,524,608 bytes)     7/13/2009
8:05 PM
msdtc.exe c:\windows\system32\msdtc.exe 2376       8
         200      1380     6/15/2010 8:34 AM
         2001.12.8530.16385 138.50 KB (141,824
bytes)    7/13/2009 6:59 PM
msinfo32.exe        c:\program files\common
files\microsoft shared\msinfo\msinfo32.exe
         2264     8        200      1380
         6/15/2010 10:33 AM 6.1.7600.16385
         370.00 KB (378,880 bytes)     7/13/2009
6:31 PM
wmiprvse.exe
         c:\windows\system32\wbem\wmiprvse.exe
         1880     8        200      1380
         6/15/2010 10:33 AM 6.1.7600.16385
         360.00 KB (368,640 bytes)     7/13/2009
6:47 PM
wmiprvse.exe
         c:\windows\system32\wbem\wmiprvse.exe
         2820     8        200      1380
         6/15/2010 10:33 AM 6.1.7600.16385
         360.00 KB (368,640 bytes)     7/13/2009
6:47 PM

[Loaded Modules]

Name     Version  Size      File Date Manufacturer
         Path
```

csrss   6.1.7600.16385   7.50 KB (7,680 bytes)
7/13/2009 6:19 PM   Microsoft Corporation
c:\windows\system32\csrss.exe
ntdll   6.1.7600.16385   1.66 MB (1,736,792
bytes) 7/13/2009 6:22 PM   Microsoft Corporation
c:\windows\system32\ntdll.dll
csrsrv   6.1.7600.16385   42.50 KB (43,520 bytes)
7/13/2009 6:19 PM   Microsoft Corporation
c:\windows\system32\csrsrv.dll
basesrv 6.1.7600.16385   51.50 KB (52,736 bytes)
7/13/2009 6:18 PM   Microsoft Corporation
c:\windows\system32\basesrv.dll
winsrv   6.1.7600.16385   209.00 KB (214,016
bytes) 7/13/2009 6:38 PM   Microsoft Corporation
c:\windows\system32\winsrv.dll
user32   6.1.7600.16385   985.00 KB (1,008,640
bytes) 7/13/2009 6:38 PM   Microsoft Corporation
c:\windows\system32\user32.dll
gdi32   6.1.7600.16385   395.00 KB (404,480
bytes) 7/13/2009 6:39 PM   Microsoft Corporation
c:\windows\system32\gdi32.dll
kernel32 6.1.7600.16385   1.11 MB (1,162,240
bytes) 7/13/2009 6:28 PM   Microsoft Corporation
c:\windows\system32\kernel32.dll
kernelbase   6.1.7600.16385   411.50 KB
(421,376 bytes)   7/13/2009 6:20 PM   Microsoft
Corporation
c:\windows\system32\kernelbase.dll
lpk   6.1.7600.16385   41.00 KB (41,984 bytes)
7/13/2009 6:38 PM   Microsoft Corporation
c:\windows\system32\lpk.dll
usp10   1.626.7600.16385 782.50 KB (801,280
bytes) 7/13/2009 6:38 PM   Microsoft Corporation
c:\windows\system32\usp10.dll
msvcrt   7.0.7600.16385   620.00 KB (634,880
bytes) 7/13/2009 6:19 PM   Microsoft Corporation
c:\windows\system32\msvcrt.dll
sxssrv   6.1.7600.16385   31.00 KB (31,744 bytes)
7/13/2009 6:26 PM   Microsoft Corporation
c:\windows\system32\sxssrv.dll
sxs   6.1.7600.16385   569.50 KB (583,168
bytes) 7/13/2009 6:27 PM   Microsoft Corporation
c:\windows\system32\sxs.dll
rpcrt4   6.1.7600.16385   1.17 MB (1,221,632
bytes) 7/13/2009 6:23 PM   Microsoft Corporation
c:\windows\system32\rpcrt4.dll
cryptbase 6.1.7600.16385   43.00 KB (44,032 bytes)
7/13/2009 6:20 PM   Microsoft Corporation
c:\windows\system32\cryptbase.dll
wininit 6.1.7600.16385   126.00 KB (129,024
bytes) 7/13/2009 6:52 PM   Microsoft Corporation
c:\windows\system32\wininit.exe
sechost 6.1.7600.16385   111.00 KB (113,664
bytes) 7/13/2009 6:20 PM   Microsoft Corporation
c:\windows\system32\sechost.dll
profapi 6.1.7600.16385   43.00 KB (44,032 bytes)
7/13/2009 6:20 PM   Microsoft Corporation
c:\windows\system32\profapi.dll
imm32   6.1.7600.16385   163.50 KB (167,424
bytes) 7/13/2009 6:38 PM   Microsoft Corporation
c:\windows\system32\imm32.dll

msctf   6.1.7600.16385   1.02 MB (1,067,008
bytes) 7/13/2009 6:40 PM   Microsoft Corporation
c:\windows\system32\msctf.dll
rpcrtremote   6.1.7600.16385   63.50 KB
(65,024 bytes)   7/13/2009 6:59 PM   Microsoft
Corporation
c:\windows\system32\rpcrtremote.dll
apphelp 6.1.7600.16385   330.50 KB (338,432
bytes) 7/13/2009 6:21 PM   Microsoft Corporation
c:\windows\system32\apphelp.dll
ws2_32   6.1.7600.16385   289.50 KB (296,448
bytes) 7/13/2009 6:21 PM   Microsoft Corporation
c:\windows\system32\ws2_32.dll
nsi   6.1.7600.16385   13.50 KB (13,824 bytes)
7/13/2009 6:21 PM   Microsoft Corporation
c:\windows\system32\nsi.dll
mswsock 6.1.7600.16385   312.50 KB (320,000
bytes) 7/13/2009 6:21 PM   Microsoft Corporation
c:\windows\system32\mswsock.dll
wshtcpip 6.1.7600.16385   13.00 KB (13,312 bytes)
7/13/2009 6:21 PM   Microsoft Corporation
c:\windows\system32\wshtcpip.dll
wship6   6.1.7600.16385   13.50 KB (13,824 bytes)
7/13/2009 6:21 PM   Microsoft Corporation
c:\windows\system32\wship6.dll
secur32 6.1.7600.16385   27.50 KB (28,160 bytes)
7/13/2009 6:50 PM   Microsoft Corporation
c:\windows\system32\secur32.dll
sspicli 6.1.7600.16385   133.00 KB (136,192
bytes) 7/13/2009 6:20 PM   Microsoft Corporation
c:\windows\system32\sspicli.dll
credssp 6.1.7600.16385   20.00 KB (20,480 bytes)
7/13/2009 6:50 PM   Microsoft Corporation
c:\windows\system32\credssp.dll
advapi32 6.1.7600.16385   856.50 KB (877,056
bytes) 7/13/2009 7:41 PM   Microsoft Corporation
c:\windows\system32\advapi32.dll
services 6.1.7600.16385   321.00 KB (328,704
bytes) 7/13/2009 6:19 PM   Microsoft Corporation
c:\windows\system32\services.exe
scext   6.1.7600.16385   87.00 KB (89,088 bytes)
7/13/2009 6:31 PM   Microsoft Corporation
c:\windows\system32\scext.dll
scesrv   6.1.7600.16385   396.50 KB (406,016
bytes) 7/13/2009 6:49 PM   Microsoft Corporation
c:\windows\system32\scesrv.dll
srvcli   6.1.7600.16385   124.50 KB (127,488
bytes) 7/13/2009 6:53 PM   Microsoft Corporation
c:\windows\system32\srvcli.dll
authz   6.1.7600.16385   173.50 KB (177,664
bytes) 7/13/2009 6:50 PM   Microsoft Corporation
c:\windows\system32\authz.dll
ubpm   6.1.7600.16385   209.00 KB (214,016
bytes) 7/13/2009 6:31 PM   Microsoft Corporation
c:\windows\system32\ubpm.dll
wtsapi32 6.1.7600.16385   53.00 KB (54,272 bytes)
7/13/2009 7:17 PM   Microsoft Corporation
c:\windows\system32\wtsapi32.dll
winsta   6.1.7600.16385   228.00 KB (233,472
bytes) 7/13/2009 7:17 PM   Microsoft Corporation
c:\windows\system32\winsta.dll

lsass   6.1.7600.16385   30.50 KB (31,232 bytes)
7/13/2009 6:20 PM   Microsoft Corporation
c:\windows\system32\lsass.exe
sspisrv 6.1.7600.16385   28.00 KB (28,672 bytes)
7/13/2009 6:20 PM   Microsoft Corporation
c:\windows\system32\sspisrv.dll
lsasrv   6.1.7600.16385   1.38 MB (1,446,912
bytes) 7/13/2009 6:51 PM   Microsoft Corporation
c:\windows\system32\lsasrv.dll
samsrv   6.1.7600.16385   740.00 KB (757,760
bytes) 7/13/2009 6:54 PM   Microsoft Corporation
c:\windows\system32\samsrv.dll
cryptdll 6.1.7600.16385   64.50 KB (66,048 bytes)
7/13/2009 6:49 PM   Microsoft Corporation
c:\windows\system32\cryptdll.dll
msasn1   6.1.7600.16385   43.00 KB (44,032 bytes)
7/13/2009 6:49 PM   Microsoft Corporation
c:\windows\system32\msasn1.dll
wevtapi 6.1.7600.16385   418.00 KB (428,032
bytes) 7/13/2009 6:46 PM   Microsoft Corporation
c:\windows\system32\wevtapi.dll
cngaudit 6.1.7600.16385   18.50 KB (18,944 bytes)
7/13/2009 6:49 PM   Microsoft Corporation
c:\windows\system32\cngaudit.dll
ncrypt   6.1.7600.16385   300.00 KB (307,200
bytes) 7/13/2009 6:49 PM   Microsoft Corporation
c:\windows\system32\ncrypt.dll
bcrypt   6.1.7600.16385   121.00 KB (123,904
bytes) 7/13/2009 6:49 PM   Microsoft Corporation
c:\windows\system32\bcrypt.dll
msprivs 6.1.7600.16385   2.00 KB (2,048 bytes)
7/13/2009 6:50 PM   Microsoft Corporation
c:\windows\system32\msprivs.dll
netjoin 6.1.7600.16385   184.50 KB (188,928
bytes) 7/13/2009 6:53 PM   Microsoft Corporation
c:\windows\system32\netjoin.dll
negoexts 6.1.7600.16385   114.50 KB (117,248
bytes) 7/13/2009 6:50 PM   Microsoft Corporation
c:\windows\system32\negoexts.dll
kerberos 6.1.7600.16385   697.50 KB (714,240
bytes) 7/13/2009 6:51 PM   Microsoft Corporation
c:\windows\system32\kerberos.dll
cryptsp 6.1.7600.16385   78.00 KB (79,872 bytes)
7/13/2009 6:53 PM   Microsoft Corporation
c:\windows\system32\cryptsp.dll
msv1_0   6.1.7600.16385   304.00 KB (311,296
bytes) 7/13/2009 6:50 PM   Microsoft Corporation
c:\windows\system32\msv1_0.dll
netlogon 6.1.7600.16385   676.50 KB (692,736
bytes) 7/13/2009 6:53 PM   Microsoft Corporation
c:\windows\system32\netlogon.dll
dnsapi   6.1.7600.16385   348.00 KB (356,352
bytes) 7/13/2009 6:21 PM   Microsoft Corporation
c:\windows\system32\dnsapi.dll
logoncli 6.1.7600.16385   182.00 KB (186,368
bytes) 7/13/2009 6:53 PM   Microsoft Corporation
c:\windows\system32\logoncli.dll
schannel 6.1.7600.16385   340.50 KB (348,672
bytes) 7/13/2009 6:50 PM   Microsoft Corporation
c:\windows\system32\schannel.dll
crypt32 6.1.7600.16385   1.39 MB (1,454,592
bytes) 7/13/2009 6:50 PM   Microsoft Corporation
c:\windows\system32\crypt32.dll

```
wdigest  6.1.7600.16385    205.50 KB (210,432
bytes)    7/13/2009 6:50 PM   Microsoft Corporation
          c:\windows\system32\wdigest.dll
rsaenh  6.1.7600.16385      274.66 KB (281,256
bytes)    7/13/2009 6:53 PM   Microsoft Corporation
          c:\windows\system32\rsaenh.dll
tspkg  6.1.7600.16385       84.00 KB (86,016 bytes)
          7/13/2009 6:50 PM   Microsoft Corporation
          c:\windows\system32\tspkg.dll
pku2u  6.1.7600.16385       235.00 KB (240,640
bytes)    7/13/2009 6:50 PM   Microsoft Corporation
          c:\windows\system32\pku2u.dll
bcryptprimitives  6.1.7600.16385      291.32 KB
(298,312 bytes)    7/13/2009 6:49 PM   Microsoft
Corporation
          c:\windows\system32\bcryptprimitives.dll

efslsaext 6.1.7600.16385    55.50 KB (56,832 bytes)
          7/13/2009 6:50 PM   Microsoft Corporation
          c:\windows\system32\efslsaext.dll
scecli  6.1.7600.16385      227.00 KB (232,448
bytes)    7/13/2009 6:49 PM   Microsoft Corporation
          c:\windows\system32\scecli.dll
rassfm  6.1.7600.16385      28.50 KB (29,184 bytes)
          7/13/2009 7:10 PM   Microsoft Corporation
          c:\windows\system32\rassfm.dll
iphlpapi  6.1.7600.16385    142.50 KB (145,920
bytes)    7/13/2009 6:21 PM   Microsoft Corporation
          c:\windows\system32\iphlpapi.dll
winnsi  6.1.7600.16385      25.50 KB (26,112 bytes)
          7/13/2009 6:21 PM   Microsoft Corporation
          c:\windows\system32\winnsi.dll
netutils  6.1.7600.16385    28.00 KB (28,672 bytes)
          7/13/2009 6:53 PM   Microsoft Corporation
          c:\windows\system32\netutils.dll
userenv  6.1.7600.16385     104.50 KB (107,008
bytes)    7/13/2009 6:50 PM   Microsoft Corporation
          c:\windows\system32\userenv.dll
samcli  6.1.7600.16385      65.50 KB (67,072 bytes)
          7/13/2009 6:53 PM   Microsoft Corporation
          c:\windows\system32\samcli.dll
samlib  6.1.7600.16385      104.50 KB (107,008
bytes)    7/13/2009 6:53 PM   Microsoft Corporation
          c:\windows\system32\samlib.dll
dssenh  6.1.7600.16385      186.41 KB (190,880
bytes)    7/13/2009 6:53 PM   Microsoft Corporation
          c:\windows\system32\dssenh.dll
gpapi  6.1.7600.16385       94.50 KB (96,768 bytes)
          7/13/2009 6:54 PM   Microsoft Corporation
          c:\windows\system32\gpapi.dll
certpoleng       6.1.7600.16385      70.00 KB
(71,680 bytes)    7/13/2009 6:52 PM   Microsoft
Corporation
          c:\windows\system32\certpoleng.dll
lsm  6.1.7600.16385         325.50 KB (333,312
bytes)    7/13/2009 7:17 PM   Microsoft Corporation
          c:\windows\system32\lsm.exe
sysntfy  6.1.7600.16385     22.50 KB (23,040 bytes)
          7/13/2009 6:52 PM   Microsoft Corporation
          c:\windows\system32\sysntfy.dll
wmsgapi  6.1.7600.16385     14.50 KB (14,848 bytes)
          7/13/2009 6:52 PM   Microsoft Corporation
          c:\windows\system32\wmsgapi.dll

pcwum  6.1.7600.16385       36.00 KB (36,864 bytes)
          7/13/2009 6:19 PM   Microsoft Corporation
          c:\windows\system32\pcwum.dll
ole32  6.1.7600.16385       1.99 MB (2,084,352
bytes)    7/13/2009 7:02 PM   Microsoft Corporation
          c:\windows\system32\ole32.dll
ntmarta  6.1.7600.16385     158.50 KB (162,304
bytes)    7/13/2009 6:50 PM   Microsoft Corporation
          c:\windows\system32\ntmarta.dll
wldap32  6.1.7600.16385     304.50 KB (311,808
bytes)    7/13/2009 6:54 PM   Microsoft Corporation
          c:\windows\system32\wldap32.dll
clbcatq  2001.12.8530.16385 593.50 KB (607,744
bytes)    7/13/2009 7:00 PM   Microsoft Corporation
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oleaut32  6.1.7600.16385    841.00 KB (861,184
bytes)    7/13/2009 6:59 PM   Microsoft Corporation
          c:\windows\system32\oleaut32.dll
lsmproxy  6.1.7600.16385    47.50 KB (48,640 bytes)
          7/13/2009 7:17 PM   Microsoft Corporation
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winlogon  6.1.7600.16385    380.00 KB (389,120
bytes)    7/13/2009 6:52 PM   Microsoft Corporation
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uxinit  6.1.7600.16385      24.50 KB (25,088 bytes)
          7/13/2009 6:54 PM   Microsoft Corporation
          c:\windows\system32\uxinit.dll
slc  6.1.7600.16385         30.00 KB (30,720 bytes)
          7/13/2009 6:51 PM   Microsoft Corporation
          c:\windows\system32\slc.dll
mpr  6.1.7600.16385         79.00 KB (80,896 bytes)
          7/13/2009 7:10 PM   Microsoft Corporation
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svchost  6.1.7600.16385     26.50 KB (27,136 bytes)
          7/13/2009 6:31 PM   Microsoft Corporation
          c:\windows\system32\svchost.exe
umpnpmgr  6.1.7600.16385    395.00 KB (404,480
bytes)    7/13/2009 6:27 PM   Microsoft Corporation
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spinf  6.1.7600.16385       103.00 KB (105,472
bytes)    7/13/2009 6:26 PM   Microsoft Corporation
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devrtl  6.1.7600.16385      57.00 KB (58,368 bytes)
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umpo  6.1.7600.16385        160.00 KB (163,840
bytes)    7/13/2009 6:27 PM   Microsoft Corporation
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setupapi  6.1.7600.16385    1.81 MB (1,899,520
bytes)    7/13/2009 6:27 PM   Microsoft Corporation
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cfgmgr32  6.1.7600.16385    202.50 KB (207,360
bytes)    7/13/2009 6:26 PM   Microsoft Corporation
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devobj  6.1.7600.16385      91.00 KB (93,184 bytes)
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rpcss  6.1.7600.16385       497.50 KB (509,440
bytes)    7/13/2009 7:00 PM   Microsoft Corporation
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wmidcprv  6.1.7600.16385    187.00 KB (191,488
bytes)    7/13/2009 6:47 PM   Microsoft Corporation
          c:\windows\system32\wbem\wmidcprv.dll

fastprox  6.1.7600.16385    888.00 KB (909,312
bytes)    7/13/2009 6:47 PM   Microsoft Corporation
          c:\windows\system32\wbem\fastprox.dll
wbemcomn  6.1.7600.16385    517.50 KB (529,920
bytes)    7/13/2009 6:47 PM   Microsoft Corporation
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ntdsapi  6.1.7600.16385     148.50 KB (152,064
bytes)    7/13/2009 6:54 PM   Microsoft Corporation
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wbemprox  6.1.7600.16385    42.50 KB (43,520 bytes)
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wbemsvc  6.1.7600.16385     63.00 KB (64,512 bytes)
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          c:\windows\system32\wbem\wbemsvc.dll
wmiutils  6.1.7600.16385    134.00 KB (137,216
bytes)    7/13/2009 6:47 PM   Microsoft Corporation
          c:\windows\system32\wbem\wmiutils.dll
wintrust  6.1.7600.16385    215.00 KB (220,160
bytes)    7/13/2009 6:49 PM   Microsoft Corporation
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rpcepmap  6.1.7600.16385    65.50 KB (67,072 bytes)
          7/13/2009 6:21 PM   Microsoft Corporation
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firewallapi       6.1.7600.16385      730.50 KB
(748,032 bytes)    7/13/2009 7:08 PM   Microsoft
Corporation
          c:\windows\system32\firewallapi.dll
version  6.1.7600.16385     28.50 KB (29,184 bytes)
          7/13/2009 6:57 PM   Microsoft Corporation
          c:\windows\system32\version.dll
fwpuclnt  6.1.7600.16385    316.50 KB (324,096
bytes)    7/13/2009 7:09 PM   Microsoft Corporation
          c:\windows\system32\fwpuclnt.dll
wevtsvc  6.1.7600.16385     1.57 MB (1,646,080
bytes)    7/13/2009 6:49 PM   Microsoft Corporation
          c:\windows\system32\wevtsvc.dll
lmhsvc  6.1.7600.16385      23.00 KB (23,552 bytes)
          7/13/2009 7:09 PM   Microsoft Corporation
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nrpsrv  6.1.7600.16385      14.50 KB (14,848 bytes)
          7/13/2009 7:09 PM   Microsoft Corporation
          c:\windows\system32\nrpsrv.dll
dhcpcore  6.1.7600.16385    307.00 KB (314,368
bytes)    7/13/2009 6:21 PM   Microsoft Corporation
          c:\windows\system32\dhcpcore.dll
dhcpcore6  6.1.7600.16385   219.00 KB (224,256
bytes)    7/13/2009 6:21 PM   Microsoft Corporation
          c:\windows\system32\dhcpcore6.dll
gpsvc  6.1.7600.16385       758.00 KB (776,192
bytes)    7/13/2009 6:54 PM   Microsoft Corporation
          c:\windows\system32\gpsvc.dll
nlaapi  6.1.7600.16385      68.50 KB (70,144 bytes)
          7/13/2009 7:09 PM   Microsoft Corporation
          c:\windows\system32\nlaapi.dll
profsvc  6.1.7600.16385     203.50 KB (208,384
bytes)    7/13/2009 6:50 PM   Microsoft Corporation
          c:\windows\system32\profsvc.dll
shlwapi  6.1.7600.16385     439.00 KB (449,536
bytes)    7/13/2009 6:55 PM   Microsoft Corporation
          c:\windows\system32\shlwapi.dll
```

Name	Version	Size	Date	Vendor	Path
atl	3.5.2284.0	88.50 KB (90,624 bytes)	7/13/2009 7:34 PM	Microsoft Corporation	c:\windows\system32\atl.dll
dsrole	6.1.7600.16385	32.00 KB (32,768 bytes)	7/13/2009 6:50 PM	Microsoft Corporation	c:\windows\system32\dsrole.dll
sens	6.1.7600.16385	63.00 KB (64,512 bytes)	7/13/2009 6:34 PM	Microsoft Corporation	c:\windows\system32\sens.dll
shsvcs	6.1.7600.16385	361.00 KB (369,664 bytes)	7/13/2009 6:55 PM	Microsoft Corporation	c:\windows\system32\shsvcs.dll
schedsvc	6.1.7600.16385	1.05 MB (1,104,384 bytes)	7/13/2009 6:47 PM	Microsoft Corporation	c:\windows\system32\schedsvc.dll
shell32	6.1.7600.16385	13.51 MB (14,161,920 bytes)	7/13/2009 7:04 PM	Microsoft Corporation	c:\windows\system32\shell32.dll
netapi32	6.1.7600.16385	71.00 KB (72,704 bytes)	7/13/2009 6:53 PM	Microsoft Corporation	c:\windows\system32\netapi32.dll
wkscli	6.1.7600.16385	70.00 KB (71,680 bytes)	7/13/2009 6:53 PM	Microsoft Corporation	c:\windows\system32\wkscli.dll
ktmw32	6.1.7600.16385	22.50 KB (23,040 bytes)	7/13/2009 6:19 PM	Microsoft Corporation	c:\windows\system32\ktmw32.dll
xmllite	1.3.1000.0	195.00 KB (199,680 bytes)	7/13/2009 7:41 PM	Microsoft Corporation	c:\windows\system32\xmllite.dll
taskcomp	6.1.7600.16385	462.50 KB (473,600 bytes)	7/13/2009 6:47 PM	Microsoft Corporation	c:\windows\system32\taskcomp.dll
comctl32	6.10.7600.16385	1.94 MB (2,030,080 bytes)	7/13/2009 6:56 PM	Microsoft Corporation	c:\windows\winsxs\amd64_microsoft.windows.common-controls_6595b64144ccf1df_6.0.7600.16385_none_fa6453170382f6\comctl32.dll
propsys	7.0.7600.16385	1.16 MB (1,212,416 bytes)	7/13/2009 6:56 PM	Microsoft Corporation	c:\windows\system32\propsys.dll
ikeext	6.1.7600.16385	826.00 KB (845,824 bytes)	7/13/2009 7:10 PM	Microsoft Corporation	c:\windows\system32\ikeext.dll
dhcpcsvc6	6.1.7600.16385	53.00 KB (54,272 bytes)	7/13/2009 6:21 PM	Microsoft Corporation	c:\windows\system32\dhcpcsvc6.dll
dhcpcsvc	6.1.7600.16385	85.00 KB (87,040 bytes)	7/13/2009 6:21 PM	Microsoft Corporation	c:\windows\system32\dhcpcsvc.dll
wmisvc	6.1.7600.16385	237.00 KB (242,688 bytes)	7/13/2009 6:47 PM	Microsoft Corporation	c:\windows\wbem\wmisvc.dll
srvsvc	6.1.7600.16385	230.00 KB (235,520 bytes)	7/13/2009 6:53 PM	Microsoft Corporation	c:\windows\system32\srvsvc.dll
browser	6.1.7600.16385	133.00 KB (136,192 bytes)	7/13/2009 6:53 PM	Microsoft Corporation	c:\windows\system32\browser.dll
iphlpsvc	6.1.7600.16385	552.50 KB (565,760 bytes)	7/13/2009 7:09 PM	Microsoft Corporation	c:\windows\system32\iphlpsvc.dll
rtutils	6.1.7600.16385	50.50 KB (51,712 bytes)	7/13/2009 7:09 PM	Microsoft Corporation	c:\windows\system32\rtutils.dll
sqmapi	6.1.7600.16385	229.50 KB (235,008 bytes)	7/13/2009 6:40 PM	Microsoft Corporation	c:\windows\system32\sqmapi.dll
wdscore	6.1.7600.16385	265.00 KB (271,360 bytes)	7/13/2009 6:28 PM	Microsoft Corporation	c:\windows\system32\wdscore.dll
sscore	6.1.7600.16385	13.00 KB (13,312 bytes)	7/13/2009 6:53 PM	Microsoft Corporation	c:\windows\system32\sscore.dll
clusapi	6.1.7600.16385	307.00 KB (314,368 bytes)	7/13/2009 6:34 PM	Microsoft Corporation	c:\windows\system32\clusapi.dll
resutils	6.1.7600.16385	84.00 KB (86,016 bytes)	7/13/2009 6:34 PM	Microsoft Corporation	c:\windows\system32\resutils.dll
vssapi	6.1.7600.16385	1.66 MB (1,745,408 bytes)	7/13/2009 6:38 PM	Microsoft Corporation	c:\windows\system32\vssapi.dll
vsstrace	6.1.7600.16385	75.00 KB (76,800 bytes)	7/13/2009 6:36 PM	Microsoft Corporation	c:\windows\system32\vsstrace.dll
netprofm	6.1.7600.16385	449.00 KB (459,776 bytes)	7/13/2009 7:12 PM	Microsoft Corporation	c:\windows\system32\netprofm.dll
nci	6.1.7600.16385	87.50 KB (89,600 bytes)	7/13/2009 7:09 PM	Microsoft Corporation	c:\windows\system32\nci.dll
wbemcore	6.1.7600.16385	1.16 MB (1,220,096 bytes)	7/13/2009 6:48 PM	Microsoft Corporation	c:\windows\system32\wbem\wbemcore.dll
esscli	6.1.7600.16385	430.00 KB (440,320 bytes)	7/13/2009 6:47 PM	Microsoft Corporation	c:\windows\system32\wbem\esscli.dll
rasadhlp	6.1.7600.16385	16.00 KB (16,384 bytes)	7/13/2009 7:10 PM	Microsoft Corporation	c:\windows\system32\rasadhlp.dll
repdrvfs	6.1.7600.16385	441.00 KB (451,584 bytes)	7/13/2009 6:47 PM	Microsoft Corporation	c:\windows\system32\wbem\repdrvfs.dll
wmiprvsd	6.1.7600.16385	732.50 KB (750,080 bytes)	7/13/2009 6:48 PM	Microsoft Corporation	c:\windows\system32\wbem\wmiprvsd.dll
ncobjapi	6.1.7600.16385	67.50 KB (69,120 bytes)	7/13/2009 6:47 PM	Microsoft Corporation	c:\windows\system32\ncobjapi.dll
wbemess	6.1.7600.16385	494.00 KB (505,856 bytes)	7/13/2009 6:47 PM	Microsoft Corporation	c:\windows\system32\wbem\wbemess.dll
npmproxy	6.1.7600.16385	31.00 KB (31,744 bytes)	7/13/2009 7:12 PM	Microsoft Corporation	c:\windows\system32\npmproxy.dll
certprop	6.1.7600.16385	78.50 KB (80,384 bytes)	7/13/2009 6:50 PM	Microsoft Corporation	c:\windows\system32\certprop.dll
winscard	6.1.7600.16385	212.50 KB (217,600 bytes)	7/13/2009 6:50 PM	Microsoft Corporation	c:\windows\system32\winscard.dll
sessenv	6.1.7600.16385	102.50 KB (104,960 bytes)	7/13/2009 7:17 PM	Microsoft Corporation	c:\windows\system32\sessenv.dll
ncprov	6.1.7600.16385	76.50 KB (78,336 bytes)	7/13/2009 6:47 PM	Microsoft Corporation	c:\windows\wbem\ncprov.dll
wuaueng	7.3.7600.16385	2.31 MB (2,418,176 bytes)	7/13/2009 7:36 PM	Microsoft Corporation	c:\windows\system32\wuaueng.dll
esent	6.1.7600.16385	2.45 MB (2,565,120 bytes)	7/13/2009 6:50 PM	Microsoft Corporation	c:\windows\system32\esent.dll
winspool	6.1.7600.16385	431.50 KB (441,856 bytes)	7/13/2009 7:39 PM	Microsoft Corporation	c:\windows\system32\winspool.drv
winhttp	6.1.7600.16385	428.50 KB (438,784 bytes)	7/13/2009 7:11 PM	Microsoft Corporation	c:\windows\system32\winhttp.dll
webio	6.1.7600.16385	385.50 KB (394,752 bytes)	7/13/2009 7:11 PM	Microsoft Corporation	c:\windows\system32\webio.dll
cabinet	6.1.7600.16385	92.00 KB (94,208 bytes)	7/13/2009 6:21 PM	Microsoft Corporation	c:\windows\system32\cabinet.dll
mspatcha	6.1.7600.16385	45.50 KB (46,592 bytes)	7/13/2009 6:21 PM	Microsoft Corporation	c:\windows\system32\mspatcha.dll
psapi	6.1.7600.16385	9.00 KB (9,216 bytes)	7/13/2009 6:26 PM	Microsoft Corporation	c:\windows\system32\psapi.dll
wer	6.1.7600.16385	473.00 KB (484,352 bytes)	7/13/2009 6:41 PM	Microsoft Corporation	c:\windows\system32\wer.dll
aelupsvc	6.1.7600.16385	70.50 KB (72,192 bytes)	7/13/2009 6:21 PM	Microsoft Corporation	c:\windows\system32\aelupsvc.dll
es	2001.12.8530.16385	393.50 KB (402,944 bytes)	7/13/2009 7:00 PM	Microsoft Corporation	c:\windows\system32\es.dll
nsisvc	6.1.7600.16385	25.00 KB (25,600 bytes)	7/13/2009 6:21 PM	Microsoft Corporation	c:\windows\system32\nsisvc.dll
uxsms	6.1.7600.16385	38.00 KB (38,912 bytes)	7/13/2009 6:37 PM	Microsoft Corporation	c:\windows\system32\uxsms.dll
trkwks	6.1.7600.16385	117.00 KB (119,808 bytes)	7/13/2009 6:59 PM	Microsoft Corporation	c:\windows\system32\trkwks.dll
umrdp	6.1.7600.16385	190.50 KB (195,072 bytes)	7/13/2009 7:18 PM	Microsoft Corporation	c:\windows\system32\umrdp.dll
umb	6.1.7600.16385	58.50 KB (59,904 bytes)	7/13/2009 6:35 PM	Microsoft Corporation	c:\windows\system32\umb.dll
netman	6.1.7600.16385	352.00 KB (360,448 bytes)	7/13/2009 7:08 PM	Microsoft Corporation	c:\windows\system32\netman.dll
netshell	6.1.7600.16385	2.53 MB (2,651,136 bytes)	7/13/2009 7:09 PM	Microsoft Corporation	c:\windows\system32\netshell.dll
rasdlg	6.1.7600.16385	840.50 KB (860,672 bytes)	7/13/2009 7:10 PM	Microsoft Corporation	c:\windows\system32\rasdlg.dll
mprapi	6.1.7600.16385	215.50 KB (220,672 bytes)	7/13/2009 7:10 PM	Microsoft Corporation	c:\windows\system32\mprapi.dll

rasapi32 6.1.7600.16385 375.50 KB (384,512 bytes) 7/13/2009 7:10 PM Microsoft Corporation c:\windows\system32\rasapi32.dll
rasman 6.1.7600.16385 98.00 KB (100,352 bytes) 7/13/2009 7:10 PM Microsoft Corporation c:\windows\system32\rasman.dll
netcfgx 6.1.7600.16385 505.00 KB (517,120 bytes) 7/13/2009 7:08 PM Microsoft Corporation c:\windows\system32\netcfgx.dll
hnetcfg 6.1.7600.16385 414.50 KB (424,448 bytes) 7/13/2009 7:08 PM Microsoft Corporation c:\windows\system32\hnetcfg.dll
dnsrslvr 6.1.7600.16385 178.00 KB (182,272 bytes) 7/13/2009 6:21 PM Microsoft Corporation c:\windows\system32\dnsrslvr.dll
dnsext 6.1.7600.16385 8.00 KB (8,192 bytes) 7/13/2009 7:12 PM Microsoft Corporation c:\windows\system32\dnsext.dll
wkssvc 6.1.7600.16385 116.00 KB (118,784 bytes) 7/13/2009 6:53 PM Microsoft Corporation c:\windows\system32\wkssvc.dll
cryptsvc 6.1.7600.16385 171.00 KB (175,104 bytes) 7/13/2009 6:49 PM Microsoft Corporation c:\windows\system32\cryptsvc.dll
nlasvc 6.1.7600.16385 295.00 KB (302,080 bytes) 7/13/2009 7:09 PM Microsoft Corporation c:\windows\system32\nlasvc.dll
ncsi 6.1.7600.16385 204.50 KB (209,408 bytes) 7/13/2009 7:08 PM Microsoft Corporation c:\windows\system32\ncsi.dll
ssdpapi 6.1.7600.16385 50.00 KB (51,200 bytes) 7/13/2009 7:10 PM Microsoft Corporation c:\windows\system32\ssdpapi.dll
wsmsvc 6.1.7600.16385 1.93 MB (2,018,816 bytes) 7/13/2009 6:49 PM Microsoft Corporation c:\windows\system32\wsmsvc.dll
httpapi 6.1.7600.16385 44.00 KB (45,056 bytes) 7/13/2009 6:21 PM Microsoft Corporation c:\windows\system32\httpapi.dll
wevtfwd 6.1.7600.16385 114.00 KB (116,736 bytes) 7/13/2009 6:46 PM Microsoft Corporation c:\windows\system32\wevtfwd.dll
bfe 6.1.7600.16385 687.00 KB (703,488 bytes) 7/13/2009 7:09 PM Microsoft Corporation c:\windows\system32\bfe.dll
mpssvc 6.1.7600.16385 805.50 KB (824,832 bytes) 7/13/2009 7:09 PM Microsoft Corporation c:\windows\system32\mpssvc.dll
wfapigp 6.1.7600.16385 22.00 KB (22,528 bytes) 7/13/2009 7:08 PM Microsoft Corporation c:\windows\system32\wfapigp.dll
dps 6.1.7600.16385 159.00 KB (162,816 bytes) 7/13/2009 6:31 PM Microsoft Corporation c:\windows\system32\dps.dll
taskschd 6.1.7600.16385 1.11 MB (1,168,896 bytes) 7/13/2009 6:47 PM Microsoft Corporation c:\windows\system32\taskschd.dll
wdi 6.1.7600.16385 88.50 KB (90,624 bytes) 7/13/2009 6:31 PM Microsoft Corporation c:\windows\system32\wdi.dll
radardt 6.1.7600.16385 95.50 KB (97,792 bytes) 7/13/2009 6:32 PM Microsoft Corporation c:\windows\system32\radardt.dll

wdiasqmmodule 6.1.7600.16385 35.00 KB (35,840 bytes) 7/13/2009 6:40 PM Microsoft Corporation c:\windows\system32\wdiasqmmodule.dll
spoolsv 6.1.7600.16385 545.00 KB (558,080 bytes) 7/13/2009 7:39 PM Microsoft Corporation c:\windows\system32\spoolsv.exe
powrprof 6.1.7600.16385 163.50 KB (167,424 bytes) 7/13/2009 6:27 PM Microsoft Corporation c:\windows\system32\powrprof.dll
localspl 6.1.7600.16385 932.50 KB (954,880 bytes) 7/13/2009 7:40 PM Microsoft Corporation c:\windows\system32\localspl.dll
spoolss 6.1.7600.16385 56.50 KB (57,856 bytes) 7/13/2009 7:39 PM Microsoft Corporation c:\windows\system32\spoolss.dll
printisolationproxy 6.1.7600.16385 47.00 KB (48,128 bytes) 7/13/2009 7:39 PM Microsoft Corporation c:\windows\system32\printisolationproxy.dll
tcpmon 6.1.7600.16385 190.50 KB (195,072 bytes) 7/13/2009 7:39 PM Microsoft Corporation c:\windows\system32\tcpmon.dll
snmpapi 6.1.7600.16385 27.00 KB (27,648 bytes) 7/13/2009 7:10 PM Microsoft Corporation c:\windows\system32\snmpapi.dll
wsnmp32 6.1.7600.16385 65.50 KB (67,072 bytes) 7/13/2009 7:10 PM Microsoft Corporation c:\windows\system32\wsnmp32.dll
msxml6 6.30.7600.16385 1.91 MB (1,999,360 bytes) 7/13/2009 7:43 PM Microsoft Corporation c:\windows\system32\msxml6.dll
usbmon 6.1.7600.16385 44.00 KB (45,056 bytes) 7/13/2009 7:39 PM Microsoft Corporation c:\windows\system32\usbmon.dll
wls0wndh 6.1.7600.16385 10.50 KB (10,752 bytes) 7/13/2009 6:52 PM Microsoft Corporation c:\windows\system32\wls0wndh.dll
wsdmon 6.1.7600.16385 219.50 KB (224,768 bytes) 7/13/2009 7:39 PM Microsoft Corporation c:\windows\system32\wsdmon.dll
wsdapi 6.1.7600.16385 571.50 KB (585,216 bytes) 7/13/2009 6:36 PM Microsoft Corporation c:\windows\system32\wsdapi.dll
webservices 6.1.7600.16385 1.11 MB (1,159,168 bytes) 7/13/2009 7:01 PM Microsoft Corporation c:\windows\system32\webservices.dll
fundisc 6.1.7600.16385 190.00 KB (194,560 bytes) 7/13/2009 6:35 PM Microsoft Corporation c:\windows\system32\fundisc.dll
fdpnp 6.1.7600.16385 50.00 KB (51,200 bytes) 7/13/2009 6:35 PM Microsoft Corporation c:\windows\system32\fdpnp.dll
winprint 6.1.7600.16385 38.50 KB (39,424 bytes) 7/13/2009 7:39 PM Microsoft Corporation c:\windows\system32\spool\prtprocs\x64\winprint.dll
win32spl 6.1.7600.16385 728.50 KB (745,984 bytes) 7/13/2009 7:40 PM Microsoft Corporation c:\windows\system32\win32spl.dll

cscapi 6.1.7600.16385 45.00 KB (46,080 bytes) 7/13/2009 6:24 PM Microsoft Corporation c:\windows\system32\cscapi.dll
apphostsvc 7.5.7600.16385 64.00 KB (65,536 bytes) 7/13/2009 7:27 PM Microsoft Corporation c:\windows\system32\inetsrv\apphostsvc.dll
iisutil 7.5.7600.16385 274.50 KB (281,088 bytes) 7/13/2009 7:27 PM Microsoft Corporation c:\windows\system32\inetsrv\iisutil.dll
nativerd 7.5.7600.16385 458.50 KB (469,504 bytes) 7/13/2009 7:27 PM Microsoft Corporation c:\windows\system32\inetsrv\nativerd.dll
iisres 7.5.7600.16385 215.00 KB (220,160 bytes) 7/13/2009 7:26 PM Microsoft Corporation c:\windows\system32\inetsrv\iisres.dll
mlang 6.1.7600.16385 221.50 KB (226,816 bytes) 7/13/2009 6:55 PM Microsoft Corporation c:\windows\system32\mlang.dll
smsvchost 3.0.4506.4926 113.83 KB (116,560 bytes) 7/13/2009 8:01 PM Microsoft Corporation c:\windows\microsoft.net\framework64\v3.0\windows communication foundation\smsvchost.exe
mscoree 2.0.50727.4927 393.81 KB (403,264 bytes) 7/13/2009 3:37 PM Microsoft Corporation c:\windows\system32\mscoree.dll
mscorwks 2.0.50727.4927 9.59 MB (10,059,072 bytes) 7/13/2009 3:37 PM Microsoft Corporation c:\windows\microsoft.net\framework64\v2.0.50727\mscorwks.dll
msvcr80 8.0.50727.4927 783.81 KB (802,624 bytes) 7/13/2009 3:37 PM Microsoft Corporation c:\windows\winsxs\amd64_microsoft.vc80.crt_1fc8b3b9a1e18e3b_8.0.50727.4927_none_88dce9872fb18caf\msvcr80.dll
mscorlib.ni 2.0.50727.4927 14.85 MB (15,566,848 bytes) 7/14/2009 12:08 AM Microsoft Corporation c:\windows\assembly\nativeimages_v2.0.50727_64\mscorlib\9a017aa8d51322f18a40f414fa35872d\mscorlib.ni.dll
mscorjit 2.0.50727.4927 1.50 MB (1,576,768 bytes) 7/13/2009 3:37 PM Microsoft Corporation c:\windows\microsoft.net\framework64\v2.0.50727\mscorjit.dll
System.ni 2.0.50727.4927 10.11 MB (10,597,376 bytes) 7/14/2009 12:08 AM Microsoft Corporation c:\windows\assembly\nativeimages_v2.0.50727_64\system\247913fa7ae6fcf04ea33d28d24ab611\system.ni.dll
System.ServiceProcess.ni 2.0.50727.4927 288.50 KB (295,424 bytes) 7/14/2009 12:10 AM Microsoft Corporation c:\windows\assembly\nativeimages_v2.0.50727_64\system.serviceproce#\cdbb9ec9236094dc4ee8550f11026618\system.serviceprocess.ni.dll
System.ServiceModel.ni 3.0.4506.4926 22.71 MB (23,812,096 bytes) 2/26/2010 3:23 PM Microsoft Corporation c:\windows\assembly\nativeimages_v2.0.50727

_64\system.servicemodel\0270a4b611f4102a46c03a3703a19
871\system.servicemodel.ni.dll
SMDiagnostics.ni   3.0.4506.4926   341.00 KB
(349,184 bytes)   2/26/2010 3:21 PM   Microsoft
Corporation
        c:\windows\assembly\nativeimages_v2.0.50727
_64\smdiagnostics\9582e0909da23bef64014e4eacd0c8d8\sm
diagnostics.ni.dll
System.Configuration.ni   2.0.50727.4927
    1.25 MB (1,308,160 bytes)   7/14/2009
12:08 AM Microsoft Corporation
        c:\windows\assembly\nativeimages_v2.0.50727
_64\system.configuration\907b2b3dae591e0484acfc0ea63e
8caa\system.configuration.ni.dll
System.Xml.ni   2.0.50727.4927   6.63 MB
(6,948,864 bytes) 7/14/2009 12:09 AM Microsoft
Corporation
        c:\windows\assembly\nativeimages_v2.0.50727
_64\system.xml\1fb1b14199d6aec70df1a0626a3ae5f2\syste
m.xml.ni.dll
System.IdentityModel.ni   3.0.4506.4926
    1.37 MB (1,433,088 bytes)   2/26/2010
3:23 PM Microsoft Corporation
        c:\windows\assembly\nativeimages_v2.0.50727
_64\system.identitymodel\4720ef897a36c2ce494b6c3d07fc
e065\system.identitymodel.ni.dll
wbhstipm   7.5.7600.16385   28.00 KB (28,672 bytes)
    7/13/2009 7:26 PM Microsoft Corporation
        c:\windows\system32\inetsrv\wbhstipm.dll

System.Runtime.Serialization.ni   3.0.4506.4926
    2.93 MB (3,073,536 bytes)   2/26/2010
3:21 PM Microsoft Corporation
        c:\windows\assembly\nativeimages_v2.0.50727
_64\system.runtime.seri#\12aaff696a0c54773664b4c5407d
eaa2\system.runtime.serialization.ni.dll
taskhost   6.1.7600.16385   67.50 KB (69,120 bytes)
    7/13/2009 6:31 PM Microsoft Corporation
        c:\windows\system32\taskhost.exe
msctfmonitor   6.1.7600.16385   27.50 KB
(28,160 bytes)   7/13/2009 6:39 PM   Microsoft
Corporation
        c:\windows\system32\msctfmonitor.dll
msutb   6.1.7600.16385   230.00 KB
bytes)   7/13/2009 6:39 PM Microsoft Corporation
        c:\windows\system32\msutb.dll
dimsjob   6.1.7600.16385   39.50 KB (40,448 bytes)
    7/13/2009 6:53 PM Microsoft Corporation
        c:\windows\system32\dimsjob.dll
dwm   6.1.7600.16385   117.50 KB (120,320
bytes)   7/13/2009 6:37 PM Microsoft Corporation
        c:\windows\system32\dwm.exe
uxtheme   6.1.7600.16385   324.50 KB (332,288
bytes)   7/13/2009 6:55 PM Microsoft Corporation
        c:\windows\system32\uxtheme.dll
dwmredir   6.1.7600.16385   125.50 KB (128,512
bytes)   7/13/2009 6:37 PM Microsoft Corporation
        c:\windows\system32\dwmredir.dll
dwmcore   6.1.7600.16385   1.56 MB (1,634,304
bytes)   7/13/2009 6:39 PM Microsoft Corporation
        c:\windows\system32\dwmcore.dll
windowscodecs   6.1.7600.16385   1.13 MB
(1,189,888 bytes) 7/13/2009 6:42 PM   Microsoft

Corporation
        c:\windows\system32\windowscodecs.dll
d3d10_1   6.1.7600.16385   192.50 KB (197,120
bytes)   7/13/2009 6:41 PM Microsoft Corporation
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d3d10_1core   6.1.7600.16385   311.50 KB
(318,976 bytes)   7/13/2009 6:41 PM   Microsoft
Corporation
        c:\windows\system32\d3d10_1core.dll
dxgi   6.1.7600.16385   643.00 KB (658,432
bytes)   7/13/2009 6:41 PM Microsoft Corporation
        c:\windows\system32\dxgi.dll
dwmapi   6.1.7600.16385   80.50 KB (82,432 bytes)
    7/13/2009 6:37 PM Microsoft Corporation
        c:\windows\system32\dwmapi.dll
explorer   6.1.7600.16385   2.74 MB (2,868,224
bytes)   7/13/2009 6:56 PM Microsoft Corporation
        c:\windows\explorer.exe
explorerframe   6.1.7600.16385   1.78 MB
(1,863,680 bytes) 7/13/2009 6:57 PM   Microsoft
Corporation
        c:\windows\system32\explorerframe.dll
duser   6.1.7600.16385   254.50 KB (260,608
bytes)   7/13/2009 6:39 PM Microsoft Corporation
        c:\windows\system32\duser.dll
dui70   6.1.7600.16385   954.00 KB (976,896
bytes)   7/13/2009 6:41 PM Microsoft Corporation
        c:\windows\system32\dui70.dll
gdiplus   6.1.7600.16385   2.06 MB (2,165,248
bytes)   7/13/2009 6:40 PM Microsoft Corporation
        c:\windows\winsxs\amd64_microsoft.windows.g
diplus_6595b64144ccf1df_1.1.7600.16385_none_2b4f45e87
195fcc4\gdiplus.dll
ehstorshell   6.1.7600.16385   198.50 KB
(203,264 bytes)   7/13/2009 7:00 PM   Microsoft
Corporation
        c:\windows\system32\ehstorshell.dll
ntshrui   6.1.7600.16385   498.00 KB (509,952
bytes)   7/13/2009 6:57 PM Microsoft Corporation
        c:\windows\system32\ntshrui.dll
iconcodecservice   6.1.7600.16385   14.00 KB
(14,336 bytes)   7/13/2009 6:37 PM   Microsoft
Corporation
        c:\windows\system32\iconcodecservice.dll

sndvolsso   6.1.7600.16385   220.00 KB (225,280
bytes)   7/13/2009 7:19 PM Microsoft Corporation
        c:\windows\system32\sndvolsso.dll
hid   6.1.7600.16385   29.50 KB (30,208 bytes)
    7/13/2009 7:06 PM Microsoft Corporation
        c:\windows\system32\hid.dll
mmdevapi   6.1.7600.16385   277.50 KB (284,160
bytes)   7/13/2009 7:18 PM Microsoft Corporation
        c:\windows\system32\mmdevapi.dll
timedate   6.1.7600.16385   503.00 KB (515,072
bytes)   7/13/2009 6:56 PM Microsoft Corporation
        c:\windows\system32\timedate.cpl
winbrand   6.1.7600.16385   16.00 KB (16,384 bytes)
    7/13/2009 6:30 PM Microsoft Corporation
        c:\windows\system32\winbrand.dll
actxprxy   6.1.7600.16385   936.50 KB (958,976
bytes)   7/13/2009 7:41 PM Microsoft Corporation
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shdocvw   6.1.7600.16385   191.50 KB (196,096
bytes)   7/13/2009 6:55 PM Microsoft Corporation
        c:\windows\system32\shdocvw.dll
shacct   6.1.7600.16385   132.00 KB (135,168
bytes)   7/13/2009 6:55 PM Microsoft Corporation
        c:\windows\system32\shacct.dll
linkinfo   6.1.7600.16385   29.00 KB (29,696 bytes)
    7/13/2009 6:55 PM Microsoft Corporation
        c:\windows\system32\linkinfo.dll
msls31   3.10.349.0   217.00 KB (222,208
bytes)   7/13/2009 6:39 PM Microsoft Corporation
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authui   6.1.7600.16385   1.84 MB (1,926,144
bytes)   7/13/2009 6:58 PM Microsoft Corporation
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cryptui   6.1.7600.16385   1.02 MB (1,065,984
bytes)   7/13/2009 6:49 PM Microsoft Corporation
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winmm   6.1.7600.16385   212.50 KB (217,600
bytes)   7/13/2009 7:18 PM Microsoft Corporation
        c:\windows\system32\winmm.dll
msftedit   5.41.21.2509   781.00 KB (799,744
bytes)   7/13/2009 6:39 PM Microsoft Corporation
        c:\windows\system32\msftedit.dll
stobject   6.1.7600.16385   250.00 KB (256,000
bytes)   7/13/2009 6:56 PM Microsoft Corporation
        c:\windows\system32\stobject.dll
batmeter   6.1.7600.16385   730.50 KB (748,032
bytes)   7/13/2009 6:56 PM Microsoft Corporation
        c:\windows\system32\batmeter.dll
prnfldr   6.1.7600.16385   407.00 KB (416,768
bytes)   7/13/2009 7:40 PM Microsoft Corporation
        c:\windows\system32\prnfldr.dll
dxp   6.1.7600.16385   449.00 KB (459,776
bytes)   7/13/2009 7:21 PM Microsoft Corporation
        c:\windows\system32\dxp.dll
urlmon   8.0.7600.16385   1.42 MB (1,492,480
bytes)   7/13/2009 7:01 PM Microsoft Corporation
        c:\windows\system32\urlmon.dll
iertutil   8.0.7600.16385   2.33 MB (2,440,704
bytes)   7/13/2009 6:59 PM Microsoft Corporation
        c:\windows\system32\iertutil.dll
syncreg   2007.94.7600.16385 72.00 KB (73,728 bytes)
    7/13/2009 7:22 PM Microsoft Corporation
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pnidui   6.1.7600.16385   1.72 MB (1,807,872
bytes)   7/13/2009 7:08 PM Microsoft Corporation
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qutil   6.1.7600.16385   105.00 KB (107,520
bytes)   7/13/2009 7:07 PM Microsoft Corporation
        c:\windows\system32\qutil.dll
actioncenter   6.1.7600.16385   762.50 KB
(780,800 bytes)   7/13/2009 6:56 PM   Microsoft
Corporation
        c:\windows\system32\actioncenter.dll
imapi2   6.1.7600.16385   493.50 KB (505,344
bytes)   7/13/2009 7:01 PM Microsoft Corporation
        c:\windows\system32\imapi2.dll
qagent   6.1.7600.16385   259.00 KB (265,216
bytes)   7/13/2009 7:07 PM Microsoft Corporation
        c:\windows\system32\qagent.dll

```
hgcpl      6.1.7600.16385     324.50 KB (332,288        Corporation                                     wdc        6.1.7600.16385     1.30 MB (1,363,968
bytes)     7/13/2009 6:57 PM   Microsoft Corporation            c:\windows\system32\fwremotesvr.dll      bytes)     7/13/2009 6:32 PM   Microsoft Corporation
       c:\windows\system32\hgcpl.dll                mmc        6.1.7600.16385     2.04 MB (2,144,256             c:\windows\system32\wdc.dll
werconcpl 6.1.7600.16385      1.22 MB (1,280,512        bytes)     7/13/2009 6:49 PM   Microsoft Corporation   pdh        6.1.7600.16385     293.00 KB (300,032
bytes)     7/13/2009 6:41 PM   Microsoft Corporation            c:\windows\system32\mmc.exe              bytes)     7/13/2009 6:31 PM   Microsoft Corporation
       c:\windows\system32\werconcpl.dll            mfc42u     6.6.8063.0         1.29 MB (1,357,312             c:\windows\system32\pdh.dll
framedynos          6.1.7600.16385     288.50 KB       bytes)     7/13/2009 7:35 PM   Microsoft Corporation   pdhui      6.1.7600.16385     57.00 KB (58,368 bytes)
(295,424 bytes)      7/13/2009 6:47 PM   Microsoft            c:\windows\system32\mfc42u.dll                      7/13/2009 6:31 PM   Microsoft Corporation
Corporation                                          odbc32     6.1.7600.16385     696.00 KB (712,704             c:\windows\system32\pdhui.dll
       c:\windows\system32\framedynos.dll            bytes)     7/13/2009 7:29 PM   Microsoft Corporation   comdlg32 6.1.7600.16385       581.50 KB (595,456
wercplsupport       6.1.7600.16385     82.50 KB               c:\windows\system32\odbc32.dll            bytes)     7/13/2009 6:55 PM   Microsoft Corporation
(84,480 bytes)       7/13/2009 6:40 PM   Microsoft      mmcbase    6.1.7600.16385     348.00 KB (356,352             c:\windows\system32\comdlg32.dll
Corporation                                          bytes)     7/13/2009 6:46 PM   Microsoft Corporation   credui     6.1.7600.16385     213.00 KB (218,112
       c:\windows\system32\wercplsupport.dll                c:\windows\system32\mmcbase.dll           bytes)     7/13/2009 6:53 PM   Microsoft Corporation
hcproviders         6.1.7600.16385     30.50 KB        odbcint    6.1.7600.16385     224.00 KB (229,376             c:\windows\system32\credui.dll
(31,232 bytes)       7/13/2009 6:56 PM   Microsoft      bytes)     7/13/2009 7:28 PM   Microsoft Corporation   pla        6.1.7600.16385     1.33 MB (1,390,080
Corporation                                                 c:\windows\system32\odbcint.dll           bytes)     7/13/2009 6:32 PM   Microsoft Corporation
       c:\windows\system32\hcproviders.dll          mmcndmgr   6.1.7600.16385     3.06 MB (3,205,120             c:\windows\system32\pla.dll
ieproxy    8.0.7600.16385     438.00 KB (448,512        bytes)     7/13/2009 6:48 PM   Microsoft Corporation   tdh        6.1.7600.16385     825.00 KB (844,800
bytes)     7/13/2009 6:58 PM   Microsoft Corporation            c:\windows\system32\mmcndmgr.dll          bytes)     7/13/2009 6:32 PM   Microsoft Corporation
       c:\program files\internet                     msxml3     8.110.7600.16385   1.79 MB (1,876,992             c:\windows\system32\tdh.dll
explorer\ieproxy.dll                                 bytes)     7/13/2009 7:42 PM   Microsoft Corporation   utildll    6.1.7600.16385     34.00 KB (34,816 bytes)
drprov     6.1.7600.16385     24.00 KB (24,576 bytes)           c:\windows\system32\msxml3.dll                      7/13/2009 7:17 PM   Microsoft Corporation
           7/13/2009 7:17 PM   Microsoft Corporation   tsuserex   6.1.7600.16385     144.00 KB (147,456             c:\windows\system32\utildll.dll
       c:\windows\system32\drprov.dll               bytes)     7/13/2009 7:17 PM   Microsoft Corporation   dmdskmgr  6.1.7600.16385     275.50 KB (282,112
ntlanman  6.1.7600.16385     126.50 KB (129,536               c:\windows\system32\tsuserex.dll          bytes)     7/13/2009 6:36 PM   Microsoft Corporation
bytes)     7/13/2009 6:48 PM   Microsoft Corporation   activeds   6.1.7600.16385     261.50 KB (267,776             c:\windows\system32\dmdskmgr.dll
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regsvc     6.1.7600.16385     155.50 KB (159,232               c:\windows\system32\activeds.dll                    7/13/2009 6:36 PM   Microsoft Corporation
bytes)     7/13/2009 6:31 PM   Microsoft Corporation   adsldpc    6.1.7600.16385     231.00 KB (236,544             c:\windows\system32\dmutil.dll
       c:\windows\system32\regsvc.dll               bytes)     7/13/2009 6:53 PM   Microsoft Corporation   dmdskres  6.1.7600.16385     363.50 KB (372,224
iisw3adm  7.5.7600.16385     440.50 KB (451,072               c:\windows\system32\adsldpc.dll           bytes)     7/13/2009 6:36 PM   Microsoft Corporation
bytes)     7/13/2009 7:27 PM   Microsoft Corporation   mprsnap    6.1.7600.16385     1.33 MB (1,393,152             c:\windows\system32\dmdskres.dll
       c:\windows\system32\inetsrv\iisw3adm.dll     bytes)     7/13/2009 7:09 PM   Microsoft Corporation   dmdskres2 6.1.7600.16385     2.00 KB (2,048 bytes)
                                                            c:\windows\system32\mprsnap.dll                      7/13/2009 6:36 PM   Microsoft Corporation
w3tp       7.5.7600.16385     19.50 KB (19,968 bytes)   rtrfiltr   6.1.7600.16385     89.50 KB (91,648 bytes)            c:\windows\system32\dmdskres2.dll
           7/13/2009 7:27 PM   Microsoft Corporation            7/13/2009 7:09 PM   Microsoft Corporation   rasuser    6.1.7600.16385     264.50 KB (270,848
       c:\windows\system32\inetsrv\w3tp.dll                 c:\windows\system32\rtrfiltr.dll          bytes)     7/13/2009 7:09 PM   Microsoft Corporation
termsrv    6.1.7600.16385     690.00 KB (706,560        browcli    6.1.7600.16385     57.00 KB (58,368 bytes)            c:\windows\system32\rasuser.dll
bytes)     7/13/2009 7:17 PM   Microsoft Corporation            7/13/2009 6:53 PM   Microsoft Corporation   comctl32   5.82.7600.16385    619.00 KB (633,856
       c:\windows\system32\termsrv.dll                     c:\windows\system32\browcli.dll           bytes)     7/13/2009 6:55 PM   Microsoft Corporation
icaapi     6.1.7600.16385     22.00 KB (22,528 bytes)   els        6.1.7600.16385     236.00 KB (241,664             c:\windows\winsxs\amd64_microsoft.windows.c
           7/13/2009 7:16 PM   Microsoft Corporation   bytes)     7/13/2009 6:46 PM   Microsoft Corporation   ommon-
       c:\windows\system32\icaapi.dll                     c:\windows\system32\els.dll               controls_6595b64144ccf1df_5.82.7600.16385_none_a44af8
regapi     6.1.7600.16385     92.50 KB (94,720 bytes)   filemgmt   6.1.7600.16385     569.00 KB (582,656    ec57f961cf\comctl32.dll
           7/13/2009 7:17 PM   Microsoft Corporation   bytes)     7/13/2009 6:46 PM   Microsoft Corporation   dsprop     6.1.7600.16385     186.50 KB (190,976
       c:\windows\system32\regapi.dll                     c:\windows\system32\filemgmt.dll          bytes)     7/13/2009 6:46 PM   Microsoft Corporation
tlscsp     6.1.7600.16385     72.00 KB (73,728 bytes)   wbemcntl 6.1.7600.16385     378.00 KB (387,072             c:\windows\system32\dsprop.dll
           7/13/2009 7:16 PM   Microsoft Corporation   bytes)     7/13/2009 6:47 PM   Microsoft Corporation   dsuiext    6.1.7600.16385     685.00 KB (701,440
       c:\windows\system32\tlscsp.dll                     c:\windows\system32\wbem\wbemcntl.dll     bytes)     7/13/2009 6:55 PM   Microsoft Corporation
rdpcorekmts         6.1.7600.16385     146.00 KB        mmfutil    6.1.7600.16385     20.00 KB (20,480 bytes)            c:\windows\system32\dsuiext.dll
(149,504 bytes)      7/13/2009 7:17 PM   Microsoft                7/13/2009 6:47 PM   Microsoft Corporation   servdeps   6.1.7600.16385     134.00 KB (137,216
Corporation                                                 c:\windows\system32\wbem\mmfutil.dll      bytes)     7/13/2009 6:47 PM   Microsoft Corporation
       c:\windows\system32\rdpcorekmts.dll          localsec    6.1.7600.16385     539.00 KB (551,936             c:\windows\system32\wbem\servdeps.dll
rdpwsx     6.1.7600.16385     74.50 KB (76,288 bytes)   bytes)     7/13/2009 6:46 PM   Microsoft Corporation   comsnap    2001.12.8530.16385 296.50 KB (303,616
           7/13/2009 7:17 PM   Microsoft Corporation            c:\windows\system32\localsec.dll          bytes)     7/13/2009 6:59 PM   Microsoft Corporation
       c:\windows\system32\rdpwsx.dll               devmgr     6.1.7600.16385     516.50 KB (528,896             c:\windows\system32\comsnap.dll
ipsecsvc   6.1.7600.16385     488.50 KB (500,224        bytes)     7/13/2009 6:27 PM   Microsoft Corporation   mfc42      6.6.8063.0         1.33 MB (1,393,152
bytes)     7/13/2009 7:08 PM   Microsoft Corporation            c:\windows\system32\devmgr.dll            bytes)     7/13/2009 7:35 PM   Microsoft Corporation
       c:\windows\system32\ipsecsvc.dll             newdev     6.0.5054.0         306.50 KB (313,856             c:\windows\system32\mfc42.dll
fwremotesvr         6.1.7600.16385     74.00 KB        bytes)     7/13/2009 6:26 PM   Microsoft Corporation   oleacc     7.0.0.0            324.00 KB (331,776 bytes)
(75,776 bytes)       7/13/2009 7:08 PM   Microsoft                c:\windows\system32\newdev.dll                      7/13/2009 6:39 PM   Microsoft Corporation
                                                                                                                  c:\windows\system32\oleacc.dll
```

MMCEx.ni 6.1.7600.16385   2.22 MB (2,327,040
bytes)   7/14/2009 12:11 AM Not Available
        c:\windows\assembly\nativeimages_v2.0.50727
_64\mmcex\495a1d4acb8ce34924a0bc7ceffd429e\mmcex.ni.d
ll
MMCFxCommon.ni   6.1.7600.16385   408.00 KB
(417,792 bytes)   7/14/2009 12:10 AM Not Available
        c:\windows\assembly\nativeimages_v2.0.50727
_64\mmcfxcommon\93374f3b7034e8f0af28cf29f414b4a3\mmcf
xcommon.ni.dll
System.Drawing.ni   2.0.50727.4927   2.20 MB
(2,311,168 bytes)   7/14/2009 12:09 AM Microsoft
Corporation
        c:\windows\assembly\nativeimages_v2.0.50727
_64\system.drawing\10f1e1ffca16e550af8a8fd7685a48ef\s
ystem.drawing.ni.dll
System.Windows.Forms.ni   2.0.50727.4927
16.57 MB (17,378,816 bytes)   7/14/2009
12:09 AM Microsoft Corporation
        c:\windows\assembly\nativeimages_v2.0.50727
_64\system.windows.forms\2e0044fa7cabadce65fa8964fe2c
90dd\system.windows.forms.ni.dll
diasymreader   8.0.50727.4927   778.32 KB
(797,000 bytes)   7/13/2009 3:37 PM Microsoft
Corporation
        c:\windows\microsoft.net\framework64\v2.0.5
0727\diasymreader.dll
Microsoft.ManagementConsole.ni
        6.1.7600.16385   779.00 KB (797,696
bytes)   7/14/2009 12:10 AM Not Available
        c:\windows\assembly\nativeimages_v2.0.50727
_64\microsoft.managemen#\92af4acb9fb3d8c89c5c364a1ad6
b230\microsoft.managementconsole.ni.dll
Microsoft.Windows.ServerManager.ni
        6.1.7600.16385   13.93 MB (14,605,312
bytes)   2/25/2010 2:10 PM Microsoft Corporation
        c:\windows\assembly\nativeimages_v2.0.50727
_64\microsoft.windows.s#\f41bca4c6471aa468c4b1a084a0f
037a\microsoft.windows.servermanager.ni.dll
Microsoft.BestPractices.ni   6.1.7600.16385
        3.63 MB (3,803,136 bytes)   7/14/2009
12:10 AM Not Available
        c:\windows\assembly\nativeimages_v2.0.50727
_64\microsoft.bestpract#\010a66955f21b8ef9ea3acb3555e
9ff9\microsoft.bestpractices.ni.dll
shfolder 6.1.7600.16385   10.00 KB (10,240 bytes)
        7/13/2009 6:55 PM Microsoft Corporation
        c:\windows\system32\shfolder.dll
svrmgrnc 6.1.7600.16385   120.50 KB (123,392
bytes)   7/13/2009 6:48 PM Microsoft Corporation
        c:\windows\system32\svrmgrnc.dll
osbaseln 6.1.7600.16385   24.50 KB (25,088 bytes)
        7/13/2009 6:35 PM Microsoft Corporation
        c:\windows\system32\osbaseln.dll
wuapi 7.3.7600.16385   679.50 KB (695,808
bytes)   7/13/2009 7:35 PM Microsoft Corporation
        c:\windows\system32\wuapi.dll
sppc 6.1.7600.16385   142.50 KB (145,920
bytes)   7/13/2009 8:04 PM Microsoft Corporation
        c:\windows\system32\sppc.dll
cbsapi 6.1.7600.16385   19.00 KB (19,456 bytes)
        7/13/2009 6:35 PM Microsoft Corporation
        c:\windows\servicing\cbsapi.dll

trustedinstaller   6.1.7600.16385   189.50 KB
(194,048 bytes)   7/13/2009 6:35 PM Microsoft
Corporation
        c:\windows\servicing\trustedinstaller.exe
dbghelp 6.1.7600.16385   1.04 MB (1,087,488
bytes)   7/13/2009 7:13 PM Microsoft Corporation
        c:\windows\system32\dbghelp.dll
cbscore 6.1.7600.16385   946.50 KB (969,216
bytes)   7/13/2009 9:55 PM Microsoft Corporation
        c:\windows\winsxs\amd64_microsoft-windows-
servicingstack_31bf3856ad364e35_6.1.7600.16385_none_6
55452efe0fb810b\cbscore.dll
dpx 6.1.7600.16385   390.00 KB (399,360
bytes)   7/13/2009 6:21 PM Microsoft Corporation
        c:\windows\system32\dpx.dll
wcp 6.1.7600.16385   2.63 MB (2,758,656
bytes)   7/13/2009 9:55 PM Microsoft Corporation
        c:\windows\winsxs\amd64_microsoft-windows-
servicingstack_31bf3856ad364e35_6.1.7600.16385_none_6
55452efe0fb810b\wcp.dll
drupdate 6.1.7600.16385   199.00 KB (203,776
bytes)   7/13/2009 9:55 PM Microsoft Corporation
        c:\windows\winsxs\amd64_microsoft-windows-
servicingstack_31bf3856ad364e35_6.1.7600.16385_none_6
55452efe0fb810b\drupdate.dll
wrpint 6.1.7600.16385   59.50 KB (60,928 bytes)
        7/13/2009 9:55 PM Microsoft Corporation
        c:\windows\winsxs\amd64_microsoft-windows-
servicingstack_31bf3856ad364e35_6.1.7600.16385_none_6
55452efe0fb810b\wrpint.dll
sxsstore 6.1.7600.16385   26.50 KB (27,136 bytes)
        7/13/2009 6:26 PM Microsoft Corporation
        c:\windows\system32\sxsstore.dll
sppsvc 6.1.7600.16385   3.36 MB (3,524,608
bytes)   7/13/2009 8:05 PM Microsoft Corporation
        c:\windows\system32\sppsvc.exe
sppwinob 6.1.7600.16385   409.00 KB (418,816
bytes)   7/13/2009 6:51 PM Microsoft Corporation
        c:\windows\system32\sppwinob.dll
sppobjs 6.1.7600.16385   1.03 MB (1,082,880
bytes)   7/13/2009 6:52 PM Microsoft Corporation
        c:\windows\system32\sppobjs.dll
msdtc 2001.12.8530.16385   138.50 KB (141,824
bytes)   7/13/2009 6:59 PM Microsoft Corporation
        c:\windows\system32\msdtc.exe
msdtctm 2001.12.8530.16385 1.44 MB (1,509,888
bytes)   7/13/2009 7:00 PM Microsoft Corporation
        c:\windows\system32\msdtctm.dll
msdtcprx 2001.12.8530.16385 728.00 KB (745,472
bytes)   7/13/2009 6:59 PM Microsoft Corporation
        c:\windows\system32\msdtcprx.dll
mtxclu 2001.12.8530.16385   364.00 KB (372,736
bytes)   7/13/2009 6:59 PM Microsoft Corporation
        c:\windows\system32\mtxclu.dll
msdtclog 2001.12.8530.16385 122.00 KB (124,928
bytes)   7/13/2009 6:59 PM Microsoft Corporation
        c:\windows\system32\msdtclog.dll
xolehlp 2001.12.8530.16385 58.00 KB (59,392 bytes)
        7/13/2009 6:59 PM Microsoft Corporation
        c:\windows\system32\xolehlp.dll

comres 2001.12.8530.16385 1.24 MB (1,297,408
bytes)   7/13/2009 6:59 PM Microsoft Corporation
        c:\windows\system32\comres.dll
msdtcvsp1res   2001.12.8530.16385 21.00 KB
(21,504 bytes)   7/13/2009 6:59 PM Microsoft
Corporation
        c:\windows\system32\msdtcvsp1res.dll
mtxoci 2001.12.8530.16385 153.00 KB (156,672
bytes)   7/13/2009 6:59 PM Microsoft Corporation
        c:\windows\system32\mtxoci.dll
msinfo32 6.1.7600.16385   370.00 KB (378,880
bytes)   7/13/2009 6:31 PM Microsoft Corporation
        c:\program files\common files\microsoft
shared\msinfo\msinfo32.exe
wmiprvse 6.1.7600.16385   360.00 KB (368,640
bytes)   7/13/2009 6:47 PM Microsoft Corporation
        c:\windows\system32\wbem\wmiprvse.exe
cimwin32 6.1.7600.16385   1.96 MB (2,055,168
bytes)   7/13/2009 6:48 PM Microsoft Corporation
        c:\windows\system32\wbem\cimwin32.dll
security 6.1.7600.16385   5.00 KB (5,120 bytes)
        7/13/2009 6:50 PM Microsoft Corporation
        c:\windows\system32\security.dll
schedcli 6.1.7600.16385   23.50 KB (24,064 bytes)
        7/13/2009 6:53 PM Microsoft Corporation
        c:\windows\system32\schedcli.dll
wmi 6.1.7600.16385   5.00 KB (5,120 bytes)
        7/13/2009 7:41 PM Microsoft Corporation
        c:\windows\system32\wmi.dll
ntevt 6.1.7600.16385   260.00 KB (266,240
bytes)   7/13/2009 6:47 PM Microsoft Corporation
        c:\windows\system32\wbem\ntevt.dll
provthrd 6.1.7600.16385   300.00 KB (307,200
bytes)   7/13/2009 6:47 PM Microsoft Corporation
        c:\windows\system32\provthrd.dll
msvcirt 7.0.7600.16385   76.50 KB (78,336 bytes)
        7/13/2009 6:18 PM Microsoft Corporation
        c:\windows\system32\msvcirt.dll
wsock32 6.1.7600.16385   18.00 KB (18,432 bytes)
        7/13/2009 7:10 PM Microsoft Corporation
        c:\windows\system32\wsock32.dll
tapi32 6.1.7600.16385   243.00 KB (248,832
bytes)   7/13/2009 7:41 PM Microsoft Corporation
        c:\windows\system32\tapi32.dll
unidrvui 0.3.7600.16385   863.50 KB (884,224
bytes)   7/13/2009 8:18 PM Microsoft Corporation
        c:\windows\system32\spool\drivers\x64\3\uni
drvui.dll
mxdwdui 0.3.7600.16385   215.50 KB (220,672
bytes)   7/13/2009 8:19 PM Microsoft Corporation
        c:\windows\system32\spool\drivers\x64\3\mxd
wdui.dll
wmiperfclass   6.1.7600.16385   133.00 KB
(136,192 bytes)   7/13/2009 6:31 PM Microsoft
Corporation
        c:\windows\system32\wbem\wmiperfclass.dll

[Services]

Display Name   Name   State   Start Mode
        Service Type   Path   Error Control
        Start Name   Tag ID

Application Experience   AeLookupSvc
        Running   Manual   Share Process
        c:\windows\system32\svchost.exe -k netsvcs
        Normal   localSystem   0
Application Layer Gateway Service   ALG
        Stopped   Manual   Own Process
        c:\windows\system32\alg.exe   Normal   NT
AUTHORITY\LocalService   0
Application Host Helper Service   AppHostSvc
        Running   Auto   Share Process
        c:\windows\system32\svchost.exe -k apphost
        Normal   LocalSystem   0
Application Identity   AppIDSvc   Stopped
        Manual   Share Process
        c:\windows\system32\svchost.exe -k
localserviceandnoimpersonation   Normal   NT
Authority\LocalService   0
Application Information   Appinfo   Stopped
        Manual   Share Process
        c:\windows\system32\svchost.exe -k netsvcs
        Normal   LocalSystem   0
Application Management   AppMgmt   Stopped
        Manual   Share Process
        c:\windows\system32\svchost.exe -k netsvcs
        Normal   LocalSystem   0
ASP.NET State Service   aspnet_state
        Stopped   Manual   Own Process
        c:\windows\microsoft.net\framework64\v2.0.5
0727\aspnet_state.exe   Normal   NT
AUTHORITY\NetworkService   0
Windows Audio Endpoint Builder
        AudioEndpointBuilder   Stopped
        Manual   Share Process
        c:\windows\system32\svchost.exe -k
localsystemnetworkrestricted   Normal   LocalSystem
        0
Windows Audio   AudioSrv   Stopped   Manual
        Share Process
        c:\windows\system32\svchost.exe -k
localservicenetworkrestricted   Normal   NT
AUTHORITY\LocalService   0
Base Filtering Engine   BFE   Running
        Auto   Share Process
        c:\windows\system32\svchost.exe -k
localservicenonetwork   Normal   NT
AUTHORITY\LocalService   0
Background Intelligent Transfer Service BITS
        Stopped   Manual   Share Process
        c:\windows\system32\svchost.exe -k netsvcs
        Normal   LocalSystem   0
Computer Browser   Browser   Stopped   Disabled
        Share Process
        c:\windows\system32\svchost.exe -k netsvcs
        Normal   LocalSystem   0
Certificate Propagation   CertPropSvc
        Running   Manual   Share Process
        c:\windows\system32\svchost.exe -k netsvcs
        Normal   LocalSystem   0
Microsoft .NET Framework NGEN v2.0.50727_X86
        clr_optimization_v2.0.50727_32
        Stopped   Manual   Own Process
        c:\windows\microsoft.net\framework\v2.0.507

27\mscorsvw.exe   Ignore   LocalSystem   0
Microsoft .NET Framework NGEN v2.0.50727_X64
        clr_optimization_v2.0.50727_64
        Stopped   Manual   Own Process
        c:\windows\microsoft.net\framework64\v2.0.5
0727\mscorsvw.exe   Ignore   LocalSystem   0

COM+ System Application   COMSysApp Stopped
        Manual   Own Process
        c:\windows\system32\dllhost.exe
/processid:{02d4b3f1-fd88-11d1-960d-00805fc79235}
        Normal   LocalSystem   0
Cryptographic Services   CryptSvc   Running
        Auto   Share Process
        c:\windows\system32\svchost.exe -k
networkservice   Normal   NT
Authority\NetworkService   0
DCOM Server Process Launcher   DcomLaunch
        Running   Auto   Share Process
        c:\windows\system32\svchost.exe -k
dcomlaunch   Normal   LocalSystem   0

Disk Defragmenter   defragsvc Stopped   Manual   Own
Process   c:\windows\system32\svchost.exe -k
defragsvc Normal   localSystem   0
DHCP Client   Dhcp   Running   Auto
        Share Process
        c:\windows\system32\svchost.exe -k
localservicenetworkrestricted Normal   NT
Authority\LocalService   0
DNS Client   Dnscache Running   Auto
        Share Process
        c:\windows\system32\svchost.exe -k
networkservice   Normal   NT
AUTHORITY\NetworkService   0
Wired AutoConfig   dot3svc   Stopped   Manual
        Share Process
        c:\windows\system32\svchost.exe -k
localsystemnetworkrestricted   Normal   localSystem
        0
Diagnostic Policy Service   DPS   Running
        Auto   Share Process
        c:\windows\system32\svchost.exe -k
localservicenonetwork   Normal   NT
AUTHORITY\LocalService   0
Extensible Authentication Protocol   EapHost
        Stopped   Manual   Share Process
        c:\windows\system32\svchost.exe -k netsvcs
        Normal   localSystem   0
Encrypting File System (EFS)   EFS   Stopped
        Manual   Share Process
        c:\windows\system32\lsass.exe Normal
        LocalSystem   0
Windows Event Log   eventlog Running   Auto
        Share Process
        c:\windows\system32\svchost.exe -k
localservicenetworkrestricted Normal   NT
AUTHORITY\LocalService   0
COM+ Event System   EventSystem   Running
        Auto   Share Process
        c:\windows\system32\svchost.exe -k

localservice   Normal   NT
AUTHORITY\LocalService   0
Microsoft Fibre Channel Platform Registration Service
        FCRegSvc Stopped   Manual   Share Process
        c:\windows\system32\svchost.exe -k
localservicenetworkrestricted Normal   NT
AUTHORITY\LocalService   0
Function Discovery Provider Host   fdPHost
        Stopped   Manual   Share Process
        c:\windows\system32\svchost.exe -k
localservice   Normal   NT
AUTHORITY\LocalService   0
Function Discovery Resource Publication FDResPub
        Stopped   Manual   Share Process
        c:\windows\system32\svchost.exe -k
localserviceandnoimpersonation   Normal   NT
AUTHORITY\LocalService   0
Windows Font Cache Service   FontCache Stopped
        Manual   Share Process
        c:\windows\system32\svchost.exe -k
localserviceandnoimpersonation   Normal   NT
AUTHORITY\LocalService   0
Windows Presentation Foundation Font Cache 3.0.0.0
        FontCache3.0.0.0   Stopped   Manual   Own
Process
        c:\windows\microsoft.net\framework64\v3.0\w
pf\presentationfontcache.exe Normal   NT
Authority\LocalService   0
Group Policy Client gpsvc   Running   Auto
        Share Process
        c:\windows\system32\svchost.exe -k netsvcs
        Normal   LocalSystem   0
Human Interface Device Access hidserv   Stopped
        Manual   Share Process
        c:\windows\system32\svchost.exe -k
localsystemnetworkrestricted Normal   LocalSystem
        0
Health Key and Certificate Management   hkmsvc
        Stopped   Manual   Share Process
        c:\windows\system32\svchost.exe -k netsvcs
        Normal   localSystem   0
Windows CardSpace   idsvc   Stopped   Manual
        Share Process
        "c:\windows\microsoft.net\framework64\v3.0\
windows communication foundation\infocard.exe"
        Normal   LocalSystem   0
IIS Admin Service   IISADMIN Stopped   Auto
        Share Process
        c:\windows\system32\inetsrv\inetinfo.exe
        Normal   LocalSystem   0
IKE and AuthIP IPsec Keying Modules   IKEEXT
        Running   Auto   Share Process
        c:\windows\system32\svchost.exe -k netsvcs
        Normal   LocalSystem   0
PnP-X IP Bus Enumerator   IPBusEnum Stopped
        Disabled   Share Process
        c:\windows\system32\svchost.exe -k
localsystemnetworkrestricted   Normal   LocalSystem
        0
IP Helper iphlpsvc Running   Auto   Share Process
        c:\windows\system32\svchost.exe -k netsvcs
        Normal   LocalSystem   0

CNG Key Isolation   KeyIso   Stopped   Manual
        Share Process
        c:\windows\system32\lsass.exe Normal
        LocalSystem   0
KtmRm for Distributed Transaction Coordinator
        KtmRm   Stopped   Manual   Share Process
        c:\windows\system32\svchost.exe -k
networkserviceandnoimpersonation   Normal   NT
AUTHORITY\NetworkService   0
Server   LanmanServer   Running   Auto
        Share Process
        c:\windows\system32\svchost.exe -k netsvcs
        Normal   LocalSystem   0
Workstation   LanmanWorkstation   Running
        Auto   Share Process
        c:\windows\system32\svchost.exe -k
networkservice   Normal   NT
AUTHORITY\NetworkService   0
Link-Layer Topology Discovery Mapper   lltdsvc
        Stopped   Manual   Share Process
        c:\windows\system32\svchost.exe -k
localservice   Normal   NT
AUTHORITY\LocalService   0
TCP/IP NetBIOS Helper   lmhosts   Running
        Auto   Share Process
        c:\windows\system32\svchost.exe -k
localservicenetworkrestricted Normal   NT
AUTHORITY\LocalService   0
Multimedia Class Scheduler   MMCSS   Stopped
        Manual   Share Process
        c:\windows\system32\svchost.exe -k netsvcs
        Normal   LocalSystem   0
Windows Firewall   MpsSvc   Running   Auto
        Share Process
        c:\windows\system32\svchost.exe -k
localserviceonnetwork   Normal   NT
Authority\LocalService   0
Distributed Transaction Coordinator   MSDTC
        Running   Auto   Own Process
        c:\windows\system32\msdtc.exe Normal   NT
AUTHORITY\NetworkService   0
Microsoft iSCSI Initiator Service   MSiSCSI
        Stopped   Manual   Share Process
        c:\windows\system32\svchost.exe -k netsvcs
        Normal   LocalSystem   0
Windows Installer   msiserver Stopped   Manual   Own
Process   c:\windows\system32\msiexec.exe /v
        Normal   LocalSystem   0
Network Access Protection Agent   napagent
        Stopped   Manual   Share Process
        c:\windows\system32\svchost.exe -k
networkservice   Normal   NT
AUTHORITY\NetworkService   0
Netlogon   Netlogon   Stopped   Manual   Share Process
        c:\windows\system32\lsass.exe Normal
        LocalSystem   0
Network Connections Netman   Running   Manual
        Share Process
        c:\windows\system32\svchost.exe -k
localsystemnetworkrestricted Normal   LocalSystem
        0
Net.Msmq Listener Adapter   NetMsmqActivator
        Stopped   Disabled Share Process

        "c:\windows\microsoft.net\framework64\v3.0\
windows communication foundation\smsvchost.exe" -
netmsmqactivator   Normal   NT
AUTHORITY\NetworkService   0
Net.Pipe Listener Adapter   NetPipeActivator
        Running   Auto   Share Process
        "c:\windows\microsoft.net\framework64\v3.0\
windows communication foundation\smsvchost.exe"
        Normal   NT AUTHORITY\LocalService   0

Network List Service   netprofm Running
        Manual   Share Process
        c:\windows\system32\svchost.exe -k
localservice   Normal   NT
AUTHORITY\LocalService   0
Net.Tcp Listener Adapter   NetTcpActivator
        Running   Auto   Share Process
        "c:\windows\microsoft.net\framework64\v3.0\
windows communication foundation\smsvchost.exe"
        Normal   NT AUTHORITY\LocalService   0

Net.Tcp Port Sharing Service NetTcpPortSharing
        Running   Auto   Share Process
        "c:\windows\microsoft.net\framework64\v3.0\
windows communication foundation\smsvchost.exe"
        Normal   NT AUTHORITY\LocalService   0

Network Location Awareness   NlaSvc   Running
        Auto   Share Process
        c:\windows\system32\svchost.exe -k
networkservice   Normal   NT
AUTHORITY\NetworkService   0
Network Store Interface Service   nsi
        Running   Auto   Share Process
        c:\windows\system32\svchost.exe -k
localservice   Normal   NT
Authority\LocalService   0
Office Source Engine   ose   Stopped
        Manual   Own Process   "c:\program
files (x86)\common files\microsoft shared\source
engine\ose.exe"   Normal   LocalSystem   0

Performance Counter DLL Host PerfHost   Stopped
        Manual   Own Process
        c:\windows\syswow64\perfhost.exe
        Normal   NT AUTHORITY\LocalService   0

Performance Logs & Alerts   pla   Stopped
        Manual   Share Process
        c:\windows\system32\svchost.exe -k
localserviceonnetwork   Normal   NT
AUTHORITY\LocalService   0
Plug and Play   PlugPlay Running   Auto
        Share Process
        c:\windows\system32\svchost.exe -k
dcomlaunch   Normal   LocalSystem   0

IPsec Policy Agent PolicyAgent   Running
        Manual   Share Process
        c:\windows\system32\svchost.exe -k
networkservicenetworkrestricted   Normal   NT
Authority\NetworkService   0

Power   Power   Running Auto   Share Process
        c:\windows\system32\svchost.exe -k
dcomlaunch   Normal   LocalSystem   0

User Profile Service   ProfSvc   Running
        Auto   Share Process
        c:\windows\system32\svchost.exe -k netsvcs
        Normal   LocalSystem   0
Protected Storage   ProtectedStorage   Stopped
        Manual   Share Process
        c:\windows\system32\lsass.exe Normal
        LocalSystem   0
Remote Access Auto Connection Manager   RasAuto
        Stopped   Manual   Share Process
        c:\windows\system32\svchost.exe -k netsvcs
        Normal   localSystem   0
Remote Access Connection Manager   RasMan
        Stopped   Manual   Share Process
        c:\windows\system32\svchost.exe -k netsvcs
        Normal   localSystem   0
Routing and Remote Access   RemoteAccess
        Stopped   Disabled Share Process
        c:\windows\system32\svchost.exe -k netsvcs
        Normal   localSystem   0
Remote Registry   RemoteRegistry   Running
        Auto   Share Process
        c:\windows\system32\svchost.exe -k regsvc
        Normal   NT AUTHORITY\LocalService   0

RPC Endpoint Mapper RpcEptMapper   Running
        Auto   Share Process
        c:\windows\system32\svchost.exe -k rpcss
        Normal   NT AUTHORITY\NetworkService   0

Remote Procedure Call (RPC) Locator   RpcLocator
        Stopped   Manual   Own Process
        c:\windows\system32\locator.exe
        Normal   NT AUTHORITY\NetworkService   0

Remote Procedure Call (RPC)   RpcSs   Running
        Auto   Share Process
        c:\windows\system32\svchost.exe -k rpcss
        Normal   NT AUTHORITY\NetworkService   0

Resultant Set of Policy Provider   RSoPProv
        Stopped   Manual   Share Process
        c:\windows\system32\rsopprov.exe
        Normal   LocalSystem   0
Special Administration Console Helper   sacsvr
        Stopped   Manual   Share Process
        c:\windows\system32\svchost.exe -k netsvcs
        Normal   LocalSystem   0
Security Accounts Manager   SamSs   Running
        Auto   Share Process
        c:\windows\system32\lsass.exe Normal
        LocalSystem   0
Smart Card   SCardSvr Stopped   Manual
        Share Process
        c:\windows\system32\svchost.exe -k
localserviceandnoimpersonation   Normal   NT
AUTHORITY\LocalService   0
Task Scheduler   Schedule Running   Auto
        Share Process

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                    c:\windows\system32\svchost.exe -k netsvcs
         Normal    LocalSystem    0
Smart Card Removal Policy    SCPolicySvc
         Stopped    Manual    Share Process
         c:\windows\system32\svchost.exe -k netsvcs
         Normal    LocalSystem    0
Secondary Logon    seclogon    Stopped    Manual
         Share Process
         c:\windows\system32\svchost.exe -k netsvcs
         Normal    LocalSystem    0
System Event Notification Service    SENS
         Running    Auto    Share Process
         c:\windows\system32\svchost.exe -k netsvcs
         Normal    LocalSystem    0
Remote Desktop Configuration    SessionEnv
         Running    Manual    Share Process
         c:\windows\system32\svchost.exe -k netsvcs
         Normal    localSystem    0
Internet Connection Sharing (ICS)    SharedAccess
         Stopped    Disabled    Share Process
         c:\windows\system32\svchost.exe -k netsvcs
         Normal    LocalSystem    0
Shell Hardware Detection    ShellHWDetection
         Running    Auto    Share Process
         c:\windows\system32\svchost.exe -k netsvcs
         Ignore    LocalSystem    0
SNMP Trap    SNMPTRAP    Stopped    Manual    Own Process
         c:\windows\system32\snmptrap.exe
         Normal    NT AUTHORITY\LocalService    0

Print Spooler    Spooler    Running    Auto    Own
Process    c:\windows\system32\spoolsv.exe
         Normal    LocalSystem    0
Software Protection    sppsvc    Running    Auto    Own
Process    c:\windows\system32\sppsvc.exe
         Normal    NT AUTHORITY\NetworkService    0

SPP Notification Service    sppuinotify
         Stopped    Manual    Share Process
         c:\windows\system32\svchost.exe -k
localservice    Normal    NT
AUTHORITY\LocalService    0
SSDP Discovery    SSDPSRV    Stopped    Disabled
         Share Process
         c:\windows\system32\svchost.exe -k
localserviceandnoimpersonation    Normal    NT
AUTHORITY\LocalService    0
Secure Socket Tunneling Protocol Service
         SstpSvc    Stopped    Manual    Share Process
         c:\windows\system32\svchost.exe -k
localservice    Normal    NT
Authority\LocalService    0
Microsoft Software Shadow Copy Provider swprv
         Stopped    Manual    Own Process
         c:\windows\system32\svchost.exe -k swprv
         Normal    LocalSystem    0
Telephony    TapiSrv    Stopped    Manual    Own Process
         c:\windows\system32\svchost.exe -k tapisrv
         Normal    NT AUTHORITY\NetworkService    0

TPM Base Services    TBS    Stopped    Manual
         Share Process
         c:\windows\system32\svchost.exe -k

localserviceandnoimpersonation    Normal    NT
AUTHORITY\LocalService    0
Remote Desktop Services    TermService
         Running    Manual    Share Process
         c:\windows\system32\svchost.exe -k termsvcs
         Normal    NT Authority\NetworkService    0

Thread Ordering Server    THREADORDER
         Stopped    Manual    Share Process
         c:\windows\system32\svchost.exe -k
localservice    Normal    NT
AUTHORITY\LocalService    0
Distributed Link Tracking Client    TrkWks
         Running    Auto    Share Process
         c:\windows\system32\svchost.exe -k
localsystemnetworkrestricted    Normal    LocalSystem
         0
Windows Modules Installer    TrustedInstaller
         Running    Manual    Own Process
         c:\windows\servicing\trustedinstaller.exe
         Normal    localSystem    0
Interactive Services Detection    UI0Detect
         Stopped    Manual    Own Process
         c:\windows\system32\ui0detect.exe
         Normal    LocalSystem    0
Remote Desktop Services UserMode Port Redirector
         UmRdpService    Running    Manual
         Share Process
         c:\windows\system32\svchost.exe -k
localsystemnetworkrestricted    Normal    localSystem
         0
UPnP Device Host    upnphost    Stopped    Disabled
         Share Process
         c:\windows\system32\svchost.exe -k
localserviceandnoimpersonation    Normal    NT
AUTHORITY\LocalService    0
Desktop Window Manager Session Manager    UxSms
         Running    Auto    Share Process
         c:\windows\system32\svchost.exe -k
localsystemnetworkrestricted    Normal    localSystem
         0
Credential Manager    VaultSvc    Stopped    Manual
         Share Process
         c:\windows\system32\lsass.exe    Normal
         LocalSystem    0
Virtual Disk    vds    Stopped    Manual    Own
Process    c:\windows\system32\vds.exe    Normal
         LocalSystem    0
Volume Shadow Copy    VSS    Stopped    Manual    Own
Process    c:\windows\system32\vssvc.exe Normal
         LocalSystem    0
Windows Time    W32Time    Stopped    Manual
         Share Process
         c:\windows\system32\svchost.exe -k
localservice    Normal    NT
AUTHORITY\LocalService    0
World Wide Web Publishing Service    W3SVC
         Running    Auto    Share Process
         c:\windows\system32\svchost.exe -k iissvcs
         Normal    LocalSystem    0
Windows Process Activation Service    WAS
         Running    Manual    Share Process

         c:\windows\system32\svchost.exe -k iissvcs
         Normal    LocalSystem    0
Windows Color System    WcsPlugInService
         Stopped    Manual    Share Process
         c:\windows\system32\svchost.exe -k wcssvc
         Normal    NT AUTHORITY\LocalService    0

Diagnostic Service Host    WdiServiceHost
         Stopped    Manual    Share Process
         c:\windows\system32\svchost.exe -k
localservice    Normal    NT
AUTHORITY\LocalService    0
Diagnostic System Host    WdiSystemHost
         Stopped    Manual    Share Process
         c:\windows\system32\svchost.exe -k
localsystemnetworkrestricted    Normal    LocalSystem
         0
Windows Event Collector    Wecsvc    Stopped
         Manual    Share Process
         c:\windows\system32\svchost.exe -k
networkservice    Normal    NT
AUTHORITY\NetworkService    0
Problem Reports and Solutions Control Panel Support
         wercplsupport    Stopped    Manual
         Share Process
         c:\windows\system32\svchost.exe -k netsvcs
         Normal    localSystem    0
Windows Error Reporting Service    WerSvc
         Stopped    Manual    Share Process
         c:\windows\system32\svchost.exe -k
wersvcgroup         Ignore    localSystem    0

WinHTTP Web Proxy Auto-Discovery Service
         WinHttpAutoProxySvc Stopped    Manual
         Share Process
         c:\windows\system32\svchost.exe -k
localservice    Normal    NT
AUTHORITY\LocalService    0
Windows Management Instrumentation    Winmgmt
         Running    Auto    Share Process
         c:\windows\system32\svchost.exe -k netsvcs
         Ignore    localSystem    0
Windows Remote Management (WS-Management)
         WinRM    Running    Auto    Share Process
         c:\windows\system32\svchost.exe -k
networkservice    Normal    NT
AUTHORITY\NetworkService    0
WMI Performance Adapter    wmiApSrv    Stopped
         Manual    Own Process
         c:\windows\system32\wbem\wmiapsrv.exe
         Normal    LocalSystem    0
Portable Device Enumerator Service    WPDBusEnum
         Stopped    Manual    Share Process
         c:\windows\system32\svchost.exe -k
localsystemnetworkrestricted    Normal    LocalSystem
         0
Windows Update    wuauserv    Running    Auto
         Share Process
         c:\windows\system32\svchost.exe -k netsvcs
         Normal    LocalSystem    0
Windows Driver Foundation - User-mode Driver
Framework wudfsvc    Stopped    Manual    Share Process
         c:\windows\system32\svchost.exe -k
```

localsystemnetworkrestricted Normal   LocalSystem
        0

[Program Groups]

Group Name   Name   User Name
Start Menu   Default:Start Menu Default
Start Menu\Programs Default:Start Menu\Programs
        Default
Start Menu\Programs\Accessories   Default:Start
Menu\Programs\Accessories   Default
Start Menu\Programs\Accessories\Accessibility
        Default:Start
Menu\Programs\Accessories\Accessibility Default
Start Menu\Programs\Accessories\System Tools
        Default:Start
Menu\Programs\Accessories\System Tools Default
Start Menu\Programs\Maintenance   Default:Start
Menu\Programs\Maintenance   Default
Start Menu   Public:Start Menu   Public
Start Menu\Programs Public:Start Menu\Programs
        Public
Start Menu\Programs\Accessories   Public:Start
Menu\Programs\Accessories   Public
Start Menu\Programs\Accessories\Accessibility
        Public:Start
Menu\Programs\Accessories\Accessibility Public
Start Menu\Programs\Accessories\System Tools
        Public:Start
Menu\Programs\Accessories\System Tools Public
Start Menu\Programs\Accessories\Windows PowerShell
        Public:Start
Menu\Programs\Accessories\Windows PowerShell
        Public
Start Menu\Programs\Administrative Tools
        Public:Start Menu\Programs\Administrative
Tools   Public
Start Menu\Programs\Administrative Tools\Terminal
Services Public:Start Menu\Programs\Administrative
Tools\Terminal Services   Public
Start Menu\Programs\HP System Tools   Public:Start
Menu\Programs\HP System Tools Public
Start Menu\Programs\HP System Tools\HP Array
Configuration Utility CLI   Public:Start
Menu\Programs\HP System Tools\HP Array Configuration
Utility CLI   Public
Start Menu\Programs\Maintenance   Public:Start
Menu\Programs\Maintenance   Public
Start Menu\Programs\Microsoft SQL Server 2005
        Public:Start Menu\Programs\Microsoft SQL
Server 2005   Public
Start Menu\Programs\Microsoft SQL Server
2005\Analysis Services   Public:Start
Menu\Programs\Microsoft SQL Server 2005\Analysis
Services Public
Start Menu\Programs\Microsoft SQL Server
2005\Configuration Tools   Public:Start
Menu\Programs\Microsoft SQL Server 2005\Configuration
Tools   Public
Start Menu\Programs\Microsoft SQL Server
2005\Documentation and Tutorials   Public:Start
Menu\Programs\Microsoft SQL Server 2005\Documentation
and Tutorials   Public

Start Menu\Programs\Microsoft SQL Server
2005\Documentation and Tutorials\Tutorials
        Public:Start Menu\Programs\Microsoft SQL
Server 2005\Documentation and Tutorials\Tutorials
        Public
Start Menu\Programs\Microsoft SQL Server
2005\Performance Tools   Public:Start
Menu\Programs\Microsoft SQL Server 2005\Performance
Tools   Public
Start Menu\Programs\Microsoft Visual Studio 2005
        Public:Start Menu\Programs\Microsoft Visual
Studio 2005   Public
Start Menu\Programs\Microsoft Visual Studio
2005\Visual Studio Tools   Public:Start
Menu\Programs\Microsoft Visual Studio 2005\Visual
Studio Tools   Public
Start Menu\Programs\Startup   Public:Start
Menu\Programs\Startup   Public
Start Menu   CL136\Administrator:Start Menu
        CL136\Administrator
Start Menu\Programs CL136\Administrator:Start
Menu\Programs   CL136\Administrator
Start Menu\Programs\Accessories
        CL136\Administrator:Start
Menu\Programs\Accessories   CL136\Administrator
Start Menu\Programs\Accessories\Accessibility
        CL136\Administrator:Start
Menu\Programs\Accessories\Accessibility
        CL136\Administrator
Start Menu\Programs\Accessories\System Tools
        CL136\Administrator:Start
Menu\Programs\Accessories\System Tools
        CL136\Administrator
Start Menu\Programs\Administrative Tools
        CL136\Administrator:Start
Menu\Programs\Administrative Tools
        CL136\Administrator
Start Menu\Programs\Maintenance
        CL136\Administrator:Start
Menu\Programs\Maintenance   CL136\Administrator
Start Menu\Programs\Startup
        CL136\Administrator:Start
Menu\Programs\Startup   CL136\Administrator

[Startup Programs]

Program   Command   User Name Location

[OLE Registration]

Object   Local Server
WordPad Document   "%programfiles%\windows
nt\accessories\wordpad.exe"
Paintbrush Picture   %systemroot%\system32\mspaint.exe

Package   Not Available
Microsoft PenInputPanel Control   Not Available

[Windows Error Reporting]

Time   Type   Details

6/9/2010 3:12 PM   Application Error   Faulting
application name: w3wp.exe, version: 7.5.7600.16385,
time stamp: 0x4a5bcd2b
Faulting module
name: ole32.dll, version: 6.1.7600.16385, time stamp:
0x4a5bdac7
Exception code:
0xc0000005
Fault offset:
0x0000f771
Faulting process id:
0x430
Faulting application start time:
0x01cb07e346470e77
Faulting
application path:
C:\Windows\SysWOW64\inetsrv\w3wp.exe
F
aulting module path:
C:\Windows\syswow64\ole32.dll
Report
Id: 7548d7ce-73d9-11df-95d6-00237de8ac86
5/20/2010 4:47 PM   Application Error   Faulting
application name: w3wp.exe, version: 7.5.7600.16385,
time stamp: 0x4a5bcd2b
Faulting module
name: ole32.dll, version: 6.1.7600.16385, time stamp:
0x4a5bdac7
Exception code:
0xc0000005
Fault offset:
0x0000f771
Faulting process id:
0x6ec
Faulting application start time:
0x01caf83900d26e1b
Faulting
application path:
C:\Windows\SysWOW64\inetsrv\w3wp.exe
F
aulting module path:
C:\Windows\syswow64\ole32.dll
Report
Id: 533a4e26-642f-11df-9559-00237de8ac86
4/8/2010 9:50 PM   Application Error   Faulting
application name: w3wp.exe, version: 7.5.7600.16385,
time stamp: 0x4a5bcd2b
Faulting module
name: ole32.dll, version: 6.1.7600.16385, time stamp:
0x4a5bdac7
Exception code:
0xc0000005
Fault offset:
0x0000f771
Faulting process id:
0xbf0
Faulting application start time:
0x01cad75c99802bda
Faulting
application path:
C:\Windows\SysWOW64\inetsrv\w3wp.exe
F
aulting module path:
C:\Windows\syswow64\ole32.dll
Report
Id: ca17318e-4358-11df-a6d6-00237de8ac86
4/7/2010 12:04 AM   Application Error   Faulting
application name: w3wp.exe, version: 7.5.7600.16385,
time stamp: 0x4a5bcd2b
Faulting module
name: ole32.dll, version: 6.1.7600.16385, time stamp:
0x4a5bdac7
Exception code:
0xc0000005
Fault offset:
0x0000f771
Faulting process id:
0x824
Faulting application start time:
0x01cad5e2eb22f26f
Faulting
application path:
C:\Windows\SysWOW64\inetsrv\w3wp.exe
F
aulting module path:
C:\Windows\syswow64\ole32.dll
Report
Id: 19912675-41d9-11df-9510-00237de8ac86
4/5/2010 8:05 PM   Application Error   Faulting
application name: w3wp.exe, version: 7.5.7600.16385,
time stamp: 0x4a5bcd2b
Faulting module
name: ole32.dll, version: 6.1.7600.16385, time stamp:
0x4a5bdac7
Exception code:
0xc0000005
Fault offset:
0x0000f771
Faulting process id:

0xa4c
Faulting application start time: 0x01cad4f51bd7303c
Faulting application path: C:\Windows\SysWOW64\inetsrv\w3wp.exe
Faulting module path: C:\Windows\syswow64\ole32.dll
Report Id: 8e468d5d-40ee-11df-b26f-00237de8ac86
3/26/2010 3:44 AM   Application Error   Faulting application name: w3wp.exe, version: 7.5.7600.16385, time stamp: 0x4a5bcd2b
Faulting module name: ole32.dll, version: 6.1.7600.16385, time stamp: 0x4a5bdac7
Exception code: 0xc0000005
Fault offset: 0x0000f771
Faulting process id: 0x81c
Faulting application start time: 0x01cacc913f4bd64a
Faulting application path: C:\Windows\SysWOW64\inetsrv\w3wp.exe
Faulting module path: C:\Windows\syswow64\ole32.dll
Report Id: f20e251b-3889-11df-8e24-00237de8ac86
3/24/2010 11:34 PM Application Error   Faulting application name: w3wp.exe, version: 7.5.7600.16385, time stamp: 0x4a5bcd2b
Faulting module name: ole32.dll, version: 6.1.7600.16385, time stamp: 0x4a5bdac7
Exception code: 0xc0000005
Fault offset: 0x0000f771
Faulting process id: 0xa8c
Faulting application start time: 0x01cacba642c931df
Faulting application path: C:\Windows\SysWOW64\inetsrv\w3wp.exe
Faulting module path: C:\Windows\syswow64\ole32.dll
Report Id: d6672243-379d-11df-af78-00237de8ac86
2/24/2010 10:57 PM Application Error   Faulting application name: mmc.exe, version: 6.1.7600.16385, time stamp: 0x4a5bc808
Faulting module name: mmc.exe, version: 6.1.7600.16385, time stamp: 0x4a5bc808
Exception code: 0xc000041d
Fault offset: 0x0000000000034f82
Faulting process id: 0x874
Faulting application start time: 0x01cab5a3c9a555cc
Faulting application path: C:\Windows\system32\mmc.exe
Faulting module path: C:\Windows\system32\mmc.exe
Report Id: 09e0f910-2198-11df-b3dd-001b78e28536
6/9/2010 3:12 PM   Windows Error Reporting   Fault bucket , type 0
Event Name: APPCRASH
Response: Not available
Cab Id: 0

Problem signature:
P1: w3wp.exe
P2: 7.5.7600.16385
P3: 4a5bcd2b
P4: ole32.dll
P5: 6.1.7600.16385
P6: 4a5bdac7
P7: c0000005
P8: 0000f771
P9: 
P10:



Attached files:

These files may be available here:
C:\ProgramData\Microsoft\Windows\WER\ReportQueue\AppCrash_w3wp.exe_1acfc318792f45c71dad16b62778422247fc5f7_09dc59c3

Analysis symbol: 
Rechecking for solution: 0
Report Id: 7548d7ce-73d9-11df-95d6-00237de8ac86
Report Status: 0
6/9/2010 3:12 PM   Windows Error Reporting   Fault bucket , type 0
Event Name: APPCRASH
Response: Not available
Cab Id: 0

Problem signature:
P1: w3wp.exe
P2: 7.5.7600.16385
P3: 4a5bcd2b
P4: ole32.dll
P5: 6.1.7600.16385
P6: 4a5bdac7
P7: c0000005
P8: 0000f771
P9: 
P10: 

Attached files:

These files may be available here:
C:\ProgramData\Microsoft\Windows\WER\ReportQueue\AppCrash_w3wp.exe_1acfc318792f45c71dad16b62778422247fc5f7_09dc59c3

Analysis symbol: 
Rechecking for solution: 0
Report Id: 7548d7ce-73d9-11df-95d6-00237de8ac86
Report Status: 4
5/20/2010 4:47 PM   Windows Error Reporting   Fault bucket , type 0
Event Name: APPCRASH
Response: Not available
Cab Id: 0

Problem signature:
P1: w3wp.exe
P2: 7.5.7600.16385
P3: 4a5bcd2b
P4: ole32.dll
P5: 6.1.7600.16385
P6: 4a5bdac7
P7: c0000005
P8: 0000f771
P9: 
P10: 

Attached files:

These files may be available here:
C:\ProgramData\Microsoft\Windows\WER\ReportQueue\AppCrash_w3wp.exe_1acfc318792f45c71dad16b62778422247fc5f7_0158ba3f

Analysis symbol: 
Rechecking for solution: 0
Report Id: 533a4e26-642f-11df-9559-00237de8ac86
Report Status: 0
5/20/2010 4:47 PM   Windows Error Reporting   Fault bucket , type 0
Event Name: APPCRASH
Response: Not available
Cab Id: 0

Problem

signature:
P1: w3wp.exe
P2: 7.5.7600.16385
P3: 4a5bcd2b
P4: ole32.dll
P5: 6.1.7600.16385
P6: 4a5bdac7
P7: c0000005
P8: 0000f771
P9: 
P10: 

Attached files:

These files may be available here:
C:\ProgramData\Microsoft\Windows\WER\ReportQueue\AppCrash_w3wp.exe_1acfc318792f45c71dad16b62778422247fc5f7_0158ba3f

Analysis symbol: 
Rechecking for solution: 0
Report Id: 533a4e26-642f-11df-9559-00237de8ac86
Report Status: 4
4/8/2010 9:50 PM   Windows Error Reporting   Fault bucket , type 0
Event Name: APPCRASH
Response: Not available
Cab Id: 0

Problem signature:
P1: w3wp.exe
P2: 7.5.7600.16385
P3: 4a5bcd2b
P4: ole32.dll
P5: 6.1.7600.16385
P6: 4a5bdac7
P7: c0000005
P8: 0000f771
P9: 
P10: 

Attached files:

These files may be available here:
C:\ProgramData\Microsoft\Windows\WER\ReportQueue\AppCrash_w3wp.exe_1acfc318792f45c71dad16b62778422247fc5f7_0c9674a5

Analysis symbol: 
Rechecking for solution: 0
Report Id: ca17318e-4358-11df-a6d6-00237de8ac86
Report Status: 0
4/8/2010 9:50 PM   Windows Error Reporting   Fault bucket , type 0
Event Name: APPCRASH
Response: Not available
Cab Id: 0

Problem signature:
P1: w3wp.exe
P2: 7.5.7600.16385
P3: 4a5bcd2b
P4: ole32.dll
P5: 6.1.7600.16385
P6: 4a5bdac7
P7: c0000005
P8: 0000f771
P9: 
P10: 

Attached files:

These files may be available here:
C:\ProgramData\Microsoft\Windows\WER\ReportQueue\AppCrash_w3wp.exe_1acfc318792f45c71dad16b62778422247fc5f7_0c9674a5


;
Analysis symbol: 
Rechecking
for solution: 0
Report Id: ca17318e-
4358-11df-a6d6-00237de8ac86
Report
Status: 4
4/7/2010 12:04 AM   Windows Error Reporting
        Fault bucket , type 0
Event
Name: APPCRASH
Response: Not
available
Cab Id:
0

Problem
signature:
P1:
w3wp.exe
P2:
7.5.7600.16385
P3:
4a5bcd2b
P4:
ole32.dll
P5:
6.1.7600.16385
P6:
4a5bdac7
P7:
c0000005
P8:
0000f771
P9: 
P10:


Attached
files:

These files may
be available
here:
C:\ProgramData\Microsoft\Windows
\WER\ReportQueue\AppCrash_w3wp.exe_1acfc318792f45c71d
ad16b62778422247fc5f7_020e229d
&#x000d
;
Analysis symbol: 
Rechecking
for solution: 0
Report Id: 19912675-
41d9-11df-9510-00237de8ac86
Report
Status: 0
4/7/2010 12:04 AM   Windows Error Reporting
        Fault bucket , type 0
Event
Name: APPCRASH
Response: Not
available
Cab Id:
0

Problem
signature:
P1:
w3wp.exe
P2:
7.5.7600.16385
P3:
4a5bcd2b
P4:
ole32.dll
P5:
6.1.7600.16385
P6:
4a5bdac7
P7:
c0000005
P8:
0000f771
P9: 
P10:


Attached
files:

These files may
be available
here:
C:\ProgramData\Microsoft\Windows
\WER\ReportQueue\AppCrash_w3wp.exe_1acfc318792f45c71d
ad16b62778422247fc5f7_020e229d
&#x000d
;
Analysis symbol: 
Rechecking
for solution: 0
Report Id: 19912675-
41d9-11df-9510-00237de8ac86
Report
Status: 4
4/5/2010 8:05 PM   Windows Error Reporting
        Fault bucket , type 0
Event
Name: APPCRASH
Response: Not
available
Cab Id:
0

Problem
signature:
P1:
w3wp.exe
P2:
7.5.7600.16385
P3:
4a5bcd2b
P4:
ole32.dll
P5:
6.1.7600.16385
P6:

4a5bdac7
P7:
c0000005
P8:
0000f771
P9: 
P10:


Attached
files:

These files may
be available
here:
C:\ProgramData\Microsoft\Windows
\WER\ReportQueue\AppCrash_w3wp.exe_1acfc318792f45c71d
ad16b62778422247fc5f7_0ebf9118
&#x000d
;
Analysis symbol: 
Rechecking
for solution: 0
Report Id: 8e468d5d-
40ee-11df-b26f-00237de8ac86
Report
Status: 0
4/5/2010 8:05 PM   Windows Error Reporting
        Fault bucket , type 0
Event
Name: APPCRASH
Response: Not
available
Cab Id:
0

Problem
signature:
P1:
w3wp.exe
P2:
7.5.7600.16385
P3:
4a5bcd2b
P4:
ole32.dll
P5:
6.1.7600.16385
P6:
4a5bdac7
P7:
c0000005
P8:
0000f771
P9: 
P10:


Attached
files:

These files may
be available
here:
C:\ProgramData\Microsoft\Windows
\WER\ReportQueue\AppCrash_w3wp.exe_1acfc318792f45c71d
ad16b62778422247fc5f7_0ebf9118
&#x000d
;
Analysis symbol: 
Rechecking
for solution: 0
Report Id: 8e468d5d-
40ee-11df-b26f-00237de8ac86
Report
Status: 4
3/26/2010 3:44 AM   Windows Error Reporting
        Fault bucket , type 0
Event
Name: APPCRASH
Response: Not
available
Cab Id:
0

Problem
signature:
P1:
w3wp.exe
P2:
7.5.7600.16385
P3:
4a5bcd2b
P4:
ole32.dll
P5:
6.1.7600.16385
P6:
4a5bdac7
P7:
c0000005
P8:
0000f771
P9: 
P10:


Attached
files:

These files may
be available
here:
C:\ProgramData\Microsoft\Windows
\WER\ReportQueue\AppCrash_w3wp.exe_1acfc318792f45c71d
ad16b62778422247fc5f7_0b551f24
&#x000d
;
Analysis symbol: 
Rechecking
for solution: 0
Report Id: f20e251b-
3889-11df-8e24-00237de8ac86
Report
Status: 0
3/26/2010 3:44 AM   Windows Error Reporting
        Fault bucket , type 0
Event

Name: APPCRASH
Response: Not
available
Cab Id:
0

Problem
signature:
P1:
w3wp.exe
P2:
7.5.7600.16385
P3:
4a5bcd2b
P4:
ole32.dll
P5:
6.1.7600.16385
P6:
4a5bdac7
P7:
c0000005
P8:
0000f771
P9: 
P10:


Attached
files:

These files may
be available
here:
C:\ProgramData\Microsoft\Windows
\WER\ReportQueue\AppCrash_w3wp.exe_1acfc318792f45c71d
ad16b62778422247fc5f7_0b551f24
&#x000d
;
Analysis symbol: 
Rechecking
for solution: 0
Report Id: f20e251b-
3889-11df-8e24-00237de8ac86
Report
Status: 4
3/24/2010 11:34 PM Windows Error Reporting
        Fault bucket , type 0
Event
Name: APPCRASH
Response: Not
available
Cab Id:
0

Problem
signature:
P1:
w3wp.exe
P2:
7.5.7600.16385
P3:
4a5bcd2b
P4:
ole32.dll
P5:
6.1.7600.16385
P6:
4a5bdac7
P7:
c0000005
P8:
0000f771
P9: 
P10:


Attached
files:
C:\Windows\Temp\WERCE75.tmp.app
compat.txt
C:\Windows\Temp\WERD308.tmp
.WERInternalMetadata.xml
C:\Windows\Te
mp\WERD309.tmp.hdmp
C:\Windows\Temp\WE
RD819.tmp.mdmp

These
files may be available
here:
C:\ProgramData\Microsoft\Windows
\WER\ReportQueue\AppCrash_w3wp.exe_1acfc318792f45c71d
ad16b62778422247fc5f7_cab_17ebd864
&#x
000d;
Analysis symbol:

Rechecking for solution:
0
Report Id: d6672243-379d-11df-af78-
00237de8ac86
Report Status: 0
3/24/2010 11:34 PM Windows Error Reporting
        Fault bucket , type 0
Event
Name: APPCRASH
Response: Not
available
Cab Id:
0

Problem
signature:
P1:
w3wp.exe
P2:
7.5.7600.16385
P3:
4a5bcd2b
P4:
ole32.dll
P5:
6.1.7600.16385
P6:
4a5bdac7
P7:
c0000005
P8:

0000f771
P9: 
P10:


Attached
files:
C:\Windows\Temp\WERCE75.tmp.app
compat.txt
C:\Windows\Temp\WERD308.tmp
.WERInternalMetadata.xml
C:\Windows\Te
mp\WERD309.tmp.hdmp
C:\Windows\Temp\WE
RD819.tmp.mdmp

These
files may be available
here:
C:\ProgramData\Microsoft\Windows
\WER\ReportQueue\AppCrash_w3wp.exe_1acfc318792f45c71d
ad16b62778422247fc5f7_cab_17ebd864
&#x
000d;
Analysis symbol:

Rechecking for solution:
0
Report Id: d6672243-379d-11df-af78-
00237de8ac86
Report Status: 4
3/23/2010 12:10 AM Windows Error Reporting
        Fault bucket , type 0
Event
Name:
PnPRequestAdditionalSoftware
Response:
Not available
Cab Id:
0

Problem
signature:
P1: x64
P2:
USB\VID_03F0&PID_1027&REV_0002&MI_01
P
3: 6.1.0.0
P4: 0409
P5:
input.inf
P6: *
P7:

P8: 
P9:

P10:


Attached
files:

These files may
be available
here:
C:\Users\Administrator\AppData\L
ocal\Microsoft\Windows\WER\ReportQueue\NonCritical_x6
4_a0d66a05e5e2b143e7be3182e8e197924df9c6_086863e0&#x0
00d;

Analysis symbol:

Rechecking for solution:
0
Report Id: 6ec819cf-3610-11df-8f6f-
00237de8ac86
Report Status: 4
3/22/2010 10:44 PM Windows Error Reporting
        Fault bucket , type 0
Event
Name: PnPDeviceProblemCode
Response:
Not available
Cab Id:
0

Problem
signature:
P1: x64
P2:
USB\UNKNOWN
P3: {36fc9e60-c465-11cf-
8056-444553540000}
P4:
0000002B
P5:
unknown
P6: unknown
P7:
unknown
P8: 
P9:

P10:


Attached
files:

These files may
be available
here:
C:\Users\Administrator\AppData\L
ocal\Microsoft\Windows\WER\ReportQueue\NonCritical_x6
4_8dd2a6bea57836935d86a299b4735d5c6f632592_0bb6b47f&#
x000d;

Analysis symbol:

Rechecking for solution:
0
Report Id: 72309239-3604-11df-88e6-
00237de8ac86
Report Status: 4
3/22/2010 10:43 PM Windows Error Reporting
        Fault bucket , type 0
Event
Name: PnPDeviceProblemCode
Response:
Not available
Cab Id:

0

Problem
signature:
P1: x64
P2:
USB\UNKNOWN
P3: {36fc9e60-c465-11cf-
8056-444553540000}
P4:
0000002B
P5:
unknown
P6: unknown
P7:
unknown
P8: 
P9:

P10:


Attached
files:
C:\Users\Administrator\AppData\
Local\Temp\DMI27BB.tmp.log.xml
C:\Wind
ows\inf\usb.inf

These
files may be available
here:
C:\Users\Administrator\AppData\L
ocal\Microsoft\Windows\WER\ReportQueue\NonCritical_x6
4_8dd2a6bea57836935d86a299b4735d5c6f632592_cab_0aa627
da

Analysis symbol:

Rechecking for solution:
0
Report Id: 5cbaaa40-3604-11df-88e6-
00237de8ac86
Report Status: 4
3/22/2010 10:43 PM Windows Error Reporting
        Fault bucket , type 0
Event
Name: PnPDriverNotFound
Response: Not
available
Cab Id:
0

Problem
signature:
P1: x64
P2:
PCI\VEN_0E11&DEV_B203&SUBSYS_3305103C&REV_03&
#x000a;P3: 
P4: 
P5:

P6: 
P7:

P8: 
P9:

P10:


Attached
files:

These files may
be available
here:
C:\Users\Administrator\AppData\L
ocal\Microsoft\Windows\WER\ReportQueue\NonCritical_x6
4_13c25b234499970de196aa1523fa6c8773e538_031987e4&#x0
00d;

Analysis symbol:

Rechecking for solution:
0
Report Id: 42af3be4-3604-11df-88e6-
e44176dcc66e
Report Status: 6
3/22/2010 10:43 PM Windows Error Reporting
        Fault bucket , type 0
Event
Name: PnPDeviceProblemCode
Response:
Not available
Cab Id:
0

Problem
signature:
P1: x64
P2:
ACPI\PNP0303
P3: {4d36e96b-e325-11ce-
bfc1-08002be10318}
P4:
00000018
P5:
i8042prt.sys
P6:
6.1.7600.16385
P7: 07-13-
2009
P8: 
P9:

P10:


Attached
files:
C:\Users\Administrator\AppData\
Local\Temp\DMI850A.tmp.log.xml
C:\Wind
ows\inf\keyboard.inf

T
hese files may be available
here:
C:\Users\Administrator\AppData\L
ocal\Microsoft\Windows\WER\ReportQueue\NonCritical_x6
4_f4f71df533ac84b879e1123436b8242ca1af9_cab_03198526&
#x000d;

Analysis symbol:


Rechecking for solution:
0
Report Id: 42af3be3-3604-11df-88e6-
e44176dcc66e
Report Status: 6
3/22/2010 10:42 PM Windows Error Reporting
        Fault bucket , type 0
Event
Name: PnPDriverNotFound
Response: Not
available
Cab Id:
0

Problem
signature:
P1: x64
P2:
PCI\VEN_103C&DEV_3302&SUBSYS_3305103C&REV_00&
#x000a;P3: 
P4: 
P5:

P6: 
P7:

P8: 
P9:

P10:


Attached
files:

These files may
be available
here:
C:\Users\Administrator\AppData\L
ocal\Microsoft\Windows\WER\ReportQueue\NonCritical_x6
4_456942f2b4b1a733839bd1c4c52121c3e899ebb3_0319820a&#
x000d;

Analysis symbol:

Rechecking for solution:
0
Report Id: 42af3be2-3604-11df-88e6-
e44176dcc66e
Report Status: 6
3/22/2010 10:42 PM Windows Error Reporting
        Fault bucket , type 0
Event
Name: PnPGenericDriverFound
Response:
Not available
Cab Id:
0

Problem
signature:
P1: x64
P2:
PCI\VEN_1002&DEV_515E&SUBSYS_31FB103C&REV_02&
#x000a;P3: 
P4: 
P5:

P6: 
P7:

P8: 
P9:

P10:


Attached
files:

These files may
be available
here:
C:\Users\Administrator\AppData\L
ocal\Microsoft\Windows\WER\ReportQueue\NonCritical_x6
4_c5ce18a1b32ff35336f0e43b5d80ab481dbb3d3_03197d2a&#x
000d;

Analysis symbol:

Rechecking for solution:
0
Report Id: 42af3be1-3604-11df-88e6-
e44176dcc66e
Report Status: 6
3/22/2010 10:42 PM Windows Error Reporting
        Fault bucket , type 0
Event
Name: PnPDeviceProblemCode
Response:
Not available
Cab Id:
0

Problem
signature:
P1: x64
P2:
ACPI\PNP0F13
P3: {4d36e96f-e325-11ce-
bfc1-08002be10318}
P4:
00000018
P5:
i8042prt.sys
P6:
6.1.7600.16385
P7: 07-13-
2009
P8: 
P9:

P10:


Attached
files:
C:\Users\Administrator\AppData\
Local\Temp\DMI5080.tmp.log.xml
C:\Wind
ows\inf\msmouse.inf

Th
ese files may be available

here:
C:\Users\Administrator\AppData\L
ocal\Microsoft\Windows\WER\ReportQueue\NonCritical_x6
4_9bdf93d4229cb979a843798485b93595c892f2ea_cab_031950
be

Analysis symbol:

Rechecking for solution:
0
Report Id: 3be58f59-3604-11df-88e6-
e44176dcc66e
Report Status: 6
3/22/2010 10:42 PM Windows Error Reporting
        Fault bucket , type 0
Event
Name: PnPDriverNotFound
Response: Not
available
Cab Id:
0

Problem
signature:
P1: x64
P2:
PCI\VEN_0E11&DEV_B204&SUBSYS_3305103C&REV_03&
#x000a;P3: 
P4: 
P5:

P6: 
P7:

P8: 
P9:

P10:


Attached
files:

These files may
be available
here:
C:\Users\Administrator\AppData\L
ocal\Microsoft\Windows\WER\ReportQueue\NonCritical_x6
4_7e82eddd15e4d283c242ed14eb6e8ab8c3b92a_03191fcf&#x0
00d;

Analysis symbol:

Rechecking for solution:
0
Report Id: 34707fbd-3604-11df-88e6-
e44176dcc66e
Report Status: 6
3/22/2010 10:41 PM Windows Error Reporting
        Fault bucket , type 0
Event
Name:
PnPRequestAdditionalSoftware
Response:
Not available
Cab Id:
0

Problem
signature:
P1: x64
P2:
USB\VID_03F0&PID_1027&REV_0002&MI_00
P
3: 6.1.0.0
P4: 0409
P5:
input.inf
P6: *
P7:

P8: 
P9:

P10:


Attached
files:

These files may
be available
here:
C:\Users\Administrator\AppData\L
ocal\Microsoft\Windows\WER\ReportQueue\NonCritical_x6
4_e9be7acaab5beae6465de43a38b014e0599a45_03186518&#x0
00d;

Analysis symbol:

Rechecking for solution:
0
Report Id: 17ebe355-3604-11df-88e6-
e44176dcc66e
Report Status: 6
3/5/2010 10:06 PM   Windows Error Reporting
        Fault bucket , type 0
Event
Name:
PnPRequestAdditionalSoftware
Response:
Not available
Cab Id:
0

Problem
signature:
P1: x64
P2:
USB\VID_03F0&PID_1027&REV_0002&MI_00
P
3: 6.1.0.0
P4: 0409
P5:
input.inf
P6: *
P7:

P8: 
P9:

P10:


Attached

files:

These files may
be available
here:
C:\Users\Administrator\AppData\L
ocal\Microsoft\Windows\WER\ReportQueue\NonCritical_x6
4_e9be7acaab5beae6465de43a38b014e0599a45_cab_07eced89


Analysis symbol:

Rechecking for solution:
0
Report Id: 568377f4-28a3-11df-bbb1-
001f29c9fc7a
Report Status: 6
3/5/2010 10:06 PM   Windows Error Reporting
        Fault bucket , type 0
Event
Name:
PnPRequestAdditionalSoftware
Response:
Not available
Cab Id:
0

Problem
signature:
P1: x64
P2:
USB\VID_03F0&PID_1027&REV_0002&MI_01
P
3: 6.1.0.0
P4: 0409
P5:
input.inf
P6: *
P7:

P8: 
P9:

P10:


Attached
files:

These files may
be available
here:
C:\Users\Administrator\AppData\L
ocal\Microsoft\Windows\WER\ReportQueue\NonCritical_x6
4_a0d66a05e5e2b143e7be3182e8e197924df9c6_cab_07ece3a9


Analysis symbol:

Rechecking for solution:
0
Report Id: 568377f3-28a3-11df-bbb1-
001f29c9fc7a
Report Status: 6
3/5/2010 10:06 PM   Windows Error Reporting
        Fault bucket , type 0
Event
Name: PnPDriverNotFound
Response: Not
available
Cab Id:
0

Problem
signature:
P1: x64
P2:
PCI\VEN_103C&DEV_3302&SUBSYS_3305103C&REV_00&
#x000a;P3: 
P4: 
P5:

P6: 
P7:

P8: 
P9:

P10:


Attached
files:
C:\Users\Administrator\AppData\
Local\Temp\DMIC488.tmp.log.xml
&#x000d
;
These files may be available
here:
C:\Users\Administrator\AppData\L
ocal\Microsoft\Windows\WER\ReportQueue\NonCritical_x6
4_456942f2b4b1a733839bd1c4c52121c3e899ebb3_cab_07ecc4
e3

Analysis symbol:

Rechecking for solution:
0
Report Id: 4c2096e4-28a3-11df-bbb1-
001f29c9fc7a
Report Status: 6
3/5/2010 10:06 PM   Windows Error Reporting
        Fault bucket , type 0
Event
Name: PnPDriverNotFound
Response: Not
available
Cab Id:
0

Problem
signature:
P1: x64
P2:
PCI\VEN_0E11&DEV_B204&SUBSYS_3305103C&REV_03&
#x000a;P3: 
P4: 
P5:

P6: 
P7:

P8: 
P9:


P10:


Attached
files:
C:\Users\Administrator\AppData\
Local\Temp\DMIC3CC.tmp.log.xml
&#x000d
;
These files may be available
here:
C:\Users\Administrator\AppData\L
ocal\Microsoft\Windows\WER\ReportQueue\NonCritical_x6
4_7e82eddd15e4d283c242ed14eb6e8ab8c3b92a_cab_07ecc409


Analysis symbol:

Rechecking for solution:
0
Report Id: 4c2096e3-28a3-11df-bbb1-
001f29c9fc7a
Report Status: 6
3/5/2010 10:06 PM   Windows Error Reporting
        Fault bucket , type 0
Event
Name: PnPDriverNotFound
Response: Not
available
Cab Id:
0

Problem
signature:
P1: x64
P2:
PCI\VEN_0E11&DEV_B203&SUBSYS_3305103C&REV_03&
#x000a;P3: 
P4: 
P5:

P6: 
P7:

P8: 
P9:

P10:


Attached
files:
C:\Users\Administrator\AppData\
Local\Temp\DMIC2F0.tmp.log.xml
&#x000d
;
These files may be available
here:
C:\Users\Administrator\AppData\L
ocal\Microsoft\Windows\WER\ReportQueue\NonCritical_x6
4_13c25b234499970de196aa1523fa6c8773e538_cab_07ecc35d


Analysis symbol:

Rechecking for solution:
0
Report Id: 4c2096e2-28a3-11df-bbb1-
001f29c9fc7a
Report Status: 6
3/5/2010 10:06 PM   Windows Error Reporting
        Fault bucket , type 0
Event
Name: PnPGenericDriverFound
Response:
Not available
Cab Id:
0

Problem
signature:
P1: x64
P2:
PCI\VEN_1002&DEV_515E&SUBSYS_31FB103C&REV_02&
#x000a;P3: 
P4: 
P5:

P6: 
P7:

P8: 
P9:

P10:


Attached
files:

These files may
be available
here:
C:\Users\Administrator\AppData\L
ocal\Microsoft\Windows\WER\ReportQueue\NonCritical_x6
4_c5ce18a1b32ff35336f0e43b5d80ab481dbb3d3_cab_07eca03
4

Analysis symbol:

Rechecking for solution:
0
Report Id: 4c2096e1-28a3-11df-bbb1-
001f29c9fc7a
Report Status: 6
2/24/2010 10:57 PM Windows Error Reporting
        Fault bucket , type 0
Event
Name: APPCRASH
Response: Not
available
Cab Id:
0

Problem
signature:
P1:
mmc.exe
P2:
6.1.7600.16385
P3:

4a5bc808
P4: mmc.exe
P5: 6.1.7600.16385
P6: 4a5bc808
P7: c000041d
P8: 0000000000034f82
P9: 
P10: 

Attached files:

These files may be available here:
C:\Users\Administrator\AppData\Local\Microsoft\Windows\WER\ReportArchive\AppCrash_mmc.exe_42a6b5586fd91e68468f51a6af1fd51dalaa9a75_0b59f891

Analysis symbol: 
Rechecking for solution: 0
Report Id: 09e0f910-2198-11df-b3dd-001b78e28536
Report Status: 0
2/23/2010 11:01 PM Windows Error Reporting
  Fault bucket , type 0
Event Name: PnPRequestAdditionalSoftware
Response: Not available
Cab Id: 0

Problem signature:
P1: x64
P2: USB\VID_03F0&PID_1027&REV_0002&MI_01
P3: 6.1.0.0
P4: 0409
P5: input.inf
P6: *
P7: 
P8: 
P9: 
P10: 

Attached files:

These files may be available here:
C:\ProgramData\Microsoft\Windows\WER\ReportQueue\NonCritical_x64_a0d66a05e5e2b143e7be3182e8e197924df9c6_cab_0758fc38

Analysis symbol: 
Rechecking for solution: 0
Report Id: 51022fc2-20cf-11df-bd40-001b78e0712e
Report Status: 4
2/23/2010 11:01 PM Windows Error Reporting
  Fault bucket , type 0
Event Name: PnPRequestAdditionalSoftware
Response: Not available
Cab Id: 0

Problem signature:
P1: x64
P2: USB\VID_03F0&PID_1027&REV_0002&MI_00
P3: 6.1.0.0
P4: 0409
P5: input.inf
P6: *
P7: 
P8: 
P9: 
P10: 

Attached files:

These files may be available here:
C:\ProgramData\Microsoft\Windows\WER\ReportQueue\NonCritical_x64_e9be7acaab5beae6465d e43a38b014e0599a45_cab_0750f7b6

Analysis symbol: 
Rechecking for solution: 0
Report Id: 504fa88d-20cf-11df-bd40-001b78e0712e
Report Status: 4
2/23/2010 10:58 PM Windows Error Reporting
  Fault bucket , type 0
Event

Name: PnPDeviceProblemCode
Response: Not available
Cab Id: 0

Problem signature:
P1: x64
P2: USB\UNKNOWN
P3: {36fc9e60-c465-11cf-8056-444553540000}
P4: 0000002B
P5: unknown
P6: unknown
P7: unknown
P8: 
P9: 
P10: 

Attached files:
C:\Windows\Temp\DMI7271.tmp.log.xml
C:\Windows\Temp\LOG7291.tmp
C:\Windows\inf\usb.inf

These files may be available here:
C:\ProgramData\Microsoft\Windows\WER\ReportQueue\NonCritical_x64_8dd2a6bea57836935d86a299b4735d5c6f632592_cab_06c2729f

Analysis symbol: 
Rechecking for solution: 0
Report Id: f191b784-20ce-11df-b087-001b78e0712e
Report Status: 4
2/23/2010 10:57 PM Windows Error Reporting
  Fault bucket , type 0
Event Name: PnPGenericDriverFound
Response: Not available
Cab Id: 0

Problem signature:
P1: x64
P2: PCI\VEN_1002&DEV_515E&SUBSYS_31FB103C&REV_02
P3: 
P4: 
P5: 
P6: 
P7: 
P8: 
P9: 
P10: 

Attached files:

These files may be available here:
C:\ProgramData\Microsoft\Windows\WER\ReportQueue\NonCritical_x64_c5ce18a1b32ff35336f0e43b5d80ab481dbb3d3_cab_05e1dff2

Analysis symbol: 
Rechecking for solution: 0
Report Id: db302751-20ce-11df-b087-8d33201e54ab
Report Status: 6
2/23/2010 10:57 PM Windows Error Reporting
  Fault bucket , type 0
Event Name: PnPDriverNotFound
Response: Not available
Cab Id: 0

Problem signature:
P1: x64
P2: PCI\VEN_0E11&DEV_B204&SUBSYS_3305103C&REV_03
P3: 
P4: 
P5: 
P6: 
P7: 
P8: 
P9: 
P10: 

Attached files:
C:\Windows\Temp\DMIC0ED.tmp.log.xml

These files may be available here:
C:\ProgramData\Microsoft\Windows\WER\ReportQueue\NonCritical_x64_7e82eddd15e4d283c242ed14eb6e8ab8c3b92a_cab_04f1c10d

Analysis symbol: 
Rechecking for solution: 0
Report Id: d6794da6-

20ce-11df-b087-8d33201e54ab
Report Status: 6
2/23/2010 10:57 PM Windows Error Reporting
  Fault bucket , type 0
Event Name: PnPDriverNotFound
Response: Not available
Cab Id: 0

Problem signature:
P1: x64
P2: PCI\VEN_0E11&DEV_B203&SUBSYS_3305103C&REV_03
P3: 
P4: 
P5: 
P6: 
P7: 
P8: 
P9: 
P10: 

Attached files:
C:\Windows\Temp\DMIA7E2.tmp.log.xml

These files may be available here:
C:\ProgramData\Microsoft\Windows\WER\ReportQueue\NonCritical_x64_13c25b234499970de196aa1523fa6c8773e538_cab_0731a801

Analysis symbol: 
Rechecking for solution: 0
Report Id: d2a6f815-20ce-11df-b087-8d33201e54ab
Report Status: 6
2/23/2010 10:57 PM Windows Error Reporting
  Fault bucket , type 0
Event Name: PnPDriverNotFound
Response: Not available
Cab Id: 0

Problem signature:
P1: x64
P2: PCI\VEN_103C&DEV_3302&SUBSYS_3305103C&REV_00
P3: 
P4: 
P5: 
P6: 
P7: 
P8: 
P9: 
P10: 

Attached files:
C:\Windows\Temp\DMI92CC.tmp.log.xml

These files may be available here:
C:\ProgramData\Microsoft\Windows\WER\ReportQueue\NonCritical_x64_456942f2b4b1a733839bd1c4c52121c3e899ebb3_cab_06d1930b

Analysis symbol: 
Rechecking for solution: 0
Report Id: cf71bd57-20ce-11df-b087-8d33201e54ab
Report Status: 6

COM_Settings.txt

The component services tool in Windows 2008 was used to change the queue settings for the TPCC COM+ queue components. All tpcc queue components were set to enable object pooling, object construction, just in time activation, and component supports events and statistics. The construction string was Server = myserver; UID= sa; pwd=; DATABASE= tpcc; The single queue TpccAllTxn object was used, with the Min and Max both being set to 140 queues. Delivery threads were set under the TPCC key in the registry.

inetinfo.txt

Key Name:
HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\services\
InetInfo
Class Name: <NO CLASS>
Last Write Time: 2/23/2010 - 7:17 PM

Key Name:
HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\services\
InetInfo\Parameters
Class Name: <NO CLASS>
Last Write Time: 2/23/2010 - 7:25 PM
Value 0
  Name: PoolThreadLimit
  Type: REG_DWORD
  Data: 0x7fa

Value 1
  Name: ThreadTimeout
  Type: REG_DWORD
  Data: 0x15180

Value 2
  Name: ListenBackLog
  Type: REG_DWORD
  Data: 0xf

Key Name:
HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\services\
InetInfo\Performance
Class Name: <NO CLASS>
Last Write Time: 2/25/2010 - 3:43 PM
Value 0
  Name: Close
  Type: REG_SZ
  Data: CloseINFOPerformanceData

Value 1
  Name: Open
  Type: REG_SZ
  Data: OpenINFOPerformanceData

Value 2
  Name: Collect
  Type: REG_SZ
  Data: CollectINFOPerformanceData

Value 3
  Name: Library
  Type: REG_SZ
  Data: infoctrs.dll

Value 4
  Name: InstallType
  Type: REG_DWORD
  Data: 0x1

Value 5
  Name: PerfIniFile

  Type: REG_SZ
  Data: infoctrs.ini

Value 6
  Name: First Counter
  Type: REG_DWORD
  Data: 0x1fb2

Value 7
  Name: Last Counter
  Type: REG_DWORD
  Data: 0x1ff2

Value 8
  Name: First Help
  Type: REG_DWORD
  Data: 0x1fb3

Value 9
  Name: Last Help
  Type: REG_DWORD
  Data: 0x1ff3

Value 10
  Name: Object List
  Type: REG_SZ
  Data: 8114

install.txt

Microsoft SQL Server 2005 Enterprise x64 Edition SP3
Installation Procedures
Type of installation: custom
During the custom installation, use the default
settings for all except the following two areas:
Services accounts:
SQL Server - local system account
SQL Server Agent - local system account
Set the sort order/collation as Latin1_General / BIN

server_summary.txt

System Information report written at: 06/15/10
09:17:22
System Name: VENOM
[System Summary]

Item   Value
OS Name   Microsoft Windows Server 2008 R2 Enterprise

Version   6.1.7600 Build 7600
Other OS Description   Not Available
OS Manufacturer   Microsoft Corporation
System Name   VENOM
System Manufacturer HP
System Model   ProLiant DL585 G7

System Type   x64-based PC
Processor AMD Opteron(tm) Processor 6176 SE, 2294
Mhz, 12 Core(s), 12 Logical Processor(s)
Processor AMD Opteron(tm) Processor 6176 SE, 2294
Mhz, 12 Core(s), 12 Logical Processor(s)
Processor AMD Opteron(tm) Processor 6176 SE, 2294
Mhz, 12 Core(s), 12 Logical Processor(s)
Processor AMD Opteron(tm) Processor 6176 SE, 2294
Mhz, 12 Core(s), 12 Logical Processor(s)
BIOS Version/Date HP A16, 5/19/2010
SMBIOS Version   2.6
Windows Directory C:\Windows
System Directory   C:\Windows\system32
Boot Device   \Device\HarddiskVolume81
Locale   United States
Hardware Abstraction Layer   Version =
"6.1.7600.16385"
User Name Not Available
Time Zone Central Daylight Time
Installed Physical Memory (RAM)   512 GB
Total Physical Memory   512 GB
Available Physical Memory   490 GB
Total Virtual Memory   512 GB
Available Virtual Memory   490 GB
Page File Space   16.0 MB
Page File C:\pagefile.sys

[Hardware Resources]

[Conflicts/Sharing]

Resource Device
I/O Port 0x00000000-0x0000000F   Direct memory
access controller
I/O Port 0x00000000-0x0000000F   PCI bus

I/O Port 0x0000A000-0x0000AFFF   PCI standard
PCI-to-PCI bridge
I/O Port 0x0000A000-0x0000AFFF   PCI bus

IRQ 52   PCI standard PCI-to-PCI bridge
IRQ 52   PCI standard PCI-to-PCI bridge
IRQ 52   PCI standard PCI-to-PCI bridge

I/O Port 0x000003C0-0x000003DF   Standard VGA
Graphics Adapter
I/O Port 0x000003C0-0x000003DF   PCI bus

IRQ 86   Microsoft ACPI-Compliant System
IRQ 86   PCI standard PCI-to-PCI bridge
IRQ 86   PCI standard PCI-to-PCI bridge

I/O Port 0x00002000-0x00002FFF   ATI I/O
Communications Processor PCI Bus Controller
I/O Port 0x00002000-0x00002FFF   Standard VGA
Graphics Adapter

I/O Port 0x00000070-0x00000071   System
CMOS/real time clock
I/O Port 0x00000070-0x00000071   Motherboard
resources

IRQ 22   Standard OpenHCD USB Host Controller
IRQ 22   Standard Enhanced PCI to USB Host
Controller
IRQ 22   Standard OpenHCD USB Host Controller

IRQ 150   Microsoft ACPI-Compliant System
IRQ 150   PCI standard PCI-to-PCI bridge
IRQ 150   PCI standard PCI-to-PCI bridge

IRQ 23   Standard OpenHCD USB Host Controller
IRQ 23   Standard OpenHCD USB Host Controller
IRQ 23   Standard Enhanced PCI to USB Host
Controller

I/O Port 0x00003000-0x000030FF   Base System
Device
I/O Port 0x00003000-0x000030FF   PCI standard
PCI-to-PCI bridge

Memory Address 0xFED00000-0xFED003FF   High
precision event timer
Memory Address 0xFED00000-0xFED003FF   PCI bus
Memory Address 0xFED00000-0xFED003FF   PCI bus

Memory Address 0xE0000000-0xE7FFFFFF   ATI I/O
Communications Processor PCI Bus Controller
Memory Address 0xE0000000-0xE7FFFFFF   Standard VGA
Graphics Adapter

I/O Port 0x000000A0-0x000000BF   Motherboard
resources
I/O Port 0x000000A0-0x000000BF   Programmable
interrupt controller

Memory Address 0xA0000-0xBFFFF   Standard VGA
Graphics Adapter
Memory Address 0xA0000-0xBFFFF   PCI bus

I/O Port 0x000003B0-0x000003BB   Standard VGA
Graphics Adapter
I/O Port 0x000003B0-0x000003BB   PCI bus

I/O Port 0x00001000-0x00001007   Standard Dual
Channel PCI IDE Controller
I/O Port 0x00001000-0x00001007   PCI bus

I/O Port 0x00007000-0x00007FFF   PCI standard
PCI-to-PCI bridge
I/O Port 0x00007000-0x00007FFF   PCI bus

IRQ 148   Microsoft ACPI-Compliant System
IRQ 148   PCI standard PCI-to-PCI bridge

IRQ 116   Microsoft ACPI-Compliant System
IRQ 116   PCI standard PCI-to-PCI bridge

IRQ 118   Microsoft ACPI-Compliant System
IRQ 118   PCI standard PCI-to-PCI bridge
IRQ 118   PCI standard PCI-to-PCI bridge

I/O Port 0x00000600-0x0000067F   Motherboard
resources

I/O Port 0x00000600-0x0000067F   Extended IO
Bus

I/O Port 0x0000D000-0x0000DFFF   PCI standard
PCI-to-PCI bridge
I/O Port 0x0000D000-0x0000DFFF   PCI bus

Memory Address 0xEE000000-0xEFFFFFFF   HP NC375i
Integrated Quad Port Multifunction Gigabit Server
Adapter #4
Memory Address 0xEE000000-0xEFFFFFFF   PCI standard
PCI-to-PCI bridge

IRQ 84   Microsoft ACPI-Compliant System
IRQ 84   PCI standard PCI-to-PCI bridge

I/O Port 0x00000020-0x0000003F   Motherboard
resources
I/O Port 0x00000020-0x0000003F   Programmable
interrupt controller

[DMA]

Resource Device   Status
Channel 7 Direct memory access controller   OK

[Forced Hardware]

Device   PNP Device ID

[I/O]

Resource Device   Status
0x00000070-0x00000071   System CMOS/real time
clock   OK
0x00000070-0x00000071   Motherboard resources
OK
0x00003000-0x000030FF   Base System Device OK

0x00003000-0x000030FF   PCI standard PCI-to-PCI
bridge   OK
0x00003400-0x000034FF   Base System Device OK

0x00000010-0x0000001F   Motherboard resources
OK
0x00000020-0x0000003F   Motherboard resources
OK
0x00000020-0x0000003F   Programmable interrupt
controller   OK
0x000000A0-0x000000BF   Motherboard resources
OK
0x000000A0-0x000000BF   Programmable interrupt
controller   OK
0x00000050-0x00000053   Motherboard resources
OK
0x00000090-0x0000009F   Motherboard resources
OK
0x000000F0-0x000000F0   Motherboard resources
OK
0x00000379-0x0000037A   Motherboard resources
OK

0x00000400-0x0000043F   Motherboard resources
OK
0x000004D0-0x000004D1   Motherboard resources
OK
0x000004D6-0x000004D6   Motherboard resources
OK
0x00000520-0x00000520   Motherboard resources
OK
0x00000580-0x0000059F   Motherboard resources
OK
0x00000600-0x0000067F   Motherboard resources
OK
0x00000600-0x0000067F   Extended IO Bus   OK

0x00000700-0x00000703   Motherboard resources
OK
0x00000820-0x0000082F   Motherboard resources
OK
0x00000900-0x000009FE   Motherboard resources
OK
0x00000C06-0x00000C07   Motherboard resources
OK
0x00000C14-0x00000C14   Motherboard resources
OK
0x00000C4A-0x00000C4A   Motherboard resources
OK
0x00000C50-0x00000C52   Motherboard resources
OK
0x00000C6C-0x00000C6C   Motherboard resources
OK
0x00000C6F-0x00000C6F   Motherboard resources
OK
0x00000C80-0x00000C83   Motherboard resources
OK
0x00000C90-0x00000C9F   Motherboard resources
OK
0x00000CA0-0x00000CA5   Motherboard resources
OK
0x00000CD0-0x00000CDF   Motherboard resources
OK
0x00000F50-0x00000F58   Motherboard resources
OK
0x00000B00-0x00000B3F   Motherboard resources
OK
0x000002F8-0x000002FF   Motherboard resources
OK
0x00003800-0x000038FF   Base System Device OK

0x00008000-0x00008FFF   PCI standard PCI-to-PCI
bridge   OK
0x000001F0-0x000001F7   ATA Channel 0   OK

0x000003F6-0x000003F6   ATA Channel 0   OK

0x00002000-0x00002FFF   ATI I/O Communications
Processor PCI Bus Controller OK
0x00002000-0x00002FFF   Standard VGA Graphics
Adapter   OK
0x00005000-0x00005FFF   PCI standard PCI-to-PCI
bridge   OK
0x00007000-0x00007FFF   PCI standard PCI-to-PCI
bridge   OK
0x00007000-0x00007FFF   PCI bus   OK

Resource	Device	Status
0x00000170-0x00000177	ATA Channel 1	OK
0x00000376-0x00000376	ATA Channel 1	OK
0x00000CA2-0x00000CA3	Microsoft Generic IPMI Compliant Device	OK
0x00000500-0x0000050F	Standard Dual Channel PCI IDE Controller	OK
0x0000B000-0x0000BFFF	PCI standard PCI-to-PCI bridge	OK
0x00000C00-0x00000C01	Programmable interrupt controller	OK
0x00000040-0x00000043	System timer	OK
0x00001000-0x00001007	Standard Dual Channel PCI IDE Controller	OK
0x00001000-0x00001007	PCI bus	OK
0x00001008-0x0000100B	Standard Dual Channel PCI IDE Controller	OK
0x00001010-0x00001017	Standard Dual Channel PCI IDE Controller	OK
0x00001018-0x0000101B	Standard Dual Channel PCI IDE Controller	OK
0x00001020-0x0000102F	Standard Dual Channel PCI IDE Controller	OK
0x0000E000-0x0000EFFF	PCI standard PCI-to-PCI bridge	OK
0x0000A000-0x0000AFFF	PCI standard PCI-to-PCI bridge	OK
0x0000A000-0x0000AFFF	PCI bus	OK
0x00000000-0x0000000F	Direct memory access controller	OK
0x00000000-0x0000000F	PCI bus	OK
0x00000080-0x0000008F	Direct memory access controller	OK
0x000000C0-0x000000DF	Direct memory access controller	OK
0x00000060-0x00000060	Standard PS/2 Keyboard	OK
0x00000064-0x00000064	Standard PS/2 Keyboard	OK
0x00009000-0x00009FFF	PCI standard PCI-to-PCI bridge	OK
0x000003B0-0x000003BB	Standard VGA Graphics Adapter	OK
0x000003B0-0x000003BB	PCI bus	OK
0x000003C0-0x000003DF	Standard VGA Graphics Adapter	OK
0x000003C0-0x000003DF	PCI bus	OK
0x000003F8-0x000003FF	Communications Port (COM1)	OK
0x0000D000-0x0000DFFF	PCI standard PCI-to-PCI bridge	OK
0x0000D000-0x0000DFFF	PCI bus	OK
0x00000061-0x00000061	System speaker	OK
0x0000C000-0x0000CFFF	PCI standard PCI-to-PCI bridge	OK
0x00006000-0x00006FFF	PCI standard PCI-to-PCI bridge	OK
0x0000002E-0x0000002F	Extended IO Bus	OK
0x00000620-0x0000065F	Extended IO Bus	OK
0x00000680-0x0000069F	Extended IO Bus	OK
0x00000660-0x0000067F	Extended IO Bus	OK
0x00000300-0x0000031F	Extended IO Bus	OK
0x00003C00-0x00003C1F	Standard Universal PCI to USB Host Controller	OK
0x000003E0-0x00000CF7	PCI bus	OK
0x00000D00-0x00000FFF	PCI bus	OK
0x0000F000-0x0000FFFF	PCI standard PCI-to-PCI bridge	OK
0x00004000-0x00004FFF	PCI standard PCI-to-PCI bridge	OK

[IRQs]

Resource	Device	Status
IRQ 10	Base System Device	OK
IRQ 4294967135	HP NC375i Integrated Quad Port Multifunction Gigabit Server Adapter #3	OK
IRQ 4294967134	HP NC375i Integrated Quad Port Multifunction Gigabit Server Adapter #3	OK
IRQ 4294967133	HP NC375i Integrated Quad Port Multifunction Gigabit Server Adapter #3	OK
IRQ 4294967132	HP NC375i Integrated Quad Port Multifunction Gigabit Server Adapter #3	OK
IRQ 4294967131	HP NC375i Integrated Quad Port Multifunction Gigabit Server Adapter #3	OK
IRQ 4294967130	HP NC375i Integrated Quad Port Multifunction Gigabit Server Adapter #3	OK
IRQ 4294967129	HP NC375i Integrated Quad Port Multifunction Gigabit Server Adapter #3	OK
IRQ 4294967128	HP NC375i Integrated Quad Port Multifunction Gigabit Server Adapter #3	OK
IRQ 4294967173	LSI Adapter, SAS2 2008 Falcon - StorPort	OK
IRQ 4294967172	LSI Adapter, SAS2 2008 Falcon - StorPort	OK
IRQ 4294967171	LSI Adapter, SAS2 2008 Falcon - StorPort	OK
IRQ 4294967170	LSI Adapter, SAS2 2008 Falcon - StorPort	OK
IRQ 4294967169	LSI Adapter, SAS2 2008 Falcon - StorPort	OK
IRQ 4294967168	LSI Adapter, SAS2 2008 Falcon - StorPort	OK
IRQ 4294967167	LSI Adapter, SAS2 2008 Falcon - StorPort	OK
IRQ 4294967166	LSI Adapter, SAS2 2008 Falcon - StorPort	OK
IRQ 4294967165	LSI Adapter, SAS2 2008 Falcon - StorPort	OK
IRQ 4294967164	LSI Adapter, SAS2 2008 Falcon - StorPort	OK
IRQ 4294967163	LSI Adapter, SAS2 2008 Falcon - StorPort	OK
IRQ 4294967162	LSI Adapter, SAS2 2008 Falcon - StorPort	OK
IRQ 4294967161	LSI Adapter, SAS2 2008 Falcon - StorPort	OK
IRQ 4294967160	LSI Adapter, SAS2 2008 Falcon - StorPort	OK
IRQ 4294967159	LSI Adapter, SAS2 2008 Falcon - StorPort	OK
IRQ 4294967158	LSI Adapter, SAS2 2008 Falcon - StorPort	OK
IRQ 4294967157	LSI Adapter, SAS2 2008 Falcon - StorPort	OK
IRQ 4294967156	LSI Adapter, SAS2 2008 Falcon - StorPort	OK
IRQ 4294967155	LSI Adapter, SAS2 2008 Falcon - StorPort	OK
IRQ 4294967154	LSI Adapter, SAS2 2008 Falcon - StorPort	OK
IRQ 4294967153	LSI Adapter, SAS2 2008 Falcon - StorPort	OK
IRQ 4294967152	LSI Adapter, SAS2 2008 Falcon - StorPort	OK
IRQ 4294967151	LSI Adapter, SAS2 2008 Falcon - StorPort	OK
IRQ 4294967150	LSI Adapter, SAS2 2008 Falcon - StorPort	OK
IRQ 4294967149	LSI Adapter, SAS2 2008 Falcon - StorPort	OK
IRQ 4294967148	LSI Adapter, SAS2 2008 Falcon - StorPort	OK
IRQ 4294967147	LSI Adapter, SAS2 2008 Falcon - StorPort	OK
IRQ 4294967146	LSI Adapter, SAS2 2008 Falcon - StorPort	OK
IRQ 4294967145	LSI Adapter, SAS2 2008 Falcon - StorPort	OK
IRQ 4294967144	LSI Adapter, SAS2 2008 Falcon - StorPort	OK
IRQ 12	PS/2 Compatible Mouse	OK
IRQ 23	Standard OpenHCD USB Host Controller	OK
IRQ 23	Standard OpenHCD USB Host Controller	OK
IRQ 23	Standard Enhanced PCI to USB Host Controller	OK
IRQ 24	PCI standard PCI-to-PCI bridge	OK
IRQ 81	Microsoft ACPI-Compliant System	OK
IRQ 82	Microsoft ACPI-Compliant System	OK
IRQ 83	Microsoft ACPI-Compliant System	OK
IRQ 84	Microsoft ACPI-Compliant System	OK
IRQ 84	PCI standard PCI-to-PCI bridge	OK
IRQ 85	Microsoft ACPI-Compliant System	OK
IRQ 86	Microsoft ACPI-Compliant System	OK
IRQ 86	PCI standard PCI-to-PCI bridge	OK
IRQ 86	PCI standard PCI-to-PCI bridge	OK
IRQ 87	Microsoft ACPI-Compliant System	OK

IRQ	Device	Status	IRQ	Device	Status	IRQ	Device	Status
IRQ 88	Microsoft ACPI-Compliant System	OK	IRQ 118	Microsoft ACPI-Compliant System	OK	IRQ 147	Microsoft ACPI-Compliant System	OK
IRQ 89	Microsoft ACPI-Compliant System	OK	IRQ 118	PCI standard PCI-to-PCI bridge	OK	IRQ 148	Microsoft ACPI-Compliant System	OK
IRQ 90	Microsoft ACPI-Compliant System	OK	IRQ 118	PCI standard PCI-to-PCI bridge	OK	IRQ 148	PCI standard PCI-to-PCI bridge	OK
IRQ 91	Microsoft ACPI-Compliant System	OK	IRQ 119	Microsoft ACPI-Compliant System	OK	IRQ 149	Microsoft ACPI-Compliant System	OK
IRQ 92	Microsoft ACPI-Compliant System	OK	IRQ 120	Microsoft ACPI-Compliant System	OK	IRQ 150	Microsoft ACPI-Compliant System	OK
IRQ 93	Microsoft ACPI-Compliant System	OK	IRQ 121	Microsoft ACPI-Compliant System	OK	IRQ 150	PCI standard PCI-to-PCI bridge	OK
IRQ 94	Microsoft ACPI-Compliant System	OK	IRQ 122	Microsoft ACPI-Compliant System	OK	IRQ 150	PCI standard PCI-to-PCI bridge	OK
IRQ 95	Microsoft ACPI-Compliant System	OK	IRQ 123	Microsoft ACPI-Compliant System	OK	IRQ 151	Microsoft ACPI-Compliant System	OK
IRQ 96	Microsoft ACPI-Compliant System	OK	IRQ 124	Microsoft ACPI-Compliant System	OK	IRQ 152	Microsoft ACPI-Compliant System	OK
IRQ 97	Microsoft ACPI-Compliant System	OK	IRQ 125	Microsoft ACPI-Compliant System	OK	IRQ 153	Microsoft ACPI-Compliant System	OK
IRQ 98	Microsoft ACPI-Compliant System	OK	IRQ 126	Microsoft ACPI-Compliant System	OK	IRQ 154	Microsoft ACPI-Compliant System	OK
IRQ 99	Microsoft ACPI-Compliant System	OK	IRQ 127	Microsoft ACPI-Compliant System	OK	IRQ 155	Microsoft ACPI-Compliant System	OK
IRQ 100	Microsoft ACPI-Compliant System	OK	IRQ 128	Microsoft ACPI-Compliant System	OK	IRQ 156	Microsoft ACPI-Compliant System	OK
IRQ 101	Microsoft ACPI-Compliant System	OK	IRQ 129	Microsoft ACPI-Compliant System	OK	IRQ 157	Microsoft ACPI-Compliant System	OK
IRQ 102	Microsoft ACPI-Compliant System	OK	IRQ 130	Microsoft ACPI-Compliant System	OK	IRQ 158	Microsoft ACPI-Compliant System	OK
IRQ 103	Microsoft ACPI-Compliant System	OK	IRQ 131	Microsoft ACPI-Compliant System	OK	IRQ 159	Microsoft ACPI-Compliant System	OK
IRQ 104	Microsoft ACPI-Compliant System	OK	IRQ 132	Microsoft ACPI-Compliant System	OK	IRQ 160	Microsoft ACPI-Compliant System	OK
IRQ 105	Microsoft ACPI-Compliant System	OK	IRQ 133	Microsoft ACPI-Compliant System	OK	IRQ 161	Microsoft ACPI-Compliant System	OK
IRQ 106	Microsoft ACPI-Compliant System	OK	IRQ 134	Microsoft ACPI-Compliant System	OK	IRQ 162	Microsoft ACPI-Compliant System	OK
IRQ 107	Microsoft ACPI-Compliant System	OK	IRQ 135	Microsoft ACPI-Compliant System	OK	IRQ 163	Microsoft ACPI-Compliant System	OK
IRQ 108	Microsoft ACPI-Compliant System	OK	IRQ 136	Microsoft ACPI-Compliant System	OK	IRQ 164	Microsoft ACPI-Compliant System	OK
IRQ 109	Microsoft ACPI-Compliant System	OK	IRQ 137	Microsoft ACPI-Compliant System	OK	IRQ 165	Microsoft ACPI-Compliant System	OK
IRQ 110	Microsoft ACPI-Compliant System	OK	IRQ 138	Microsoft ACPI-Compliant System	OK	IRQ 166	Microsoft ACPI-Compliant System	OK
IRQ 111	Microsoft ACPI-Compliant System	OK	IRQ 139	Microsoft ACPI-Compliant System	OK	IRQ 167	Microsoft ACPI-Compliant System	OK
IRQ 112	Microsoft ACPI-Compliant System	OK	IRQ 140	Microsoft ACPI-Compliant System	OK	IRQ 168	Microsoft ACPI-Compliant System	OK
IRQ 113	Microsoft ACPI-Compliant System	OK	IRQ 141	Microsoft ACPI-Compliant System	OK	IRQ 169	Microsoft ACPI-Compliant System	OK
IRQ 114	Microsoft ACPI-Compliant System	OK	IRQ 142	Microsoft ACPI-Compliant System	OK	IRQ 170	Microsoft ACPI-Compliant System	OK
IRQ 115	Microsoft ACPI-Compliant System	OK	IRQ 143	Microsoft ACPI-Compliant System	OK	IRQ 171	Microsoft ACPI-Compliant System	OK
IRQ 116	Microsoft ACPI-Compliant System	OK	IRQ 144	Microsoft ACPI-Compliant System	OK	IRQ 172	Microsoft ACPI-Compliant System	OK
IRQ 116	PCI standard PCI-to-PCI bridge	OK	IRQ 145	Microsoft ACPI-Compliant System	OK	IRQ 173	Microsoft ACPI-Compliant System	OK
IRQ 117	Microsoft ACPI-Compliant System	OK	IRQ 146	Microsoft ACPI-Compliant System	OK	IRQ 174	Microsoft ACPI-Compliant System	OK

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IRQ 175   Microsoft ACPI-Compliant System      OK        IRQ 4294967181      LSI Adapter, SAS2 2008 Falcon -       IRQ 4294967243      LSI Adapter, SAS2 2008 Falcon -
                                                          StorPort  OK                                             StorPort  OK
IRQ 176   Microsoft ACPI-Compliant System      OK        IRQ 4294967180      LSI Adapter, SAS2 2008 Falcon -       IRQ 4294967242      LSI Adapter, SAS2 2008 Falcon -
                                                          StorPort  OK                                             StorPort  OK
IRQ 177   Microsoft ACPI-Compliant System      OK        IRQ 4294967179      LSI Adapter, SAS2 2008 Falcon -       IRQ 4294967241      LSI Adapter, SAS2 2008 Falcon -
                                                          StorPort  OK                                             StorPort  OK
IRQ 178   Microsoft ACPI-Compliant System      OK        IRQ 4294967178      LSI Adapter, SAS2 2008 Falcon -       IRQ 4294967240      LSI Adapter, SAS2 2008 Falcon -
                                                          StorPort  OK                                             StorPort  OK
IRQ 179   Microsoft ACPI-Compliant System      OK        IRQ 4294967177      LSI Adapter, SAS2 2008 Falcon -       IRQ 4294967239      LSI Adapter, SAS2 2008 Falcon -
                                                          StorPort  OK                                             StorPort  OK
IRQ 180   Microsoft ACPI-Compliant System      OK        IRQ 4294967176      LSI Adapter, SAS2 2008 Falcon -       IRQ 4294967238      LSI Adapter, SAS2 2008 Falcon -
                                                          StorPort  OK                                             StorPort  OK
IRQ 181   Microsoft ACPI-Compliant System      OK        IRQ 4294967175      LSI Adapter, SAS2 2008 Falcon -       IRQ 4294967237      LSI Adapter, SAS2 2008 Falcon -
                                                          StorPort  OK                                             StorPort  OK
IRQ 182   Microsoft ACPI-Compliant System      OK        IRQ 4294967174      LSI Adapter, SAS2 2008 Falcon -       IRQ 4294967236      LSI Adapter, SAS2 2008 Falcon -
                                                          StorPort  OK                                             StorPort  OK
IRQ 183   Microsoft ACPI-Compliant System      OK        IRQ 4294967218      LSI Adapter, SAS2 2008 Falcon -       IRQ 4294967235      LSI Adapter, SAS2 2008 Falcon -
                                                          StorPort  OK                                             StorPort  OK
IRQ 184   Microsoft ACPI-Compliant System      OK        IRQ 4294967217      LSI Adapter, SAS2 2008 Falcon -       IRQ 4294967234      LSI Adapter, SAS2 2008 Falcon -
                                                          StorPort  OK                                             StorPort  OK
IRQ 185   Microsoft ACPI-Compliant System      OK        IRQ 4294967216      LSI Adapter, SAS2 2008 Falcon -       IRQ 54    PCI standard PCI-to-PCI bridge        OK
                                                          StorPort  OK
IRQ 186   Microsoft ACPI-Compliant System      OK        IRQ 4294967215      LSI Adapter, SAS2 2008 Falcon -       IRQ 4294967294      Smart Array P410i Controller  OK
                                                          StorPort  OK
IRQ 187   Microsoft ACPI-Compliant System      OK        IRQ 4294967214      LSI Adapter, SAS2 2008 Falcon -       IRQ 4294967293      Smart Array P410i Controller  OK
                                                          StorPort  OK
IRQ 188   Microsoft ACPI-Compliant System      OK        IRQ 4294967213      LSI Adapter, SAS2 2008 Falcon -       IRQ 4294967292      Smart Array P410i Controller  OK
                                                          StorPort  OK
IRQ 189   Microsoft ACPI-Compliant System      OK        IRQ 4294967212      LSI Adapter, SAS2 2008 Falcon -       IRQ 4294967291      Smart Array P410i Controller  OK
                                                          StorPort  OK
IRQ 190   Microsoft ACPI-Compliant System      OK        IRQ 4294967211      LSI Adapter, SAS2 2008 Falcon -       IRQ 4294967290      Smart Array P410i Controller  OK
                                                          StorPort  OK
IRQ 11    Base System Device  OK                          IRQ 4294967210      LSI Adapter, SAS2 2008 Falcon -       IRQ 4294967289      Smart Array P410i Controller  OK
IRQ 4294967143      HP NC375i Integrated Quad Port        StorPort  OK
Multifunction Gigabit Server Adapter #4 OK                IRQ 4294967209      LSI Adapter, SAS2 2008 Falcon -       IRQ 4294967288      Smart Array P410i Controller  OK
IRQ 4294967142      HP NC375i Integrated Quad Port        StorPort  OK
Multifunction Gigabit Server Adapter #4 OK                IRQ 4294967208      LSI Adapter, SAS2 2008 Falcon -       IRQ 4294967287      Smart Array P410i Controller  OK
IRQ 4294967141      HP NC375i Integrated Quad Port        StorPort  OK
Multifunction Gigabit Server Adapter #4 OK                IRQ 4294967207      LSI Adapter, SAS2 2008 Falcon -       IRQ 15    ATA Channel 1        OK
IRQ 4294967140      HP NC375i Integrated Quad Port        StorPort  OK                                             IRQ 4294967278      LSI Adapter, SAS2 2008 Falcon -
Multifunction Gigabit Server Adapter #4 OK                IRQ 4294967206      LSI Adapter, SAS2 2008 Falcon -       StorPort  OK
IRQ 4294967139      HP NC375i Integrated Quad Port        StorPort  OK                                             IRQ 4294967277      LSI Adapter, SAS2 2008 Falcon -
Multifunction Gigabit Server Adapter #4 OK                IRQ 4294967205      LSI Adapter, SAS2 2008 Falcon -       StorPort  OK
IRQ 4294967138      HP NC375i Integrated Quad Port        StorPort  OK                                             IRQ 4294967276      LSI Adapter, SAS2 2008 Falcon -
Multifunction Gigabit Server Adapter #4 OK                IRQ 4294967204      LSI Adapter, SAS2 2008 Falcon -       StorPort  OK
IRQ 4294967137      HP NC375i Integrated Quad Port        StorPort  OK                                             IRQ 4294967275      LSI Adapter, SAS2 2008 Falcon -
Multifunction Gigabit Server Adapter #4 OK                IRQ 22    Standard OpenHCD USB Host Controller     OK     StorPort  OK
IRQ 4294967136      HP NC375i Integrated Quad Port                                                                 IRQ 4294967274      LSI Adapter, SAS2 2008 Falcon -
Multifunction Gigabit Server Adapter #4 OK                IRQ 22    Standard Enhanced PCI to USB Host             StorPort  OK
IRQ 4294967188      LSI Adapter, SAS2 2008 Falcon -       Controller          OK                                   IRQ 4294967273      LSI Adapter, SAS2 2008 Falcon -
StorPort  OK                                              IRQ 22    Standard OpenHCD USB Host Controller     OK     StorPort  OK
IRQ 4294967187      LSI Adapter, SAS2 2008 Falcon -                                                                IRQ 4294967272      LSI Adapter, SAS2 2008 Falcon -
StorPort OK                                               IRQ 14    ATA Channel 0        OK                         StorPort  OK
IRQ 4294967186      LSI Adapter, SAS2 2008 Falcon -       IRQ 4294967248      LSI Adapter, SAS2 2008 Falcon -       IRQ 4294967271      LSI Adapter, SAS2 2008 Falcon -
StorPort  OK                                              StorPort  OK                                             StorPort  OK
IRQ 4294967185      LSI Adapter, SAS2 2008 Falcon -       IRQ 4294967247      LSI Adapter, SAS2 2008 Falcon -       IRQ 4294967270      LSI Adapter, SAS2 2008 Falcon -
StorPort  OK                                              StorPort  OK                                             StorPort  OK
IRQ 4294967184      LSI Adapter, SAS2 2008 Falcon -       IRQ 4294967246      LSI Adapter, SAS2 2008 Falcon -       IRQ 4294967269      LSI Adapter, SAS2 2008 Falcon -
StorPort  OK                                              StorPort  OK                                             StorPort  OK
IRQ 4294967183      LSI Adapter, SAS2 2008 Falcon -       IRQ 4294967245      LSI Adapter, SAS2 2008 Falcon -       IRQ 4294967268      LSI Adapter, SAS2 2008 Falcon -
StorPort  OK                                              StorPort  OK                                             StorPort  OK
IRQ 4294967182      LSI Adapter, SAS2 2008 Falcon -       IRQ 4294967244      LSI Adapter, SAS2 2008 Falcon -       IRQ 4294967267      LSI Adapter, SAS2 2008 Falcon -
StorPort  OK                                              StorPort  OK                                             StorPort  OK
```

IRQ 4294967266   LSI Adapter, SAS2 2008 Falcon - StorPort OK
IRQ 4294967265   LSI Adapter, SAS2 2008 Falcon - StorPort OK
IRQ 4294967264   LSI Adapter, SAS2 2008 Falcon - StorPort OK
IRQ 52   PCI standard PCI-to-PCI bridge   OK
IRQ 52   PCI standard PCI-to-PCI bridge   OK
IRQ 52   PCI standard PCI-to-PCI bridge   OK
IRQ 64   QLogic Fibre Channel Adapter OK
IRQ 0   System timer   OK
IRQ 16   Standard Dual Channel PCI IDE Controller OK
IRQ 65   QLogic Fibre Channel Adapter OK
IRQ 1   Standard PS/2 Keyboard   OK
IRQ 4   Communications Port (COM1)   OK
IRQ 4294967286   Smart Array P812 Controller   OK
IRQ 4294967285   Smart Array P812 Controller   OK
IRQ 4294967284   Smart Array P812 Controller   OK
IRQ 4294967283   Smart Array P812 Controller   OK
IRQ 4294967282   Smart Array P812 Controller   OK
IRQ 4294967281   Smart Array P812 Controller   OK
IRQ 4294967280   Smart Array P812 Controller   OK
IRQ 4294967279   Smart Array P812 Controller   OK
IRQ 4294967119   HP NC375i Integrated Quad Port Multifunction Gigabit Server Adapter   OK
IRQ 4294967118   HP NC375i Integrated Quad Port Multifunction Gigabit Server Adapter   OK
IRQ 4294967117   HP NC375i Integrated Quad Port Multifunction Gigabit Server Adapter   OK
IRQ 4294967116   HP NC375i Integrated Quad Port Multifunction Gigabit Server Adapter   OK
IRQ 4294967115   HP NC375i Integrated Quad Port Multifunction Gigabit Server Adapter   OK
IRQ 4294967114   HP NC375i Integrated Quad Port Multifunction Gigabit Server Adapter   OK
IRQ 4294967113   HP NC375i Integrated Quad Port Multifunction Gigabit Server Adapter   OK
IRQ 4294967112   HP NC375i Integrated Quad Port Multifunction Gigabit Server Adapter   OK
IRQ 4294967203   LSI Adapter, SAS2 2008 Falcon - StorPort OK
IRQ 4294967202   LSI Adapter, SAS2 2008 Falcon - StorPort OK
IRQ 4294967201   LSI Adapter, SAS2 2008 Falcon - StorPort OK
IRQ 4294967200   LSI Adapter, SAS2 2008 Falcon - StorPort OK
IRQ 4294967199   LSI Adapter, SAS2 2008 Falcon - StorPort OK
IRQ 4294967198   LSI Adapter, SAS2 2008 Falcon - StorPort OK

IRQ 4294967197   LSI Adapter, SAS2 2008 Falcon - StorPort OK
IRQ 4294967196   LSI Adapter, SAS2 2008 Falcon - StorPort OK
IRQ 4294967195   LSI Adapter, SAS2 2008 Falcon - StorPort OK
IRQ 4294967194   LSI Adapter, SAS2 2008 Falcon - StorPort OK
IRQ 4294967193   LSI Adapter, SAS2 2008 Falcon - StorPort OK
IRQ 4294967192   LSI Adapter, SAS2 2008 Falcon - StorPort OK
IRQ 4294967191   LSI Adapter, SAS2 2008 Falcon - StorPort OK
IRQ 4294967190   LSI Adapter, SAS2 2008 Falcon - StorPort OK
IRQ 4294967189   LSI Adapter, SAS2 2008 Falcon - StorPort OK
IRQ 44   Standard Universal PCI to USB Host Controller   OK
IRQ 4294967127   HP NC375i Integrated Quad Port Multifunction Gigabit Server Adapter #2 OK
IRQ 4294967126   HP NC375i Integrated Quad Port Multifunction Gigabit Server Adapter #2 OK
IRQ 4294967125   HP NC375i Integrated Quad Port Multifunction Gigabit Server Adapter #2 OK
IRQ 4294967124   HP NC375i Integrated Quad Port Multifunction Gigabit Server Adapter #2 OK
IRQ 4294967123   HP NC375i Integrated Quad Port Multifunction Gigabit Server Adapter #2 OK
IRQ 4294967122   HP NC375i Integrated Quad Port Multifunction Gigabit Server Adapter #2 OK
IRQ 4294967121   HP NC375i Integrated Quad Port Multifunction Gigabit Server Adapter #2 OK
IRQ 4294967120   HP NC375i Integrated Quad Port Multifunction Gigabit Server Adapter #2 OK
IRQ 4294967233   LSI Adapter, SAS2 2008 Falcon - StorPort OK
IRQ 4294967232   LSI Adapter, SAS2 2008 Falcon - StorPort OK
IRQ 4294967231   LSI Adapter, SAS2 2008 Falcon - StorPort OK
IRQ 4294967230   LSI Adapter, SAS2 2008 Falcon - StorPort OK
IRQ 4294967229   LSI Adapter, SAS2 2008 Falcon - StorPort OK
IRQ 4294967228   LSI Adapter, SAS2 2008 Falcon - StorPort OK
IRQ 4294967227   LSI Adapter, SAS2 2008 Falcon - StorPort OK
IRQ 4294967226   LSI Adapter, SAS2 2008 Falcon - StorPort OK
IRQ 4294967225   LSI Adapter, SAS2 2008 Falcon - StorPort OK
IRQ 4294967224   LSI Adapter, SAS2 2008 Falcon - StorPort OK
IRQ 4294967223   LSI Adapter, SAS2 2008 Falcon - StorPort OK
IRQ 4294967222   LSI Adapter, SAS2 2008 Falcon - StorPort OK
IRQ 4294967221   LSI Adapter, SAS2 2008 Falcon - StorPort OK

IRQ 4294967220   LSI Adapter, SAS2 2008 Falcon - StorPort OK
IRQ 4294967219   LSI Adapter, SAS2 2008 Falcon - StorPort OK
IRQ 4294967263   LSI Adapter, SAS2 2008 Falcon - StorPort OK
IRQ 4294967262   LSI Adapter, SAS2 2008 Falcon - StorPort OK
IRQ 4294967261   LSI Adapter, SAS2 2008 Falcon - StorPort OK
IRQ 4294967260   LSI Adapter, SAS2 2008 Falcon - StorPort OK
IRQ 4294967259   LSI Adapter, SAS2 2008 Falcon - StorPort OK
IRQ 4294967258   LSI Adapter, SAS2 2008 Falcon - StorPort OK
IRQ 4294967257   LSI Adapter, SAS2 2008 Falcon - StorPort OK
IRQ 4294967256   LSI Adapter, SAS2 2008 Falcon - StorPort OK
IRQ 4294967255   LSI Adapter, SAS2 2008 Falcon - StorPort OK
IRQ 4294967254   LSI Adapter, SAS2 2008 Falcon - StorPort OK
IRQ 4294967253   LSI Adapter, SAS2 2008 Falcon - StorPort OK
IRQ 4294967252   LSI Adapter, SAS2 2008 Falcon - StorPort OK
IRQ 4294967251   LSI Adapter, SAS2 2008 Falcon - StorPort OK
IRQ 4294967250   LSI Adapter, SAS2 2008 Falcon - StorPort OK
IRQ 4294967249   LSI Adapter, SAS2 2008 Falcon - StorPort OK

[Memory]

Resource Device   Status
0xEDAF0000-0xEDAF01FF   Base System Device OK
0xF5E00000-0xF5FFFFFF   HP NC375i Integrated Quad Port Multifunction Gigabit Server Adapter #3 OK
0xF2000000-0xF3FFFFFF   HP NC375i Integrated Quad Port Multifunction Gigabit Server Adapter #3 OK
0xC0000000-0xCFFFFFFF   Motherboard resources OK
0xFDEF0000-0xFDEF3FFF   LSI Adapter, SAS2 2008 Falcon -StorPort   OK
0xFDE80000-0xFDEBFFFF   LSI Adapter, SAS2 2008 Falcon -StorPort   OK
0xFDFF0000-0xFDFF3FFF   LSI Adapter, SAS2 2008 Falcon -StorPort   OK
0xFDF80000-0xFDFBFFFF   LSI Adapter, SAS2 2008 Falcon -StorPort   OK
0xED6B0000-0xED6B0FFF   Standard OpenHCD USB Host Controller   OK
0xED800000-0xEDAFFFFF   PCI standard PCI-to-PCI bridge   OK
0xEDAE0000-0xEDAE00FF   Base System Device OK

0xED900000-0xED9FFFFF   Base System Device OK

0xED880000-0xED8FFFFF   Base System Device OK

0xED870000-0xED877FFF   Base System Device OK

0xED860000-0xED867FFF   Base System Device OK

0xF1E00000-0xF1FFFFFF   HP NC375i Integrated
Quad Port Multifunction Gigabit Server Adapter #4 OK

0xEE000000-0xEFFFFFFF   HP NC375i Integrated
Quad Port Multifunction Gigabit Server Adapter #4 OK

0xEE000000-0xEFFFFFFF   PCI standard PCI-to-PCI
bridge   OK
0xFDDF0000-0xFDDF3FFF   LSI Adapter, SAS2 2008
Falcon -StorPort   OK
0xFDD80000-0xFDDBFFFF   LSI Adapter, SAS2 2008
Falcon -StorPort   OK
0xFDAF0000-0xFDAF3FFF   LSI Adapter, SAS2 2008
Falcon -StorPort   OK
0xFDA80000-0xFDABFFFF   LSI Adapter, SAS2 2008
Falcon -StorPort   OK
0xED6D0000-0xED6D0FFF   Standard OpenHCD USB
Host Controller   OK
0xFD600000-0xFD6FFFFF   PCI standard PCI-to-PCI
bridge   OK
0xFD7F0000-0xFD7F3FFF   LSI Adapter, SAS2 2008
Falcon -StorPort   OK
0xFD780000-0xFD7BFFFF   LSI Adapter, SAS2 2008
Falcon -StorPort   OK
0xED700000-0xED7FFFFF   ATI I/O Communications
Processor PCI Bus Controller OK
0xE0000000-0xE7FFFFFF   ATI I/O Communications
Processor PCI Bus Controller OK
0xE0000000-0xE7FFFFFF   Standard VGA Graphics
Adapter   OK
0xED6A0000-0xED6A0FFF   Standard OpenHCD USB
Host Controller   OK
0xFCB00000-0xFCFFFFFF   PCI standard PCI-to-PCI
bridge   OK
0xFD500000-0xFD5FFFFF   PCI standard PCI-to-PCI
bridge   OK
0xEDC00000-0xEDFFFFFF   Smart Array P410i
Controller   OK
0xEDBF0000-0xEDBF0FFF   Smart Array P410i
Controller   OK
0xFD3F0000-0xFD3F3FFF   LSI Adapter, SAS2 2008
Falcon -StorPort   OK
0xFD380000-0xFD3BFFFF   LSI Adapter, SAS2 2008
Falcon -StorPort   OK
0xFDA00000-0xFDAFFFFF   PCI standard PCI-to-PCI
bridge   OK
0xFD6F0000-0xFD6F3FFF   QLogic Fibre Channel
Adapter   OK
0xFED00000-0xFED003FF   High precision event
timer   OK
0xFED00000-0xFED003FF   PCI bus   OK
0xFED00000-0xFED003FF   PCI bus   OK
0xED6F0000-0xED6F03FF   Standard Dual Channel
PCI IDE Controller OK

0xFDE00000-0xFDEFFFFF   PCI standard PCI-to-PCI
bridge   OK
0xFD900000-0xFD9FFFFF   PCI standard PCI-to-PCI
bridge   OK
0xFD6E0000-0xFD6E3FFF   QLogic Fibre Channel
Adapter   OK
0xED6C0000-0xED6C00FF   Standard Enhanced PCI
to USB Host Controller   OK
0xFD700000-0xFD7FFFFF   PCI standard PCI-to-PCI
bridge   OK
0xED7F0000-0xED7FFFFF   Standard VGA Graphics
Adapter   OK
0xA0000-0xBFFFF   Standard VGA Graphics Adapter OK

0xA0000-0xBFFFF   PCI bus   OK
0xFDD00000-0xFDDFFFFF   PCI standard PCI-to-PCI
bridge   OK
0xFCC00000-0xFCFFFFFF   Smart Array P812
Controller   OK
0xFCBF0000-0xFCBF0FFF   Smart Array P812
Controller   OK
0xFC800000-0xFC9FFFFF   HP NC375i Integrated
Quad Port Multifunction Gigabit Server Adapter   OK

0xFA000000-0xFBFFFFFF   HP NC375i Integrated
Quad Port Multifunction Gigabit Server Adapter   OK

0xFD800000-0xFDBFFFFF   PCI bus   OK
0xFDBF0000-0xFDBF3FFF   LSI Adapter, SAS2 2008
Falcon -StorPort   OK
0xFDB80000-0xFDBBFFFF   LSI Adapter, SAS2 2008
Falcon -StorPort   OK
0xED690000-0xED6900FF   Standard Enhanced PCI
to USB Host Controller   OK
0xFDC00000-0xFDFFFFFF   PCI bus   OK
0xFDB00000-0xFDBFFFFF   PCI standard PCI-to-PCI
bridge   OK
0xFD300000-0xFD3FFFFF   PCI standard PCI-to-PCI
bridge   OK
0xF9E00000-0xF9FFFFFF   HP NC375i Integrated
Quad Port Multifunction Gigabit Server Adapter #2 OK

0xF6000000-0xF7FFFFFF   HP NC375i Integrated
Quad Port Multifunction Gigabit Server Adapter #2 OK

0xFD9F0000-0xFD9F3FFF   LSI Adapter, SAS2 2008
Falcon -StorPort   OK
0xFD980000-0xFD9BFFFF   LSI Adapter, SAS2 2008
Falcon -StorPort   OK
0xDFF00000-0xFD3FFFFF   PCI bus   OK
0xFD5F0000-0xFD5F3FFF   LSI Adapter, SAS2 2008
Falcon -StorPort   OK
0xFD580000-0xFD5BFFFF   LSI Adapter, SAS2 2008
Falcon -StorPort   OK
0xFD400000-0xFD7FFFFF   PCI bus   OK
0xED6E0000-0xED6E0FFF   Standard OpenHCD USB
Host Controller   OK
0xFDF00000-0xFDFFFFFF   PCI standard PCI-to-PCI
bridge   OK
0xEDB00000-0xEDFFFFFF   PCI standard PCI-to-PCI
bridge   OK

[Components]

[Multimedia]

[Audio Codecs]

CODEC   Manufacturer   Description
                    Status   File   Version   Size
                    Creation Date
c:\windows\system32\msg711.acm   Microsoft
Corporation   OK
                    C:\Windows\system32\MSG711.ACM
                    6.1.7600.16385   14.50 KB (14,848 bytes)
                    7/13/2009 7:18 PM
c:\windows\system32\imaadp32.acm   Microsoft
Corporation   OK
                    C:\Windows\system32\IMAADP32.ACM
                    6.1.7600.16385   21.50 KB (22,016 bytes)
                    7/13/2009 7:18 PM
c:\windows\system32\msgsm32.acm   Microsoft
Corporation   OK
                    C:\Windows\system32\MSGSM32.ACM
                    6.1.7600.16385   28.50 KB (29,184 bytes)
                    7/13/2009 7:18 PM
c:\windows\system32\msadp32.acm   Microsoft
Corporation   OK
                    C:\Windows\system32\MSADP32.ACM
                    6.1.7600.16385   23.50 KB (24,064 bytes)
                    7/13/2009 7:18 PM

[Video Codecs]

CODEC   Manufacturer   Description
                    Status   File   Version   Size
                    Creation Date
c:\windows\system32\msrle32.dll   Microsoft
Corporation   OK
                    C:\Windows\system32\MSRLE32.DLL
                    6.1.7600.16385   15.50 KB (15,872 bytes)
                    7/13/2009 7:18 PM
c:\windows\system32\msvidc32.dll   Microsoft
Corporation   OK
                    C:\Windows\system32\MSVIDC32.DLL
                    6.1.7600.16385   37.50 KB (38,400 bytes)
                    7/13/2009 7:18 PM
c:\windows\system32\msyuv.dll Microsoft Corporation
                    OK
                    C:\Windows\system32\MSYUV.DLL
                    6.1.7600.16385   24.00 KB (24,576 bytes)
                    7/13/2009 7:06 PM
c:\windows\system32\iyuv_32.dll   Microsoft
Corporation   OK
                    C:\Windows\system32\IYUV_32.DLL
                    6.1.7600.16385   52.50 KB (53,760 bytes)
                    7/13/2009 7:06 PM
c:\windows\system32\tsbyuv.dll   Microsoft
Corporation   OK
                    C:\Windows\system32\TSBYUV.DLL
                    6.1.7600.16385   14.00 KB (14,336 bytes)
                    7/13/2009 7:06 PM

[CD-ROM]

Item	Value
Drive	D:
Description	CD-ROM Drive
Media Loaded	No
Media Type	DVD-ROM
Name	HL-DT-ST DVD-ROM GDR-D20N ATA Device
Manufacturer	(Standard CD-ROM drives)
Status	OK
Transfer Rate	-1.00 kbytes/sec
SCSI Target ID	0

PNP Device ID   IDE\CDROMHL-DT-ST_DVD-ROM_GDR-D20N_____1.05_____\5&BD36E20&0&0.0.0
Driver   c:\windows\system32\drivers\cdrom.sys
(6.1.7600.16385, 144.00 KB (147,456 bytes), 7/13/2009 6:19 PM)

[Sound Device]

Item	Value

[Display]

Item	Value
Name	Standard VGA Graphics Adapter

PNP Device ID
        PCI\VEN_1002&DEV_515E&SUBSYS_31FB103C&REV_02\4&2A2AE743&0&18A4
Adapter Type   Not Available, (Standard display types) compatible
Adapter Description Standard VGA Graphics Adapter
Adapter RAM   Not Available
Installed Drivers Not Available
Driver Version   6.1.7600.16385
INF File display.inf (vga section)
Color Planes   Not Available
Color Table Entries Not Available
Resolution   Not Available
Bits/Pixel   Not Available
Memory Address   0xE0000000-0xE7FFFFFF
I/O Port 0x00002000-0x00002FFF
Memory Address   0xED7F0000-0xED7FFFFF
I/O Port 0x000003B0-0x000003BB
I/O Port 0x000003C0-0x000003DF
Memory Address   0xA0000-0xBFFFF
Driver   c:\windows\system32\drivers\vgapnp.sys
(6.1.7600.16385, 28.50 KB (29,184 bytes), 7/13/2009 6:38 PM)

[Infrared]

Item	Value

[Input]

[Keyboard]

Item	Value
Description	USB Input Device

Name   Enhanced (101- or 102-key)
Layout   00000409
PNP Device ID
        USB\VID_03F0&PID_7029&MI_00\7&32D48B34&0&0000
Number of Function Keys   12
Driver   c:\windows\system32\drivers\hidusb.sys
(6.1.7600.16385, 29.50 KB (30,208 bytes), 7/13/2009 7:06 PM)

Description   Standard PS/2 Keyboard
Name   Enhanced (101- or 102-key)
Layout   00000409
PNP Device ID   ACPI\PNP0303\4&9333F3&0
Number of Function Keys   12
I/O Port 0x00000060-0x00000060
I/O Port 0x00000064-0x00000064
IRQ Channel   IRQ 1
Driver   c:\windows\system32\drivers\i8042prt.sys
(6.1.7600.16385, 103.00 KB (105,472 bytes), 7/13/2009 6:19 PM)

[Pointing Device]

Item	Value
Hardware Type	PS/2 Compatible Mouse
Number of Buttons	0
Status	OK
PNP Device ID	ACPI\PNP0F13\4&9333F3&0
Power Management Supported	No
Double Click Threshold	Not Available
Handedness	Not Available
IRQ Channel	IRQ 12

Driver   c:\windows\system32\drivers\i8042prt.sys
(6.1.7600.16385, 103.00 KB (105,472 bytes), 7/13/2009 6:19 PM)

Hardware Type   USB Input Device
Number of Buttons   0
Status   OK
PNP Device ID
        USB\VID_03F0&PID_7029&MI_01\7&32D48B34&0&0001
Power Management Supported   No
Double Click Threshold   Not Available
Handedness   Not Available
Driver   c:\windows\system32\drivers\hidusb.sys
(6.1.7600.16385, 29.50 KB (30,208 bytes), 7/13/2009 7:06 PM)

[Modem]

Item	Value

[Network]

[Adapter]

Item	Value
Name	[00000000] WAN Miniport (SSTP)
Adapter Type	Not Available
Product Type	WAN Miniport (SSTP)
Installed	Yes
PNP Device ID	ROOT\MS_SSTPMINIPORT\0000
Last Reset	6/15/2010 8:56 AM
Index	0
Service Name	RasSstp
IP Address	Not Available
IP Subnet	Not Available
Default IP Gateway	Not Available
DHCP Enabled	No
DHCP Server	Not Available
DHCP Lease Expires	Not Available
DHCP Lease Obtained	Not Available
MAC Address	Not Available

Driver   c:\windows\system32\drivers\rassstp.sys
(6.1.7600.16385, 82.00 KB (83,968 bytes), 7/13/2009 7:10 PM)

Name	[00000001] WAN Miniport (IKEv2)
Adapter Type	Not Available
Product Type	WAN Miniport (IKEv2)
Installed	Yes
PNP Device ID	ROOT\MS_AGILEVPNMINIPORT\0000
Last Reset	6/15/2010 8:56 AM
Index	1
Service Name	RasAgileVpn
IP Address	Not Available
IP Subnet	Not Available
Default IP Gateway	Not Available
DHCP Enabled	No
DHCP Server	Not Available
DHCP Lease Expires	Not Available
DHCP Lease Obtained	Not Available
MAC Address	Not Available

Driver   c:\windows\system32\drivers\agilevpn.sys
(6.1.7600.16385, 59.00 KB (60,416 bytes), 7/13/2009 7:10 PM)

Name	[00000002] WAN Miniport (L2TP)
Adapter Type	Not Available
Product Type	WAN Miniport (L2TP)
Installed	Yes
PNP Device ID	ROOT\MS_L2TPMINIPORT\0000
Last Reset	6/15/2010 8:56 AM
Index	2
Service Name	Rasl2tp
IP Address	Not Available
IP Subnet	Not Available
Default IP Gateway	Not Available
DHCP Enabled	No
DHCP Server	Not Available
DHCP Lease Expires	Not Available
DHCP Lease Obtained	Not Available
MAC Address	Not Available

Driver   c:\windows\system32\drivers\rasl2tp.sys
(6.1.7600.16385, 127.00 KB (130,048 bytes), 7/13/2009 7:10 PM)

Name	[00000003] WAN Miniport (PPTP)
Adapter Type	Not Available
Product Type	WAN Miniport (PPTP)
Installed	Yes
PNP Device ID	ROOT\MS_PPTPMINIPORT\0000

Last Reset   6/15/2010 8:56 AM
Index   3
Service Name   PptpMiniport
IP Address   Not Available
IP Subnet Not Available
Default IP Gateway Not Available
DHCP Enabled   No
DHCP Server   Not Available
DHCP Lease Expires Not Available
DHCP Lease Obtained Not Available
MAC Address   Not Available
Driver   c:\windows\system32\drivers\raspptp.sys
(6.1.7600.16385, 109.00 KB (111,616 bytes), 7/13/2009
7:10 PM)

Name   [00000004] WAN Miniport (PPPOE)
Adapter Type   Not Available
Product Type   WAN Miniport (PPPOE)
Installed Yes
PNP Device ID   ROOT\MS_PPPOEMINIPORT\0000
Last Reset   6/15/2010 8:56 AM
Index   4
Service Name   RasPppoe
IP Address   Not Available
IP Subnet Not Available
Default IP Gateway Not Available
DHCP Enabled   No
DHCP Server   Not Available
DHCP Lease Expires Not Available
DHCP Lease Obtained Not Available
MAC Address   Not Available
Driver   c:\windows\system32\drivers\raspppoe.sys
(6.1.7600.16385, 90.50 KB (92,672 bytes), 7/13/2009
7:10 PM)

Name   [00000005] WAN Miniport (IPv6)
Adapter Type   Not Available
Product Type   WAN Miniport (IPv6)
Installed Yes
PNP Device ID   ROOT\MS_NDISWANIPV6\0000
Last Reset   6/15/2010 8:56 AM
Index   5
Service Name   NdisWan
IP Address   Not Available
IP Subnet Not Available
Default IP Gateway Not Available
DHCP Enabled   No
DHCP Server   Not Available
DHCP Lease Expires Not Available
DHCP Lease Obtained Not Available
MAC Address   Not Available
Driver   c:\windows\system32\drivers\ndiswan.sys
(6.1.7600.16385, 160.50 KB (164,352 bytes), 7/13/2009
7:10 PM)

Name   [00000006] WAN Miniport (Network Monitor)

Adapter Type   Not Available
Product Type   WAN Miniport (Network Monitor)

Installed Yes
PNP Device ID   ROOT\MS_NDISWANBH\0000
Last Reset   6/15/2010 8:56 AM

Index   6
Service Name   NdisWan
IP Address   Not Available
IP Subnet Not Available
Default IP Gateway Not Available
DHCP Enabled   No
DHCP Server   Not Available
DHCP Lease Expires Not Available
DHCP Lease Obtained Not Available
MAC Address   Not Available
Driver   c:\windows\system32\drivers\ndiswan.sys
(6.1.7600.16385, 160.50 KB (164,352 bytes), 7/13/2009
7:10 PM)

Name   [00000007] HP NC375i Integrated Quad Port
Multifunction Gigabit Server Adapter
Adapter Type   Ethernet 802.3
Product Type   HP NC375i Integrated Quad Port
Multifunction Gigabit Server Adapter
Installed Yes
PNP Device ID
          PCI\VEN_4040&DEV_0100&SUBSYS_705A103C&REV_4
2\4&3636F4A7&0&0010
Last Reset   6/15/2010 8:56 AM
Index   7
Service Name   NXND6HP
IP Address   130.168.208.31, 130.168.208.10

IP Subnet 255.255.0.0, 255.255.0.0
Default IP Gateway Not Available
DHCP Enabled   No
DHCP Server   Not Available
DHCP Lease Expires Not Available
DHCP Lease Obtained Not Available
MAC Address   00:26:55:1B:1F:04
Memory Address   0xFC800000-0xFC9FFFFF
Memory Address   0xFA000000-0xFBFFFFFF
IRQ Channel   IRQ 4294967119
IRQ Channel   IRQ 4294967118
IRQ Channel   IRQ 4294967117
IRQ Channel   IRQ 4294967116
IRQ Channel   IRQ 4294967115
IRQ Channel   IRQ 4294967114
IRQ Channel   IRQ 4294967113
IRQ Channel   IRQ 4294967112
Driver   c:\windows\system32\drivers\hpnd6x64.sys
(4.0.520.13471, 371.47 KB (380,384 bytes), 2/5/2010
5:14 PM)

Name   [00000008] Microsoft ISATAP Adapter
Adapter Type   Tunnel
Product Type   Microsoft ISATAP Adapter
Installed Yes
PNP Device ID   ROOT*ISATAP\0000
Last Reset   6/15/2010 8:56 AM
Index   8
Service Name   tunnel
IP Address   Not Available
IP Subnet Not Available
Default IP Gateway Not Available
DHCP Enabled   No
DHCP Server   Not Available
DHCP Lease Expires Not Available

DHCP Lease Obtained Not Available
MAC Address   Not Available
Driver   c:\windows\system32\drivers\tunnel.sys
(6.1.7600.16385, 122.50 KB (125,440 bytes), 7/13/2009
7:09 PM)

Name   [00000009] WAN Miniport (IP)
Adapter Type   Not Available
Product Type   WAN Miniport (IP)
Installed Yes
PNP Device ID   ROOT\MS_NDISWANIP\0000
Last Reset   6/15/2010 8:56 AM
Index   9
Service Name   NdisWan
IP Address   Not Available
IP Subnet Not Available
Default IP Gateway Not Available
DHCP Enabled   No
DHCP Server   Not Available
DHCP Lease Expires Not Available
DHCP Lease Obtained Not Available
MAC Address   Not Available
Driver   c:\windows\system32\drivers\ndiswan.sys
(6.1.7600.16385, 160.50 KB (164,352 bytes), 7/13/2009
7:10 PM)

Name   [00000010] HP NC375i Integrated Quad Port
Multifunction Gigabit Server Adapter
Adapter Type   Ethernet 802.3
Product Type   HP NC375i Integrated Quad Port
Multifunction Gigabit Server Adapter
Installed Yes
PNP Device ID
          PCI\VEN_4040&DEV_0100&SUBSYS_705A103C&REV_4
2\4&3636F4A7&0&0110
Last Reset   6/15/2010 8:56 AM
Index   10
Service Name   NXND6HP
IP Address   130.168.208.32
IP Subnet 255.255.0.0
Default IP Gateway Not Available
DHCP Enabled   No
DHCP Server   Not Available
DHCP Lease Expires Not Available
DHCP Lease Obtained Not Available
MAC Address   00:26:55:1B:1F:05
Memory Address   0xF9E00000-0xF9FFFFFF
Memory Address   0xF6000000-0xF7FFFFFF
IRQ Channel   IRQ 4294967127
IRQ Channel   IRQ 4294967126
IRQ Channel   IRQ 4294967125
IRQ Channel   IRQ 4294967124
IRQ Channel   IRQ 4294967123
IRQ Channel   IRQ 4294967122
IRQ Channel   IRQ 4294967121
IRQ Channel   IRQ 4294967120
Driver   c:\windows\system32\drivers\hpnd6x64.sys
(4.0.520.13471, 371.47 KB (380,384 bytes), 2/5/2010
5:14 PM)

Name   [00000011] RAS Async Adapter
Adapter Type   Wide Area Network (WAN)
Product Type   RAS Async Adapter

Installed Yes
PNP Device ID   SW\{EEAB7790-C514-11D1-B42B-
00805FC1270E}\ASYNCMAC
Last Reset   6/15/2010 8:56 AM
Index   11
Service Name   AsyncMac
IP Address   Not Available
IP Subnet Not Available
Default IP Gateway Not Available
DHCP Enabled   No
DHCP Server   Not Available
DHCP Lease Expires Not Available
DHCP Lease Obtained Not Available
MAC Address   20:41:53:59:4E:FF
Driver   c:\windows\system32\drivers\asyncmac.sys
(6.1.7600.16385, 22.50 KB (23,040 bytes), 7/13/2009
7:10 PM)

Name   [00000012] HP NC375i Integrated Quad Port
Multifunction Gigabit Server Adapter
Adapter Type   Ethernet 802.3
Product Type   HP NC375i Integrated Quad Port
Multifunction Gigabit Server Adapter
Installed Yes
PNP Device ID
          PCI\VEN_4040&DEV_0100&SUBSYS_705A103C&REV_4
2\4&3636F4A7&0&0210
Last Reset   6/15/2010 8:56 AM
Index   12
Service Name   NXND6HP
IP Address   130.168.208.33
IP Subnet 255.255.0.0
Default IP Gateway Not Available
DHCP Enabled   No
DHCP Server   Not Available
DHCP Lease Expires Not Available
DHCP Lease Obtained Not Available
MAC Address   00:26:55:1B:1F:06
Memory Address   0xF5E00000-0xF5FFFFFF
Memory Address   0xF2000000-0xF3FFFFFF
IRQ Channel   IRQ 4294967135
IRQ Channel   IRQ 4294967134
IRQ Channel   IRQ 4294967133
IRQ Channel   IRQ 4294967132
IRQ Channel   IRQ 4294967131
IRQ Channel   IRQ 4294967130
IRQ Channel   IRQ 4294967129
IRQ Channel   IRQ 4294967128
Driver   c:\windows\system32\drivers\hpnd6x64.sys
(4.0.520.13471, 371.47 KB (380,384 bytes), 2/5/2010
5:14 PM)

Name   [00000013] Microsoft ISATAP Adapter
Adapter Type   Tunnel
Product Type   Microsoft ISATAP Adapter
Installed Yes
PNP Device ID   ROOT*ISATAP\0001
Last Reset   6/15/2010 8:56 AM
Index   13
Service Name   tunnel
IP Address   Not Available
IP Subnet Not Available
Default IP Gateway Not Available

DHCP Enabled   No
DHCP Server   Not Available
DHCP Lease Expires Not Available
DHCP Lease Obtained Not Available
MAC Address   Not Available
Driver   c:\windows\system32\drivers\tunnel.sys
(6.1.7600.16385, 122.50 KB (125,440 bytes), 7/13/2009
7:09 PM)

Name   [00000014] HP NC375i Integrated Quad Port
Multifunction Gigabit Server Adapter
Adapter Type   Ethernet 802.3
Product Type   HP NC375i Integrated Quad Port
Multifunction Gigabit Server Adapter
Installed Yes
PNP Device ID
          PCI\VEN_4040&DEV_0100&SUBSYS_705A103C&REV_4
2\4&3636F4A7&0&0310
Last Reset   6/15/2010 8:56 AM
Index   14
Service Name   NXND6HP
IP Address   130.168.208.34
IP Subnet 255.255.0.0
Default IP Gateway Not Available
DHCP Enabled   No
DHCP Server   Not Available
DHCP Lease Expires Not Available
DHCP Lease Obtained Not Available
MAC Address   00:26:55:1B:1F:07
Memory Address   0xF1E00000-0xF1FFFFFF
Memory Address   0xEE000000-0xEFFFFFFF
IRQ Channel   IRQ 4294967143
IRQ Channel   IRQ 4294967142
IRQ Channel   IRQ 4294967141
IRQ Channel   IRQ 4294967140
IRQ Channel   IRQ 4294967139
IRQ Channel   IRQ 4294967138
IRQ Channel   IRQ 4294967137
IRQ Channel   IRQ 4294967136
Driver   c:\windows\system32\drivers\hpnd6x64.sys
(4.0.520.13471, 371.47 KB (380,384 bytes), 2/5/2010
5:14 PM)

Name   [00000015] Microsoft 6to4 Adapter
Adapter Type   Tunnel
Product Type   Microsoft 6to4 Adapter
Installed Yes
PNP Device ID   ROOT*6TO4MP\0000
Last Reset   6/15/2010 8:56 AM
Index   15
Service Name   tunnel
IP Address   Not Available
IP Subnet Not Available
Default IP Gateway Not Available
DHCP Enabled   No
DHCP Server   Not Available
DHCP Lease Expires Not Available
DHCP Lease Obtained Not Available
MAC Address   Not Available
Driver   c:\windows\system32\drivers\tunnel.sys
(6.1.7600.16385, 122.50 KB (125,440 bytes), 7/13/2009
7:09 PM)

Name   [00000016] Microsoft ISATAP Adapter
Adapter Type   Tunnel
Product Type   Microsoft ISATAP Adapter
Installed Yes
PNP Device ID   ROOT*ISATAP\0002
Last Reset   6/15/2010 8:56 AM
Index   16
Service Name   tunnel
IP Address   Not Available
IP Subnet Not Available
Default IP Gateway Not Available
DHCP Enabled   No
DHCP Server   Not Available
DHCP Lease Expires Not Available
DHCP Lease Obtained Not Available
MAC Address   Not Available
Driver   c:\windows\system32\drivers\tunnel.sys
(6.1.7600.16385, 122.50 KB (125,440 bytes), 7/13/2009
7:09 PM)

Name   [00000017] Microsoft ISATAP Adapter
Adapter Type   Tunnel
Product Type   Microsoft ISATAP Adapter
Installed Yes
PNP Device ID   ROOT*ISATAP\0003
Last Reset   6/15/2010 8:56 AM
Index   17
Service Name   tunnel
IP Address   Not Available
IP Subnet Not Available
Default IP Gateway Not Available
DHCP Enabled   No
DHCP Server   Not Available
DHCP Lease Expires Not Available
DHCP Lease Obtained Not Available
MAC Address   Not Available
Driver   c:\windows\system32\drivers\tunnel.sys
(6.1.7600.16385, 122.50 KB (125,440 bytes), 7/13/2009
7:09 PM)

[Protocol]

Item   Value
Name   MSAFD Tcpip [TCP/IP]
Connectionless Service   No
Guarantees Delivery Yes
Guarantees Sequencing   Yes
Maximum Address Size   16 bytes
Maximum Message Size   0 bytes
Message Oriented   No
Minimum Address Size   16 bytes
Pseudo Stream Oriented   No
Supports Broadcasting   No
Supports Connect Data   No
Supports Disconnect Data   No
Supports Encryption No
Supports Expedited Data   Yes
Supports Graceful Closing   Yes
Supports Guaranteed Bandwidth No
Supports Multicasting   No

Name   MSAFD Tcpip [UDP/IP]
Connectionless Service   Yes

Guarantees Delivery   No
Guarantees Sequencing   No
Maximum Address Size   16 bytes
Maximum Message Size   63.99 KB (65,527 bytes)

Message Oriented   Yes
Minimum Address Size   16 bytes
Pseudo Stream Oriented   No
Supports Broadcasting   Yes
Supports Connect Data   No
Supports Disconnect Data   No
Supports Encryption No
Supports Expedited Data   No
Supports Graceful Closing   No
Supports Guaranteed Bandwidth No
Supports Multicasting   Yes

Name   MSAFD Tcpip [TCP/IPv6]
Connectionless Service   No
Guarantees Delivery Yes
Guarantees Sequencing   Yes
Maximum Address Size   28 bytes
Maximum Message Size   0 bytes
Message Oriented   No
Minimum Address Size   28 bytes
Pseudo Stream Oriented   No
Supports Broadcasting   No
Supports Connect Data   No
Supports Disconnect Data   No
Supports Encryption No
Supports Expedited Data   Yes
Supports Graceful Closing   Yes
Supports Guaranteed Bandwidth No
Supports Multicasting   No

Name   MSAFD Tcpip [UDP/IPv6]
Connectionless Service   Yes
Guarantees Delivery No
Guarantees Sequencing   No
Maximum Address Size   28 bytes
Maximum Message Size   63.99 KB (65,527 bytes)

Message Oriented   Yes
Minimum Address Size   28 bytes
Pseudo Stream Oriented   No
Supports Broadcasting   Yes
Supports Connect Data   No
Supports Disconnect Data   No
Supports Encryption No
Supports Expedited Data   No
Supports Graceful Closing   No
Supports Guaranteed Bandwidth No
Supports Multicasting   Yes

Name   RSVP TCPv6 Service Provider
Connectionless Service   No
Guarantees Delivery Yes
Guarantees Sequencing   Yes
Maximum Address Size   28 bytes
Maximum Message Size   0 bytes
Message Oriented   No
Minimum Address Size   28 bytes
Pseudo Stream Oriented   No

Supports Broadcasting   No
Supports Connect Data   No
Supports Disconnect Data   No
Supports Encryption Yes
Supports Expedited Data   Yes
Supports Graceful Closing   Yes
Supports Guaranteed Bandwidth No
Supports Multicasting   No

Name   RSVP TCP Service Provider
Connectionless Service   No
Guarantees Delivery Yes
Guarantees Sequencing   Yes
Maximum Address Size   16 bytes
Maximum Message Size   0 bytes
Message Oriented   No
Minimum Address Size   16 bytes
Pseudo Stream Oriented   No
Supports Broadcasting   No
Supports Connect Data   No
Supports Disconnect Data   No
Supports Encryption Yes
Supports Expedited Data   Yes
Supports Graceful Closing   Yes
Supports Guaranteed Bandwidth No
Supports Multicasting   No

Name   RSVP UDPv6 Service Provider
Connectionless Service   Yes
Guarantees Delivery No
Guarantees Sequencing   No
Maximum Address Size   28 bytes
Maximum Message Size   63.99 KB (65,527 bytes)

Message Oriented   Yes
Minimum Address Size   28 bytes
Pseudo Stream Oriented   No
Supports Broadcasting   Yes
Supports Connect Data   No
Supports Disconnect Data   No
Supports Encryption Yes
Supports Expedited Data   No
Supports Graceful Closing   No
Supports Guaranteed Bandwidth No
Supports Multicasting   Yes

Name   RSVP UDP Service Provider
Connectionless Service   Yes
Guarantees Delivery No
Guarantees Sequencing   No
Maximum Address Size   16 bytes
Maximum Message Size   63.99 KB (65,527 bytes)

Message Oriented   Yes
Minimum Address Size   16 bytes
Pseudo Stream Oriented   No
Supports Broadcasting   Yes
Supports Connect Data   No
Supports Disconnect Data   No
Supports Encryption Yes
Supports Expedited Data   No
Supports Graceful Closing   No
Supports Guaranteed Bandwidth No

Supports Multicasting   Yes

[WinSock]

Item   Value
File   c:\windows\syswow64\wsock32.dll
Size   15.00 KB (15,360 bytes)
Version 6.1.7600.16385

File   c:\windows\system32\wsock32.dll
Size   18.00 KB (18,432 bytes)
Version 6.1.7600.16385

[Ports]

[Serial]

Item   Value
Name   Communications Port (COM1)
Status   OK
PNP Device ID   ACPI\PNP0501\0
Maximum Input Buffer Size   0
Maximum Output Buffer Size   No
Settable Baud Rate Yes
Settable Data Bits Yes
Settable Flow Control   Yes
Settable Parity   Yes
Settable Parity Check   Yes
Settable Stop Bits Yes
Settable RLSD   Yes
Supports RLSD   Yes
Supports 16 Bit Mode   No
Supports Special Characters No
Baud Rate 9600
Bits/Byte 8
Stop Bits 1
Parity   None
Busy   No
Abort Read/Write on Error   No
Binary Mode Enabled Yes
Continue XMit on XOff   No
CTS Outflow Control No
Discard NULL Bytes No
DSR Outflow Control 0
DSR Sensitivity   0
DTR Flow Control Type   Enable
EOF Character   0
Error Replace Character   0
Error Replacement Enabled   No
Event Character   0
Parity Check Enabled   No
RTS Flow Control Type   Enable
XOff Character   19
XOffXMit Threshold 512
XOn Character   17
XOnXMit Threshold 2048
XOnXOff InFlow Control   0
XOnXOff OutFlow Control   0
IRQ Channel   IRQ 4
I/O Port 0x000003F8-0x000003FF

```
Driver   c:\windows\system32\drivers\serial.sys
(6.1.7600.16385, 92.00 KB (94,208 bytes), 7/13/2009
7:00 PM)

[Parallel]

Item     Value

[Storage]


[Drives]

Item     Value
Drive    C:
Description        Local Fixed Disk
Compressed         No
File System        NTFS
Size     136.60 GB (146,671,661,056 bytes)
Free Space         123.23 GB (132,313,456,640 bytes)

Volume Name
Volume Serial Number          3C217108

Drive    D:
Description        CD-ROM Disc

Drive    E:
Description        Local Fixed Disk
Compressed         Not Available
File System        Not Available
Size     Not Available
Free Space         Not Available
Volume Name        Not Available
Volume Serial Number          Not Available

Drive    F:
Description        Local Fixed Disk
Compressed         Not Available
File System        Not Available
Size     Not Available
Free Space         Not Available
Volume Name        Not Available
Volume Serial Number          Not Available

Drive    G:
Description        Local Fixed Disk
Compressed         Not Available
File System        Not Available
Size     Not Available
Free Space         Not Available
Volume Name        Not Available
Volume Serial Number          Not Available

Drive    H:
Description        Local Fixed Disk
Compressed         Not Available
File System        Not Available
Size     Not Available
Free Space         Not Available
Volume Name        Not Available
Volume Serial Number          Not Available
```

```
Drive    T:
Description        Local Fixed Disk
Compressed         No
File System        NTFS
Size     2.00 TB (2,199,021,154,304 bytes)
Free Space         900.30 GB (966,691,106,816 bytes)

Volume Name        back1
Volume Serial Number          0087A885

Drive    U:
Description        Local Fixed Disk
Compressed         No
File System        NTFS
Size     2.00 TB (2,199,021,154,304 bytes)
Free Space         900.30 GB (966,691,176,448 bytes)

Volume Name        back2
Volume Serial Number          AE94C041

Drive    V:
Description        Local Fixed Disk
Compressed         No
File System        NTFS
Size     2.00 TB (2,199,021,154,304 bytes)
Free Space         900.30 GB (966,691,176,448 bytes)

Volume Name        back3
Volume Serial Number          56A79DF6

Drive    W:
Description        Local Fixed Disk
Compressed         No
File System        NTFS
Size     2.00 TB (2,199,021,154,304 bytes)
Free Space         900.30 GB (966,691,176,448 bytes)

Volume Name        back4
Volume Serial Number          CCB40A16

Drive    X:
Description        Local Fixed Disk
Compressed         No
File System        NTFS
Size     2.00 TB (2,199,021,154,304 bytes)
Free Space         900.30 GB (966,691,176,448 bytes)

Volume Name        back5
Volume Serial Number          12C17C1F

Drive    Y:
Description        Local Fixed Disk
Compressed         No
File System        NTFS
Size     2.00 TB (2,199,021,154,304 bytes)
Free Space         900.30 GB (966,691,176,448 bytes)

Volume Name        back6
Volume Serial Number          F0D44BC2

Drive    Z:
Description        Local Fixed Disk
```

```
Compressed         No
File System        NTFS
Size     1.64 TB (1,804,099,121,152 bytes)
Free Space         532.50 GB (571,772,280,832 bytes)

Volume Name        back7
Volume Serial Number          70E13F9C

[Disks]

Item     Value
Description        Disk drive
Manufacturer       (Standard disk drives)
Model    ATA MK0120EAVDT SCSI Disk Device
Bytes/Sector       512
Media Loaded       Yes
Media Type         Fixed hard disk
Partitions         4
SCSI Bus  0
SCSI Logical Unit  0
SCSI Port 8
SCSI Target ID     8
Sectors/Track      63
Size     111.79 GB (120,031,511,040 bytes)
Total Cylinders    14,593
Total Sectors      234,436,545
Total Tracks       3,721,215
Tracks/Cylinder    255
Partition Disk #48, Partition #0
Partition Size     25.39 GB (27,262,976,000 bytes)

Partition Starting Offset     1,048,576 bytes
Partition Disk #48, Partition #1
Partition Size     18.55 GB (19,922,944,000 bytes)

Partition Starting Offset     27,264,024,576 bytes

Partition Disk #48, Partition #2
Partition Size     20.51 GB (22,020,096,000 bytes)

Partition Starting Offset     47,186,968,576 bytes

Partition Disk #48, Partition #3
Partition Size     5.86 GB (6,291,456,000 bytes)
Partition Starting Offset     69,207,064,576 bytes


Description        Disk drive
Manufacturer       (Standard disk drives)
Model    ATA MK0120EAVDT SCSI Disk Device
Bytes/Sector       512
Media Loaded       Yes
Media Type         Fixed hard disk
Partitions         4
SCSI Bus  0
SCSI Logical Unit  0
SCSI Port 8
SCSI Target ID     9
Sectors/Track      63
Size     111.79 GB (120,031,511,040 bytes)
Total Cylinders    14,593
Total Sectors      234,436,545
Total Tracks       3,721,215
```

```
Tracks/Cylinder    255                          SCSI Bus  0                                  Partition Starting Offset    69,207,064,576 bytes
Partition Disk #49, Partition #0                SCSI Logical Unit    0
Partition Size    25.39 GB (27,262,976,000 bytes)   SCSI Port 8
                                                SCSI Target ID    11                          Description        Disk drive
Partition Starting Offset    1,048,576 bytes    Sectors/Track    63                           Manufacturer        (Standard disk drives)
Partition Disk #49, Partition #1                Size    111.79 GB (120,031,511,040 bytes)     Model    ATA MK0120EAVDT SCSI Disk Device
Partition Size    18.55 GB (19,922,944,000 bytes)   Total Cylinders    14,593                 Bytes/Sector    512
                                                Total Sectors    234,436,545                  Media Loaded    Yes
Partition Starting Offset    27,264,024,576 bytes    Total Tracks    3,721,215                Media Type        Fixed hard disk
                                                Tracks/Cylinder    255                         Partitions        4
Partition Disk #49, Partition #2                Partition Disk #51, Partition #0              SCSI Bus  0
Partition Size    20.51 GB (22,020,096,000 bytes)   Partition Size    25.39 GB (27,262,976,000 bytes)   SCSI Logical Unit    0
                                                                                              SCSI Port 8
Partition Starting Offset    47,186,968,576 bytes    Partition Starting Offset    1,048,576 bytes   SCSI Target ID    13
                                                Partition Disk #51, Partition #1              Sectors/Track    63
Partition Disk #49, Partition #3                Partition Size    18.55 GB (19,922,944,000 bytes)   Size    111.79 GB (120,031,511,040 bytes)
Partition Size    5.86 GB (6,291,456,000 bytes)                                               Total Cylinders    14,593
Partition Starting Offset    69,207,064,576 bytes    Partition Starting Offset    27,264,024,576 bytes   Total Sectors    234,436,545
                                                                                              Total Tracks    3,721,215
                                                Partition Disk #51, Partition #2              Tracks/Cylinder    255
Description        Disk drive                   Partition Size    20.51 GB (22,020,096,000 bytes)   Partition Disk #53, Partition #0
Manufacturer        (Standard disk drives)                                                    Partition Size    25.39 GB (27,262,976,000 bytes)
Model    ATA MK0120EAVDT SCSI Disk Device       Partition Starting Offset    47,186,968,576 bytes
Bytes/Sector    512                                                                           Partition Starting Offset    1,048,576 bytes
Media Loaded    Yes                             Partition Disk #51, Partition #3              Partition Disk #53, Partition #1
Media Type        Fixed hard disk               Partition Size    5.86 GB (6,291,456,000 bytes)   Partition Size    18.55 GB (19,922,944,000 bytes)
Partitions        4                             Partition Starting Offset    69,207,064,576 bytes
SCSI Bus  0                                                                                   Partition Starting Offset    27,264,024,576 bytes
SCSI Logical Unit    0
SCSI Port 8                                     Description        Disk drive                  Partition Disk #53, Partition #2
SCSI Target ID    10                            Manufacturer        (Standard disk drives)     Partition Size    20.51 GB (22,020,096,000 bytes)
Sectors/Track    63                             Model    ATA MK0120EAVDT SCSI Disk Device
Size    111.79 GB (120,031,511,040 bytes)       Bytes/Sector    512                           Partition Starting Offset    47,186,968,576 bytes
Total Cylinders    14,593                       Media Loaded    Yes
Total Sectors    234,436,545                    Media Type        Fixed hard disk             Partition Disk #53, Partition #3
Total Tracks    3,721,215                       Partitions        4                           Partition Size    5.86 GB (6,291,456,000 bytes)
Tracks/Cylinder    255                          SCSI Bus  0                                  Partition Starting Offset    69,207,064,576 bytes
Partition Disk #50, Partition #0                SCSI Logical Unit    0
Partition Size    25.39 GB (27,262,976,000 bytes)   SCSI Port 8
                                                SCSI Target ID    12                          Description        Disk drive
Partition Starting Offset    1,048,576 bytes    Sectors/Track    63                           Manufacturer        (Standard disk drives)
Partition Disk #50, Partition #1                Size    111.79 GB (120,031,511,040 bytes)     Model    ATA MK0120EAVDT SCSI Disk Device
Partition Size    18.55 GB (19,922,944,000 bytes)   Total Cylinders    14,593                 Bytes/Sector    512
                                                Total Sectors    234,436,545                  Media Loaded    Yes
Partition Starting Offset    27,264,024,576 bytes    Total Tracks    3,721,215                Media Type        Fixed hard disk
                                                Tracks/Cylinder    255                         Partitions        4
Partition Disk #50, Partition #2                Partition Disk #52, Partition #0              SCSI Bus  0
Partition Size    20.51 GB (22,020,096,000 bytes)   Partition Size    25.39 GB (27,262,976,000 bytes)   SCSI Logical Unit    0
                                                                                              SCSI Port 8
Partition Starting Offset    47,186,968,576 bytes    Partition Starting Offset    1,048,576 bytes   SCSI Target ID    14
                                                Partition Disk #52, Partition #1              Sectors/Track    63
Partition Disk #50, Partition #3                Partition Size    18.55 GB (19,922,944,000 bytes)   Size    111.79 GB (120,031,511,040 bytes)
Partition Size    5.86 GB (6,291,456,000 bytes)                                               Total Cylinders    14,593
Partition Starting Offset    69,207,064,576 bytes    Partition Starting Offset    27,264,024,576 bytes   Total Sectors    234,436,545
                                                                                              Total Tracks    3,721,215
                                                Partition Disk #52, Partition #2              Tracks/Cylinder    255
Description        Disk drive                   Partition Size    20.51 GB (22,020,096,000 bytes)   Partition Disk #54, Partition #0
Manufacturer        (Standard disk drives)                                                    Partition Size    25.39 GB (27,262,976,000 bytes)
Model    ATA MK0120EAVDT SCSI Disk Device       Partition Starting Offset    47,186,968,576 bytes
Bytes/Sector    512                                                                           Partition Starting Offset    1,048,576 bytes
Media Loaded    Yes                             Partition Disk #52, Partition #3              Partition Disk #54, Partition #1
Media Type        Fixed hard disk               Partition Size    5.86 GB (6,291,456,000 bytes)   Partition Size    18.55 GB (19,922,944,000 bytes)
Partitions        4
```

```
Partition Starting Offset    27,264,024,576 bytes         Total Tracks        3,721,215                        Partitions        4
                                                          Tracks/Cylinder    255                               SCSI Bus  0
Partition Disk #54, Partition #2                          Partition Disk #56, Partition #0                     SCSI Logical Unit    0
Partition Size    20.51 GB (22,020,096,000 bytes)         Partition Size    25.39 GB (27,262,976,000 bytes)    SCSI Port 8
                                                                                                               SCSI Target ID    18
Partition Starting Offset    47,186,968,576 bytes         Partition Starting Offset    1,048,576 bytes         Sectors/Track    63
                                                          Partition Disk #56, Partition #1                     Size    111.79 GB (120,031,511,040 bytes)
Partition Disk #54, Partition #3                          Partition Size    18.55 GB (19,922,944,000 bytes)    Total Cylinders    14,593
Partition Size    5.86 GB (6,291,456,000 bytes)                                                                Total Sectors    234,436,545
Partition Starting Offset    69,207,064,576 bytes         Partition Starting Offset    27,264,024,576 bytes    Total Tracks    3,721,215
                                                                                                               Tracks/Cylinder    255
                                                          Partition Disk #56, Partition #2                     Partition Disk #58, Partition #0
Description        Disk drive                             Partition Size    20.51 GB (22,020,096,000 bytes)    Partition Size    25.39 GB (27,262,976,000 bytes)
Manufacturer      (Standard disk drives)
Model    ATA MK0120EAVDT SCSI Disk Device                Partition Starting Offset    47,186,968,576 bytes    Partition Starting Offset    1,048,576 bytes
Bytes/Sector      512                                                                                          Partition Disk #58, Partition #1
Media Loaded      Yes                                     Partition Disk #56, Partition #3                     Partition Size    18.55 GB (19,922,944,000 bytes)
Media Type        Fixed hard disk                         Partition Size    5.86 GB (6,291,456,000 bytes)
Partitions        4                                       Partition Starting Offset    69,207,064,576 bytes    Partition Starting Offset    27,264,024,576 bytes
SCSI Bus  0
SCSI Logical Unit    0                                                                                         Partition Disk #58, Partition #2
SCSI Port 8                                               Description        Disk drive                        Partition Size    20.51 GB (22,020,096,000 bytes)
SCSI Target ID    15                                      Manufacturer      (Standard disk drives)
Sectors/Track    63                                       Model    ATA MK0120EAVDT SCSI Disk Device            Partition Starting Offset    47,186,968,576 bytes
Size    111.79 GB (120,031,511,040 bytes)                Bytes/Sector      512
Total Cylinders    14,593                                 Media Loaded      Yes                                Partition Disk #58, Partition #3
Total Sectors    234,436,545                              Media Type        Fixed hard disk                    Partition Size    5.86 GB (6,291,456,000 bytes)
Total Tracks    3,721,215                                 Partitions        4                                  Partition Starting Offset    69,207,064,576 bytes
Tracks/Cylinder    255                                    SCSI Bus  0
Partition Disk #55, Partition #0                          SCSI Logical Unit    0
Partition Size    25.39 GB (27,262,976,000 bytes)         SCSI Port 8                                          Description        Disk drive
                                                          SCSI Target ID    17                                 Manufacturer      (Standard disk drives)
Partition Starting Offset    1,048,576 bytes              Sectors/Track    63                                  Model    ATA MK0120EAVDT SCSI Disk Device
Partition Disk #55, Partition #1                          Size    111.79 GB (120,031,511,040 bytes)            Bytes/Sector      512
Partition Size    18.55 GB (19,922,944,000 bytes)         Total Cylinders    14,593                            Media Loaded      Yes
                                                          Total Sectors    234,436,545                         Media Type        Fixed hard disk
Partition Starting Offset    27,264,024,576 bytes         Total Tracks    3,721,215                            Partitions        4
                                                          Tracks/Cylinder    255                               SCSI Bus  0
Partition Disk #55, Partition #2                          Partition Disk #57, Partition #0                     SCSI Logical Unit    0
Partition Size    20.51 GB (22,020,096,000 bytes)         Partition Size    25.39 GB (27,262,976,000 bytes)    SCSI Port 8
                                                                                                               SCSI Target ID    19
Partition Starting Offset    47,186,968,576 bytes         Partition Starting Offset    1,048,576 bytes         Sectors/Track    63
                                                          Partition Disk #57, Partition #1                     Size    111.79 GB (120,031,511,040 bytes)
Partition Disk #55, Partition #3                          Partition Size    18.55 GB (19,922,944,000 bytes)    Total Cylinders    14,593
Partition Size    5.86 GB (6,291,456,000 bytes)                                                                Total Sectors    234,436,545
Partition Starting Offset    69,207,064,576 bytes         Partition Starting Offset    27,264,024,576 bytes    Total Tracks    3,721,215
                                                                                                               Tracks/Cylinder    255
                                                          Partition Disk #57, Partition #2                     Partition Disk #59, Partition #0
Description        Disk drive                             Partition Size    20.51 GB (22,020,096,000 bytes)    Partition Size    25.39 GB (27,262,976,000 bytes)
Manufacturer      (Standard disk drives)
Model    ATA MK0120EAVDT SCSI Disk Device                Partition Starting Offset    47,186,968,576 bytes    Partition Starting Offset    1,048,576 bytes
Bytes/Sector      512                                                                                          Partition Disk #59, Partition #1
Media Loaded      Yes                                     Partition Disk #57, Partition #3                     Partition Size    18.55 GB (19,922,944,000 bytes)
Media Type        Fixed hard disk                         Partition Size    5.86 GB (6,291,456,000 bytes)
Partitions        4                                       Partition Starting Offset    69,207,064,576 bytes    Partition Starting Offset    27,264,024,576 bytes
SCSI Bus  0
SCSI Logical Unit    0                                                                                         Partition Disk #59, Partition #2
SCSI Port 8                                               Description        Disk drive                        Partition Size    20.51 GB (22,020,096,000 bytes)
SCSI Target ID    16                                      Manufacturer      (Standard disk drives)
Sectors/Track    63                                       Model    ATA MK0120EAVDT SCSI Disk Device            Partition Starting Offset    47,186,968,576 bytes
Size    111.79 GB (120,031,511,040 bytes)                Bytes/Sector      512
Total Cylinders    14,593                                 Media Loaded      Yes                                Partition Disk #59, Partition #3
Total Sectors    234,436,545                              Media Type        Fixed hard disk                    Partition Size    5.86 GB (6,291,456,000 bytes)
```

Partition Starting Offset   69,207,064,576 bytes

Description   Disk drive
Manufacturer   (Standard disk drives)
Model   ATA MK0120EAVDT SCSI Disk Device
Bytes/Sector   512
Media Loaded   Yes
Media Type   Fixed hard disk
Partitions   4
SCSI Bus 0
SCSI Logical Unit   0
SCSI Port 8
SCSI Target ID   20
Sectors/Track   63
Size   111.79 GB (120,031,511,040 bytes)
Total Cylinders   14,593
Total Sectors   234,436,545
Total Tracks   3,721,215
Tracks/Cylinder   255
Partition Disk #60, Partition #0
Partition Size   25.39 GB (27,262,976,000 bytes)

Partition Starting Offset   1,048,576 bytes
Partition Disk #60, Partition #1
Partition Size   18.55 GB (19,922,944,000 bytes)

Partition Starting Offset   27,264,024,576 bytes

Partition Disk #60, Partition #2
Partition Size   20.51 GB (22,020,096,000 bytes)

Partition Starting Offset   47,186,968,576 bytes

Partition Disk #60, Partition #3
Partition Size   5.86 GB (6,291,456,000 bytes)
Partition Starting Offset   69,207,064,576 bytes

Description   Disk drive
Manufacturer   (Standard disk drives)
Model   ATA MK0120EAVDT SCSI Disk Device
Bytes/Sector   512
Media Loaded   Yes
Media Type   Fixed hard disk
Partitions   4
SCSI Bus 0
SCSI Logical Unit   0
SCSI Port 8
SCSI Target ID   21
Sectors/Track   63
Size   111.79 GB (120,031,511,040 bytes)
Total Cylinders   14,593
Total Sectors   234,436,545
Total Tracks   3,721,215
Tracks/Cylinder   255
Partition Disk #61, Partition #0
Partition Size   25.39 GB (27,262,976,000 bytes)

Partition Starting Offset   1,048,576 bytes
Partition Disk #61, Partition #1
Partition Size   18.55 GB (19,922,944,000 bytes)

Partition Starting Offset   27,264,024,576 bytes

Partition Disk #61, Partition #2
Partition Size   20.51 GB (22,020,096,000 bytes)

Partition Starting Offset   47,186,968,576 bytes

Partition Disk #61, Partition #3
Partition Size   5.86 GB (6,291,456,000 bytes)
Partition Starting Offset   69,207,064,576 bytes

Description   Disk drive
Manufacturer   (Standard disk drives)
Model   ATA MK0120EAVDT SCSI Disk Device
Bytes/Sector   512
Media Loaded   Yes
Media Type   Fixed hard disk
Partitions   4
SCSI Bus 0
SCSI Logical Unit   0
SCSI Port 8
SCSI Target ID   22
Sectors/Track   63
Size   111.79 GB (120,031,511,040 bytes)
Total Cylinders   14,593
Total Sectors   234,436,545
Total Tracks   3,721,215
Tracks/Cylinder   255
Partition Disk #62, Partition #0
Partition Size   25.39 GB (27,262,976,000 bytes)

Partition Starting Offset   1,048,576 bytes
Partition Disk #62, Partition #1
Partition Size   18.55 GB (19,922,944,000 bytes)

Partition Starting Offset   27,264,024,576 bytes

Partition Disk #62, Partition #2
Partition Size   20.51 GB (22,020,096,000 bytes)

Partition Starting Offset   47,186,968,576 bytes

Partition Disk #62, Partition #3
Partition Size   5.86 GB (6,291,456,000 bytes)
Partition Starting Offset   69,207,064,576 bytes

Description   Disk drive
Manufacturer   (Standard disk drives)
Model   ATA MK0120EAVDT SCSI Disk Device
Bytes/Sector   512
Media Loaded   Yes
Media Type   Fixed hard disk
Partitions   4
SCSI Bus 0
SCSI Logical Unit   0
SCSI Port 8
SCSI Target ID   23
Sectors/Track   63
Size   111.79 GB (120,031,511,040 bytes)
Total Cylinders   14,593
Total Sectors   234,436,545

Total Tracks   3,721,215
Tracks/Cylinder   255
Partition Disk #63, Partition #0
Partition Size   25.39 GB (27,262,976,000 bytes)

Partition Starting Offset   1,048,576 bytes
Partition Disk #63, Partition #1
Partition Size   18.55 GB (19,922,944,000 bytes)

Partition Starting Offset   27,264,024,576 bytes

Partition Disk #63, Partition #2
Partition Size   20.51 GB (22,020,096,000 bytes)

Partition Starting Offset   47,186,968,576 bytes

Partition Disk #63, Partition #3
Partition Size   5.86 GB (6,291,456,000 bytes)
Partition Starting Offset   69,207,064,576 bytes

Description   Disk drive
Manufacturer   (Standard disk drives)
Model   ATA MK0120EAVDT SCSI Disk Device
Bytes/Sector   512
Media Loaded   Yes
Media Type   Fixed hard disk
Partitions   4
SCSI Bus 0
SCSI Logical Unit   0
SCSI Port 8
SCSI Target ID   24
Sectors/Track   63
Size   111.79 GB (120,031,511,040 bytes)
Total Cylinders   14,593
Total Sectors   234,436,545
Total Tracks   3,721,215
Tracks/Cylinder   255
Partition Disk #64, Partition #0
Partition Size   25.39 GB (27,262,976,000 bytes)

Partition Starting Offset   1,048,576 bytes
Partition Disk #64, Partition #1
Partition Size   18.55 GB (19,922,944,000 bytes)

Partition Starting Offset   27,264,024,576 bytes

Partition Disk #64, Partition #2
Partition Size   20.51 GB (22,020,096,000 bytes)

Partition Starting Offset   47,186,968,576 bytes

Partition Disk #64, Partition #3
Partition Size   5.86 GB (6,291,456,000 bytes)
Partition Starting Offset   69,207,064,576 bytes

Description   Disk drive
Manufacturer   (Standard disk drives)
Model   ATA MK0120EAVDT SCSI Disk Device
Bytes/Sector   512
Media Loaded   Yes
Media Type   Fixed hard disk

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Partitions        4                          Partition Starting Offset    69,207,064,576 bytes      Partition Starting Offset    27,264,024,576 bytes
SCSI Bus  0
SCSI Logical Unit   0                                                                                Partition Disk #108, Partition #2
SCSI Port 8                                   Description        Disk drive                          Partition Size      20.51 GB (22,020,096,000 bytes)
SCSI Target ID      25                        Manufacturer       (Standard disk drives)
Sectors/Track       63                        Model     ATA MK0120EAVDT SCSI Disk Device             Partition Starting Offset    47,186,968,576 bytes
Size       111.79 GB (120,031,511,040 bytes)  Bytes/Sector       512
Total Cylinders   14,593                      Media Loaded       Yes                                 Partition Disk #108, Partition #3
Total Sectors       234,436,545               Media Type         Fixed hard disk                     Partition Size      5.86 GB (6,291,456,000 bytes)
Total Tracks        3,721,215                 Partitions         4                                   Partition Starting Offset    69,207,064,576 bytes
Tracks/Cylinder     255                       SCSI Bus  0
Partition Disk #65, Partition #0             SCSI Logical Unit   0
Partition Size      25.39 GB (27,262,976,000 bytes)  SCSI Port 8                                     Description        Disk drive
                                              SCSI Target ID      125                                 Manufacturer       (Standard disk drives)
Partition Starting Offset    1,048,576 bytes  Sectors/Track       63                                  Model     ATA MK0120EAVDT SCSI Disk Device
Partition Disk #65, Partition #1             Size       111.79 GB (120,031,511,040 bytes)           Bytes/Sector       512
Partition Size      18.55 GB (19,922,944,000 bytes)  Total Cylinders   14,593                        Media Loaded       Yes
                                              Total Sectors       234,436,545                         Media Type         Fixed hard disk
Partition Starting Offset    27,264,024,576 bytes  Total Tracks        3,721,215                      Partitions         4
                                              Tracks/Cylinder     255                                 SCSI Bus  0
Partition Disk #65, Partition #2             Partition Disk #67, Partition #0                        SCSI Logical Unit   0
Partition Size      20.51 GB (22,020,096,000 bytes)  Partition Size      25.39 GB (27,262,976,000 bytes)  SCSI Port 11
                                                                                                     SCSI Target ID      9
Partition Starting Offset    47,186,968,576 bytes  Partition Starting Offset    1,048,576 bytes      Sectors/Track       63
                                              Partition Disk #67, Partition #1                        Size       111.79 GB (120,031,511,040 bytes)
Partition Disk #65, Partition #3             Partition Size      18.55 GB (19,922,944,000 bytes)     Total Cylinders   14,593
Partition Size      5.86 GB (6,291,456,000 bytes)                                                    Total Sectors       234,436,545
Partition Starting Offset    69,207,064,576 bytes  Partition Starting Offset    27,264,024,576 bytes  Total Tracks        3,721,215
                                                                                                     Tracks/Cylinder     255
                                              Partition Disk #67, Partition #2                        Partition Disk #109, Partition #0
Description        Disk drive                 Partition Size      20.51 GB (22,020,096,000 bytes)     Partition Size      25.39 GB (27,262,976,000 bytes)
Manufacturer       (Standard disk drives)
Model     ATA MK0120EAVDT SCSI Disk Device   Partition Starting Offset    47,186,968,576 bytes       Partition Starting Offset    1,048,576 bytes
Bytes/Sector       512                                                                               Partition Disk #109, Partition #1
Media Loaded       Yes                        Partition Disk #67, Partition #3                        Partition Size      18.55 GB (19,922,944,000 bytes)
Media Type         Fixed hard disk           Partition Size      5.86 GB (6,291,456,000 bytes)
Partitions         4                          Partition Starting Offset    69,207,064,576 bytes      Partition Starting Offset    27,264,024,576 bytes
SCSI Bus  0
SCSI Logical Unit   0
SCSI Port 8                                   Description        Disk drive                          Partition Disk #109, Partition #2
SCSI Target ID      124                       Manufacturer       (Standard disk drives)              Partition Size      20.51 GB (22,020,096,000 bytes)
Sectors/Track       63                        Model     ATA MK0120EAVDT SCSI Disk Device
Size       111.79 GB (120,031,511,040 bytes)  Bytes/Sector       512                                 Partition Starting Offset    47,186,968,576 bytes
Total Cylinders   14,593                      Media Loaded       Yes
Total Sectors       234,436,545               Media Type         Fixed hard disk                     Partition Disk #109, Partition #3
Total Tracks        3,721,215                 Partitions         4                                   Partition Size      5.86 GB (6,291,456,000 bytes)
Tracks/Cylinder     255                       SCSI Bus  0                                            Partition Starting Offset    69,207,064,576 bytes
Partition Disk #66, Partition #0             SCSI Logical Unit   0
Partition Size      25.39 GB (27,262,976,000 bytes)  SCSI Port 11
                                              SCSI Target ID      8                                   Description        Disk drive
Partition Starting Offset    1,048,576 bytes  Sectors/Track       63                                 Manufacturer       (Standard disk drives)
Partition Disk #66, Partition #1             Size       111.79 GB (120,031,511,040 bytes)           Model     ATA MK0120EAVDT SCSI Disk Device
Partition Size      18.55 GB (19,922,944,000 bytes)  Total Cylinders   14,593                        Bytes/Sector       512
                                              Total Sectors       234,436,545                         Media Loaded       Yes
Partition Starting Offset    27,264,024,576 bytes  Total Tracks        3,721,215                      Media Type         Fixed hard disk
                                              Tracks/Cylinder     255                                 Partitions         4
Partition Disk #66, Partition #2             Partition Disk #108, Partition #0                       SCSI Bus  0
Partition Size      20.51 GB (22,020,096,000 bytes)  Partition Size      25.39 GB (27,262,976,000 bytes)  SCSI Logical Unit   0
                                                                                                     SCSI Port 11
Partition Starting Offset    47,186,968,576 bytes  Partition Starting Offset    1,048,576 bytes      SCSI Target ID      10
                                              Partition Disk #108, Partition #1                       Sectors/Track       63
Partition Disk #66, Partition #3             Partition Size      18.55 GB (19,922,944,000 bytes)     Size       111.79 GB (120,031,511,040 bytes)
Partition Size      5.86 GB (6,291,456,000 bytes)                                                    Total Cylinders   14,593
                                                                                                     Total Sectors       234,436,545
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Total Tracks       3,721,215                        Partitions          4                          Partition Starting Offset    69,207,064,576 bytes
Tracks/Cylinder    255                              SCSI Bus  0
Partition Disk #110, Partition #0                   SCSI Logical Unit    0
Partition Size     25.39 GB (27,262,976,000 bytes)  SCSI Port 11                                   Description          Disk drive
                                                    SCSI Target ID    30                            Manufacturer     (Standard disk drives)
Partition Starting Offset    1,048,576 bytes        Sectors/Track     63                            Model     ATA MK0120EAVDT SCSI Disk Device
Partition Disk #110, Partition #1                   Size     111.79 GB (120,031,511,040 bytes)      Bytes/Sector       512
Partition Size     18.55 GB (19,922,944,000 bytes)  Total Cylinders    14,593                       Media Loaded       Yes
                                                    Total Sectors      234,436,545                  Media Type         Fixed hard disk
                                                    Total Tracks       3,721,215                    Partitions          4
Partition Starting Offset    27,264,024,576 bytes   Tracks/Cylinder    255                          SCSI Bus  0
Partition Disk #110, Partition #2                   Partition Disk #112, Partition #0               SCSI Logical Unit    0
Partition Size     20.51 GB (22,020,096,000 bytes)  Partition Size     25.39 GB (27,262,976,000 bytes)   SCSI Port 11
                                                                                                    SCSI Target ID    32
Partition Starting Offset    47,186,968,576 bytes   Partition Starting Offset    1,048,576 bytes    Sectors/Track     63
                                                    Partition Disk #112, Partition #1               Size     111.79 GB (120,031,511,040 bytes)
Partition Disk #110, Partition #3                   Partition Size     18.55 GB (19,922,944,000 bytes)   Total Cylinders    14,593
Partition Size     5.86 GB (6,291,456,000 bytes)                                                    Total Sectors      234,436,545
Partition Starting Offset    69,207,064,576 bytes   Partition Starting Offset    27,264,024,576 bytes    Total Tracks       3,721,215
                                                                                                    Tracks/Cylinder    255
                                                    Partition Disk #112, Partition #2               Partition Disk #114, Partition #0
Description          Disk drive                     Partition Size     20.51 GB (22,020,096,000 bytes)   Partition Size     25.39 GB (27,262,976,000 bytes)
Manufacturer     (Standard disk drives)
Model     ATA MK0120EAVDT SCSI Disk Device          Partition Starting Offset    47,186,968,576 bytes    Partition Starting Offset    1,048,576 bytes
Bytes/Sector       512                                                                              Partition Disk #114, Partition #1
Media Loaded       Yes                              Partition Disk #112, Partition #3               Partition Size     18.55 GB (19,922,944,000 bytes)
Media Type         Fixed hard disk                  Partition Size     5.86 GB (6,291,456,000 bytes)
Partitions          4                               Partition Starting Offset    69,207,064,576 bytes    Partition Starting Offset    27,264,024,576 bytes
SCSI Bus  0
SCSI Logical Unit    0                                                                              Partition Disk #114, Partition #2
SCSI Port 11                                        Description          Disk drive                 Partition Size     20.51 GB (22,020,096,000 bytes)
SCSI Target ID    29                                Manufacturer     (Standard disk drives)
Sectors/Track     63                                Model     ATA MK0120EAVDT SCSI Disk Device      Partition Starting Offset    47,186,968,576 bytes
Size     111.79 GB (120,031,511,040 bytes)          Bytes/Sector       512
Total Cylinders    14,593                           Media Loaded       Yes                          Partition Disk #114, Partition #3
Total Sectors      234,436,545                      Media Type         Fixed hard disk              Partition Size     5.86 GB (6,291,456,000 bytes)
Total Tracks       3,721,215                        Partitions          4                          Partition Starting Offset    69,207,064,576 bytes
Tracks/Cylinder    255                              SCSI Bus  0
Partition Disk #111, Partition #0                   SCSI Logical Unit    0
Partition Size     25.39 GB (27,262,976,000 bytes)  SCSI Port 11                                   Description          Disk drive
                                                    SCSI Target ID    31                            Manufacturer     (Standard disk drives)
Partition Starting Offset    1,048,576 bytes        Sectors/Track     63                            Model     ATA MK0120EAVDT SCSI Disk Device
Partition Disk #111, Partition #1                   Size     111.79 GB (120,031,511,040 bytes)      Bytes/Sector       512
Partition Size     18.55 GB (19,922,944,000 bytes)  Total Cylinders    14,593                       Media Loaded       Yes
                                                    Total Sectors      234,436,545                  Media Type         Fixed hard disk
Partition Starting Offset    27,264,024,576 bytes   Total Tracks       3,721,215                    Partitions          4
                                                    Tracks/Cylinder    255                          SCSI Bus  0
Partition Disk #111, Partition #2                   Partition Disk #113, Partition #0               SCSI Logical Unit    0
Partition Size     20.51 GB (22,020,096,000 bytes)  Partition Size     25.39 GB (27,262,976,000 bytes)   SCSI Port 11
                                                                                                    SCSI Target ID    33
Partition Starting Offset    47,186,968,576 bytes   Partition Starting Offset    1,048,576 bytes    Sectors/Track     63
                                                    Partition Disk #113, Partition #1               Size     111.79 GB (120,031,511,040 bytes)
Partition Disk #111, Partition #3                   Partition Size     18.55 GB (19,922,944,000 bytes)   Total Cylinders    14,593
Partition Size     5.86 GB (6,291,456,000 bytes)                                                    Total Sectors      234,436,545
Partition Starting Offset    69,207,064,576 bytes   Partition Starting Offset    27,264,024,576 bytes    Total Tracks       3,721,215
                                                                                                    Tracks/Cylinder    255
                                                    Partition Disk #113, Partition #2               Partition Disk #115, Partition #0
Description          Disk drive                     Partition Size     20.51 GB (22,020,096,000 bytes)   Partition Size     25.39 GB (27,262,976,000 bytes)
Manufacturer     (Standard disk drives)
Model     ATA MK0120EAVDT SCSI Disk Device          Partition Starting Offset    47,186,968,576 bytes    Partition Starting Offset    1,048,576 bytes
Bytes/Sector       512                                                                              Partition Disk #115, Partition #1
Media Loaded       Yes                              Partition Disk #113, Partition #3               Partition Size     18.55 GB (19,922,944,000 bytes)
Media Type         Fixed hard disk                  Partition Size     5.86 GB (6,291,456,000 bytes)
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Partition Starting Offset    27,264,024,576 bytes        Total Tracks        3,721,215                   Partitions        4
                                                         Tracks/Cylinder    255                          SCSI Bus  0
Partition Disk #115, Partition #2                        Partition Disk #117, Partition #0               SCSI Logical Unit    0
Partition Size    20.51 GB (22,020,096,000 bytes)        Partition Size    25.39 GB (27,262,976,000 bytes)  SCSI Port 11
                                                                                                          SCSI Target ID    37
Partition Starting Offset    47,186,968,576 bytes                                                         Sectors/Track    63
                                                         Partition Starting Offset    1,048,576 bytes     Size    111.79 GB (120,031,511,040 bytes)
Partition Disk #115, Partition #3                        Partition Disk #117, Partition #1               Total Cylinders    14,593
Partition Size    5.86 GB (6,291,456,000 bytes)          Partition Size    18.55 GB (19,922,944,000 bytes)  Total Sectors    234,436,545
Partition Starting Offset    69,207,064,576 bytes                                                         Total Tracks    3,721,215
                                                         Partition Starting Offset    27,264,024,576 bytes  Tracks/Cylinder    255
                                                                                                          Partition Disk #119, Partition #0
Description        Disk drive                            Partition Disk #117, Partition #2               Partition Size    25.39 GB (27,262,976,000 bytes)
Manufacturer      (Standard disk drives)                 Partition Size    20.51 GB (22,020,096,000 bytes)
Model      ATA MK0120EAVDT SCSI Disk Device                                                              Partition Starting Offset    1,048,576 bytes
Bytes/Sector    512                                      Partition Starting Offset    47,186,968,576 bytes  Partition Disk #119, Partition #1
Media Loaded      Yes                                                                                    Partition Size    18.55 GB (19,922,944,000 bytes)
Media Type        Fixed hard disk                        Partition Disk #117, Partition #3
Partitions    4                                          Partition Size    5.86 GB (6,291,456,000 bytes)  Partition Starting Offset    27,264,024,576 bytes
SCSI Bus  0                                              Partition Starting Offset    69,207,064,576 bytes
SCSI Logical Unit    0                                                                                   Partition Disk #119, Partition #2
SCSI Port 11                                                                                             Partition Size    20.51 GB (22,020,096,000 bytes)
SCSI Target ID    34                                     Description        Disk drive
Sectors/Track    63                                      Manufacturer      (Standard disk drives)         Partition Starting Offset    47,186,968,576 bytes
Size    111.79 GB (120,031,511,040 bytes)                Model      ATA MK0120EAVDT SCSI Disk Device
Total Cylinders    14,593                                Bytes/Sector    512                              Partition Disk #119, Partition #3
Total Sectors    234,436,545                             Media Loaded      Yes                            Partition Size    5.86 GB (6,291,456,000 bytes)
Total Tracks    3,721,215                                Media Type        Fixed hard disk                Partition Starting Offset    69,207,064,576 bytes
Tracks/Cylinder    255                                   Partitions    4
Partition Disk #116, Partition #0                        SCSI Bus  0
Partition Size    25.39 GB (27,262,976,000 bytes)        SCSI Logical Unit    0                           Description        Disk drive
                                                         SCSI Port 11                                     Manufacturer      (Standard disk drives)
Partition Starting Offset    1,048,576 bytes             SCSI Target ID    36                             Model      ATA MK0120EAVDT SCSI Disk Device
Partition Disk #116, Partition #1                        Sectors/Track    63                              Bytes/Sector    512
Partition Size    18.55 GB (19,922,944,000 bytes)        Size    111.79 GB (120,031,511,040 bytes)        Media Loaded      Yes
                                                         Total Cylinders    14,593                        Media Type        Fixed hard disk
Partition Starting Offset    27,264,024,576 bytes        Total Sectors    234,436,545                     Partitions    4
                                                         Total Tracks    3,721,215                        SCSI Bus  0
Partition Disk #116, Partition #2                        Tracks/Cylinder    255                           SCSI Logical Unit    0
Partition Size    20.51 GB (22,020,096,000 bytes)        Partition Disk #118, Partition #0                SCSI Port 11
                                                         Partition Size    25.39 GB (27,262,976,000 bytes)  SCSI Target ID    38
Partition Starting Offset    47,186,968,576 bytes                                                         Sectors/Track    63
                                                         Partition Starting Offset    1,048,576 bytes     Size    111.79 GB (120,031,511,040 bytes)
Partition Disk #116, Partition #3                        Partition Disk #118, Partition #1                Total Cylinders    14,593
Partition Size    5.86 GB (6,291,456,000 bytes)          Partition Size    18.55 GB (19,922,944,000 bytes)  Total Sectors    234,436,545
Partition Starting Offset    69,207,064,576 bytes                                                         Total Tracks    3,721,215
                                                         Partition Starting Offset    27,264,024,576 bytes  Tracks/Cylinder    255
                                                                                                          Partition Disk #120, Partition #0
Description        Disk drive                            Partition Disk #118, Partition #2               Partition Size    25.39 GB (27,262,976,000 bytes)
Manufacturer      (Standard disk drives)                 Partition Size    20.51 GB (22,020,096,000 bytes)
Model      ATA MK0120EAVDT SCSI Disk Device                                                              Partition Starting Offset    1,048,576 bytes
Bytes/Sector    512                                      Partition Starting Offset    47,186,968,576 bytes  Partition Disk #120, Partition #1
Media Loaded      Yes                                                                                    Partition Size    18.55 GB (19,922,944,000 bytes)
Media Type        Fixed hard disk                        Partition Disk #118, Partition #3
Partitions    4                                          Partition Size    5.86 GB (6,291,456,000 bytes)  Partition Starting Offset    27,264,024,576 bytes
SCSI Bus  0                                              Partition Starting Offset    69,207,064,576 bytes
SCSI Logical Unit    0                                                                                   Partition Disk #120, Partition #2
SCSI Port 11                                                                                             Partition Size    20.51 GB (22,020,096,000 bytes)
SCSI Target ID    35                                     Description        Disk drive
Sectors/Track    63                                      Manufacturer      (Standard disk drives)         Partition Starting Offset    47,186,968,576 bytes
Size    111.79 GB (120,031,511,040 bytes)                Model      ATA MK0120EAVDT SCSI Disk Device
Total Cylinders    14,593                                Bytes/Sector    512                              Partition Disk #120, Partition #3
Total Sectors    234,436,545                             Media Loaded      Yes                            Partition Size    5.86 GB (6,291,456,000 bytes)
                                                         Media Type        Fixed hard disk
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Partition Starting Offset   69,207,064,576 bytes

Description   Disk drive
Manufacturer   (Standard disk drives)
Model   ATA MK0120EAVDT SCSI Disk Device
Bytes/Sector   512
Media Loaded   Yes
Media Type   Fixed hard disk
Partitions   4
SCSI Bus 0
SCSI Logical Unit   0
SCSI Port 11
SCSI Target ID   39
Sectors/Track   63
Size   111.79 GB (120,031,511,040 bytes)
Total Cylinders   14,593
Total Sectors   234,436,545
Total Tracks   3,721,215
Tracks/Cylinder   255
Partition Disk #121, Partition #0
Partition Size   25.39 GB (27,262,976,000 bytes)

Partition Starting Offset   1,048,576 bytes
Partition Disk #121, Partition #1
Partition Size   18.55 GB (19,922,944,000 bytes)

Partition Starting Offset   27,264,024,576 bytes

Partition Disk #121, Partition #2
Partition Size   20.51 GB (22,020,096,000 bytes)

Partition Starting Offset   47,186,968,576 bytes

Partition Disk #121, Partition #3
Partition Size   5.86 GB (6,291,456,000 bytes)
Partition Starting Offset   69,207,064,576 bytes

Description   Disk drive
Manufacturer   (Standard disk drives)
Model   ATA MK0120EAVDT SCSI Disk Device
Bytes/Sector   512
Media Loaded   Yes
Media Type   Fixed hard disk
Partitions   4
SCSI Bus 0
SCSI Logical Unit   0
SCSI Port 11
SCSI Target ID   40
Sectors/Track   63
Size   111.79 GB (120,031,511,040 bytes)
Total Cylinders   14,593
Total Sectors   234,436,545
Total Tracks   3,721,215
Tracks/Cylinder   255
Partition Disk #122, Partition #0
Partition Size   25.39 GB (27,262,976,000 bytes)

Partition Starting Offset   1,048,576 bytes
Partition Disk #122, Partition #1
Partition Size   18.55 GB (19,922,944,000 bytes)

Partition Starting Offset   27,264,024,576 bytes

Partition Disk #122, Partition #2
Partition Size   20.51 GB (22,020,096,000 bytes)

Partition Starting Offset   47,186,968,576 bytes

Partition Disk #122, Partition #3
Partition Size   5.86 GB (6,291,456,000 bytes)
Partition Starting Offset   69,207,064,576 bytes

Description   Disk drive
Manufacturer   (Standard disk drives)
Model   ATA MK0120EAVDT SCSI Disk Device
Bytes/Sector   512
Media Loaded   Yes
Media Type   Fixed hard disk
Partitions   4
SCSI Bus 0
SCSI Logical Unit   0
SCSI Port 11
SCSI Target ID   41
Sectors/Track   63
Size   111.79 GB (120,031,511,040 bytes)
Total Cylinders   14,593
Total Sectors   234,436,545
Total Tracks   3,721,215
Tracks/Cylinder   255
Partition Disk #123, Partition #0
Partition Size   25.39 GB (27,262,976,000 bytes)

Partition Starting Offset   1,048,576 bytes
Partition Disk #123, Partition #1
Partition Size   18.55 GB (19,922,944,000 bytes)

Partition Starting Offset   27,264,024,576 bytes

Partition Disk #123, Partition #2
Partition Size   20.51 GB (22,020,096,000 bytes)

Partition Starting Offset   47,186,968,576 bytes

Partition Disk #123, Partition #3
Partition Size   5.86 GB (6,291,456,000 bytes)
Partition Starting Offset   69,207,064,576 bytes

Description   Disk drive
Manufacturer   (Standard disk drives)
Model   ATA MK0120EAVDT SCSI Disk Device
Bytes/Sector   512
Media Loaded   Yes
Media Type   Fixed hard disk
Partitions   4
SCSI Bus 0
SCSI Logical Unit   0
SCSI Port 11
SCSI Target ID   42
Sectors/Track   63
Size   111.79 GB (120,031,511,040 bytes)
Total Cylinders   14,593
Total Sectors   234,436,545

Total Tracks   3,721,215
Tracks/Cylinder   255
Partition Disk #124, Partition #0
Partition Size   25.39 GB (27,262,976,000 bytes)

Partition Starting Offset   1,048,576 bytes
Partition Disk #124, Partition #1
Partition Size   18.55 GB (19,922,944,000 bytes)

Partition Starting Offset   27,264,024,576 bytes

Partition Disk #124, Partition #2
Partition Size   20.51 GB (22,020,096,000 bytes)

Partition Starting Offset   47,186,968,576 bytes

Partition Disk #124, Partition #3
Partition Size   5.86 GB (6,291,456,000 bytes)
Partition Starting Offset   69,207,064,576 bytes

Description   Disk drive
Manufacturer   (Standard disk drives)
Model   ATA MK0120EAVDT SCSI Disk Device
Bytes/Sector   512
Media Loaded   Yes
Media Type   Fixed hard disk
Partitions   4
SCSI Bus 0
SCSI Logical Unit   0
SCSI Port 11
SCSI Target ID   43
Sectors/Track   63
Size   111.79 GB (120,031,511,040 bytes)
Total Cylinders   14,593
Total Sectors   234,436,545
Total Tracks   3,721,215
Tracks/Cylinder   255
Partition Disk #125, Partition #0
Partition Size   25.39 GB (27,262,976,000 bytes)

Partition Starting Offset   1,048,576 bytes
Partition Disk #125, Partition #1
Partition Size   18.55 GB (19,922,944,000 bytes)

Partition Starting Offset   27,264,024,576 bytes

Partition Disk #125, Partition #2
Partition Size   20.51 GB (22,020,096,000 bytes)

Partition Starting Offset   47,186,968,576 bytes

Partition Disk #125, Partition #3
Partition Size   5.86 GB (6,291,456,000 bytes)
Partition Starting Offset   69,207,064,576 bytes

Description   Disk drive
Manufacturer   (Standard disk drives)
Model   ATA MK0120EAVDT SCSI Disk Device
Bytes/Sector   512
Media Loaded   Yes
Media Type   Fixed hard disk

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Partitions          4                           Partition Starting Offset   69,207,064,576 bytes        Partition Starting Offset   27,264,024,576 bytes
SCSI Bus  0
SCSI Logical Unit   0                                                                                    Partition Disk #29, Partition #2
SCSI Port 11                                     Description        Disk drive                           Partition Size    20.51 GB (22,020,096,000 bytes)
SCSI Target ID      44                           Manufacturer       (Standard disk drives)
Sectors/Track       63                           Model     ATA MK0120EAVDT SCSI Disk Device             Partition Starting Offset   47,186,968,576 bytes
Size      111.79 GB (120,031,511,040 bytes)      Bytes/Sector       512
Total Cylinders     14,593                       Media Loaded       Yes                                  Partition Disk #29, Partition #3
Total Sectors       234,436,545                  Media Type         Fixed hard disk                      Partition Size    5.86 GB (6,291,456,000 bytes)
Total Tracks        3,721,215                    Partitions         4                                    Partition Starting Offset   69,207,064,576 bytes
Tracks/Cylinder     255                          SCSI Bus  0
Partition Disk #126, Partition #0                SCSI Logical Unit   0
Partition Size      25.39 GB (27,262,976,000 bytes)  SCSI Port 7                                          Description        Disk drive
                                                 SCSI Target ID      29                                  Manufacturer       (Standard disk drives)
Partition Starting Offset   1,048,576 bytes      Sectors/Track       63                                  Model     ATA MK0120EAVDT SCSI Disk Device
Partition Disk #126, Partition #1                Size      111.79 GB (120,031,511,040 bytes)             Bytes/Sector       512
Partition Size      18.55 GB (19,922,944,000 bytes)  Total Cylinders     14,593                          Media Loaded       Yes
                                                 Total Sectors       234,436,545                         Media Type         Fixed hard disk
Partition Starting Offset   27,264,024,576 bytes Total Tracks        3,721,215                           Partitions         4
                                                 Tracks/Cylinder     255                                 SCSI Bus  0
Partition Disk #126, Partition #2                Partition Disk #28, Partition #0                        SCSI Logical Unit   0
Partition Size      20.51 GB (22,020,096,000 bytes)  Partition Size    25.39 GB (27,262,976,000 bytes)   SCSI Port 7
                                                                                                         SCSI Target ID      31
Partition Starting Offset   47,186,968,576 bytes Partition Starting Offset   1,048,576 bytes             Sectors/Track       63
                                                 Partition Disk #28, Partition #1                        Size      111.79 GB (120,031,511,040 bytes)
Partition Disk #126, Partition #3                Partition Size    18.55 GB (19,922,944,000 bytes)       Total Cylinders     14,593
Partition Size      5.86 GB (6,291,456,000 bytes)                                                        Total Sectors       234,436,545
Partition Starting Offset   69,207,064,576 bytes Partition Starting Offset   27,264,024,576 bytes        Total Tracks        3,721,215
                                                                                                         Tracks/Cylinder     255
                                                 Partition Disk #28, Partition #2                        Partition Disk #30, Partition #0
Description        Disk drive                    Partition Size    20.51 GB (22,020,096,000 bytes)       Partition Size    25.39 GB (27,262,976,000 bytes)
Manufacturer       (Standard disk drives)
Model     ATA MK0120EAVDT SCSI Disk Device       Partition Starting Offset   47,186,968,576 bytes        Partition Starting Offset   1,048,576 bytes
Bytes/Sector       512                                                                                   Partition Disk #30, Partition #1
Media Loaded       Yes                           Partition Disk #28, Partition #3                        Partition Size    18.55 GB (19,922,944,000 bytes)
Media Type         Fixed hard disk               Partition Size    5.86 GB (6,291,456,000 bytes)
Partitions         4                             Partition Starting Offset   69,207,064,576 bytes        Partition Starting Offset   27,264,024,576 bytes
SCSI Bus  0
SCSI Logical Unit   0                                                                                    Partition Disk #30, Partition #2
SCSI Port 11                                     Description        Disk drive                           Partition Size    20.51 GB (22,020,096,000 bytes)
SCSI Target ID      45                           Manufacturer       (Standard disk drives)
Sectors/Track       63                           Model     ATA MK0120EAVDT SCSI Disk Device             Partition Starting Offset   47,186,968,576 bytes
Size      111.79 GB (120,031,511,040 bytes)      Bytes/Sector       512
Total Cylinders     14,593                       Media Loaded       Yes                                  Partition Disk #30, Partition #3
Total Sectors       234,436,545                  Media Type         Fixed hard disk                      Partition Size    5.86 GB (6,291,456,000 bytes)
Total Tracks        3,721,215                    Partitions         4                                    Partition Starting Offset   69,207,064,576 bytes
Tracks/Cylinder     255                          SCSI Bus  0
Partition Disk #127, Partition #0                SCSI Logical Unit   0
Partition Size      25.39 GB (27,262,976,000 bytes)  SCSI Port 7                                          Description        Disk drive
                                                 SCSI Target ID      30                                  Manufacturer       (Standard disk drives)
Partition Starting Offset   1,048,576 bytes      Sectors/Track       63                                  Model     ATA MK0120EAVDT SCSI Disk Device
Partition Disk #127, Partition #1                Size      111.79 GB (120,031,511,040 bytes)             Bytes/Sector       512
Partition Size      18.55 GB (19,922,944,000 bytes)  Total Cylinders     14,593                          Media Loaded       Yes
                                                 Total Sectors       234,436,545                         Media Type         Fixed hard disk
Partition Starting Offset   27,264,024,576 bytes Total Tracks        3,721,215                           Partitions         4
                                                 Tracks/Cylinder     255                                 SCSI Bus  0
Partition Disk #127, Partition #2                Partition Disk #29, Partition #0                        SCSI Logical Unit   0
Partition Size      20.51 GB (22,020,096,000 bytes)  Partition Size    25.39 GB (27,262,976,000 bytes)   SCSI Port 7
                                                                                                         SCSI Target ID      32
Partition Starting Offset   47,186,968,576 bytes Partition Starting Offset   1,048,576 bytes             Sectors/Track       63
                                                 Partition Disk #29, Partition #1                        Size      111.79 GB (120,031,511,040 bytes)
Partition Disk #127, Partition #3                Partition Size    18.55 GB (19,922,944,000 bytes)       Total Cylinders     14,593
Partition Size      5.86 GB (6,291,456,000 bytes)                                                        Total Sectors       234,436,545
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Total Tracks     3,721,215              Partitions       4                    Partition Starting Offset    69,207,064,576 bytes
Tracks/Cylinder  255                    SCSI Bus  0
Partition Disk #31, Partition #0        SCSI Logical Unit   0
Partition Size   25.39 GB (27,262,976,000 bytes)  SCSI Port 7                 Description       Disk drive
                                        SCSI Target ID   34                    Manufacturer      (Standard disk drives)
Partition Starting Offset   1,048,576 bytes  Sectors/Track    63               Model    ATA MK0120EAVDT SCSI Disk Device
Partition Disk #31, Partition #1        Size     111.79 GB (120,031,511,040 bytes)  Bytes/Sector     512
Partition Size   18.55 GB (19,922,944,000 bytes)  Total Cylinders  14,593      Media Loaded     Yes
                                        Total Sectors    234,436,545           Media Type       Fixed hard disk
                                        Total Tracks     3,721,215             Partitions       4
Partition Starting Offset   27,264,024,576 bytes  Tracks/Cylinder  255         SCSI Bus  0
                                        Partition Disk #33, Partition #0       SCSI Logical Unit   0
Partition Disk #31, Partition #2        Partition Size   25.39 GB (27,262,976,000 bytes)  SCSI Port 7
Partition Size   20.51 GB (22,020,096,000 bytes)                              SCSI Target ID   36
                                        Partition Starting Offset   1,048,576 bytes  Sectors/Track    63
Partition Starting Offset   47,186,968,576 bytes  Partition Disk #33, Partition #1  Size     111.79 GB (120,031,511,040 bytes)
                                        Partition Size   18.55 GB (19,922,944,000 bytes)  Total Cylinders  14,593
Partition Disk #31, Partition #3                                               Total Sectors    234,436,545
Partition Size   5.86 GB (6,291,456,000 bytes)  Partition Starting Offset   27,264,024,576 bytes  Total Tracks     3,721,215
Partition Starting Offset   69,207,064,576 bytes                              Tracks/Cylinder  255
                                        Partition Disk #33, Partition #2       Partition Disk #35, Partition #0
                                        Partition Size   20.51 GB (22,020,096,000 bytes)  Partition Size   25.39 GB (27,262,976,000 bytes)
Description      Disk drive
Manufacturer     (Standard disk drives)  Partition Starting Offset   47,186,968,576 bytes  Partition Starting Offset   1,048,576 bytes
Model    ATA MK0120EAVDT SCSI Disk Device                                      Partition Disk #35, Partition #1
Bytes/Sector     512                    Partition Disk #33, Partition #3       Partition Size   18.55 GB (19,922,944,000 bytes)
Media Loaded     Yes                    Partition Size   5.86 GB (6,291,456,000 bytes)
Media Type       Fixed hard disk        Partition Starting Offset   69,207,064,576 bytes  Partition Starting Offset   27,264,024,576 bytes
Partitions       4
SCSI Bus  0                                                                    Partition Disk #35, Partition #2
SCSI Logical Unit   0                   Description       Disk drive           Partition Size   20.51 GB (22,020,096,000 bytes)
SCSI Port 7                             Manufacturer      (Standard disk drives)
SCSI Target ID   33                     Model    ATA MK0120EAVDT SCSI Disk Device  Partition Starting Offset   47,186,968,576 bytes
Sectors/Track    63                     Bytes/Sector     512
Size     111.79 GB (120,031,511,040 bytes)  Media Loaded     Yes               Partition Disk #35, Partition #3
Total Cylinders  14,593                 Media Type       Fixed hard disk        Partition Size   5.86 GB (6,291,456,000 bytes)
Total Sectors    234,436,545            Partitions       4                    Partition Starting Offset   69,207,064,576 bytes
Total Tracks     3,721,215              SCSI Bus  0
Tracks/Cylinder  255                    SCSI Logical Unit   0
Partition Disk #32, Partition #0        SCSI Port 7                            Description       Disk drive
Partition Size   25.39 GB (27,262,976,000 bytes)  SCSI Target ID   35          Manufacturer      (Standard disk drives)
                                        Sectors/Track    63                    Model    ATA MK0120EAVDT SCSI Disk Device
Partition Starting Offset   1,048,576 bytes  Size     111.79 GB (120,031,511,040 bytes)  Bytes/Sector     512
Partition Disk #32, Partition #1        Total Cylinders  14,593                Media Loaded     Yes
Partition Size   18.55 GB (19,922,944,000 bytes)  Total Sectors    234,436,545  Media Type       Fixed hard disk
                                        Total Tracks     3,721,215             Partitions       4
Partition Starting Offset   27,264,024,576 bytes  Tracks/Cylinder  255         SCSI Bus  0
                                        Partition Disk #34, Partition #0       SCSI Logical Unit   0
Partition Disk #32, Partition #2        Partition Size   25.39 GB (27,262,976,000 bytes)  SCSI Port 7
Partition Size   20.51 GB (22,020,096,000 bytes)                              SCSI Target ID   37
                                        Partition Starting Offset   1,048,576 bytes  Sectors/Track    63
Partition Starting Offset   47,186,968,576 bytes  Partition Disk #34, Partition #1  Size     111.79 GB (120,031,511,040 bytes)
                                        Partition Size   18.55 GB (19,922,944,000 bytes)  Total Cylinders  14,593
Partition Disk #32, Partition #3                                               Total Sectors    234,436,545
Partition Size   5.86 GB (6,291,456,000 bytes)  Partition Starting Offset   27,264,024,576 bytes  Total Tracks     3,721,215
Partition Starting Offset   69,207,064,576 bytes                              Tracks/Cylinder  255
                                        Partition Disk #34, Partition #2       Partition Disk #36, Partition #0
                                        Partition Size   20.51 GB (22,020,096,000 bytes)  Partition Size   25.39 GB (27,262,976,000 bytes)
Description      Disk drive
Manufacturer     (Standard disk drives)  Partition Starting Offset   47,186,968,576 bytes  Partition Starting Offset   1,048,576 bytes
Model    ATA MK0120EAVDT SCSI Disk Device                                      Partition Disk #36, Partition #1
Bytes/Sector     512                    Partition Disk #34, Partition #3       Partition Size   18.55 GB (19,922,944,000 bytes)
Media Loaded     Yes                    Partition Size   5.86 GB (6,291,456,000 bytes)
Media Type       Fixed hard disk
```

Partition Starting Offset   27,264,024,576 bytes

Partition Disk #36, Partition #2
Partition Size   20.51 GB (22,020,096,000 bytes)

Partition Starting Offset   47,186,968,576 bytes

Partition Disk #36, Partition #3
Partition Size   5.86 GB (6,291,456,000 bytes)
Partition Starting Offset   69,207,064,576 bytes

Description   Disk drive
Manufacturer   (Standard disk drives)
Model   ATA MK0120EAVDT SCSI Disk Device
Bytes/Sector   512
Media Loaded   Yes
Media Type   Fixed hard disk
Partitions   4
SCSI Bus 0
SCSI Logical Unit   0
SCSI Port 7
SCSI Target ID   38
Sectors/Track   63
Size   111.79 GB (120,031,511,040 bytes)
Total Cylinders   14,593
Total Sectors   234,436,545
Total Tracks   3,721,215
Tracks/Cylinder   255
Partition Disk #37, Partition #0
Partition Size   25.39 GB (27,262,976,000 bytes)

Partition Starting Offset   1,048,576 bytes
Partition Disk #37, Partition #1
Partition Size   18.55 GB (19,922,944,000 bytes)

Partition Starting Offset   27,264,024,576 bytes

Partition Disk #37, Partition #2
Partition Size   20.51 GB (22,020,096,000 bytes)

Partition Starting Offset   47,186,968,576 bytes

Partition Disk #37, Partition #3
Partition Size   5.86 GB (6,291,456,000 bytes)
Partition Starting Offset   69,207,064,576 bytes

Description   Disk drive
Manufacturer   (Standard disk drives)
Model   ATA MK0120EAVDT SCSI Disk Device
Bytes/Sector   512
Media Loaded   Yes
Media Type   Fixed hard disk
Partitions   4
SCSI Bus 0
SCSI Logical Unit   0
SCSI Port 7
SCSI Target ID   39
Sectors/Track   63
Size   111.79 GB (120,031,511,040 bytes)
Total Cylinders   14,593
Total Sectors   234,436,545

Total Tracks   3,721,215
Tracks/Cylinder   255
Partition Disk #38, Partition #0
Partition Size   25.39 GB (27,262,976,000 bytes)

Partition Starting Offset   1,048,576 bytes
Partition Disk #38, Partition #1
Partition Size   18.55 GB (19,922,944,000 bytes)

Partition Starting Offset   27,264,024,576 bytes

Partition Disk #38, Partition #2
Partition Size   20.51 GB (22,020,096,000 bytes)

Partition Starting Offset   47,186,968,576 bytes

Partition Disk #38, Partition #3
Partition Size   5.86 GB (6,291,456,000 bytes)
Partition Starting Offset   69,207,064,576 bytes

Description   Disk drive
Manufacturer   (Standard disk drives)
Model   ATA MK0120EAVDT SCSI Disk Device
Bytes/Sector   512
Media Loaded   Yes
Media Type   Fixed hard disk
Partitions   4
SCSI Bus 0
SCSI Logical Unit   0
SCSI Port 7
SCSI Target ID   40
Sectors/Track   63
Size   111.79 GB (120,031,511,040 bytes)
Total Cylinders   14,593
Total Sectors   234,436,545
Total Tracks   3,721,215
Tracks/Cylinder   255
Partition Disk #39, Partition #0
Partition Size   25.39 GB (27,262,976,000 bytes)

Partition Starting Offset   1,048,576 bytes
Partition Disk #39, Partition #1
Partition Size   18.55 GB (19,922,944,000 bytes)

Partition Starting Offset   27,264,024,576 bytes

Partition Disk #39, Partition #2
Partition Size   20.51 GB (22,020,096,000 bytes)

Partition Starting Offset   47,186,968,576 bytes

Partition Disk #39, Partition #3
Partition Size   5.86 GB (6,291,456,000 bytes)
Partition Starting Offset   69,207,064,576 bytes

Description   Disk drive
Manufacturer   (Standard disk drives)
Model   ATA MK0120EAVDT SCSI Disk Device
Bytes/Sector   512
Media Loaded   Yes
Media Type   Fixed hard disk

Partitions   4
SCSI Bus 0
SCSI Logical Unit   0
SCSI Port 7
SCSI Target ID   41
Sectors/Track   63
Size   111.79 GB (120,031,511,040 bytes)
Total Cylinders   14,593
Total Sectors   234,436,545
Total Tracks   3,721,215
Tracks/Cylinder   255
Partition Disk #40, Partition #0
Partition Size   25.39 GB (27,262,976,000 bytes)

Partition Starting Offset   1,048,576 bytes
Partition Disk #40, Partition #1
Partition Size   18.55 GB (19,922,944,000 bytes)

Partition Starting Offset   27,264,024,576 bytes

Partition Disk #40, Partition #2
Partition Size   20.51 GB (22,020,096,000 bytes)

Partition Starting Offset   47,186,968,576 bytes

Partition Disk #40, Partition #3
Partition Size   5.86 GB (6,291,456,000 bytes)
Partition Starting Offset   69,207,064,576 bytes

Description   Disk drive
Manufacturer   (Standard disk drives)
Model   ATA MK0120EAVDT SCSI Disk Device
Bytes/Sector   512
Media Loaded   Yes
Media Type   Fixed hard disk
Partitions   4
SCSI Bus 0
SCSI Logical Unit   0
SCSI Port 7
SCSI Target ID   42
Sectors/Track   63
Size   111.79 GB (120,031,511,040 bytes)
Total Cylinders   14,593
Total Sectors   234,436,545
Total Tracks   3,721,215
Tracks/Cylinder   255
Partition Disk #41, Partition #0
Partition Size   25.39 GB (27,262,976,000 bytes)

Partition Starting Offset   1,048,576 bytes
Partition Disk #41, Partition #1
Partition Size   18.55 GB (19,922,944,000 bytes)

Partition Starting Offset   27,264,024,576 bytes

Partition Disk #41, Partition #2
Partition Size   20.51 GB (22,020,096,000 bytes)

Partition Starting Offset   47,186,968,576 bytes

Partition Disk #41, Partition #3
Partition Size   5.86 GB (6,291,456,000 bytes)

Partition Starting Offset   69,207,064,576 bytes

Description   Disk drive
Manufacturer   (Standard disk drives)
Model   ATA MK0120EAVDT SCSI Disk Device
Bytes/Sector   512
Media Loaded   Yes
Media Type   Fixed hard disk
Partitions   4
SCSI Bus 0
SCSI Logical Unit 0
SCSI Port 7
SCSI Target ID   43
Sectors/Track   63
Size   111.79 GB (120,031,511,040 bytes)
Total Cylinders   14,593
Total Sectors   234,436,545
Total Tracks   3,721,215
Tracks/Cylinder   255
Partition Disk #42, Partition #0
Partition Size   25.39 GB (27,262,976,000 bytes)

Partition Starting Offset   1,048,576 bytes
Partition Disk #42, Partition #1
Partition Size   18.55 GB (19,922,944,000 bytes)

Partition Starting Offset   27,264,024,576 bytes

Partition Disk #42, Partition #2
Partition Size   20.51 GB (22,020,096,000 bytes)

Partition Starting Offset   47,186,968,576 bytes

Partition Disk #42, Partition #3
Partition Size   5.86 GB (6,291,456,000 bytes)
Partition Starting Offset   69,207,064,576 bytes

Description   Disk drive
Manufacturer   (Standard disk drives)
Model   ATA MK0120EAVDT SCSI Disk Device
Bytes/Sector   512
Media Loaded   Yes
Media Type   Fixed hard disk
Partitions   4
SCSI Bus 0
SCSI Logical Unit 0
SCSI Port 7
SCSI Target ID   44
Sectors/Track   63
Size   111.79 GB (120,031,511,040 bytes)
Total Cylinders   14,593
Total Sectors   234,436,545
Total Tracks   3,721,215
Tracks/Cylinder   255
Partition Disk #43, Partition #0
Partition Size   25.39 GB (27,262,976,000 bytes)

Partition Starting Offset   1,048,576 bytes
Partition Disk #43, Partition #1
Partition Size   18.55 GB (19,922,944,000 bytes)

Partition Starting Offset   27,264,024,576 bytes

Partition Disk #43, Partition #2
Partition Size   20.51 GB (22,020,096,000 bytes)

Partition Starting Offset   47,186,968,576 bytes

Partition Disk #43, Partition #3
Partition Size   5.86 GB (6,291,456,000 bytes)
Partition Starting Offset   69,207,064,576 bytes

Description   Disk drive
Manufacturer   (Standard disk drives)
Model   ATA MK0120EAVDT SCSI Disk Device
Bytes/Sector   512
Media Loaded   Yes
Media Type   Fixed hard disk
Partitions   4
SCSI Bus 0
SCSI Logical Unit 0
SCSI Port 7
SCSI Target ID   45
Sectors/Track   63
Size   111.79 GB (120,031,511,040 bytes)
Total Cylinders   14,593
Total Sectors   234,436,545
Total Tracks   3,721,215
Tracks/Cylinder   255
Partition Disk #44, Partition #0
Partition Size   25.39 GB (27,262,976,000 bytes)

Partition Starting Offset   1,048,576 bytes
Partition Disk #44, Partition #1
Partition Size   18.55 GB (19,922,944,000 bytes)

Partition Starting Offset   27,264,024,576 bytes

Partition Disk #44, Partition #2
Partition Size   20.51 GB (22,020,096,000 bytes)

Partition Starting Offset   47,186,968,576 bytes

Partition Disk #44, Partition #3
Partition Size   5.86 GB (6,291,456,000 bytes)
Partition Starting Offset   69,207,064,576 bytes

Description   Disk drive
Manufacturer   (Standard disk drives)
Model   ATA MK0120EAVDT SCSI Disk Device
Bytes/Sector   512
Media Loaded   Yes
Media Type   Fixed hard disk
Partitions   4
SCSI Bus 0
SCSI Logical Unit 0
SCSI Port 7
SCSI Target ID   46
Sectors/Track   63
Size   111.79 GB (120,031,511,040 bytes)
Total Cylinders   14,593
Total Sectors   234,436,545

Total Tracks   3,721,215
Tracks/Cylinder   255
Partition Disk #45, Partition #0
Partition Size   25.39 GB (27,262,976,000 bytes)

Partition Starting Offset   1,048,576 bytes
Partition Disk #45, Partition #1
Partition Size   18.55 GB (19,922,944,000 bytes)

Partition Starting Offset   27,264,024,576 bytes

Partition Disk #45, Partition #2
Partition Size   20.51 GB (22,020,096,000 bytes)

Partition Starting Offset   47,186,968,576 bytes

Partition Disk #45, Partition #3
Partition Size   5.86 GB (6,291,456,000 bytes)
Partition Starting Offset   69,207,064,576 bytes

Description   Disk drive
Manufacturer   (Standard disk drives)
Model   ATA MK0120EAVDT SCSI Disk Device
Bytes/Sector   512
Media Loaded   Yes
Media Type   Fixed hard disk
Partitions   4
SCSI Bus 0
SCSI Logical Unit 0
SCSI Port 7
SCSI Target ID   47
Sectors/Track   63
Size   111.79 GB (120,031,511,040 bytes)
Total Cylinders   14,593
Total Sectors   234,436,545
Total Tracks   3,721,215
Tracks/Cylinder   255
Partition Disk #46, Partition #0
Partition Size   25.39 GB (27,262,976,000 bytes)

Partition Starting Offset   1,048,576 bytes
Partition Disk #46, Partition #1
Partition Size   18.55 GB (19,922,944,000 bytes)

Partition Starting Offset   27,264,024,576 bytes

Partition Disk #46, Partition #2
Partition Size   20.51 GB (22,020,096,000 bytes)

Partition Starting Offset   47,186,968,576 bytes

Partition Disk #46, Partition #3
Partition Size   5.86 GB (6,291,456,000 bytes)
Partition Starting Offset   69,207,064,576 bytes

Description   Disk drive
Manufacturer   (Standard disk drives)
Model   ATA MK0120EAVDT SCSI Disk Device
Bytes/Sector   512
Media Loaded   Yes
Media Type   Fixed hard disk

```
Partitions        4                          Partition Starting Offset    69,207,064,576 bytes          Partition Starting Offset    27,264,024,576 bytes
SCSI Bus  0
SCSI Logical Unit   0                                                                                    Partition Disk #90, Partition #2
SCSI Port 7                                   Description        Disk drive                              Partition Size    20.51 GB (22,020,096,000 bytes)
SCSI Target ID    48                          Manufacturer      (Standard disk drives)
Sectors/Track    63                           Model     ATA MK0120EAVDT SCSI Disk Device                 Partition Starting Offset    47,186,968,576 bytes
Size     111.79 GB (120,031,511,040 bytes)    Bytes/Sector      512
Total Cylinders   14,593                       Media Loaded      Yes                                     Partition Disk #90, Partition #3
Total Sectors     234,436,545                  Media Type        Fixed hard disk                         Partition Size    5.86 GB (6,291,456,000 bytes)
Total Tracks      3,721,215                    Partitions        4                                       Partition Starting Offset    69,207,064,576 bytes
Tracks/Cylinder   255                          SCSI Bus  0
Partition Disk #47, Partition #0              SCSI Logical Unit   0
Partition Size    25.39 GB (27,262,976,000 bytes)  SCSI Port 10                                          Description        Disk drive
                                              SCSI Target ID    50                                       Manufacturer      (Standard disk drives)
Partition Starting Offset    1,048,576 bytes   Sectors/Track    63                                       Model     ATA MK0120EAVDT SCSI Disk Device
Partition Disk #47, Partition #1              Size     111.79 GB (120,031,511,040 bytes)                 Bytes/Sector      512
Partition Size    18.55 (19,922,944,000 bytes)  Total Cylinders   14,593                                 Media Loaded      Yes
                                              Total Sectors     234,436,545                              Media Type        Fixed hard disk
Partition Starting Offset    27,264,024,576 bytes  Total Tracks      3,721,215                            Partitions        4
                                              Tracks/Cylinder   255                                      SCSI Bus  0
Partition Disk #47, Partition #2              Partition Disk #89, Partition #0                           SCSI Logical Unit   0
Partition Size    20.51 GB (22,020,096,000 bytes)  Partition Size    25.39 GB (27,262,976,000 bytes)     SCSI Port 10
                                                                                                         SCSI Target ID    52
Partition Starting Offset    47,186,968,576 bytes  Partition Starting Offset    1,048,576 bytes          Sectors/Track    63
                                              Partition Disk #89, Partition #1                           Size     111.79 GB (120,031,511,040 bytes)
Partition Disk #47, Partition #3              Partition Size    18.55 GB (19,922,944,000 bytes)          Total Cylinders   14,593
Partition Size    5.86 GB (6,291,456,000 bytes)                                                          Total Sectors     234,436,545
Partition Starting Offset    69,207,064,576 bytes  Partition Starting Offset    27,264,024,576 bytes     Total Tracks      3,721,215
                                                                                                         Tracks/Cylinder   255
                                              Partition Disk #89, Partition #2                           Partition Disk #91, Partition #0
Description        Disk drive                 Partition Size    20.51 GB (22,020,096,000 bytes)          Partition Size    25.39 GB (27,262,976,000 bytes)
Manufacturer      (Standard disk drives)
Model     ATA MK0120EAVDT SCSI Disk Device    Partition Starting Offset    47,186,968,576 bytes          Partition Starting Offset    1,048,576 bytes
Bytes/Sector      512                                                                                    Partition Disk #91, Partition #1
Media Loaded      Yes                         Partition Disk #89, Partition #3                           Partition Size    18.55 GB (19,922,944,000 bytes)
Media Type        Fixed hard disk            Partition Size    5.86 GB (6,291,456,000 bytes)
Partitions        4                          Partition Starting Offset    69,207,064,576 bytes           Partition Starting Offset    27,264,024,576 bytes
SCSI Bus  0
SCSI Logical Unit   0                                                                                    Partition Disk #91, Partition #2
SCSI Port 10                                  Description        Disk drive                              Partition Size    20.51 GB (22,020,096,000 bytes)
SCSI Target ID    49                          Manufacturer      (Standard disk drives)
Sectors/Track    63                           Model     ATA MK0120EAVDT SCSI Disk Device                 Partition Starting Offset    47,186,968,576 bytes
Size     111.79 GB (120,031,511,040 bytes)    Bytes/Sector      512
Total Cylinders   14,593                       Media Loaded      Yes                                     Partition Disk #91, Partition #3
Total Sectors     234,436,545                  Media Type        Fixed hard disk                         Partition Size    5.86 GB (6,291,456,000 bytes)
Total Tracks      3,721,215                    Partitions        4                                       Partition Starting Offset    69,207,064,576 bytes
Tracks/Cylinder   255                          SCSI Bus  0
Partition Disk #88, Partition #0              SCSI Logical Unit   0
Partition Size    25.39 GB (27,262,976,000 bytes)  SCSI Port 10                                          Description        Disk drive
                                              SCSI Target ID    51                                       Manufacturer      (Standard disk drives)
Partition Starting Offset    1,048,576 bytes   Sectors/Track    63                                       Model     ATA MK0120EAVDT SCSI Disk Device
Partition Disk #88, Partition #1              Size     111.79 GB (120,031,511,040 bytes)                 Bytes/Sector      512
Partition Size    18.55 GB (19,922,944,000 bytes)  Total Cylinders   14,593                              Media Loaded      Yes
                                              Total Sectors     234,436,545                              Media Type        Fixed hard disk
Partition Starting Offset    27,264,024,576 bytes  Total Tracks      3,721,215                            Partitions        4
                                              Tracks/Cylinder   255                                      SCSI Bus  0
Partition Disk #88, Partition #2              Partition Disk #90, Partition #0                           SCSI Logical Unit   0
Partition Size    20.51 GB (22,020,096,000 bytes)  Partition Size    25.39 GB (27,262,976,000 bytes)     SCSI Port 10
                                                                                                         SCSI Target ID    53
Partition Starting Offset    47,186,968,576 bytes  Partition Starting Offset    1,048,576 bytes          Sectors/Track    63
                                              Partition Disk #90, Partition #1                           Size     111.79 GB (120,031,511,040 bytes)
Partition Disk #88, Partition #3              Partition Size    18.55 GB (19,922,944,000 bytes)          Total Cylinders   14,593
Partition Size    5.86 GB (6,291,456,000 bytes)                                                          Total Sectors     234,436,545
```

```
Total Tracks       3,721,215
Tracks/Cylinder    255
Partition Disk #92, Partition #0
Partition Size     25.39 GB (27,262,976,000 bytes)

Partition Starting Offset     1,048,576 bytes
Partition Disk #92, Partition #1
Partition Size     18.55 GB (19,922,944,000 bytes)

Partition Starting Offset     27,264,024,576 bytes

Partition Disk #92, Partition #2
Partition Size     20.51 GB (22,020,096,000 bytes)

Partition Starting Offset     47,186,968,576 bytes

Partition Disk #92, Partition #3
Partition Size     5.86 GB (6,291,456,000 bytes)
Partition Starting Offset     69,207,064,576 bytes


Description        Disk drive
Manufacturer       (Standard disk drives)
Model     ATA MK0120EAVDT SCSI Disk Device
Bytes/Sector       512
Media Loaded       Yes
Media Type         Fixed hard disk
Partitions         4
SCSI Bus  0
SCSI Logical Unit   0
SCSI Port 10
SCSI Target ID     54
Sectors/Track      63
Size      111.79 GB (120,031,511,040 bytes)
Total Cylinders    14,593
Total Sectors      234,436,545
Total Tracks       3,721,215
Tracks/Cylinder    255
Partition Disk #93, Partition #0
Partition Size     25.39 GB (27,262,976,000 bytes)

Partition Starting Offset     1,048,576 bytes
Partition Disk #93, Partition #1
Partition Size     18.55 GB (19,922,944,000 bytes)

Partition Starting Offset     27,264,024,576 bytes

Partition Disk #93, Partition #2
Partition Size     20.51 GB (22,020,096,000 bytes)

Partition Starting Offset     47,186,968,576 bytes

Partition Disk #93, Partition #3
Partition Size     5.86 GB (6,291,456,000 bytes)
Partition Starting Offset     69,207,064,576 bytes


Description        Disk drive
Manufacturer       (Standard disk drives)
Model     ATA MK0120EAVDT SCSI Disk Device
Bytes/Sector       512
Media Loaded       Yes
Media Type         Fixed hard disk
```

```
Partitions         4
SCSI Bus  0
SCSI Logical Unit   0
SCSI Port 10
SCSI Target ID     55
Sectors/Track      63
Size      111.79 GB (120,031,511,040 bytes)
Total Cylinders    14,593
Total Sectors      234,436,545
Total Tracks       3,721,215
Tracks/Cylinder    255
Partition Disk #94, Partition #0
Partition Size     25.39 GB (27,262,976,000 bytes)

Partition Starting Offset     1,048,576 bytes
Partition Disk #94, Partition #1
Partition Size     18.55 GB (19,922,944,000 bytes)

Partition Starting Offset     27,264,024,576 bytes

Partition Disk #94, Partition #2
Partition Size     20.51 GB (22,020,096,000 bytes)

Partition Starting Offset     47,186,968,576 bytes

Partition Disk #94, Partition #3
Partition Size     5.86 GB (6,291,456,000 bytes)
Partition Starting Offset     69,207,064,576 bytes


Description        Disk drive
Manufacturer       (Standard disk drives)
Model     ATA MK0120EAVDT SCSI Disk Device
Bytes/Sector       512
Media Loaded       Yes
Media Type         Fixed hard disk
Partitions         4
SCSI Bus  0
SCSI Logical Unit   0
SCSI Port 10
SCSI Target ID     56
Sectors/Track      63
Size      111.79 GB (120,031,511,040 bytes)
Total Cylinders    14,593
Total Sectors      234,436,545
Total Tracks       3,721,215
Tracks/Cylinder    255
Partition Disk #95, Partition #0
Partition Size     25.39 GB (27,262,976,000 bytes)

Partition Starting Offset     1,048,576 bytes
Partition Disk #95, Partition #1
Partition Size     18.55 GB (19,922,944,000 bytes)

Partition Starting Offset     27,264,024,576 bytes

Partition Disk #95, Partition #2
Partition Size     20.51 GB (22,020,096,000 bytes)

Partition Starting Offset     47,186,968,576 bytes

Partition Disk #95, Partition #3
Partition Size     5.86 GB (6,291,456,000 bytes)
```

```
Partition Starting Offset     69,207,064,576 bytes


Description        Disk drive
Manufacturer       (Standard disk drives)
Model     ATA MK0120EAVDT SCSI Disk Device
Bytes/Sector       512
Media Loaded       Yes
Media Type         Fixed hard disk
Partitions         4
SCSI Bus  0
SCSI Logical Unit   0
SCSI Port 10
SCSI Target ID     57
Sectors/Track      63
Size      111.79 GB (120,031,511,040 bytes)
Total Cylinders    14,593
Total Sectors      234,436,545
Total Tracks       3,721,215
Tracks/Cylinder    255
Partition Disk #96, Partition #0
Partition Size     25.39 GB (27,262,976,000 bytes)

Partition Starting Offset     1,048,576 bytes
Partition Disk #96, Partition #1
Partition Size     18.55 GB (19,922,944,000 bytes)

Partition Starting Offset     27,264,024,576 bytes

Partition Disk #96, Partition #2
Partition Size     20.51 GB (22,020,096,000 bytes)

Partition Starting Offset     47,186,968,576 bytes

Partition Disk #96, Partition #3
Partition Size     5.86 GB (6,291,456,000 bytes)
Partition Starting Offset     69,207,064,576 bytes


Description        Disk drive
Manufacturer       (Standard disk drives)
Model     ATA MK0120EAVDT SCSI Disk Device
Bytes/Sector       512
Media Loaded       Yes
Media Type         Fixed hard disk
Partitions         4
SCSI Bus  0
SCSI Logical Unit   0
SCSI Port 10
SCSI Target ID     58
Sectors/Track      63
Size      111.79 GB (120,031,511,040 bytes)
Total Cylinders    14,593
Total Sectors      234,436,545
Total Tracks       3,721,215
Tracks/Cylinder    255
Partition Disk #97, Partition #0
Partition Size     25.39 GB (27,262,976,000 bytes)

Partition Starting Offset     1,048,576 bytes
Partition Disk #97, Partition #1
Partition Size     18.55 GB (19,922,944,000 bytes)
```

```
Partition Starting Offset     27,264,024,576 bytes        Total Tracks       3,721,215                      Partitions            4
                                                          Tracks/Cylinder    255                            SCSI Bus  0
Partition Disk #97, Partition #2                          Partition Disk #99, Partition #0                 SCSI Logical Unit    0
Partition Size      20.51 GB (22,020,096,000 bytes)       Partition Size      25.39 GB (27,262,976,000 bytes)  SCSI Port 10
                                                                                                           SCSI Target ID       62
Partition Starting Offset     47,186,968,576 bytes                                                         Sectors/Track        63
                                                          Partition Starting Offset     1,048,576 bytes    Size      111.79 GB (120,031,511,040 bytes)
Partition Disk #97, Partition #3                          Partition Disk #99, Partition #1                 Total Cylinders    14,593
Partition Size      5.86 GB (6,291,456,000 bytes)         Partition Size      18.55 GB (19,922,944,000 bytes)  Total Sectors      234,436,545
Partition Starting Offset     69,207,064,576 bytes                                                         Total Tracks       3,721,215
                                                                                                           Tracks/Cylinder    255
                                                          Partition Starting Offset     27,264,024,576 bytes  Partition Disk #101, Partition #0
Description         Disk drive                                                                             Partition Size      25.39 GB (27,262,976,000 bytes)
Manufacturer        (Standard disk drives)                Partition Disk #99, Partition #2
Model      ATA MK0120EAVDT SCSI Disk Device               Partition Size      20.51 GB (22,020,096,000 bytes)  Partition Starting Offset     1,048,576 bytes
Bytes/Sector        512                                                                                    Partition Disk #101, Partition #1
Media Loaded        Yes                                   Partition Starting Offset     47,186,968,576 bytes  Partition Size      18.55 GB (19,922,944,000 bytes)
Media Type          Fixed hard disk
Partitions          4                                     Partition Disk #99, Partition #3                 Partition Starting Offset     27,264,024,576 bytes
SCSI Bus  0                                               Partition Size      5.86 GB (6,291,456,000 bytes)
SCSI Logical Unit    0                                    Partition Starting Offset     69,207,064,576 bytes  Partition Disk #101, Partition #2
SCSI Port 10                                                                                               Partition Size      20.51 GB (22,020,096,000 bytes)
SCSI Target ID       59
Sectors/Track        63                                   Description         Disk drive                    Partition Starting Offset     47,186,968,576 bytes
Size      111.79 GB (120,031,511,040 bytes)               Manufacturer        (Standard disk drives)
Total Cylinders    14,593                                 Model      ATA MK0120EAVDT SCSI Disk Device       Partition Disk #101, Partition #3
Total Sectors      234,436,545                            Bytes/Sector        512                           Partition Size      5.86 GB (6,291,456,000 bytes)
Total Tracks       3,721,215                              Media Loaded        Yes                           Partition Starting Offset     69,207,064,576 bytes
Tracks/Cylinder    255                                    Media Type          Fixed hard disk
Partition Disk #98, Partition #0                          Partitions          4
Partition Size      25.39 GB (27,262,976,000 bytes)       SCSI Bus  0                                       Description         Disk drive
                                                          SCSI Logical Unit    0                            Manufacturer        (Standard disk drives)
Partition Starting Offset     1,048,576 bytes             SCSI Port 10                                      Model      ATA MK0120EAVDT SCSI Disk Device
Partition Disk #98, Partition #1                          SCSI Target ID       61                           Bytes/Sector        512
Partition Size      18.55 GB (19,922,944,000 bytes)       Sectors/Track        63                           Media Loaded        Yes
                                                          Size      111.79 GB (120,031,511,040 bytes)       Media Type          Fixed hard disk
Partition Starting Offset     27,264,024,576 bytes        Total Cylinders    14,593                         Partitions          4
                                                          Total Sectors      234,436,545                    SCSI Bus  0
Partition Disk #98, Partition #2                          Total Tracks       3,721,215                      SCSI Logical Unit    0
Partition Size      20.51 GB (22,020,096,000 bytes)       Tracks/Cylinder    255                            SCSI Port 10
                                                          Partition Disk #100, Partition #0                 SCSI Target ID       63
Partition Starting Offset     47,186,968,576 bytes        Partition Size      25.39 GB (27,262,976,000 bytes)  Sectors/Track        63
                                                                                                           Size      111.79 GB (120,031,511,040 bytes)
Partition Disk #98, Partition #3                          Partition Starting Offset     1,048,576 bytes    Total Cylinders    14,593
Partition Size      5.86 GB (6,291,456,000 bytes)         Partition Disk #100, Partition #1                 Total Sectors      234,436,545
Partition Starting Offset     69,207,064,576 bytes        Partition Size      18.55 GB (19,922,944,000 bytes)  Total Tracks       3,721,215
                                                                                                           Tracks/Cylinder    255
                                                          Partition Starting Offset     27,264,024,576 bytes  Partition Disk #102, Partition #0
Description         Disk drive                                                                             Partition Size      25.39 GB (27,262,976,000 bytes)
Manufacturer        (Standard disk drives)                Partition Disk #100, Partition #2
Model      ATA MK0120EAVDT SCSI Disk Device               Partition Size      20.51 GB (22,020,096,000 bytes)  Partition Starting Offset     1,048,576 bytes
Bytes/Sector        512                                                                                    Partition Disk #102, Partition #1
Media Loaded        Yes                                   Partition Starting Offset     47,186,968,576 bytes  Partition Size      18.55 GB (19,922,944,000 bytes)
Media Type          Fixed hard disk
Partitions          4                                     Partition Disk #100, Partition #3                 Partition Starting Offset     27,264,024,576 bytes
SCSI Bus  0                                               Partition Size      5.86 GB (6,291,456,000 bytes)
SCSI Logical Unit    0                                    Partition Starting Offset     69,207,064,576 bytes  Partition Disk #102, Partition #2
SCSI Port 10                                                                                               Partition Size      20.51 GB (22,020,096,000 bytes)
SCSI Target ID       60
Sectors/Track        63                                   Description         Disk drive                    Partition Starting Offset     47,186,968,576 bytes
Size      111.79 GB (120,031,511,040 bytes)               Manufacturer        (Standard disk drives)
Total Cylinders    14,593                                 Model      ATA MK0120EAVDT SCSI Disk Device       Partition Disk #102, Partition #3
Total Sectors      234,436,545                            Bytes/Sector        512                           Partition Size      5.86 GB (6,291,456,000 bytes)
                                                          Media Loaded        Yes
                                                          Media Type          Fixed hard disk
```

```
Partition Starting Offset    69,207,064,576 bytes


Description        Disk drive
Manufacturer       (Standard disk drives)
Model      ATA MK0120EAVDT SCSI Disk Device
Bytes/Sector       512
Media Loaded       Yes
Media Type         Fixed hard disk
Partitions         4
SCSI Bus  0
SCSI Logical Unit  0
SCSI Port 10
SCSI Target ID     64
Sectors/Track      63
Size      111.79 GB (120,031,511,040 bytes)
Total Cylinders    14,593
Total Sectors      234,436,545
Total Tracks       3,721,215
Tracks/Cylinder    255
Partition Disk #103, Partition #0
Partition Size     25.39 GB (27,262,976,000 bytes)

Partition Starting Offset    1,048,576 bytes
Partition Disk #103, Partition #1
Partition Size     18.55 GB (19,922,944,000 bytes)

Partition Starting Offset    27,264,024,576 bytes

Partition Disk #103, Partition #2
Partition Size     20.51 GB (22,020,096,000 bytes)

Partition Starting Offset    47,186,968,576 bytes

Partition Disk #103, Partition #3
Partition Size     5.86 GB (6,291,456,000 bytes)
Partition Starting Offset    69,207,064,576 bytes


Description        Disk drive
Manufacturer       (Standard disk drives)
Model      ATA MK0120EAVDT SCSI Disk Device
Bytes/Sector       512
Media Loaded       Yes
Media Type         Fixed hard disk
Partitions         4
SCSI Bus  0
SCSI Logical Unit  0
SCSI Port 10
SCSI Target ID     65
Sectors/Track      63
Size      111.79 GB (120,031,511,040 bytes)
Total Cylinders    14,593
Total Sectors      234,436,545
Total Tracks       3,721,215
Tracks/Cylinder    255
Partition Disk #104, Partition #0
Partition Size     25.39 GB (27,262,976,000 bytes)

Partition Starting Offset    1,048,576 bytes
Partition Disk #104, Partition #1
Partition Size     18.55 GB (19,922,944,000 bytes)
```

```
Partition Starting Offset    27,264,024,576 bytes

Partition Disk #104, Partition #2
Partition Size     20.51 GB (22,020,096,000 bytes)

Partition Starting Offset    47,186,968,576 bytes

Partition Disk #104, Partition #3
Partition Size     5.86 GB (6,291,456,000 bytes)
Partition Starting Offset    69,207,064,576 bytes


Description        Disk drive
Manufacturer       (Standard disk drives)
Model      ATA MK0120EAVDT SCSI Disk Device
Bytes/Sector       512
Media Loaded       Yes
Media Type         Fixed hard disk
Partitions         4
SCSI Bus  0
SCSI Logical Unit  0
SCSI Port 10
SCSI Target ID     66
Sectors/Track      63
Size      111.79 GB (120,031,511,040 bytes)
Total Cylinders    14,593
Total Sectors      234,436,545
Total Tracks       3,721,215
Tracks/Cylinder    255
Partition Disk #105, Partition #0
Partition Size     25.39 GB (27,262,976,000 bytes)

Partition Starting Offset    1,048,576 bytes
Partition Disk #105, Partition #1
Partition Size     18.55 GB (19,922,944,000 bytes)

Partition Starting Offset    27,264,024,576 bytes

Partition Disk #105, Partition #2
Partition Size     20.51 GB (22,020,096,000 bytes)

Partition Starting Offset    47,186,968,576 bytes

Partition Disk #105, Partition #3
Partition Size     5.86 GB (6,291,456,000 bytes)
Partition Starting Offset    69,207,064,576 bytes


Description        Disk drive
Manufacturer       (Standard disk drives)
Model      ATA MK0120EAVDT SCSI Disk Device
Bytes/Sector       512
Media Loaded       Yes
Media Type         Fixed hard disk
Partitions         4
SCSI Bus  0
SCSI Logical Unit  0
SCSI Port 10
SCSI Target ID     67
Sectors/Track      63
Size      111.79 GB (120,031,511,040 bytes)
Total Cylinders    14,593
Total Sectors      234,436,545
```

```
Total Tracks       3,721,215
Tracks/Cylinder    255
Partition Disk #106, Partition #0
Partition Size     25.39 GB (27,262,976,000 bytes)

Partition Starting Offset    1,048,576 bytes
Partition Disk #106, Partition #1
Partition Size     18.55 GB (19,922,944,000 bytes)

Partition Starting Offset    27,264,024,576 bytes

Partition Disk #106, Partition #2
Partition Size     20.51 GB (22,020,096,000 bytes)

Partition Starting Offset    47,186,968,576 bytes

Partition Disk #106, Partition #3
Partition Size     5.86 GB (6,291,456,000 bytes)
Partition Starting Offset    69,207,064,576 bytes


Description        Disk drive
Manufacturer       (Standard disk drives)
Model      ATA MK0120EAVDT SCSI Disk Device
Bytes/Sector       512
Media Loaded       Yes
Media Type         Fixed hard disk
Partitions         4
SCSI Bus  0
SCSI Logical Unit  0
SCSI Port 10
SCSI Target ID     68
Sectors/Track      63
Size      111.79 GB (120,031,511,040 bytes)
Total Cylinders    14,593
Total Sectors      234,436,545
Total Tracks       3,721,215
Tracks/Cylinder    255
Partition Disk #107, Partition #0
Partition Size     25.39 GB (27,262,976,000 bytes)

Partition Starting Offset    1,048,576 bytes
Partition Disk #107, Partition #1
Partition Size     18.55 GB (19,922,944,000 bytes)

Partition Starting Offset    27,264,024,576 bytes

Partition Disk #107, Partition #2
Partition Size     20.51 GB (22,020,096,000 bytes)

Partition Starting Offset    47,186,968,576 bytes

Partition Disk #107, Partition #3
Partition Size     5.86 GB (6,291,456,000 bytes)
Partition Starting Offset    69,207,064,576 bytes


Description        Disk drive
Manufacturer       (Standard disk drives)
Model      ATA MK0120EAVDT SCSI Disk Device
Bytes/Sector       512
Media Loaded       Yes
Media Type         Fixed hard disk
```

Partitions   4
SCSI Bus 0
SCSI Logical Unit   0
SCSI Port 9
SCSI Target ID   49
Sectors/Track   63
Size   111.79 GB (120,031,511,040 bytes)
Total Cylinders   14,593
Total Sectors   234,436,545
Total Tracks   3,721,215
Tracks/Cylinder   255
Partition Disk #68, Partition #0
Partition Size   25.39 GB (27,262,976,000 bytes)

Partition Starting Offset   1,048,576 bytes
Partition Disk #68, Partition #1
Partition Size   18.55 GB (19,922,944,000 bytes)

Partition Starting Offset   27,264,024,576 bytes

Partition Disk #68, Partition #2
Partition Size   20.51 GB (22,020,096,000 bytes)

Partition Starting Offset   47,186,968,576 bytes

Partition Disk #68, Partition #3
Partition Size   5.86 GB (6,291,456,000 bytes)
Partition Starting Offset   69,207,064,576 bytes

Description   Disk drive
Manufacturer   (Standard disk drives)
Model   ATA MK0120EAVDT SCSI Disk Device
Bytes/Sector   512
Media Loaded   Yes
Media Type   Fixed hard disk
Partitions   4
SCSI Bus 0
SCSI Logical Unit   0
SCSI Port 9
SCSI Target ID   50
Sectors/Track   63
Size   111.79 GB (120,031,511,040 bytes)
Total Cylinders   14,593
Total Sectors   234,436,545
Total Tracks   3,721,215
Tracks/Cylinder   255
Partition Disk #69, Partition #0
Partition Size   25.39 GB (27,262,976,000 bytes)

Partition Starting Offset   1,048,576 bytes
Partition Disk #69, Partition #1
Partition Size   18.55 GB (19,922,944,000 bytes)

Partition Starting Offset   27,264,024,576 bytes

Partition Disk #69, Partition #2
Partition Size   20.51 GB (22,020,096,000 bytes)

Partition Starting Offset   47,186,968,576 bytes

Partition Disk #69, Partition #3
Partition Size   5.86 GB (6,291,456,000 bytes)

Partition Starting Offset   69,207,064,576 bytes

Description   Disk drive
Manufacturer   (Standard disk drives)
Model   ATA MK0120EAVDT SCSI Disk Device
Bytes/Sector   512
Media Loaded   Yes
Media Type   Fixed hard disk
Partitions   4
SCSI Bus 0
SCSI Logical Unit   0
SCSI Port 9
SCSI Target ID   51
Sectors/Track   63
Size   111.79 GB (120,031,511,040 bytes)
Total Cylinders   14,593
Total Sectors   234,436,545
Total Tracks   3,721,215
Tracks/Cylinder   255
Partition Disk #70, Partition #0
Partition Size   25.39 GB (27,262,976,000 bytes)

Partition Starting Offset   1,048,576 bytes
Partition Disk #70, Partition #1
Partition Size   18.55 GB (19,922,944,000 bytes)

Partition Starting Offset   27,264,024,576 bytes

Partition Disk #70, Partition #2
Partition Size   20.51 GB (22,020,096,000 bytes)

Partition Starting Offset   47,186,968,576 bytes

Partition Disk #70, Partition #3
Partition Size   5.86 GB (6,291,456,000 bytes)
Partition Starting Offset   69,207,064,576 bytes

Description   Disk drive
Manufacturer   (Standard disk drives)
Model   ATA MK0120EAVDT SCSI Disk Device
Bytes/Sector   512
Media Loaded   Yes
Media Type   Fixed hard disk
Partitions   4
SCSI Bus 0
SCSI Logical Unit   0
SCSI Port 9
SCSI Target ID   52
Sectors/Track   63
Size   111.79 GB (120,031,511,040 bytes)
Total Cylinders   14,593
Total Sectors   234,436,545
Total Tracks   3,721,215
Tracks/Cylinder   255
Partition Disk #71, Partition #0
Partition Size   25.39 GB (27,262,976,000 bytes)

Partition Starting Offset   1,048,576 bytes
Partition Disk #71, Partition #1
Partition Size   18.55 GB (19,922,944,000 bytes)

Partition Starting Offset   69,207,064,576 bytes

Partition Disk #71, Partition #2
Partition Size   20.51 GB (22,020,096,000 bytes)

Partition Starting Offset   47,186,968,576 bytes

Partition Disk #71, Partition #3
Partition Size   5.86 GB (6,291,456,000 bytes)
Partition Starting Offset   69,207,064,576 bytes

Description   Disk drive
Manufacturer   (Standard disk drives)
Model   ATA MK0120EAVDT SCSI Disk Device
Bytes/Sector   512
Media Loaded   Yes
Media Type   Fixed hard disk
Partitions   4
SCSI Bus 0
SCSI Logical Unit   0
SCSI Port 9
SCSI Target ID   53
Sectors/Track   63
Size   111.79 GB (120,031,511,040 bytes)
Total Cylinders   14,593
Total Sectors   234,436,545
Total Tracks   3,721,215
Tracks/Cylinder   255
Partition Disk #72, Partition #0
Partition Size   25.39 GB (27,262,976,000 bytes)

Partition Starting Offset   1,048,576 bytes
Partition Disk #72, Partition #1
Partition Size   18.55 GB (19,922,944,000 bytes)

Partition Starting Offset   27,264,024,576 bytes

Partition Disk #72, Partition #2
Partition Size   20.51 GB (22,020,096,000 bytes)

Partition Starting Offset   47,186,968,576 bytes

Partition Disk #72, Partition #3
Partition Size   5.86 GB (6,291,456,000 bytes)
Partition Starting Offset   69,207,064,576 bytes

Description   Disk drive
Manufacturer   (Standard disk drives)
Model   ATA MK0120EAVDT SCSI Disk Device
Bytes/Sector   512
Media Loaded   Yes
Media Type   Fixed hard disk
Partitions   4
SCSI Bus 0
SCSI Logical Unit   0
SCSI Port 9
SCSI Target ID   54
Sectors/Track   63
Size   111.79 GB (120,031,511,040 bytes)
Total Cylinders   14,593
Total Sectors   234,436,545

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Total Tracks       3,721,215                    Partitions         4                          Partition Starting Offset    69,207,064,576 bytes
Tracks/Cylinder    255                          SCSI Bus  0
Partition Disk #73, Partition #0                SCSI Logical Unit    0
Partition Size     25.39 GB (27,262,976,000 bytes)  SCSI Port 9                              Description        Disk drive
                                                SCSI Target ID    56                         Manufacturer       (Standard disk drives)
Partition Starting Offset    1,048,576 bytes    Sectors/Track    63                          Model    ATA MK0120EAVDT SCSI Disk Device
Partition Disk #73, Partition #1                Size    111.79 GB (120,031,511,040 bytes)    Bytes/Sector      512
Partition Size     18.55 GB (19,922,944,000 bytes)  Total Cylinders   14,593                  Media Loaded      Yes
                                                Total Sectors    234,436,545                 Media Type        Fixed hard disk
                                                Total Tracks     3,721,215                   Partitions        4
Partition Starting Offset    27,264,024,576 bytes  Tracks/Cylinder   255                      SCSI Bus  0
                                                Partition Disk #75, Partition #0             SCSI Logical Unit    0
Partition Disk #73, Partition #2                Partition Size    25.39 GB (27,262,976,000 bytes)  SCSI Port 9
Partition Size     20.51 GB (22,020,096,000 bytes)                                           SCSI Target ID    58
                                                Partition Starting Offset    1,048,576 bytes  Sectors/Track     63
Partition Starting Offset    47,186,968,576 bytes  Partition Disk #75, Partition #1          Size    111.79 GB (120,031,511,040 bytes)
                                                Partition Size    18.55 GB (19,922,944,000 bytes)  Total Cylinders   14,593
Partition Disk #73, Partition #3                                                             Total Sectors    234,436,545
Partition Size     5.86 GB (6,291,456,000 bytes)  Partition Starting Offset    27,264,024,576 bytes  Total Tracks     3,721,215
Partition Starting Offset    69,207,064,576 bytes                                            Tracks/Cylinder   255
                                                Partition Disk #75, Partition #2             Partition Disk #77, Partition #0
                                                Partition Size    20.51 GB (22,020,096,000 bytes)  Partition Size    25.39 GB (27,262,976,000 bytes)
Description        Disk drive
Manufacturer       (Standard disk drives)       Partition Starting Offset    47,186,968,576 bytes  Partition Starting Offset    1,048,576 bytes
Model    ATA MK0120EAVDT SCSI Disk Device                                                    Partition Disk #77, Partition #1
Bytes/Sector      512                           Partition Disk #75, Partition #3             Partition Size    18.55 GB (19,922,944,000 bytes)
Media Loaded      Yes                           Partition Size    5.86 GB (6,291,456,000 bytes)
Media Type        Fixed hard disk              Partition Starting Offset    69,207,064,576 bytes  Partition Starting Offset    27,264,024,576 bytes
Partitions        4
SCSI Bus  0                                                                                  Partition Disk #77, Partition #2
SCSI Logical Unit    0                          Description        Disk drive               Partition Size    20.51 GB (22,020,096,000 bytes)
SCSI Port 9                                     Manufacturer       (Standard disk drives)
SCSI Target ID    55                            Model    ATA MK0120EAVDT SCSI Disk Device    Partition Starting Offset    47,186,968,576 bytes
Sectors/Track     63                            Bytes/Sector      512
Size    111.79 GB (120,031,511,040 bytes)       Media Loaded      Yes                        Partition Disk #77, Partition #3
Total Cylinders   14,593                        Media Type        Fixed hard disk           Partition Size    5.86 GB (6,291,456,000 bytes)
Total Sectors    234,436,545                    Partitions        4                         Partition Starting Offset    69,207,064,576 bytes
Total Tracks     3,721,215                      SCSI Bus  0
Tracks/Cylinder   255                           SCSI Logical Unit    0
Partition Disk #74, Partition #0                SCSI Port 9                                  Description        Disk drive
Partition Size     25.39 GB (27,262,976,000 bytes)  SCSI Target ID    57                     Manufacturer       (Standard disk drives)
                                                Sectors/Track     63                         Model    ATA MK0120EAVDT SCSI Disk Device
Partition Starting Offset    1,048,576 bytes    Size    111.79 GB (120,031,511,040 bytes)    Bytes/Sector      512
Partition Disk #74, Partition #1                Total Cylinders   14,593                      Media Loaded      Yes
Partition Size     18.55 GB (19,922,944,000 bytes)  Total Sectors    234,436,545             Media Type        Fixed hard disk
                                                Total Tracks     3,721,215                   Partitions        4
Partition Starting Offset    27,264,024,576 bytes  Tracks/Cylinder   255                      SCSI Bus  0
                                                Partition Disk #76, Partition #0             SCSI Logical Unit    0
Partition Disk #74, Partition #2                Partition Size    25.39 GB (27,262,976,000 bytes)  SCSI Port 9
Partition Size     20.51 GB (22,020,096,000 bytes)                                           SCSI Target ID    59
                                                Partition Starting Offset    1,048,576 bytes  Sectors/Track     63
Partition Starting Offset    47,186,968,576 bytes  Partition Disk #76, Partition #1          Size    111.79 GB (120,031,511,040 bytes)
                                                Partition Size    18.55 GB (19,922,944,000 bytes)  Total Cylinders   14,593
Partition Disk #74, Partition #3                                                             Total Sectors    234,436,545
Partition Size     5.86 GB (6,291,456,000 bytes)  Partition Starting Offset    27,264,024,576 bytes  Total Tracks     3,721,215
Partition Starting Offset    69,207,064,576 bytes                                            Tracks/Cylinder   255
                                                Partition Disk #76, Partition #2             Partition Disk #78, Partition #0
                                                Partition Size    20.51 GB (22,020,096,000 bytes)  Partition Size    25.39 GB (27,262,976,000 bytes)
Description        Disk drive
Manufacturer       (Standard disk drives)       Partition Starting Offset    47,186,968,576 bytes  Partition Starting Offset    1,048,576 bytes
Model    ATA MK0120EAVDT SCSI Disk Device                                                    Partition Disk #78, Partition #1
Bytes/Sector      512                           Partition Disk #76, Partition #3             Partition Size    18.55 GB (19,922,944,000 bytes)
Media Loaded      Yes                           Partition Size    5.86 GB (6,291,456,000 bytes)
Media Type        Fixed hard disk
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Partition Starting Offset    27,264,024,576 bytes          Total Tracks       3,721,215                     Partitions         4
                                                            Tracks/Cylinder    255                           SCSI Bus  0
Partition Disk #78, Partition #2                            Partition Disk #80, Partition #0                 SCSI Logical Unit  0
Partition Size    20.51 GB (22,020,096,000 bytes)          Partition Size     25.39 GB (27,262,976,000 bytes)   SCSI Port 9
                                                                                                             SCSI Target ID     63
Partition Starting Offset    47,186,968,576 bytes          Partition Starting Offset    1,048,576 bytes      Sectors/Track      63
                                                           Partition Disk #80, Partition #1                  Size     111.79 GB (120,031,511,040 bytes)
Partition Disk #78, Partition #3                           Partition Size     18.55 GB (19,922,944,000 bytes)   Total Cylinders    14,593
Partition Size    5.86 GB (6,291,456,000 bytes)                                                              Total Sectors      234,436,545
Partition Starting Offset    69,207,064,576 bytes          Partition Starting Offset    27,264,024,576 bytes Total Tracks       3,721,215
                                                                                                             Tracks/Cylinder    255
                                                           Partition Disk #80, Partition #2                  Partition Disk #82, Partition #0
Description       Disk drive                                Partition Size     20.51 GB (22,020,096,000 bytes)   Partition Size     25.39 GB (27,262,976,000 bytes)
Manufacturer      (Standard disk drives)
Model       ATA MK0120EAVDT SCSI Disk Device               Partition Starting Offset    47,186,968,576 bytes Partition Starting Offset    1,048,576 bytes
Bytes/Sector      512                                                                                        Partition Disk #82, Partition #1
Media Loaded      Yes                                       Partition Disk #80, Partition #3                  Partition Size     18.55 GB (19,922,944,000 bytes)
Media Type        Fixed hard disk                           Partition Size     5.86 GB (6,291,456,000 bytes)
Partitions        4                                         Partition Starting Offset    69,207,064,576 bytes Partition Starting Offset    27,264,024,576 bytes
SCSI Bus  0
SCSI Logical Unit  0                                                                                          Partition Disk #82, Partition #2
SCSI Port 9                                                 Description       Disk drive                       Partition Size     20.51 GB (22,020,096,000 bytes)
SCSI Target ID    60                                        Manufacturer      (Standard disk drives)
Sectors/Track     63                                        Model       ATA MK0120EAVDT SCSI Disk Device       Partition Starting Offset    47,186,968,576 bytes
Size     111.79 GB (120,031,511,040 bytes)                 Bytes/Sector      512
Total Cylinders   14,593                                    Media Loaded      Yes                              Partition Disk #82, Partition #3
Total Sectors     234,436,545                               Media Type        Fixed hard disk                  Partition Size     5.86 GB (6,291,456,000 bytes)
Total Tracks      3,721,215                                 Partitions        4                                Partition Starting Offset    69,207,064,576 bytes
Tracks/Cylinder   255                                       SCSI Bus  0
Partition Disk #79, Partition #0                            SCSI Logical Unit  0
Partition Size    25.39 GB (27,262,976,000 bytes)          SCSI Port 9                                        Description       Disk drive
                                                            SCSI Target ID    62                              Manufacturer      (Standard disk drives)
Partition Starting Offset    1,048,576 bytes               Sectors/Track     63                              Model       ATA MK0120EAVDT SCSI Disk Device
Partition Disk #79, Partition #1                            Size     111.79 GB (120,031,511,040 bytes)        Bytes/Sector      512
Partition Size    18.55 GB (19,922,944,000 bytes)          Total Cylinders   14,593                          Media Loaded      Yes
                                                            Total Sectors     234,436,545                     Media Type        Fixed hard disk
Partition Starting Offset    27,264,024,576 bytes          Total Tracks      3,721,215                        Partitions        4
                                                            Tracks/Cylinder   255                             SCSI Bus  0
Partition Disk #79, Partition #2                            Partition Disk #81, Partition #0                  SCSI Logical Unit  0
Partition Size    20.51 GB (22,020,096,000 bytes)          Partition Size     25.39 GB (27,262,976,000 bytes)   SCSI Port 9
                                                                                                             SCSI Target ID    64
Partition Starting Offset    47,186,968,576 bytes          Partition Starting Offset    1,048,576 bytes      Sectors/Track     63
                                                           Partition Disk #81, Partition #1                  Size     111.79 GB (120,031,511,040 bytes)
Partition Disk #79, Partition #3                           Partition Size     18.55 GB (19,922,944,000 bytes)   Total Cylinders   14,593
Partition Size    5.86 GB (6,291,456,000 bytes)                                                              Total Sectors     234,436,545
Partition Starting Offset    69,207,064,576 bytes          Partition Starting Offset    27,264,024,576 bytes Total Tracks      3,721,215
                                                                                                             Tracks/Cylinder   255
                                                           Partition Disk #81, Partition #2                  Partition Disk #83, Partition #0
Description       Disk drive                                Partition Size     20.51 GB (22,020,096,000 bytes)   Partition Size     25.39 GB (27,262,976,000 bytes)
Manufacturer      (Standard disk drives)
Model       ATA MK0120EAVDT SCSI Disk Device               Partition Starting Offset    47,186,968,576 bytes Partition Starting Offset    1,048,576 bytes
Bytes/Sector      512                                                                                        Partition Disk #83, Partition #1
Media Loaded      Yes                                       Partition Disk #81, Partition #3                  Partition Size     18.55 GB (19,922,944,000 bytes)
Media Type        Fixed hard disk                           Partition Size     5.86 GB (6,291,456,000 bytes)
Partitions        4                                         Partition Starting Offset    69,207,064,576 bytes Partition Starting Offset    27,264,024,576 bytes
SCSI Bus  0
SCSI Logical Unit  0                                                                                          Partition Disk #83, Partition #2
SCSI Port 9                                                 Description       Disk drive                       Partition Size     20.51 GB (22,020,096,000 bytes)
SCSI Target ID    61                                        Manufacturer      (Standard disk drives)
Sectors/Track     63                                        Model       ATA MK0120EAVDT SCSI Disk Device       Partition Starting Offset    47,186,968,576 bytes
Size     111.79 GB (120,031,511,040 bytes)                 Bytes/Sector      512
Total Cylinders   14,593                                    Media Loaded      Yes                              Partition Disk #83, Partition #3
Total Sectors     234,436,545                               Media Type        Fixed hard disk                  Partition Size     5.86 GB (6,291,456,000 bytes)
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Partition Starting Offset    69,207,064,576 bytes        Partition Starting Offset    27,264,024,576 bytes        Total Tracks      3,721,215
                                                                                                                 Tracks/Cylinder   255
                                                         Partition Disk #85, Partition #2                        Partition Disk #87, Partition #0
Description        Disk drive                            Partition Size     20.51 GB (22,020,096,000 bytes)      Partition Size    25.39 GB (27,262,976,000 bytes)
Manufacturer       (Standard disk drives)
Model      ATA MK0120EAVDT SCSI Disk Device              Partition Starting Offset    47,186,968,576 bytes        Partition Starting Offset    1,048,576 bytes
Bytes/Sector       512                                                                                           Partition Disk #87, Partition #1
Media Loaded       Yes                                   Partition Disk #85, Partition #3                        Partition Size    18.55 GB (19,922,944,000 bytes)
Media Type         Fixed hard disk                       Partition Size     5.86 GB (6,291,456,000 bytes)
Partitions         4                                     Partition Starting Offset    69,207,064,576 bytes        Partition Starting Offset    27,264,024,576 bytes
SCSI Bus  0
SCSI Logical Unit  0                                                                                             Partition Disk #87, Partition #2
SCSI Port 9                                              Description        Disk drive                           Partition Size    20.51 GB (22,020,096,000 bytes)
SCSI Target ID     65                                    Manufacturer       (Standard disk drives)
Sectors/Track      63                                    Model      ATA MK0120EAVDT SCSI Disk Device             Partition Starting Offset    47,186,968,576 bytes
Size      111.79 GB (120,031,511,040 bytes)              Bytes/Sector       512
Total Cylinders    14,593                                Media Loaded       Yes                                  Partition Disk #87, Partition #3
Total Sectors      234,436,545                           Media Type         Fixed hard disk                      Partition Size    5.86 GB (6,291,456,000 bytes)
Total Tracks       3,721,215                             Partitions         4                                    Partition Starting Offset    69,207,064,576 bytes
Tracks/Cylinder    255                                   SCSI Bus  0
Partition Disk #84, Partition #0                         SCSI Logical Unit  0
Partition Size     25.39 GB (27,262,976,000 bytes)       SCSI Port 9                                             Description        Disk drive
                                                         SCSI Target ID     67                                   Manufacturer       (Standard disk drives)
Partition Starting Offset    1,048,576 bytes             Sectors/Track      63                                   Model      ATA MK0120EAVDT SCSI Disk Device
Partition Disk #84, Partition #1                         Size      111.79 GB (120,031,511,040 bytes)             Bytes/Sector       512
Partition Size     18.55 GB (19,922,944,000 bytes)       Total Cylinders    14,593                               Media Loaded       Yes
                                                         Total Sectors      234,436,545                          Media Type         Fixed hard disk
Partition Starting Offset    27,264,024,576 bytes        Total Tracks       3,721,215                            Partitions         4
                                                         Tracks/Cylinder    255                                  SCSI Bus  0
Partition Disk #84, Partition #2                         Partition Disk #86, Partition #0                        SCSI Logical Unit  0
Partition Size     20.51 GB (22,020,096,000 bytes)       Partition Size     25.39 GB (27,262,976,000 bytes)      SCSI Port 13
                                                                                                                 SCSI Target ID     49
Partition Starting Offset    47,186,968,576 bytes        Partition Starting Offset    1,048,576 bytes            Sectors/Track      63
                                                         Partition Disk #86, Partition #1                        Size      111.79 GB (120,031,511,040 bytes)
Partition Disk #84, Partition #3                         Partition Size     18.55 GB (19,922,944,000 bytes)      Total Cylinders    14,593
Partition Size     5.86 GB (6,291,456,000 bytes)                                                                 Total Sectors      234,436,545
Partition Starting Offset    69,207,064,576 bytes        Partition Starting Offset    27,264,024,576 bytes       Total Tracks       3,721,215
                                                                                                                 Tracks/Cylinder    255
                                                         Partition Disk #86, Partition #2                        Partition Disk #148, Partition #0
Description        Disk drive                            Partition Size     20.51 GB (22,020,096,000 bytes)      Partition Size    25.39 GB (27,262,976,000 bytes)
Manufacturer       (Standard disk drives)
Model      ATA MK0120EAVDT SCSI Disk Device              Partition Starting Offset    47,186,968,576 bytes        Partition Starting Offset    1,048,576 bytes
Bytes/Sector       512                                                                                           Partition Disk #148, Partition #1
Media Loaded       Yes                                   Partition Disk #86, Partition #3                        Partition Size    18.55 GB (19,922,944,000 bytes)
Media Type         Fixed hard disk                       Partition Size     5.86 GB (6,291,456,000 bytes)
Partitions         4                                     Partition Starting Offset    69,207,064,576 bytes       Partition Starting Offset    27,264,024,576 bytes
SCSI Bus  0
SCSI Logical Unit  0                                                                                             Partition Disk #148, Partition #2
SCSI Port 9                                              Description        Disk drive                           Partition Size    20.51 GB (22,020,096,000 bytes)
SCSI Target ID     66                                    Manufacturer       (Standard disk drives)
Sectors/Track      63                                    Model      ATA MK0120EAVDT SCSI Disk Device             Partition Starting Offset    47,186,968,576 bytes
Size      111.79 GB (120,031,511,040 bytes)              Bytes/Sector       512
Total Cylinders    14,593                                Media Loaded       Yes                                  Partition Disk #148, Partition #3
Total Sectors      234,436,545                           Media Type         Fixed hard disk                      Partition Size    5.86 GB (6,291,456,000 bytes)
Total Tracks       3,721,215                             Partitions         4                                    Partition Starting Offset    69,207,064,576 bytes
Tracks/Cylinder    255                                   SCSI Bus  0
Partition Disk #85, Partition #0                         SCSI Logical Unit  0
Partition Size     25.39 GB (27,262,976,000 bytes)       SCSI Port 9                                             Description        Disk drive
                                                         SCSI Target ID     68                                   Manufacturer       (Standard disk drives)
Partition Starting Offset    1,048,576 bytes             Sectors/Track      63                                   Model      ATA MK0120EAVDT SCSI Disk Device
Partition Disk #85, Partition #1                         Size      111.79 GB (120,031,511,040 bytes)             Bytes/Sector       512
Partition Size     18.55 GB (19,922,944,000 bytes)       Total Cylinders    14,593                               Media Loaded       Yes
                                                         Total Sectors      234,436,545                          Media Type         Fixed hard disk
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Partitions        4                          Partition Starting Offset    69,207,064,576 bytes      Partition Starting Offset    27,264,024,576 bytes
SCSI Bus  0
SCSI Logical Unit   0                                                                                Partition Disk #152, Partition #2
SCSI Port 13                                  Description        Disk drive                          Partition Size    20.51 GB (22,020,096,000 bytes)
SCSI Target ID    50                          Manufacturer    (Standard disk drives)
Sectors/Track    63                           Model    ATA MK0120EAVDT SCSI Disk Device             Partition Starting Offset    47,186,968,576 bytes
Size      111.79 GB (120,031,511,040 bytes)   Bytes/Sector      512
Total Cylinders   14,593                       Media Loaded      Yes                                 Partition Disk #152, Partition #3
Total Sectors     234,436,545                  Media Type        Fixed hard disk                     Partition Size    5.86 GB (6,291,456,000 bytes)
Total Tracks      3,721,215                    Partitions        4                                   Partition Starting Offset    69,207,064,576 bytes
Tracks/Cylinder   255                          SCSI Bus  0
Partition Disk #149, Partition #0             SCSI Logical Unit   0
Partition Size    25.39 GB (27,262,976,000 bytes)   SCSI Port 13                                    Description        Disk drive
                                              SCSI Target ID    52                                  Manufacturer    (Standard disk drives)
Partition Starting Offset    1,048,576 bytes   Sectors/Track    63                                   Model    ATA MK0120EAVDT SCSI Disk Device
Partition Disk #149, Partition #1             Size      111.79 GB (120,031,511,040 bytes)           Bytes/Sector      512
Partition Size    18.55 (19,922,944,000 bytes)   Total Cylinders   14,593                            Media Loaded      Yes
                                              Total Sectors     234,436,545                          Media Type        Fixed hard disk
Partition Starting Offset    27,264,024,576 bytes   Total Tracks      3,721,215                      Partitions        4
                                              Tracks/Cylinder   255                                  SCSI Bus  0
Partition Disk #149, Partition #2             Partition Disk #151, Partition #0                       SCSI Logical Unit   0
Partition Size    20.51 GB (22,020,096,000 bytes)   Partition Size    25.39 GB (27,262,976,000 bytes)   SCSI Port 13
                                                                                                     SCSI Target ID    54
Partition Starting Offset    47,186,968,576 bytes   Partition Starting Offset    1,048,576 bytes     Sectors/Track    63
                                              Partition Disk #151, Partition #1                       Size      111.79 GB (120,031,511,040 bytes)
Partition Disk #149, Partition #3             Partition Size    18.55 GB (19,922,944,000 bytes)      Total Cylinders   14,593
Partition Size    5.86 GB (6,291,456,000 bytes)                                                      Total Sectors     234,436,545
Partition Starting Offset    69,207,064,576 bytes   Partition Starting Offset    27,264,024,576 bytes   Total Tracks      3,721,215
                                                                                                     Tracks/Cylinder   255
                                              Partition Disk #151, Partition #2                       Partition Disk #153, Partition #0
Description        Disk drive                 Partition Size    20.51 GB (22,020,096,000 bytes)      Partition Size    25.39 GB (27,262,976,000 bytes)
Manufacturer    (Standard disk drives)
Model    ATA MK0120EAVDT SCSI Disk Device     Partition Starting Offset    47,186,968,576 bytes      Partition Starting Offset    1,048,576 bytes
Bytes/Sector      512                                                                                Partition Disk #153, Partition #1
Media Loaded      Yes                          Partition Disk #151, Partition #3                      Partition Size    18.55 GB (19,922,944,000 bytes)
Media Type        Fixed hard disk             Partition Size    5.86 GB (6,291,456,000 bytes)
Partitions        4                           Partition Starting Offset    69,207,064,576 bytes      Partition Starting Offset    27,264,024,576 bytes
SCSI Bus  0
SCSI Logical Unit   0                                                                                Partition Disk #153, Partition #2
SCSI Port 13                                  Description        Disk drive                          Partition Size    20.51 GB (22,020,096,000 bytes)
SCSI Target ID    51                          Manufacturer    (Standard disk drives)
Sectors/Track    63                           Model    ATA MK0120EAVDT SCSI Disk Device             Partition Starting Offset    47,186,968,576 bytes
Size      111.79 GB (120,031,511,040 bytes)   Bytes/Sector      512
Total Cylinders   14,593                       Media Loaded      Yes                                 Partition Disk #153, Partition #3
Total Sectors     234,436,545                  Media Type        Fixed hard disk                     Partition Size    5.86 GB (6,291,456,000 bytes)
Total Tracks      3,721,215                    Partitions        4                                   Partition Starting Offset    69,207,064,576 bytes
Tracks/Cylinder   255                          SCSI Bus  0
Partition Disk #150, Partition #0             SCSI Logical Unit   0
Partition Size    25.39 GB (27,262,976,000 bytes)   SCSI Port 13                                    Description        Disk drive
                                              SCSI Target ID    53                                  Manufacturer    (Standard disk drives)
Partition Starting Offset    1,048,576 bytes   Sectors/Track    63                                   Model    ATA MK0120EAVDT SCSI Disk Device
Partition Disk #150, Partition #1             Size      111.79 GB (120,031,511,040 bytes)           Bytes/Sector      512
Partition Size    18.55 GB (19,922,944,000 bytes)   Total Cylinders   14,593                         Media Loaded      Yes
                                              Total Sectors     234,436,545                          Media Type        Fixed hard disk
Partition Starting Offset    27,264,024,576 bytes   Total Tracks      3,721,215                      Partitions        4
                                              Tracks/Cylinder   255                                  SCSI Bus  0
Partition Disk #150, Partition #2             Partition Disk #152, Partition #0                       SCSI Logical Unit   0
Partition Size    20.51 GB (22,020,096,000 bytes)   Partition Size    25.39 GB (27,262,976,000 bytes)   SCSI Port 13
                                                                                                     SCSI Target ID    55
Partition Starting Offset    47,186,968,576 bytes   Partition Starting Offset    1,048,576 bytes     Sectors/Track    63
                                              Partition Disk #152, Partition #1                       Size      111.79 GB (120,031,511,040 bytes)
Partition Disk #150, Partition #3             Partition Size    18.55 GB (19,922,944,000 bytes)      Total Cylinders   14,593
Partition Size    5.86 GB (6,291,456,000 bytes)                                                      Total Sectors     234,436,545
```

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Total Tracks        3,721,215          Partitions          4              Partition Starting Offset    69,207,064,576 bytes
Tracks/Cylinder     255                SCSI Bus  0
Partition Disk #154, Partition #0      SCSI Logical Unit   0
Partition Size      25.39 GB (27,262,976,000 bytes)   SCSI Port 13        Description         Disk drive
                                       SCSI Target ID      57             Manufacturer        (Standard disk drives)
                                       Sectors/Track       63             Model     ATA MK0120EAVDT SCSI Disk Device
Partition Starting Offset    1,048,576 bytes   Size       111.79 GB (120,031,511,040 bytes)   Bytes/Sector        512
Partition Disk #154, Partition #1      Total Cylinders     14,593         Media Loaded        Yes
Partition Size      18.55 GB (19,922,944,000 bytes)   Total Sectors       234,436,545    Media Type          Fixed hard disk
                                       Total Tracks        3,721,215      Partitions          4
                                       Tracks/Cylinder     255            SCSI Bus  0
Partition Starting Offset    27,264,024,576 bytes   Partition Disk #156, Partition #0   SCSI Logical Unit   0
                                       Partition Size      25.39 GB (27,262,976,000 bytes)   SCSI Port 13
Partition Disk #154, Partition #2                                         SCSI Target ID      59
Partition Size      20.51 GB (22,020,096,000 bytes)   Partition Starting Offset    1,048,576 bytes   Sectors/Track       63
                                       Partition Disk #156, Partition #1   Size       111.79 GB (120,031,511,040 bytes)
                                       Partition Size      18.55 GB (19,922,944,000 bytes)   Total Cylinders     14,593
Partition Starting Offset    47,186,968,576 bytes                         Total Sectors       234,436,545
                                                                          Total Tracks        3,721,215
Partition Disk #154, Partition #3      Partition Starting Offset    27,264,024,576 bytes   Tracks/Cylinder     255
Partition Size      5.86 GB (6,291,456,000 bytes)                         Partition Disk #158, Partition #0
Partition Starting Offset    69,207,064,576 bytes   Partition Disk #156, Partition #2   Partition Size      25.39 GB (27,262,976,000 bytes)
                                       Partition Size      20.51 GB (22,020,096,000 bytes)
                                                                          Partition Starting Offset    1,048,576 bytes
Description         Disk drive         Partition Starting Offset    47,186,968,576 bytes   Partition Disk #158, Partition #1
Manufacturer        (Standard disk drives)                                Partition Size      18.55 GB (19,922,944,000 bytes)
Model     ATA MK0120EAVDT SCSI Disk Device   Partition Disk #156, Partition #3
Bytes/Sector        512                Partition Size      5.86 GB (6,291,456,000 bytes)   Partition Starting Offset    27,264,024,576 bytes
Media Loaded        Yes                Partition Starting Offset    69,207,064,576 bytes
Media Type          Fixed hard disk                                       Partition Disk #158, Partition #2
Partitions          4                                                     Partition Size      20.51 GB (22,020,096,000 bytes)
SCSI Bus  0                            Description         Disk drive
SCSI Logical Unit   0                  Manufacturer        (Standard disk drives)
SCSI Port 13                           Model     ATA MK0120EAVDT SCSI Disk Device   Partition Starting Offset    47,186,968,576 bytes
SCSI Target ID      56                 Bytes/Sector        512
Sectors/Track       63                 Media Loaded        Yes            Partition Disk #158, Partition #3
Size       111.79 GB (120,031,511,040 bytes)   Media Type          Fixed hard disk   Partition Size      5.86 GB (6,291,456,000 bytes)
Total Cylinders     14,593             Partitions          4              Partition Starting Offset    69,207,064,576 bytes
Total Sectors       234,436,545        SCSI Bus  0
Total Tracks        3,721,215          SCSI Logical Unit   0
Tracks/Cylinder     255                SCSI Port 13                       Description         Disk drive
Partition Disk #155, Partition #0      SCSI Target ID      58             Manufacturer        (Standard disk drives)
Partition Size      25.39 GB (27,262,976,000 bytes)   Sectors/Track       63   Model     ATA MK0120EAVDT SCSI Disk Device
                                       Size       111.79 GB (120,031,511,040 bytes)   Bytes/Sector        512
Partition Starting Offset    1,048,576 bytes   Total Cylinders     14,593   Media Loaded        Yes
Partition Disk #155, Partition #1      Total Sectors       234,436,545    Partitions          4
Partition Size      18.55 GB (19,922,944,000 bytes)   Total Tracks        3,721,215   SCSI Bus  0
                                       Tracks/Cylinder     255            SCSI Logical Unit   0
Partition Starting Offset    27,264,024,576 bytes   Partition Disk #157, Partition #0   SCSI Port 13
                                       Partition Size      25.39 GB (27,262,976,000 bytes)   SCSI Target ID      60
Partition Disk #155, Partition #2                                         Sectors/Track       63
Partition Size      20.51 GB (22,020,096,000 bytes)   Partition Starting Offset    1,048,576 bytes   Size       111.79 GB (120,031,511,040 bytes)
                                       Partition Disk #157, Partition #1   Total Cylinders     14,593
Partition Starting Offset    47,186,968,576 bytes   Partition Size      18.55 GB (19,922,944,000 bytes)   Total Sectors       234,436,545
                                                                          Total Tracks        3,721,215
Partition Disk #155, Partition #3      Partition Starting Offset    27,264,024,576 bytes   Tracks/Cylinder     255
Partition Size      5.86 GB (6,291,456,000 bytes)                         Partition Disk #159, Partition #0
Partition Starting Offset    69,207,064,576 bytes   Partition Disk #157, Partition #2   Partition Size      25.39 GB (27,262,976,000 bytes)
                                       Partition Size      20.51 GB (22,020,096,000 bytes)
                                                                          Partition Starting Offset    1,048,576 bytes
Description         Disk drive         Partition Starting Offset    47,186,968,576 bytes   Partition Disk #159, Partition #1
Manufacturer        (Standard disk drives)                                Partition Size      18.55 GB (19,922,944,000 bytes)
Model     ATA MK0120EAVDT SCSI Disk Device   Partition Disk #157, Partition #3
Bytes/Sector        512                Partition Size      5.86 GB (6,291,456,000 bytes)
Media Loaded        Yes
Media Type          Fixed hard disk
```

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Partition Starting Offset    27,264,024,576 bytes        Total Tracks      3,721,215              Partitions        4
                                                         Tracks/Cylinder   255                    SCSI Bus  0
Partition Disk #159, Partition #2                        Partition Disk #161, Partition #0         SCSI Logical Unit   0
Partition Size    20.51 GB (22,020,096,000 bytes)        Partition Size    25.39 GB (27,262,976,000 bytes)  SCSI Port 13
                                                                                                 SCSI Target ID    64
Partition Starting Offset    47,186,968,576 bytes        Partition Starting Offset    1,048,576 bytes   Sectors/Track     63
                                                         Partition Disk #161, Partition #1         Size      111.79 GB (120,031,511,040 bytes)
Partition Disk #159, Partition #3                        Partition Size    18.55 GB (19,922,944,000 bytes)  Total Cylinders   14,593
Partition Size    5.86 GB (6,291,456,000 bytes)                                                  Total Sectors     234,436,545
Partition Starting Offset    69,207,064,576 bytes        Partition Starting Offset    27,264,024,576 bytes  Total Tracks      3,721,215
                                                                                                 Tracks/Cylinder   255
                                                         Partition Disk #161, Partition #2         Partition Disk #163, Partition #0
Description        Disk drive                            Partition Size    20.51 GB (22,020,096,000 bytes)  Partition Size    25.39 GB (27,262,976,000 bytes)
Manufacturer       (Standard disk drives)
Model     ATA MK0120EAVDT SCSI Disk Device               Partition Starting Offset    47,186,968,576 bytes  Partition Starting Offset    1,048,576 bytes
Bytes/Sector       512                                                                           Partition Disk #163, Partition #1
Media Loaded       Yes                                   Partition Disk #161, Partition #3         Partition Size    18.55 GB (19,922,944,000 bytes)
Media Type         Fixed hard disk                       Partition Size    5.86 GB (6,291,456,000 bytes)
Partitions         4                                     Partition Starting Offset    69,207,064,576 bytes  Partition Starting Offset    27,264,024,576 bytes
SCSI Bus  0
SCSI Logical Unit   0                                                                            Partition Disk #163, Partition #2
SCSI Port 13                                             Description        Disk drive             Partition Size    20.51 GB (22,020,096,000 bytes)
SCSI Target ID    61                                     Manufacturer       (Standard disk drives)
Sectors/Track     63                                     Model     ATA MK0120EAVDT SCSI Disk Device  Partition Starting Offset    47,186,968,576 bytes
Size      111.79 GB (120,031,511,040 bytes)              Bytes/Sector       512
Total Cylinders   14,593                                 Media Loaded       Yes                    Partition Disk #163, Partition #3
Total Sectors     234,436,545                            Media Type         Fixed hard disk        Partition Size    5.86 GB (6,291,456,000 bytes)
Total Tracks      3,721,215                              Partitions         4                      Partition Starting Offset    69,207,064,576 bytes
Tracks/Cylinder   255                                    SCSI Bus  0
Partition Disk #160, Partition #0                        SCSI Logical Unit   0
Partition Size    25.39 GB (27,262,976,000 bytes)        SCSI Port 13                             Description        Disk drive
                                                         SCSI Target ID    63                     Manufacturer       (Standard disk drives)
Partition Starting Offset    1,048,576 bytes             Sectors/Track     63                     Model     ATA MK0120EAVDT SCSI Disk Device
Partition Disk #160, Partition #1                        Size      111.79 GB (120,031,511,040 bytes)  Bytes/Sector       512
Partition Size    18.55 GB (19,922,944,000 bytes)        Total Cylinders   14,593                 Media Loaded       Yes
                                                         Total Sectors     234,436,545            Media Type         Fixed hard disk
Partition Starting Offset    27,264,024,576 bytes        Total Tracks      3,721,215              Partitions         4
                                                         Tracks/Cylinder   255                    SCSI Bus  0
Partition Disk #160, Partition #2                        Partition Disk #162, Partition #0         SCSI Logical Unit   0
Partition Size    20.51 GB (22,020,096,000 bytes)        Partition Size    25.39 GB (27,262,976,000 bytes)  SCSI Port 13
                                                                                                 SCSI Target ID    65
Partition Starting Offset    47,186,968,576 bytes        Partition Starting Offset    1,048,576 bytes   Sectors/Track     63
                                                         Partition Disk #162, Partition #1         Size      111.79 GB (120,031,511,040 bytes)
Partition Disk #160, Partition #3                        Partition Size    18.55 GB (19,922,944,000 bytes)  Total Cylinders   14,593
Partition Size    5.86 GB (6,291,456,000 bytes)                                                  Total Sectors     234,436,545
Partition Starting Offset    69,207,064,576 bytes        Partition Starting Offset    27,264,024,576 bytes  Total Tracks      3,721,215
                                                                                                 Tracks/Cylinder   255
                                                         Partition Disk #162, Partition #2         Partition Disk #164, Partition #0
Description        Disk drive                            Partition Size    20.51 GB (22,020,096,000 bytes)  Partition Size    25.39 GB (27,262,976,000 bytes)
Manufacturer       (Standard disk drives)
Model     ATA MK0120EAVDT SCSI Disk Device               Partition Starting Offset    47,186,968,576 bytes  Partition Starting Offset    1,048,576 bytes
Bytes/Sector       512                                                                           Partition Disk #164, Partition #1
Media Loaded       Yes                                   Partition Disk #162, Partition #3         Partition Size    18.55 GB (19,922,944,000 bytes)
Media Type         Fixed hard disk                       Partition Size    5.86 GB (6,291,456,000 bytes)
Partitions         4                                     Partition Starting Offset    69,207,064,576 bytes  Partition Starting Offset    27,264,024,576 bytes
SCSI Bus  0
SCSI Logical Unit   0                                                                            Partition Disk #164, Partition #2
SCSI Port 13                                             Description        Disk drive             Partition Size    20.51 GB (22,020,096,000 bytes)
SCSI Target ID    62                                     Manufacturer       (Standard disk drives)
Sectors/Track     63                                     Model     ATA MK0120EAVDT SCSI Disk Device  Partition Starting Offset    47,186,968,576 bytes
Size      111.79 GB (120,031,511,040 bytes)              Bytes/Sector       512
Total Cylinders   14,593                                 Media Loaded       Yes                    Partition Disk #164, Partition #3
Total Sectors     234,436,545                            Media Type         Fixed hard disk        Partition Size    5.86 GB (6,291,456,000 bytes)
```

Partition Starting Offset   69,207,064,576 bytes

Description   Disk drive
Manufacturer   (Standard disk drives)
Model   ATA MK0120EAVDT SCSI Disk Device
Bytes/Sector   512
Media Loaded   Yes
Media Type   Fixed hard disk
Partitions   4
SCSI Bus 0
SCSI Logical Unit   0
SCSI Port 13
SCSI Target ID   66
Sectors/Track   63
Size   111.79 GB (120,031,511,040 bytes)
Total Cylinders   14,593
Total Sectors   234,436,545
Total Tracks   3,721,215
Tracks/Cylinder   255
Partition Disk #165, Partition #0
Partition Size   25.39 GB (27,262,976,000 bytes)

Partition Starting Offset   1,048,576 bytes
Partition Disk #165, Partition #1
Partition Size   18.55 GB (19,922,944,000 bytes)

Partition Starting Offset   27,264,024,576 bytes

Partition Disk #165, Partition #2
Partition Size   20.51 GB (22,020,096,000 bytes)

Partition Starting Offset   47,186,968,576 bytes

Partition Disk #165, Partition #3
Partition Size   5.86 GB (6,291,456,000 bytes)
Partition Starting Offset   69,207,064,576 bytes

Description   Disk drive
Manufacturer   (Standard disk drives)
Model   ATA MK0120EAVDT SCSI Disk Device
Bytes/Sector   512
Media Loaded   Yes
Media Type   Fixed hard disk
Partitions   4
SCSI Bus 0
SCSI Logical Unit   0
SCSI Port 13
SCSI Target ID   67
Sectors/Track   63
Size   111.79 GB (120,031,511,040 bytes)
Total Cylinders   14,593
Total Sectors   234,436,545
Total Tracks   3,721,215
Tracks/Cylinder   255
Partition Disk #166, Partition #0
Partition Size   25.39 GB (27,262,976,000 bytes)

Partition Starting Offset   1,048,576 bytes
Partition Disk #166, Partition #1
Partition Size   18.55 GB (19,922,944,000 bytes)

Partition Starting Offset   27,264,024,576 bytes

Partition Disk #166, Partition #2
Partition Size   20.51 GB (22,020,096,000 bytes)

Partition Starting Offset   47,186,968,576 bytes

Partition Disk #166, Partition #3
Partition Size   5.86 GB (6,291,456,000 bytes)
Partition Starting Offset   69,207,064,576 bytes

Description   Disk drive
Manufacturer   (Standard disk drives)
Model   ATA MK0120EAVDT SCSI Disk Device
Bytes/Sector   512
Media Loaded   Yes
Media Type   Fixed hard disk
Partitions   4
SCSI Bus 0
SCSI Logical Unit   0
SCSI Port 13
SCSI Target ID   68
Sectors/Track   63
Size   111.79 GB (120,031,511,040 bytes)
Total Cylinders   14,593
Total Sectors   234,436,545
Total Tracks   3,721,215
Tracks/Cylinder   255
Partition Disk #167, Partition #0
Partition Size   25.39 GB (27,262,976,000 bytes)

Partition Starting Offset   1,048,576 bytes
Partition Disk #167, Partition #1
Partition Size   18.55 GB (19,922,944,000 bytes)

Partition Starting Offset   27,264,024,576 bytes

Partition Disk #167, Partition #2
Partition Size   20.51 GB (22,020,096,000 bytes)

Partition Starting Offset   47,186,968,576 bytes

Partition Disk #167, Partition #3
Partition Size   5.86 GB (6,291,456,000 bytes)
Partition Starting Offset   69,207,064,576 bytes

Description   Disk drive
Manufacturer   (Standard disk drives)
Model   ATA MK0120EAVDT SCSI Disk Device
Bytes/Sector   512
Media Loaded   Yes
Media Type   Fixed hard disk
Partitions   4
SCSI Bus 0
SCSI Logical Unit   0
SCSI Port 14
SCSI Target ID   49
Sectors/Track   63
Size   111.79 GB (120,031,511,040 bytes)
Total Cylinders   14,593
Total Sectors   234,436,545

Total Tracks   3,721,215
Tracks/Cylinder   255
Partition Disk #168, Partition #0
Partition Size   25.39 GB (27,262,976,000 bytes)

Partition Starting Offset   1,048,576 bytes
Partition Disk #168, Partition #1
Partition Size   18.55 GB (19,922,944,000 bytes)

Partition Starting Offset   27,264,024,576 bytes

Partition Disk #168, Partition #2
Partition Size   20.51 GB (22,020,096,000 bytes)

Partition Starting Offset   47,186,968,576 bytes

Partition Disk #168, Partition #3
Partition Size   5.86 GB (6,291,456,000 bytes)
Partition Starting Offset   69,207,064,576 bytes

Description   Disk drive
Manufacturer   (Standard disk drives)
Model   ATA MK0120EAVDT SCSI Disk Device
Bytes/Sector   512
Media Loaded   Yes
Media Type   Fixed hard disk
Partitions   4
SCSI Bus 0
SCSI Logical Unit   0
SCSI Port 14
SCSI Target ID   50
Sectors/Track   63
Size   111.79 GB (120,031,511,040 bytes)
Total Cylinders   14,593
Total Sectors   234,436,545
Total Tracks   3,721,215
Tracks/Cylinder   255
Partition Disk #169, Partition #0
Partition Size   25.39 GB (27,262,976,000 bytes)

Partition Starting Offset   1,048,576 bytes
Partition Disk #169, Partition #1
Partition Size   18.55 GB (19,922,944,000 bytes)

Partition Starting Offset   27,264,024,576 bytes

Partition Disk #169, Partition #2
Partition Size   20.51 GB (22,020,096,000 bytes)

Partition Starting Offset   47,186,968,576 bytes

Partition Disk #169, Partition #3
Partition Size   5.86 GB (6,291,456,000 bytes)
Partition Starting Offset   69,207,064,576 bytes

Description   Disk drive
Manufacturer   (Standard disk drives)
Model   ATA MK0120EAVDT SCSI Disk Device
Bytes/Sector   512
Media Loaded   Yes
Media Type   Fixed hard disk

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Partitions        4                        Partition Starting Offset    69,207,064,576 bytes          Partition Starting Offset    27,264,024,576 bytes
SCSI Bus  0
SCSI Logical Unit   0                                                                                  Partition Disk #173, Partition #2
SCSI Port 14                               Description        Disk drive                               Partition Size     20.51 GB (22,020,096,000 bytes)
SCSI Target ID    51                       Manufacturer      (Standard disk drives)
Sectors/Track     63                       Model    ATA MK0120EAVDT SCSI Disk Device                   Partition Starting Offset    47,186,968,576 bytes
Size      111.79 GB (120,031,511,040 bytes) Bytes/Sector        512
Total Cylinders   14,593                   Media Loaded       Yes                                      Partition Disk #173, Partition #3
Total Sectors     234,436,545              Media Type         Fixed hard disk                          Partition Size     5.86 GB (6,291,456,000 bytes)
Total Tracks      3,721,215                Partitions         4                                        Partition Starting Offset    69,207,064,576 bytes
Tracks/Cylinder   255                      SCSI Bus  0
Partition Disk #170, Partition #0          SCSI Logical Unit   0
Partition Size     25.39 GB (27,262,976,000 bytes) SCSI Port 14                                        Description        Disk drive
                                           SCSI Target ID    53                                        Manufacturer      (Standard disk drives)
Partition Starting Offset    1,048,576 bytes Sectors/Track     63                                      Model    ATA MK0120EAVDT SCSI Disk Device
Partition Disk #170, Partition #1          Size      111.79 GB (120,031,511,040 bytes)                 Bytes/Sector        512
Partition Size     18.55 (19,922,944,000 bytes) Total Cylinders   14,593                               Media Loaded       Yes
                                           Total Sectors     234,436,545                               Media Type         Fixed hard disk
Partition Starting Offset    27,264,024,576 bytes Total Tracks      3,721,215                          Partitions         4
                                           Tracks/Cylinder   255                                       SCSI Bus  0
Partition Disk #170, Partition #2          Partition Disk #172, Partition #0                           SCSI Logical Unit   0
Partition Size     20.51 GB (22,020,096,000 bytes) Partition Size     25.39 GB (27,262,976,000 bytes)  SCSI Port 14
                                                                                                       SCSI Target ID    55
Partition Starting Offset    47,186,968,576 bytes Partition Starting Offset    1,048,576 bytes         Sectors/Track     63
                                           Partition Disk #172, Partition #1                           Size      111.79 GB (120,031,511,040 bytes)
Partition Disk #170, Partition #3          Partition Size     18.55 GB (19,922,944,000 bytes)          Total Cylinders   14,593
Partition Size     5.86 GB (6,291,456,000 bytes)                                                       Total Sectors     234,436,545
Partition Starting Offset    69,207,064,576 bytes Partition Starting Offset    27,264,024,576 bytes    Total Tracks      3,721,215
                                                                                                       Tracks/Cylinder   255
                                           Partition Disk #172, Partition #2                           Partition Disk #174, Partition #0
Description        Disk drive              Partition Size     20.51 GB (22,020,096,000 bytes)          Partition Size     25.39 GB (27,262,976,000 bytes)
Manufacturer      (Standard disk drives)
Model    ATA MK0120EAVDT SCSI Disk Device  Partition Starting Offset    47,186,968,576 bytes           Partition Starting Offset    1,048,576 bytes
Bytes/Sector        512                                                                                Partition Disk #174, Partition #1
Media Loaded       Yes                     Partition Disk #172, Partition #3                           Partition Size     18.55 GB (19,922,944,000 bytes)
Media Type         Fixed hard disk         Partition Size     5.86 GB (6,291,456,000 bytes)
Partitions         4                       Partition Starting Offset    69,207,064,576 bytes           Partition Starting Offset    27,264,024,576 bytes
SCSI Bus  0
SCSI Logical Unit   0                                                                                  Partition Disk #174, Partition #2
SCSI Port 14                               Description        Disk drive                               Partition Size     20.51 GB (22,020,096,000 bytes)
SCSI Target ID    52                       Manufacturer      (Standard disk drives)
Sectors/Track     63                       Model    ATA MK0120EAVDT SCSI Disk Device                   Partition Starting Offset    47,186,968,576 bytes
Size      111.79 GB (120,031,511,040 bytes) Bytes/Sector        512
Total Cylinders   14,593                   Media Loaded       Yes                                      Partition Disk #174, Partition #3
Total Sectors     234,436,545              Media Type         Fixed hard disk                          Partition Size     5.86 GB (6,291,456,000 bytes)
Total Tracks      3,721,215                Partitions         4                                        Partition Starting Offset    69,207,064,576 bytes
Tracks/Cylinder   255                      SCSI Bus  0
Partition Disk #171, Partition #0          SCSI Logical Unit   0
Partition Size     25.39 GB (27,262,976,000 bytes) SCSI Port 14                                        Description        Disk drive
                                           SCSI Target ID    54                                        Manufacturer      (Standard disk drives)
Partition Starting Offset    1,048,576 bytes Sectors/Track     63                                      Model    ATA MK0120EAVDT SCSI Disk Device
Partition Disk #171, Partition #1          Size      111.79 GB (120,031,511,040 bytes)                 Bytes/Sector        512
Partition Size     18.55 (19,922,944,000 bytes) Total Cylinders   14,593                               Media Loaded       Yes
                                           Total Sectors     234,436,545                               Media Type         Fixed hard disk
Partition Starting Offset    27,264,024,576 bytes Total Tracks      3,721,215                          Partitions         4
                                           Tracks/Cylinder   255                                       SCSI Bus  0
Partition Disk #171, Partition #2          Partition Disk #173, Partition #0                           SCSI Logical Unit   0
Partition Size     20.51 GB (22,020,096,000 bytes) Partition Size     25.39 GB (27,262,976,000 bytes)  SCSI Port 14
                                                                                                       SCSI Target ID    56
Partition Starting Offset    47,186,968,576 bytes Partition Starting Offset    1,048,576 bytes         Sectors/Track     63
                                           Partition Disk #173, Partition #1                           Size      111.79 GB (120,031,511,040 bytes)
Partition Disk #171, Partition #3          Partition Size     18.55 GB (19,922,944,000 bytes)          Total Cylinders   14,593
Partition Size     5.86 GB (6,291,456,000 bytes)                                                       Total Sectors     234,436,545
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Total Tracks       3,721,215                    Partitions       4                        Partition Starting Offset   69,207,064,576 bytes
Tracks/Cylinder    255                          SCSI Bus  0
Partition Disk #175, Partition #0               SCSI Logical Unit   0
Partition Size     25.39 GB (27,262,976,000 bytes)  SCSI Port 14                         Description       Disk drive
                                                SCSI Target ID   58                       Manufacturer      (Standard disk drives)
Partition Starting Offset   1,048,576 bytes     Sectors/Track    63                       Model      ATA MK0120EAVDT SCSI Disk Device
Partition Disk #175, Partition #1               Size      111.79 GB (120,031,511,040 bytes)  Bytes/Sector      512
Partition Size     18.55 GB (19,922,944,000 bytes)  Total Cylinders  14,593               Media Loaded      Yes
                                                Total Sectors    234,436,545              Media Type        Fixed hard disk
                                                Total Tracks     3,721,215                Partitions       4
Partition Starting Offset   27,264,024,576 bytes  Tracks/Cylinder  255                    SCSI Bus  0
                                                Partition Disk #177, Partition #0          SCSI Logical Unit   0
Partition Disk #175, Partition #2               Partition Size    25.39 GB (27,262,976,000 bytes)  SCSI Port 14
Partition Size     20.51 GB (22,020,096,000 bytes)                                        SCSI Target ID   60
                                                Partition Starting Offset   1,048,576 bytes  Sectors/Track    63
Partition Starting Offset   47,186,968,576 bytes  Partition Disk #177, Partition #1        Size      111.79 GB (120,031,511,040 bytes)
                                                Partition Size    18.55 GB (19,922,944,000 bytes)  Total Cylinders  14,593
Partition Disk #175, Partition #3                                                         Total Sectors    234,436,545
Partition Size     5.86 GB (6,291,456,000 bytes)  Partition Starting Offset   27,264,024,576 bytes  Total Tracks     3,721,215
Partition Starting Offset   69,207,064,576 bytes                                          Tracks/Cylinder  255
                                                Partition Disk #177, Partition #2          Partition Disk #179, Partition #0
                                                Partition Size    20.51 GB (22,020,096,000 bytes)  Partition Size    25.39 GB (27,262,976,000 bytes)
Description       Disk drive
Manufacturer      (Standard disk drives)        Partition Starting Offset   47,186,968,576 bytes  Partition Starting Offset   1,048,576 bytes
Model      ATA MK0120EAVDT SCSI Disk Device                                               Partition Disk #179, Partition #1
Bytes/Sector      512                           Partition Disk #177, Partition #3          Partition Size    18.55 GB (19,922,944,000 bytes)
Media Loaded      Yes                           Partition Size    5.86 GB (6,291,456,000 bytes)
Media Type        Fixed hard disk              Partition Starting Offset   69,207,064,576 bytes  Partition Starting Offset   27,264,024,576 bytes
Partitions       4
SCSI Bus  0                                                                               Partition Disk #179, Partition #2
SCSI Logical Unit   0                           Description       Disk drive               Partition Size    20.51 GB (22,020,096,000 bytes)
SCSI Port 14                                    Manufacturer      (Standard disk drives)
SCSI Target ID   57                             Model      ATA MK0120EAVDT SCSI Disk Device  Partition Starting Offset   47,186,968,576 bytes
Sectors/Track    63                             Bytes/Sector      512
Size      111.79 GB (120,031,511,040 bytes)     Media Loaded      Yes                      Partition Disk #179, Partition #3
Total Cylinders  14,593                         Media Type        Fixed hard disk          Partition Size    5.86 GB (6,291,456,000 bytes)
Total Sectors    234,436,545                    Partitions       4                        Partition Starting Offset   69,207,064,576 bytes
Total Tracks     3,721,215                      SCSI Bus  0
Tracks/Cylinder  255                            SCSI Logical Unit   0
Partition Disk #176, Partition #0               SCSI Port 14                              Description       Disk drive
Partition Size     25.39 GB (27,262,976,000 bytes)  SCSI Target ID   59                    Manufacturer      (Standard disk drives)
                                                Sectors/Track    63                       Model      ATA MK0120EAVDT SCSI Disk Device
Partition Starting Offset   1,048,576 bytes     Size      111.79 GB (120,031,511,040 bytes)  Bytes/Sector      512
Partition Disk #176, Partition #1               Total Cylinders  14,593                    Media Loaded      Yes
Partition Size     18.55 GB (19,922,944,000 bytes)  Total Sectors    234,436,545           Media Type        Fixed hard disk
                                                Total Tracks     3,721,215                Partitions       4
Partition Starting Offset   27,264,024,576 bytes  Tracks/Cylinder  255                    SCSI Bus  0
                                                Partition Disk #178, Partition #0          SCSI Logical Unit   0
Partition Disk #176, Partition #2               Partition Size    25.39 GB (27,262,976,000 bytes)  SCSI Port 14
Partition Size     20.51 GB (22,020,096,000 bytes)                                        SCSI Target ID   61
                                                Partition Starting Offset   1,048,576 bytes  Sectors/Track    63
Partition Starting Offset   47,186,968,576 bytes  Partition Disk #178, Partition #1        Size      111.79 GB (120,031,511,040 bytes)
                                                Partition Size    18.55 GB (19,922,944,000 bytes)  Total Cylinders  14,593
Partition Disk #176, Partition #3                                                         Total Sectors    234,436,545
Partition Size     5.86 GB (6,291,456,000 bytes)  Partition Starting Offset   27,264,024,576 bytes  Total Tracks     3,721,215
Partition Starting Offset   69,207,064,576 bytes                                          Tracks/Cylinder  255
                                                Partition Disk #178, Partition #2          Partition Disk #180, Partition #0
                                                Partition Size    20.51 GB (22,020,096,000 bytes)  Partition Size    25.39 GB (27,262,976,000 bytes)
Description       Disk drive
Manufacturer      (Standard disk drives)        Partition Starting Offset   47,186,968,576 bytes  Partition Starting Offset   1,048,576 bytes
Model      ATA MK0120EAVDT SCSI Disk Device                                               Partition Disk #180, Partition #1
Bytes/Sector      512                           Partition Disk #178, Partition #3          Partition Size    18.55 GB (19,922,944,000 bytes)
Media Loaded      Yes                           Partition Size    5.86 GB (6,291,456,000 bytes)
Media Type        Fixed hard disk
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Partition Starting Offset      27,264,024,576 bytes        Total Tracks       3,721,215                        Partitions         4
                                                           Tracks/Cylinder    255                              SCSI Bus  0
Partition Disk #180, Partition #2                          Partition Disk #182, Partition #0                   SCSI Logical Unit   0
Partition Size      20.51 GB (22,020,096,000 bytes)        Partition Size      25.39 GB (27,262,976,000 bytes) SCSI Port 14
                                                                                                               SCSI Target ID     65
Partition Starting Offset      47,186,968,576 bytes        Partition Starting Offset    1,048,576 bytes        Sectors/Track      63
                                                           Partition Disk #182, Partition #1                   Size      111.79 GB (120,031,511,040 bytes)
Partition Disk #180, Partition #3                          Partition Size      18.55 GB (19,922,944,000 bytes) Total Cylinders    14,593
Partition Size      5.86 GB (6,291,456,000 bytes)                                                              Total Sectors      234,436,545
Partition Starting Offset      69,207,064,576 bytes        Partition Starting Offset      27,264,024,576 bytes Total Tracks       3,721,215
                                                                                                               Tracks/Cylinder    255
                                                           Partition Disk #182, Partition #2                   Partition Disk #184, Partition #0
Description         Disk drive                             Partition Size      20.51 GB (22,020,096,000 bytes) Partition Size      25.39 GB (27,262,976,000 bytes)
Manufacturer        (Standard disk drives)
Model      ATA MK0120EAVDT SCSI Disk Device                Partition Starting Offset      47,186,968,576 bytes Partition Starting Offset    1,048,576 bytes
Bytes/Sector        512                                                                                        Partition Disk #184, Partition #1
Media Loaded        Yes                                    Partition Disk #182, Partition #3                   Partition Size      18.55 GB (19,922,944,000 bytes)
Media Type          Fixed hard disk                        Partition Size      5.86 GB (6,291,456,000 bytes)
Partitions          4                                      Partition Starting Offset      69,207,064,576 bytes Partition Starting Offset      27,264,024,576 bytes
SCSI Bus  0
SCSI Logical Unit   0                                                                                          Partition Disk #184, Partition #2
SCSI Port 14                                               Description         Disk drive                      Partition Size      20.51 GB (22,020,096,000 bytes)
SCSI Target ID      62                                     Manufacturer        (Standard disk drives)
Sectors/Track       63                                     Model      ATA MK0120EAVDT SCSI Disk Device         Partition Starting Offset      47,186,968,576 bytes
Size      111.79 GB (120,031,511,040 bytes)                Bytes/Sector        512
Total Cylinders     14,593                                 Media Loaded        Yes                             Partition Disk #184, Partition #3
Total Sectors       234,436,545                            Media Type          Fixed hard disk                 Partition Size      5.86 GB (6,291,456,000 bytes)
Total Tracks        3,721,215                              Partitions          4                               Partition Starting Offset      69,207,064,576 bytes
Tracks/Cylinder     255                                    SCSI Bus  0
Partition Disk #181, Partition #0                          SCSI Logical Unit   0
Partition Size      25.39 GB (27,262,976,000 bytes)        SCSI Port 14                                        Description         Disk drive
                                                           SCSI Target ID      64                              Manufacturer        (Standard disk drives)
Partition Starting Offset    1,048,576 bytes               Sectors/Track       63                              Model      ATA MK0120EAVDT SCSI Disk Device
Partition Disk #181, Partition #1                          Size      111.79 GB (120,031,511,040 bytes)         Bytes/Sector        512
Partition Size      18.55 GB (19,922,944,000 bytes)        Total Cylinders     14,593                          Media Loaded        Yes
                                                           Total Sectors       234,436,545                     Media Type          Fixed hard disk
Partition Starting Offset      27,264,024,576 bytes        Total Tracks        3,721,215                        Partitions          4
                                                           Tracks/Cylinder     255                             SCSI Bus  0
Partition Disk #181, Partition #2                          Partition Disk #183, Partition #0                   SCSI Logical Unit   0
Partition Size      20.51 GB (22,020,096,000 bytes)        Partition Size      25.39 GB (27,262,976,000 bytes) SCSI Port 14
                                                                                                               SCSI Target ID     66
Partition Starting Offset      47,186,968,576 bytes        Partition Starting Offset    1,048,576 bytes        Sectors/Track      63
                                                           Partition Disk #183, Partition #1                   Size      111.79 GB (120,031,511,040 bytes)
Partition Disk #181, Partition #3                          Partition Size      18.55 GB (19,922,944,000 bytes) Total Cylinders    14,593
Partition Size      5.86 GB (6,291,456,000 bytes)                                                              Total Sectors      234,436,545
Partition Starting Offset      69,207,064,576 bytes        Partition Starting Offset      27,264,024,576 bytes Total Tracks       3,721,215
                                                                                                               Tracks/Cylinder    255
                                                           Partition Disk #183, Partition #2                   Partition Disk #185, Partition #0
Description         Disk drive                             Partition Size      20.51 GB (22,020,096,000 bytes) Partition Size      25.39 GB (27,262,976,000 bytes)
Manufacturer        (Standard disk drives)
Model      ATA MK0120EAVDT SCSI Disk Device                Partition Starting Offset      47,186,968,576 bytes Partition Starting Offset    1,048,576 bytes
Bytes/Sector        512                                                                                        Partition Disk #185, Partition #1
Media Loaded        Yes                                    Partition Disk #183, Partition #3                   Partition Size      18.55 GB (19,922,944,000 bytes)
Media Type          Fixed hard disk                        Partition Size      5.86 GB (6,291,456,000 bytes)
Partitions          4                                      Partition Starting Offset      69,207,064,576 bytes Partition Starting Offset      27,264,024,576 bytes
SCSI Bus  0
SCSI Logical Unit   0                                                                                          Partition Disk #185, Partition #2
SCSI Port 14                                               Description         Disk drive                      Partition Size      20.51 GB (22,020,096,000 bytes)
SCSI Target ID      63                                     Manufacturer        (Standard disk drives)
Sectors/Track       63                                     Model      ATA MK0120EAVDT SCSI Disk Device         Partition Starting Offset      47,186,968,576 bytes
Size      111.79 GB (120,031,511,040 bytes)                Bytes/Sector        512
Total Cylinders     14,593                                 Media Loaded        Yes                             Partition Disk #185, Partition #3
Total Sectors       234,436,545                            Media Type          Fixed hard disk                 Partition Size      5.86 GB (6,291,456,000 bytes)
```

Partition Starting Offset   69,207,064,576 bytes

Description   Disk drive
Manufacturer   (Standard disk drives)
Model   ATA MK0120EAVDT SCSI Disk Device
Bytes/Sector   512
Media Loaded   Yes
Media Type   Fixed hard disk
Partitions   4
SCSI Bus 0
SCSI Logical Unit   0
SCSI Port 14
SCSI Target ID   67
Sectors/Track   63
Size   111.79 GB (120,031,511,040 bytes)
Total Cylinders   14,593
Total Sectors   234,436,545
Total Tracks   3,721,215
Tracks/Cylinder   255
Partition Disk #186, Partition #0
Partition Size   25.39 GB (27,262,976,000 bytes)

Partition Starting Offset   1,048,576 bytes
Partition Disk #186, Partition #1
Partition Size   18.55 GB (19,922,944,000 bytes)

Partition Starting Offset   27,264,024,576 bytes

Partition Disk #186, Partition #2
Partition Size   20.51 GB (22,020,096,000 bytes)

Partition Starting Offset   47,186,968,576 bytes

Partition Disk #186, Partition #3
Partition Size   5.86 GB (6,291,456,000 bytes)
Partition Starting Offset   69,207,064,576 bytes

Description   Disk drive
Manufacturer   (Standard disk drives)
Model   ATA MK0120EAVDT SCSI Disk Device
Bytes/Sector   512
Media Loaded   Yes
Media Type   Fixed hard disk
Partitions   4
SCSI Bus 0
SCSI Logical Unit   0
SCSI Port 14
SCSI Target ID   68
Sectors/Track   63
Size   111.79 GB (120,031,511,040 bytes)
Total Cylinders   14,593
Total Sectors   234,436,545
Total Tracks   3,721,215
Tracks/Cylinder   255
Partition Disk #187, Partition #0
Partition Size   25.39 GB (27,262,976,000 bytes)

Partition Starting Offset   1,048,576 bytes
Partition Disk #187, Partition #1
Partition Size   18.55 GB (19,922,944,000 bytes)

Partition Starting Offset   27,264,024,576 bytes

Partition Disk #187, Partition #2
Partition Size   20.51 GB (22,020,096,000 bytes)

Partition Starting Offset   47,186,968,576 bytes

Partition Disk #187, Partition #3
Partition Size   5.86 GB (6,291,456,000 bytes)
Partition Starting Offset   69,207,064,576 bytes

Description   Disk drive
Manufacturer   (Standard disk drives)
Model   ATA MK0120EAVDT SCSI Disk Device
Bytes/Sector   512
Media Loaded   Yes
Media Type   Fixed hard disk
Partitions   4
SCSI Bus 0
SCSI Logical Unit   0
SCSI Port 6
SCSI Target ID   58
Sectors/Track   63
Size   111.79 GB (120,031,511,040 bytes)
Total Cylinders   14,593
Total Sectors   234,436,545
Total Tracks   3,721,215
Tracks/Cylinder   255
Partition Disk #8, Partition #0
Partition Size   25.39 GB (27,262,976,000 bytes)

Partition Starting Offset   1,048,576 bytes
Partition Disk #8, Partition #1
Partition Size   18.55 GB (19,922,944,000 bytes)

Partition Starting Offset   27,264,024,576 bytes

Partition Disk #8, Partition #2
Partition Size   20.51 GB (22,020,096,000 bytes)

Partition Starting Offset   47,186,968,576 bytes

Partition Disk #8, Partition #3
Partition Size   5.86 GB (6,291,456,000 bytes)
Partition Starting Offset   69,207,064,576 bytes

Description   Disk drive
Manufacturer   (Standard disk drives)
Model   ATA MK0120EAVDT SCSI Disk Device
Bytes/Sector   512
Media Loaded   Yes
Media Type   Fixed hard disk
Partitions   4
SCSI Bus 0
SCSI Logical Unit   0
SCSI Port 6
SCSI Target ID   59
Sectors/Track   63
Size   111.79 GB (120,031,511,040 bytes)
Total Cylinders   14,593
Total Sectors   234,436,545

Total Tracks   3,721,215
Tracks/Cylinder   255
Partition Disk #9, Partition #0
Partition Size   25.39 GB (27,262,976,000 bytes)

Partition Starting Offset   1,048,576 bytes
Partition Disk #9, Partition #1
Partition Size   18.55 GB (19,922,944,000 bytes)

Partition Starting Offset   27,264,024,576 bytes

Partition Disk #9, Partition #2
Partition Size   20.51 GB (22,020,096,000 bytes)

Partition Starting Offset   47,186,968,576 bytes

Partition Disk #9, Partition #3
Partition Size   5.86 GB (6,291,456,000 bytes)
Partition Starting Offset   69,207,064,576 bytes

Description   Disk drive
Manufacturer   (Standard disk drives)
Model   ATA MK0120EAVDT SCSI Disk Device
Bytes/Sector   512
Media Loaded   Yes
Media Type   Fixed hard disk
Partitions   4
SCSI Bus 0
SCSI Logical Unit   0
SCSI Port 6
SCSI Target ID   60
Sectors/Track   63
Size   111.79 GB (120,031,511,040 bytes)
Total Cylinders   14,593
Total Sectors   234,436,545
Total Tracks   3,721,215
Tracks/Cylinder   255
Partition Disk #10, Partition #0
Partition Size   25.39 GB (27,262,976,000 bytes)

Partition Starting Offset   1,048,576 bytes
Partition Disk #10, Partition #1
Partition Size   18.55 GB (19,922,944,000 bytes)

Partition Starting Offset   27,264,024,576 bytes

Partition Disk #10, Partition #2
Partition Size   20.51 GB (22,020,096,000 bytes)

Partition Starting Offset   47,186,968,576 bytes

Partition Disk #10, Partition #3
Partition Size   5.86 GB (6,291,456,000 bytes)
Partition Starting Offset   69,207,064,576 bytes

Description   Disk drive
Manufacturer   (Standard disk drives)
Model   ATA MK0120EAVDT SCSI Disk Device
Bytes/Sector   512
Media Loaded   Yes
Media Type   Fixed hard disk

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Partitions         4                          Partition Starting Offset    69,207,064,576 bytes          Partition Starting Offset    27,264,024,576 bytes
SCSI Bus  0
SCSI Logical Unit   0                                                                                     Partition Disk #14, Partition #2
SCSI Port 6                                    Description        Disk drive                               Partition Size    20.51 GB (22,020,096,000 bytes)
SCSI Target ID     61                          Manufacturer       (Standard disk drives)
Sectors/Track      63                          Model     ATA MK0120EAVDT SCSI Disk Device                 Partition Starting Offset    47,186,968,576 bytes
Size       111.79 GB (120,031,511,040 bytes)  Bytes/Sector       512
Total Cylinders   14,593                       Media Loaded       Yes                                      Partition Disk #14, Partition #3
Total Sectors     234,436,545                  Media Type         Fixed hard disk                          Partition Size     5.86 GB (6,291,456,000 bytes)
Total Tracks      3,721,215                    Partitions         4                                        Partition Starting Offset    69,207,064,576 bytes
Tracks/Cylinder   255                          SCSI Bus  0
Partition Disk #11, Partition #0               SCSI Logical Unit   0
Partition Size    25.39 GB (27,262,976,000 bytes)  SCSI Port 6                                          Description        Disk drive
                                               SCSI Target ID     63                                      Manufacturer       (Standard disk drives)
Partition Starting Offset     1,048,576 bytes  Sectors/Track      63                                      Model     ATA MK0120EAVDT SCSI Disk Device
Partition Disk #11, Partition #1               Size       111.79 GB (120,031,511,040 bytes)              Bytes/Sector       512
Partition Size    18.55 GB (19,922,944,000 bytes)  Total Cylinders   14,593                             Media Loaded       Yes
                                               Total Sectors     234,436,545                              Media Type         Fixed hard disk
Partition Starting Offset    27,264,024,576 bytes  Total Tracks      3,721,215                           Partitions         4
                                               Tracks/Cylinder   255                                      SCSI Bus  0
Partition Disk #11, Partition #2               Partition Disk #13, Partition #0                           SCSI Logical Unit   0
Partition Size    20.51 GB (22,020,096,000 bytes)  Partition Size    25.39 GB (27,262,976,000 bytes)     SCSI Port 6
                                                                                                          SCSI Target ID     65
Partition Starting Offset    47,186,968,576 bytes  Partition Starting Offset     1,048,576 bytes         Sectors/Track      63
                                               Partition Disk #13, Partition #1                           Size       111.79 GB (120,031,511,040 bytes)
Partition Disk #11, Partition #3               Partition Size    18.55 GB (19,922,944,000 bytes)         Total Cylinders   14,593
Partition Size     5.86 GB (6,291,456,000 bytes)                                                         Total Sectors     234,436,545
Partition Starting Offset    69,207,064,576 bytes  Partition Starting Offset    27,264,024,576 bytes     Total Tracks      3,721,215
                                                                                                          Tracks/Cylinder   255
                                               Partition Disk #13, Partition #2                           Partition Disk #15, Partition #0
Description        Disk drive                  Partition Size    20.51 GB (22,020,096,000 bytes)         Partition Size    25.39 GB (27,262,976,000 bytes)
Manufacturer       (Standard disk drives)
Model     ATA MK0120EAVDT SCSI Disk Device    Partition Starting Offset    47,186,968,576 bytes         Partition Starting Offset     1,048,576 bytes
Bytes/Sector       512                                                                                   Partition Disk #15, Partition #1
Media Loaded       Yes                         Partition Disk #13, Partition #3                          Partition Size    18.55 GB (19,922,944,000 bytes)
Media Type         Fixed hard disk            Partition Size     5.86 GB (6,291,456,000 bytes)
Partitions         4                           Partition Starting Offset    69,207,064,576 bytes         Partition Starting Offset    27,264,024,576 bytes
SCSI Bus  0
SCSI Logical Unit   0                                                                                     Partition Disk #15, Partition #2
SCSI Port 6                                    Description        Disk drive                              Partition Size    20.51 GB (22,020,096,000 bytes)
SCSI Target ID     62                          Manufacturer       (Standard disk drives)
Sectors/Track      63                          Model     ATA MK0120EAVDT SCSI Disk Device                Partition Starting Offset    47,186,968,576 bytes
Size       111.79 GB (120,031,511,040 bytes)  Bytes/Sector       512
Total Cylinders   14,593                       Media Loaded       Yes                                     Partition Disk #15, Partition #3
Total Sectors     234,436,545                  Media Type         Fixed hard disk                         Partition Size     5.86 GB (6,291,456,000 bytes)
Total Tracks      3,721,215                    Partitions         4                                       Partition Starting Offset    69,207,064,576 bytes
Tracks/Cylinder   255                          SCSI Bus  0
Partition Disk #12, Partition #0               SCSI Logical Unit   0
Partition Size    25.39 GB (27,262,976,000 bytes)  SCSI Port 6                                          Description        Disk drive
                                               SCSI Target ID     64                                      Manufacturer       (Standard disk drives)
Partition Starting Offset     1,048,576 bytes  Sectors/Track      63                                      Model     ATA MK0120EAVDT SCSI Disk Device
Partition Disk #12, Partition #1               Size       111.79 GB (120,031,511,040 bytes)              Bytes/Sector       512
Partition Size    18.55 GB (19,922,944,000 bytes)  Total Cylinders   14,593                             Media Loaded       Yes
                                               Total Sectors     234,436,545                              Media Type         Fixed hard disk
Partition Starting Offset    27,264,024,576 bytes  Total Tracks      3,721,215                           Partitions         4
                                               Tracks/Cylinder   255                                      SCSI Bus  0
Partition Disk #12, Partition #2               Partition Disk #14, Partition #0                           SCSI Logical Unit   0
Partition Size    20.51 GB (22,020,096,000 bytes)  Partition Size    25.39 GB (27,262,976,000 bytes)     SCSI Port 6
                                                                                                          SCSI Target ID     66
Partition Starting Offset    47,186,968,576 bytes  Partition Starting Offset     1,048,576 bytes         Sectors/Track      63
                                               Partition Disk #14, Partition #1                           Size       111.79 GB (120,031,511,040 bytes)
Partition Disk #12, Partition #3               Partition Size    18.55 GB (19,922,944,000 bytes)         Total Cylinders   14,593
Partition Size     5.86 GB (6,291,456,000 bytes)                                                         Total Sectors     234,436,545
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Total Tracks       3,721,215              Partitions        4                   Partition Starting Offset    69,207,064,576 bytes
Tracks/Cylinder    255                    SCSI Bus  0
Partition Disk #16, Partition #0          SCSI Logical Unit    0
Partition Size     25.39 GB (27,262,976,000 bytes)   SCSI Port 6               Description        Disk drive
                                          SCSI Target ID    68                  Manufacturer       (Standard disk drives)
                                          Sectors/Track    63                   Model     ATA MK0120EAVDT SCSI Disk Device
Partition Starting Offset    1,048,576 bytes   Size       111.79 GB (120,031,511,040 bytes)   Bytes/Sector       512
Partition Disk #16, Partition #1          Total Cylinders    14,593            Media Loaded       Yes
Partition Size     18.55 GB (19,922,944,000 bytes)   Total Sectors     234,436,545          Media Type         Fixed hard disk
                                          Total Tracks      3,721,215          Partitions         4
                                          Tracks/Cylinder    255               SCSI Bus  0
Partition Starting Offset    27,264,024,576 bytes   Partition Disk #18, Partition #0   SCSI Logical Unit    0
                                          Partition Size     25.39 GB (27,262,976,000 bytes)   SCSI Port 6
Partition Disk #16, Partition #2                                               SCSI Target ID    70
Partition Size     20.51 GB (22,020,096,000 bytes)                             Sectors/Track    63
                                          Partition Starting Offset    1,048,576 bytes   Size       111.79 GB (120,031,511,040 bytes)
                                          Partition Disk #18, Partition #1   Total Cylinders    14,593
Partition Starting Offset    47,186,968,576 bytes   Partition Size     18.55 GB (19,922,944,000 bytes)   Total Sectors     234,436,545
                                                                               Total Tracks      3,721,215
Partition Disk #16, Partition #3                                               Tracks/Cylinder    255
Partition Size     5.86 GB (6,291,456,000 bytes)   Partition Starting Offset    27,264,024,576 bytes   Partition Disk #20, Partition #0
Partition Starting Offset    69,207,064,576 bytes                              Partition Size     25.39 GB (27,262,976,000 bytes)
                                          Partition Disk #18, Partition #2
                                          Partition Size     20.51 GB (22,020,096,000 bytes)   Partition Starting Offset    1,048,576 bytes
Description        Disk drive                                                  Partition Disk #20, Partition #1
Manufacturer       (Standard disk drives)                                      Partition Size     18.55 GB (19,922,944,000 bytes)
Model     ATA MK0120EAVDT SCSI Disk Device   Partition Starting Offset    47,186,968,576 bytes
Bytes/Sector       512                                                         Partition Starting Offset    27,264,024,576 bytes
Media Loaded       Yes                    Partition Disk #18, Partition #3
Media Type         Fixed hard disk        Partition Size     5.86 GB (6,291,456,000 bytes)
Partitions         4                      Partition Starting Offset    69,207,064,576 bytes   Partition Disk #20, Partition #2
SCSI Bus  0                                                                    Partition Size     20.51 GB (22,020,096,000 bytes)
SCSI Logical Unit    0
SCSI Port 6                               Description        Disk drive        Partition Starting Offset    47,186,968,576 bytes
SCSI Target ID    67                       Manufacturer       (Standard disk drives)
Sectors/Track    63                        Model     ATA MK0120EAVDT SCSI Disk Device   Partition Disk #20, Partition #3
Size       111.79 GB (120,031,511,040 bytes)   Bytes/Sector       512          Partition Size     5.86 GB (6,291,456,000 bytes)
Total Cylinders    14,593                 Media Loaded       Yes               Partition Starting Offset    69,207,064,576 bytes
Total Sectors     234,436,545             Media Type         Fixed hard disk
Total Tracks      3,721,215               Partitions         4
Tracks/Cylinder    255                    SCSI Bus  0                          Description        Disk drive
Partition Disk #17, Partition #0          SCSI Logical Unit    0                Manufacturer       (Standard disk drives)
Partition Size     25.39 GB (27,262,976,000 bytes)   SCSI Port 6              Model     ATA MK0120EAVDT SCSI Disk Device
                                          SCSI Target ID    69                  Bytes/Sector       512
                                          Sectors/Track    63                   Media Loaded       Yes
Partition Starting Offset    1,048,576 bytes   Size       111.79 GB (120,031,511,040 bytes)   Media Type         Fixed hard disk
Partition Disk #17, Partition #1          Total Cylinders    14,593            Partitions         4
Partition Size     18.55 GB (19,922,944,000 bytes)   Total Sectors     234,436,545          SCSI Bus  0
                                          Total Tracks      3,721,215          SCSI Logical Unit    0
Partition Starting Offset    27,264,024,576 bytes   Tracks/Cylinder    255    SCSI Port 6
                                          Partition Disk #19, Partition #0   SCSI Target ID    71
Partition Disk #17, Partition #2          Partition Size     25.39 GB (27,262,976,000 bytes)   Sectors/Track    63
Partition Size     20.51 GB (22,020,096,000 bytes)                            Size       111.79 GB (120,031,511,040 bytes)
                                                                               Total Cylinders    14,593
                                          Partition Starting Offset    1,048,576 bytes   Total Sectors     234,436,545
Partition Starting Offset    47,186,968,576 bytes   Partition Disk #19, Partition #1   Total Tracks      3,721,215
                                          Partition Size     18.55 GB (19,922,944,000 bytes)   Tracks/Cylinder    255
Partition Disk #17, Partition #3                                               Partition Disk #21, Partition #0
Partition Size     5.86 GB (6,291,456,000 bytes)                              Partition Size     25.39 GB (27,262,976,000 bytes)
Partition Starting Offset    69,207,064,576 bytes   Partition Starting Offset    27,264,024,576 bytes
                                                                               Partition Starting Offset    1,048,576 bytes
                                          Partition Disk #19, Partition #2   Partition Disk #21, Partition #1
Description        Disk drive             Partition Size     20.51 GB (22,020,096,000 bytes)   Partition Size     18.55 GB (19,922,944,000 bytes)
Manufacturer       (Standard disk drives)
Model     ATA MK0120EAVDT SCSI Disk Device   Partition Starting Offset    47,186,968,576 bytes
Bytes/Sector       512
Media Loaded       Yes                    Partition Disk #19, Partition #3
Media Type         Fixed hard disk        Partition Size     5.86 GB (6,291,456,000 bytes)
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Partition Starting Offset     27,264,024,576 bytes        Total Tracks      3,721,215                      Partitions        4
                                                           Tracks/Cylinder   255                            SCSI Bus  0
Partition Disk #21, Partition #2                           Partition Disk #23, Partition #0                SCSI Logical Unit   0
Partition Size     20.51 GB (22,020,096,000 bytes)         Partition Size     25.39 GB (27,262,976,000 bytes)   SCSI Port 6
                                                                                                           SCSI Target ID    75
Partition Starting Offset     47,186,968,576 bytes         Partition Starting Offset     1,048,576 bytes   Sectors/Track     63
                                                           Partition Disk #23, Partition #1                Size     111.79 GB (120,031,511,040 bytes)
Partition Disk #21, Partition #3                           Partition Size     18.55 GB (19,922,944,000 bytes)   Total Cylinders   14,593
Partition Size     5.86 GB (6,291,456,000 bytes)                                                           Total Sectors     234,436,545
Partition Starting Offset     69,207,064,576 bytes         Partition Starting Offset     27,264,024,576 bytes   Total Tracks      3,721,215
                                                                                                           Tracks/Cylinder   255
                                                           Partition Disk #23, Partition #2                Partition Disk #25, Partition #0
Description        Disk drive                              Partition Size     20.51 GB (22,020,096,000 bytes)   Partition Size     25.39 GB (27,262,976,000 bytes)
Manufacturer       (Standard disk drives)
Model     ATA MK0120EAVDT SCSI Disk Device                Partition Starting Offset     47,186,968,576 bytes   Partition Starting Offset     1,048,576 bytes
Bytes/Sector       512                                                                                      Partition Disk #25, Partition #1
Media Loaded       Yes                                     Partition Disk #23, Partition #3                Partition Size     18.55 GB (19,922,944,000 bytes)
Media Type         Fixed hard disk                         Partition Size     5.86 GB (6,291,456,000 bytes)
Partitions         4                                       Partition Starting Offset     69,207,064,576 bytes   Partition Starting Offset     27,264,024,576 bytes
SCSI Bus  0
SCSI Logical Unit   0                                                                                       Partition Disk #25, Partition #2
SCSI Port 6                                                Description        Disk drive                   Partition Size     20.51 GB (22,020,096,000 bytes)
SCSI Target ID    72                                       Manufacturer       (Standard disk drives)
Sectors/Track     63                                       Model     ATA MK0120EAVDT SCSI Disk Device      Partition Starting Offset     47,186,968,576 bytes
Size     111.79 GB (120,031,511,040 bytes)                 Bytes/Sector       512
Total Cylinders   14,593                                   Media Loaded       Yes                          Partition Disk #25, Partition #3
Total Sectors     234,436,545                              Media Type         Fixed hard disk              Partition Size     5.86 GB (6,291,456,000 bytes)
Total Tracks      3,721,215                                Partitions         4                            Partition Starting Offset     69,207,064,576 bytes
Tracks/Cylinder   255                                      SCSI Bus  0
Partition Disk #22, Partition #0                           SCSI Logical Unit   0
Partition Size     25.39 GB (27,262,976,000 bytes)         SCSI Port 6                                      Description        Disk drive
                                                           SCSI Target ID    74                             Manufacturer       (Standard disk drives)
Partition Starting Offset     1,048,576 bytes              Sectors/Track     63                             Model     ATA MK0120EAVDT SCSI Disk Device
Partition Disk #22, Partition #1                           Size     111.79 GB (120,031,511,040 bytes)       Bytes/Sector       512
Partition Size     18.55 GB (19,922,944,000 bytes)         Total Cylinders   14,593                         Media Loaded       Yes
                                                           Total Sectors     234,436,545                    Media Type         Fixed hard disk
Partition Starting Offset     27,264,024,576 bytes         Total Tracks      3,721,215                      Partitions         4
                                                           Tracks/Cylinder   255                            SCSI Bus  0
Partition Disk #22, Partition #2                           Partition Disk #24, Partition #0                SCSI Logical Unit   0
Partition Size     20.51 GB (22,020,096,000 bytes)         Partition Size     25.39 GB (27,262,976,000 bytes)   SCSI Port 6
                                                                                                           SCSI Target ID    76
Partition Starting Offset     47,186,968,576 bytes         Partition Starting Offset     1,048,576 bytes   Sectors/Track     63
                                                           Partition Disk #24, Partition #1                Size     111.79 GB (120,031,511,040 bytes)
Partition Disk #22, Partition #3                           Partition Size     18.55 GB (19,922,944,000 bytes)   Total Cylinders   14,593
Partition Size     5.86 GB (6,291,456,000 bytes)                                                           Total Sectors     234,436,545
Partition Starting Offset     69,207,064,576 bytes         Partition Starting Offset     27,264,024,576 bytes   Total Tracks      3,721,215
                                                                                                           Tracks/Cylinder   255
                                                           Partition Disk #24, Partition #2                Partition Disk #26, Partition #0
Description        Disk drive                              Partition Size     20.51 GB (22,020,096,000 bytes)   Partition Size     25.39 GB (27,262,976,000 bytes)
Manufacturer       (Standard disk drives)
Model     ATA MK0120EAVDT SCSI Disk Device                Partition Starting Offset     47,186,968,576 bytes   Partition Starting Offset     1,048,576 bytes
Bytes/Sector       512                                                                                      Partition Disk #26, Partition #1
Media Loaded       Yes                                     Partition Disk #24, Partition #3                Partition Size     18.55 GB (19,922,944,000 bytes)
Media Type         Fixed hard disk                         Partition Size     5.86 GB (6,291,456,000 bytes)
Partitions         4                                       Partition Starting Offset     69,207,064,576 bytes   Partition Starting Offset     27,264,024,576 bytes
SCSI Bus  0
SCSI Logical Unit   0                                                                                       Partition Disk #26, Partition #2
SCSI Port 6                                                Description        Disk drive                   Partition Size     20.51 GB (22,020,096,000 bytes)
SCSI Target ID    73                                       Manufacturer       (Standard disk drives)
Sectors/Track     63                                       Model     ATA MK0120EAVDT SCSI Disk Device      Partition Starting Offset     47,186,968,576 bytes
Size     111.79 GB (120,031,511,040 bytes)                 Bytes/Sector       512
Total Cylinders   14,593                                   Media Loaded       Yes                          Partition Disk #26, Partition #3
Total Sectors     234,436,545                              Media Type         Fixed hard disk              Partition Size     5.86 GB (6,291,456,000 bytes)
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Partition Starting Offset   69,207,064,576 bytes          Partition Starting Offset   27,264,024,576 bytes          Total Tracks      3,721,215
                                                                                                                    Tracks/Cylinder   255
                                                           Partition Disk #128, Partition #2                        Partition Disk #130, Partition #0
Description        Disk drive                              Partition Size    20.51 GB (22,020,096,000 bytes)        Partition Size    25.39 GB (27,262,976,000 bytes)
Manufacturer       (Standard disk drives)
Model      ATA MK0120EAVDT SCSI Disk Device               Partition Starting Offset   47,186,968,576 bytes         Partition Starting Offset    1,048,576 bytes
Bytes/Sector       512                                                                                             Partition Disk #130, Partition #1
Media Loaded       Yes                                    Partition Disk #128, Partition #3                        Partition Size    18.55 GB (19,922,944,000 bytes)
Media Type         Fixed hard disk                        Partition Size    5.86 GB (6,291,456,000 bytes)
Partitions         4                                      Partition Starting Offset   69,207,064,576 bytes         Partition Starting Offset   27,264,024,576 bytes
SCSI Bus  0
SCSI Logical Unit  0                                                                                               Partition Disk #130, Partition #2
SCSI Port 6                                               Description        Disk drive                            Partition Size    20.51 GB (22,020,096,000 bytes)
SCSI Target ID     77                                     Manufacturer       (Standard disk drives)
Sectors/Track      63                                     Model      ATA MK0120EAVDT SCSI Disk Device              Partition Starting Offset   47,186,968,576 bytes
Size      111.79 GB (120,031,511,040 bytes)               Bytes/Sector       512
Total Cylinders    14,593                                 Media Loaded       Yes                                   Partition Disk #130, Partition #3
Total Sectors      234,436,545                            Media Type         Fixed hard disk                       Partition Size    5.86 GB (6,291,456,000 bytes)
Total Tracks       3,721,215                              Partitions         4                                     Partition Starting Offset   69,207,064,576 bytes
Tracks/Cylinder    255                                    SCSI Bus  0
Partition Disk #27, Partition #0                          SCSI Logical Unit  0
Partition Size     25.39 GB (27,262,976,000 bytes)        SCSI Port 12                                             Description        Disk drive
                                                           SCSI Target ID     50                                    Manufacturer       (Standard disk drives)
Partition Starting Offset    1,048,576 bytes              Sectors/Track      63                                    Model      ATA MK0120EAVDT SCSI Disk Device
Partition Disk #27, Partition #1                          Size      111.79 GB (120,031,511,040 bytes)              Bytes/Sector       512
Partition Size     18.55 GB (19,922,944,000 bytes)        Total Cylinders    14,593                                Media Loaded       Yes
                                                           Total Sectors      234,436,545                           Media Type         Fixed hard disk
Partition Starting Offset   27,264,024,576 bytes          Total Tracks       3,721,215                              Partitions         4
                                                           Tracks/Cylinder    255                                   SCSI Bus  0
Partition Disk #27, Partition #2                          Partition Disk #129, Partition #0                        SCSI Logical Unit  0
Partition Size     20.51 GB (22,020,096,000 bytes)        Partition Size     25.39 GB (27,262,976,000 bytes)       SCSI Port 12
                                                                                                                    SCSI Target ID     52
Partition Starting Offset   47,186,968,576 bytes          Partition Starting Offset    1,048,576 bytes             Sectors/Track      63
                                                           Partition Disk #129, Partition #1                        Size      111.79 GB (120,031,511,040 bytes)
Partition Disk #27, Partition #3                          Partition Size     18.55 GB (19,922,944,000 bytes)       Total Cylinders    14,593
Partition Size     5.86 GB (6,291,456,000 bytes)                                                                   Total Sectors      234,436,545
Partition Starting Offset   69,207,064,576 bytes          Partition Starting Offset   27,264,024,576 bytes         Total Tracks       3,721,215
                                                                                                                    Tracks/Cylinder    255
                                                           Partition Disk #129, Partition #2                        Partition Disk #131, Partition #0
Description        Disk drive                              Partition Size     20.51 GB (22,020,096,000 bytes)       Partition Size     25.39 GB (27,262,976,000 bytes)
Manufacturer       (Standard disk drives)
Model      ATA MK0120EAVDT SCSI Disk Device               Partition Starting Offset   47,186,968,576 bytes         Partition Starting Offset    1,048,576 bytes
Bytes/Sector       512                                                                                             Partition Disk #131, Partition #1
Media Loaded       Yes                                    Partition Disk #129, Partition #3                        Partition Size     18.55 GB (19,922,944,000 bytes)
Media Type         Fixed hard disk                        Partition Size     5.86 GB (6,291,456,000 bytes)
Partitions         4                                      Partition Starting Offset   69,207,064,576 bytes         Partition Starting Offset   27,264,024,576 bytes
SCSI Bus  0
SCSI Logical Unit  0                                                                                               Partition Disk #131, Partition #2
SCSI Port 12                                              Description        Disk drive                            Partition Size     20.51 GB (22,020,096,000 bytes)
SCSI Target ID     49                                     Manufacturer       (Standard disk drives)
Sectors/Track      63                                     Model      ATA MK0120EAVDT SCSI Disk Device              Partition Starting Offset   47,186,968,576 bytes
Size      111.79 GB (120,031,511,040 bytes)               Bytes/Sector       512
Total Cylinders    14,593                                 Media Loaded       Yes                                   Partition Disk #131, Partition #3
Total Sectors      234,436,545                            Media Type         Fixed hard disk                       Partition Size     5.86 GB (6,291,456,000 bytes)
Total Tracks       3,721,215                              Partitions         4                                     Partition Starting Offset   69,207,064,576 bytes
Tracks/Cylinder    255                                    SCSI Bus  0
Partition Disk #128, Partition #0                         SCSI Logical Unit  0
Partition Size     25.39 GB (27,262,976,000 bytes)        SCSI Port 12                                             Description        Disk drive
                                                           SCSI Target ID     51                                    Manufacturer       (Standard disk drives)
Partition Starting Offset    1,048,576 bytes              Sectors/Track      63                                    Model      ATA MK0120EAVDT SCSI Disk Device
Partition Disk #128, Partition #1                         Size      111.79 GB (120,031,511,040 bytes)              Bytes/Sector       512
Partition Size     18.55 GB (19,922,944,000 bytes)        Total Cylinders    14,593                                Media Loaded       Yes
                                                           Total Sectors      234,436,545                           Media Type         Fixed hard disk
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Partitions        4                    Partition Starting Offset    69,207,064,576 bytes      Partition Starting Offset    27,264,024,576 bytes
SCSI Bus  0
SCSI Logical Unit   0                                                                         Partition Disk #135, Partition #2
SCSI Port 12                           Description        Disk drive                          Partition Size      20.51 GB (22,020,096,000 bytes)
SCSI Target ID    53                   Manufacturer       (Standard disk drives)
Sectors/Track     63                   Model      ATA MK0120EAVDT SCSI Disk Device            Partition Starting Offset    47,186,968,576 bytes
Size      111.79 GB (120,031,511,040 bytes)  Bytes/Sector      512
Total Cylinders   14,593               Media Loaded       Yes                                 Partition Disk #135, Partition #3
Total Sectors     234,436,545          Media Type         Fixed hard disk                     Partition Size      5.86 GB (6,291,456,000 bytes)
Total Tracks      3,721,215            Partitions         4                                   Partition Starting Offset    69,207,064,576 bytes
Tracks/Cylinder   255                  SCSI Bus  0
Partition Disk #132, Partition #0      SCSI Logical Unit   0
Partition Size    25.39 GB (27,262,976,000 bytes)  SCSI Port 12                               Description        Disk drive
                                       SCSI Target ID    55                                   Manufacturer       (Standard disk drives)
Partition Starting Offset    1,048,576 bytes  Sectors/Track     63                            Model      ATA MK0120EAVDT SCSI Disk Device
Partition Disk #132, Partition #1      Size      111.79 GB (120,031,511,040 bytes)            Bytes/Sector      512
Partition Size    18.55 (19,922,944,000 bytes)  Total Cylinders   14,593                     Media Loaded       Yes
                                       Total Sectors     234,436,545                          Media Type         Fixed hard disk
Partition Starting Offset    27,264,024,576 bytes  Total Tracks      3,721,215                Partitions         4
                                       Tracks/Cylinder   255                                  SCSI Bus  0
Partition Disk #132, Partition #2      Partition Disk #134, Partition #0                      SCSI Logical Unit   0
Partition Size    20.51 GB (22,020,096,000 bytes)  Partition Size    25.39 GB (27,262,976,000 bytes)  SCSI Port 12
                                                                                              SCSI Target ID    57
Partition Starting Offset    47,186,968,576 bytes  Partition Starting Offset    1,048,576 bytes  Sectors/Track     63
                                       Partition Disk #134, Partition #1                      Size      111.79 GB (120,031,511,040 bytes)
Partition Disk #132, Partition #3      Partition Size    18.55 GB (19,922,944,000 bytes)      Total Cylinders   14,593
Partition Size    5.86 GB (6,291,456,000 bytes)                                               Total Sectors     234,436,545
Partition Starting Offset    69,207,064,576 bytes  Partition Starting Offset    27,264,024,576 bytes  Total Tracks      3,721,215
                                                                                              Tracks/Cylinder   255
                                       Partition Disk #134, Partition #2                      Partition Disk #136, Partition #0
Description        Disk drive          Partition Size    20.51 GB (22,020,096,000 bytes)      Partition Size    25.39 GB (27,262,976,000 bytes)
Manufacturer       (Standard disk drives)
Model      ATA MK0120EAVDT SCSI Disk Device  Partition Starting Offset    47,186,968,576 bytes  Partition Starting Offset    1,048,576 bytes
Bytes/Sector      512                                                                         Partition Disk #136, Partition #1
Media Loaded       Yes                 Partition Disk #134, Partition #3                      Partition Size    18.55 GB (19,922,944,000 bytes)
Media Type         Fixed hard disk     Partition Size    5.86 GB (6,291,456,000 bytes)
Partitions         4                   Partition Starting Offset    69,207,064,576 bytes      Partition Starting Offset    27,264,024,576 bytes
SCSI Bus  0
SCSI Logical Unit   0                                                                         Partition Disk #136, Partition #2
SCSI Port 12                           Description        Disk drive                          Partition Size    20.51 GB (22,020,096,000 bytes)
SCSI Target ID    54                   Manufacturer       (Standard disk drives)
Sectors/Track     63                   Model      ATA MK0120EAVDT SCSI Disk Device            Partition Starting Offset    47,186,968,576 bytes
Size      111.79 GB (120,031,511,040 bytes)  Bytes/Sector      512
Total Cylinders   14,593               Media Loaded       Yes                                 Partition Disk #136, Partition #3
Total Sectors     234,436,545          Media Type         Fixed hard disk                     Partition Size    5.86 GB (6,291,456,000 bytes)
Total Tracks      3,721,215            Partitions         4                                   Partition Starting Offset    69,207,064,576 bytes
Tracks/Cylinder   255                  SCSI Bus  0
Partition Disk #133, Partition #0      SCSI Logical Unit   0
Partition Size    25.39 GB (27,262,976,000 bytes)  SCSI Port 12                               Description        Disk drive
                                       SCSI Target ID    56                                   Manufacturer       (Standard disk drives)
Partition Starting Offset    1,048,576 bytes  Sectors/Track     63                            Model      ATA MK0120EAVDT SCSI Disk Device
Partition Disk #133, Partition #1      Size      111.79 GB (120,031,511,040 bytes)            Bytes/Sector      512
Partition Size    18.55 (19,922,944,000 bytes)  Total Cylinders   14,593                     Media Loaded       Yes
                                       Total Sectors     234,436,545                          Media Type         Fixed hard disk
Partition Starting Offset    27,264,024,576 bytes  Total Tracks      3,721,215                Partitions         4
                                       Tracks/Cylinder   255                                  SCSI Bus  0
Partition Disk #133, Partition #2      Partition Disk #135, Partition #0                      SCSI Logical Unit   0
Partition Size    20.51 GB (22,020,096,000 bytes)  Partition Size    25.39 GB (27,262,976,000 bytes)  SCSI Port 12
                                                                                              SCSI Target ID    58
Partition Starting Offset    47,186,968,576 bytes  Partition Starting Offset    1,048,576 bytes  Sectors/Track     63
                                       Partition Disk #135, Partition #1                      Size      111.79 GB (120,031,511,040 bytes)
Partition Disk #133, Partition #3      Partition Size    18.55 GB (19,922,944,000 bytes)      Total Cylinders   14,593
Partition Size    5.86 GB (6,291,456,000 bytes)                                               Total Sectors     234,436,545
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Total Tracks       3,721,215                    Partitions          4                         Partition Starting Offset    69,207,064,576 bytes
Tracks/Cylinder    255                          SCSI Bus  0
Partition Disk #137, Partition #0               SCSI Logical Unit   0
Partition Size     25.39 GB (27,262,976,000 bytes)  SCSI Port 12                              Description          Disk drive
                                                SCSI Target ID     60                         Manufacturer        (Standard disk drives)
Partition Starting Offset    1,048,576 bytes    Sectors/Track      63                         Model      ATA MK0120EAVDT SCSI Disk Device
Partition Disk #137, Partition #1               Size      111.79 GB (120,031,511,040 bytes)   Bytes/Sector        512
Partition Size     18.55 GB (19,922,944,000 bytes)  Total Cylinders   14,593                 Media Loaded        Yes
                                                Total Sectors      234,436,545                Media Type          Fixed hard disk
                                                Total Tracks       3,721,215                  Partitions          4
Partition Starting Offset    27,264,024,576 bytes  Tracks/Cylinder   255                      SCSI Bus  0
                                                Partition Disk #139, Partition #0             SCSI Logical Unit   0
Partition Disk #137, Partition #2               Partition Size     25.39 GB (27,262,976,000 bytes)  SCSI Port 12
Partition Size     20.51 GB (22,020,096,000 bytes)                                           SCSI Target ID     62
                                                Partition Starting Offset    1,048,576 bytes  Sectors/Track      63
Partition Starting Offset    47,186,968,576 bytes  Partition Disk #139, Partition #1         Size      111.79 GB (120,031,511,040 bytes)
                                                Partition Size     18.55 GB (19,922,944,000 bytes)  Total Cylinders   14,593
Partition Disk #137, Partition #3                                                            Total Sectors      234,436,545
Partition Size     5.86 GB (6,291,456,000 bytes)  Partition Starting Offset    27,264,024,576 bytes  Total Tracks   3,721,215
Partition Starting Offset    69,207,064,576 bytes                                            Tracks/Cylinder    255
                                                Partition Disk #139, Partition #2             Partition Disk #141, Partition #0
                                                Partition Size     20.51 GB (22,020,096,000 bytes)  Partition Size   25.39 GB (27,262,976,000 bytes)
Description          Disk drive
Manufacturer        (Standard disk drives)      Partition Starting Offset    47,186,968,576 bytes  Partition Starting Offset    1,048,576 bytes
Model      ATA MK0120EAVDT SCSI Disk Device                                                  Partition Disk #141, Partition #1
Bytes/Sector        512                          Partition Disk #139, Partition #3            Partition Size     18.55 GB (19,922,944,000 bytes)
Media Loaded        Yes                          Partition Size     5.86 GB (6,291,456,000 bytes)
Media Type          Fixed hard disk             Partition Starting Offset    69,207,064,576 bytes  Partition Starting Offset    27,264,024,576 bytes
Partitions          4
SCSI Bus  0                                                                                  Partition Disk #141, Partition #2
SCSI Logical Unit   0                            Description          Disk drive             Partition Size     20.51 GB (22,020,096,000 bytes)
SCSI Port 12                                     Manufacturer        (Standard disk drives)
SCSI Target ID     59                            Model      ATA MK0120EAVDT SCSI Disk Device  Partition Starting Offset    47,186,968,576 bytes
Sectors/Track      63                            Bytes/Sector        512
Size      111.79 GB (120,031,511,040 bytes)      Media Loaded        Yes                     Partition Disk #141, Partition #3
Total Cylinders    14,593                         Media Type          Fixed hard disk        Partition Size     5.86 GB (6,291,456,000 bytes)
Total Sectors      234,436,545                    Partitions          4                      Partition Starting Offset    69,207,064,576 bytes
Total Tracks       3,721,215                      SCSI Bus  0
Tracks/Cylinder    255                            SCSI Logical Unit   0
Partition Disk #138, Partition #0                 SCSI Port 12                               Description          Disk drive
Partition Size     25.39 GB (27,262,976,000 bytes)  SCSI Target ID    61                     Manufacturer        (Standard disk drives)
                                                  Sectors/Track      63                       Model      ATA MK0120EAVDT SCSI Disk Device
Partition Starting Offset    1,048,576 bytes      Size      111.79 GB (120,031,511,040 bytes)  Bytes/Sector        512
Partition Disk #138, Partition #1                 Total Cylinders    14,593                   Media Loaded        Yes
Partition Size     18.55 GB (19,922,944,000 bytes)  Total Sectors     234,436,545             Media Type          Fixed hard disk
                                                  Total Tracks       3,721,215                 Partitions          4
Partition Starting Offset    27,264,024,576 bytes  Tracks/Cylinder   255                      SCSI Bus  0
                                                  Partition Disk #140, Partition #0           SCSI Logical Unit   0
Partition Disk #138, Partition #2                 Partition Size     25.39 GB (27,262,976,000 bytes)  SCSI Port 12
Partition Size     20.51 GB (22,020,096,000 bytes)                                           SCSI Target ID     63
                                                  Partition Starting Offset    1,048,576 bytes  Sectors/Track     63
Partition Starting Offset    47,186,968,576 bytes  Partition Disk #140, Partition #1          Size      111.79 GB (120,031,511,040 bytes)
                                                  Partition Size     18.55 GB (19,922,944,000 bytes)  Total Cylinders   14,593
Partition Disk #138, Partition #3                                                            Total Sectors      234,436,545
Partition Size     5.86 GB (6,291,456,000 bytes)  Partition Starting Offset    27,264,024,576 bytes  Total Tracks   3,721,215
Partition Starting Offset    69,207,064,576 bytes                                            Tracks/Cylinder    255
                                                  Partition Disk #140, Partition #2           Partition Disk #142, Partition #0
                                                  Partition Size     20.51 GB (22,020,096,000 bytes)  Partition Size   25.39 GB (27,262,976,000 bytes)
Description          Disk drive
Manufacturer        (Standard disk drives)        Partition Starting Offset    47,186,968,576 bytes  Partition Starting Offset    1,048,576 bytes
Model      ATA MK0120EAVDT SCSI Disk Device                                                  Partition Disk #142, Partition #1
Bytes/Sector        512                           Partition Disk #140, Partition #3           Partition Size     18.55 GB (19,922,944,000 bytes)
Media Loaded        Yes                           Partition Size     5.86 GB (6,291,456,000 bytes)
Media Type          Fixed hard disk
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Partition Starting Offset    27,264,024,576 bytes          Total Tracks      3,721,215                          Partitions           4
                                                            Tracks/Cylinder   255                                SCSI Bus  0
Partition Disk #142, Partition #2                           Partition Disk #144, Partition #0                   SCSI Logical Unit    0
Partition Size      20.51 GB (22,020,096,000 bytes)         Partition Size      25.39 GB (27,262,976,000 bytes)  SCSI Port 12
                                                                                                                SCSI Target ID      67
Partition Starting Offset    47,186,968,576 bytes           Partition Starting Offset    1,048,576 bytes         Sectors/Track      63
                                                            Partition Disk #144, Partition #1                   Size      111.79 GB (120,031,511,040 bytes)
Partition Disk #142, Partition #3                           Partition Size      18.55 GB (19,922,944,000 bytes)  Total Cylinders    14,593
Partition Size      5.86 GB (6,291,456,000 bytes)                                                                Total Sectors      234,436,545
Partition Starting Offset    69,207,064,576 bytes           Partition Starting Offset    27,264,024,576 bytes    Total Tracks      3,721,215
                                                                                                                Tracks/Cylinder    255
                                                            Partition Disk #144, Partition #2                   Partition Disk #146, Partition #0
Description          Disk drive                             Partition Size      20.51 GB (22,020,096,000 bytes)  Partition Size      25.39 GB (27,262,976,000 bytes)
Manufacturer    (Standard disk drives)
Model      ATA MK0120EAVDT SCSI Disk Device                 Partition Starting Offset    47,186,968,576 bytes    Partition Starting Offset    1,048,576 bytes
Bytes/Sector      512                                                                                            Partition Disk #146, Partition #1
Media Loaded      Yes                                       Partition Disk #144, Partition #3                   Partition Size      18.55 GB (19,922,944,000 bytes)
Media Type        Fixed hard disk                           Partition Size      5.86 GB (6,291,456,000 bytes)
Partitions        4                                         Partition Starting Offset    69,207,064,576 bytes    Partition Starting Offset    27,264,024,576 bytes
SCSI Bus  0
SCSI Logical Unit    0                                                                                          Partition Disk #146, Partition #2
SCSI Port 12                                                Description          Disk drive                     Partition Size      20.51 GB (22,020,096,000 bytes)
SCSI Target ID      64                                      Manufacturer    (Standard disk drives)
Sectors/Track      63                                       Model      ATA MK0120EAVDT SCSI Disk Device          Partition Starting Offset    47,186,968,576 bytes
Size      111.79 GB (120,031,511,040 bytes)                 Bytes/Sector      512
Total Cylinders    14,593                                   Media Loaded      Yes                               Partition Disk #146, Partition #3
Total Sectors      234,436,545                              Media Type        Fixed hard disk                   Partition Size      5.86 GB (6,291,456,000 bytes)
Total Tracks      3,721,215                                 Partitions        4                                 Partition Starting Offset    69,207,064,576 bytes
Tracks/Cylinder    255                                      SCSI Bus  0
Partition Disk #143, Partition #0                           SCSI Logical Unit    0
Partition Size      25.39 GB (27,262,976,000 bytes)         SCSI Port 12                                        Description          Disk drive
                                                            SCSI Target ID      66                              Manufacturer    (Standard disk drives)
Partition Starting Offset    1,048,576 bytes                Sectors/Track      63                               Model      ATA MK0120EAVDT SCSI Disk Device
Partition Disk #143, Partition #1                           Size      111.79 GB (120,031,511,040 bytes)          Bytes/Sector      512
Partition Size      18.55 GB (19,922,944,000 bytes)         Total Cylinders    14,593                            Media Loaded      Yes
                                                            Total Sectors      234,436,545                       Media Type        Fixed hard disk
Partition Starting Offset    27,264,024,576 bytes           Total Tracks      3,721,215                          Partitions        4
                                                            Tracks/Cylinder    255                               SCSI Bus  0
Partition Disk #143, Partition #2                           Partition Disk #145, Partition #0                   SCSI Logical Unit    0
Partition Size      20.51 GB (22,020,096,000 bytes)         Partition Size      25.39 GB (27,262,976,000 bytes)  SCSI Port 12
                                                                                                                SCSI Target ID      68
Partition Starting Offset    47,186,968,576 bytes           Partition Starting Offset    1,048,576 bytes         Sectors/Track      63
                                                            Partition Disk #145, Partition #1                   Size      111.79 GB (120,031,511,040 bytes)
Partition Disk #143, Partition #3                           Partition Size      18.55 GB (19,922,944,000 bytes)  Total Cylinders    14,593
Partition Size      5.86 GB (6,291,456,000 bytes)                                                                Total Sectors      234,436,545
Partition Starting Offset    69,207,064,576 bytes           Partition Starting Offset    27,264,024,576 bytes    Total Tracks      3,721,215
                                                                                                                Tracks/Cylinder    255
                                                            Partition Disk #145, Partition #2                   Partition Disk #147, Partition #0
Description          Disk drive                             Partition Size      20.51 GB (22,020,096,000 bytes)  Partition Size      25.39 GB (27,262,976,000 bytes)
Manufacturer    (Standard disk drives)
Model      ATA MK0120EAVDT SCSI Disk Device                 Partition Starting Offset    47,186,968,576 bytes    Partition Starting Offset    1,048,576 bytes
Bytes/Sector      512                                                                                            Partition Disk #147, Partition #1
Media Loaded      Yes                                       Partition Disk #145, Partition #3                   Partition Size      18.55 GB (19,922,944,000 bytes)
Media Type        Fixed hard disk                           Partition Size      5.86 GB (6,291,456,000 bytes)
Partitions        4                                         Partition Starting Offset    69,207,064,576 bytes    Partition Starting Offset    27,264,024,576 bytes
SCSI Bus  0
SCSI Logical Unit    0                                                                                          Partition Disk #147, Partition #2
SCSI Port 12                                                Description          Disk drive                     Partition Size      20.51 GB (22,020,096,000 bytes)
SCSI Target ID      65                                      Manufacturer    (Standard disk drives)
Sectors/Track      63                                       Model      ATA MK0120EAVDT SCSI Disk Device          Partition Starting Offset    47,186,968,576 bytes
Size      111.79 GB (120,031,511,040 bytes)                 Bytes/Sector      512
Total Cylinders    14,593                                   Media Loaded      Yes                               Partition Disk #147, Partition #3
Total Sectors      234,436,545                              Media Type        Fixed hard disk                   Partition Size      5.86 GB (6,291,456,000 bytes)
```

```
Partition Starting Offset    69,207,064,576 bytes


Description        Disk drive
Manufacturer       (Standard disk drives)
Model     HP LOGICAL VOLUME SCSI Disk Device
Bytes/Sector       512
Media Loaded       Yes
Media Type         Fixed hard disk
Partitions         1
SCSI Bus  0
SCSI Logical Unit  0
SCSI Port 5
SCSI Target ID     4
Sectors/Track      32
Size      2.00 TB (2,199,023,124,480 bytes)
Total Cylinders    526,344
Total Sectors      4,294,967,040
Total Tracks       134,217,720
Tracks/Cylinder    255
Partition Disk #1, Partition #0
Partition Size     2.00 TB (2,199,021,158,400 bytes)

Partition Starting Offset    1,048,576 bytes

Description        Disk drive
Manufacturer       (Standard disk drives)
Model     HP LOGICAL VOLUME SCSI Disk Device
Bytes/Sector       512
Media Loaded       Yes
Media Type         Fixed hard disk
Partitions         1
SCSI Bus  0
SCSI Logical Unit  0
SCSI Port 5
SCSI Target ID     5
Sectors/Track      32
Size      2.00 TB (2,199,023,124,480 bytes)
Total Cylinders    526,344
Total Sectors      4,294,967,040
Total Tracks       134,217,720
Tracks/Cylinder    255
Partition Disk #2, Partition #0
Partition Size     2.00 TB (2,199,021,158,400 bytes)

Partition Starting Offset    1,048,576 bytes

Description        Disk drive
Manufacturer       (Standard disk drives)
Model     HP LOGICAL VOLUME SCSI Disk Device
Bytes/Sector       512
Media Loaded       Yes
Media Type         Fixed hard disk
Partitions         1
SCSI Bus  0
SCSI Logical Unit  0
SCSI Port 5
SCSI Target ID     6
Sectors/Track      32
Size      2.00 TB (2,199,023,124,480 bytes)
Total Cylinders    526,344
Total Sectors      4,294,967,040
Total Tracks       134,217,720
```

```
Tracks/Cylinder    255
Partition Disk #3, Partition #0
Partition Size     2.00 TB (2,199,021,158,400 bytes)

Partition Starting Offset    1,048,576 bytes

Description        Disk drive
Manufacturer       (Standard disk drives)
Model     HP LOGICAL VOLUME SCSI Disk Device
Bytes/Sector       512
Media Loaded       Yes
Media Type         Fixed hard disk
Partitions         1
SCSI Bus  0
SCSI Logical Unit  0
SCSI Port 5
SCSI Target ID     7
Sectors/Track      32
Size      2.00 TB (2,199,023,124,480 bytes)
Total Cylinders    526,344
Total Sectors      4,294,967,040
Total Tracks       134,217,720
Tracks/Cylinder    255
Partition Disk #4, Partition #0
Partition Size     2.00 TB (2,199,021,158,400 bytes)

Partition Starting Offset    1,048,576 bytes

Description        Disk drive
Manufacturer       (Standard disk drives)
Model     HP LOGICAL VOLUME SCSI Disk Device
Bytes/Sector       512
Media Loaded       Yes
Media Type         Fixed hard disk
Partitions         1
SCSI Bus  0
SCSI Logical Unit  0
SCSI Port 5
SCSI Target ID     8
Sectors/Track      32
Size      2.00 TB (2,199,023,124,480 bytes)
Total Cylinders    526,344
Total Sectors      4,294,967,040
Total Tracks       134,217,720
Tracks/Cylinder    255
Partition Disk #5, Partition #0
Partition Size     2.00 TB (2,199,021,158,400 bytes)

Partition Starting Offset    1,048,576 bytes

Description        Disk drive
Manufacturer       (Standard disk drives)
Model     HP LOGICAL VOLUME SCSI Disk Device
Bytes/Sector       512
Media Loaded       Yes
Media Type         Fixed hard disk
Partitions         1
SCSI Bus  0
SCSI Logical Unit  0
SCSI Port 5
SCSI Target ID     9
Sectors/Track      32
Size      2.00 TB (2,199,023,124,480 bytes)
```

```
Total Cylinders    526,344
Total Sectors      4,294,967,040
Total Tracks       134,217,720
Tracks/Cylinder    255
Partition Disk #6, Partition #0
Partition Size     2.00 TB (2,199,021,158,400 bytes)

Partition Starting Offset    1,048,576 bytes

Description        Disk drive
Manufacturer       (Standard disk drives)
Model     HP LOGICAL VOLUME SCSI Disk Device
Bytes/Sector       512
Media Loaded       Yes
Media Type         Fixed hard disk
Partitions         1
SCSI Bus  0
SCSI Logical Unit  0
SCSI Port 5
SCSI Target ID     10
Sectors/Track      32
Size      1.64 TB (1,804,101,058,560 bytes)
Total Cylinders    431,818
Total Sectors      3,523,634,880
Total Tracks       110,113,590
Tracks/Cylinder    255
Partition Disk #7, Partition #0
Partition Size     1.64 TB (1,804,099,125,248 bytes)

Partition Starting Offset    1,048,576 bytes

Description        Disk drive
Manufacturer       (Standard disk drives)
Model     HP LOGICAL VOLUME SCSI Disk Device
Bytes/Sector       512
Media Loaded       Yes
Media Type         Fixed hard disk
Partitions         2
SCSI Bus  0
SCSI Logical Unit  0
SCSI Port 4
SCSI Target ID     4
Sectors/Track      32
Size      136.70 GB (146,778,685,440 bytes)
Total Cylinders    35,132
Total Sectors      286,677,120
Total Tracks       8,958,660
Tracks/Cylinder    255
Partition Disk #0, Partition #0
Partition Size     100.00 MB (104,857,600 bytes)
Partition Starting Offset    1,048,576 bytes
Partition Disk #0, Partition #1
Partition Size     136.60 GB (146,671,665,152 bytes)

Partition Starting Offset    105,906,176 bytes

Description        Disk drive
Manufacturer       (Standard disk drives)
Model     HP MSA2324fc SCSI Disk Device
Bytes/Sector       512
Media Loaded       Yes
Media Type         Fixed hard disk
Partitions         1
```

```
SCSI Bus  0                                  Media Loaded      Yes                          IRQ Channel      IRQ 4294967151
SCSI Logical Unit   1                        Media Type        Fixed hard disk             IRQ Channel      IRQ 4294967150
SCSI Port 16                                 Partitions        1                           IRQ Channel      IRQ 4294967149
SCSI Target ID     0                         SCSI Bus  0                                    IRQ Channel      IRQ 4294967148
Sectors/Track      63                        SCSI Logical Unit   4                          IRQ Channel      IRQ 4294967147
Size    1.07 TB (1,172,998,955,520 bytes)    SCSI Port 16                                   IRQ Channel      IRQ 4294967146
Total Cylinders    142,609                   SCSI Target ID     0                           IRQ Channel      IRQ 4294967145
Total Sectors      2,291,013,585             Sectors/Track      63                          IRQ Channel      IRQ 4294967144
Total Tracks       36,365,295                Size    1.07 TB (1,172,998,955,520 bytes)      Driver    c:\windows\system32\drivers\lsi_sas2.sys
Tracks/Cylinder    255                       Total Cylinders    142,609                     (2.0.17.0, 76.51 KB (78,344 bytes), 2/5/2010 5:53 PM)
Partition Disk #188, Partition #0            Total Sectors      2,291,013,585
Partition Size    1.07 TB (1,172,996,882,432 bytes)   Total Tracks    36,365,295
                                             Tracks/Cylinder    255                         Name      LSI Adapter, SAS2 2008 Falcon -StorPort
Partition Starting Offset    1,048,576 bytes Partition Disk #191, Partition #0              Manufacturer      LSI Corporation
                                             Partition Size    1.07 TB (1,172,996,882,432 bytes)  Status    OK
                                                                                           PNP Device ID
Description        Disk drive                                                                        PCI\VEN_1000&DEV_0072&SUBSYS_30B01000&REV_0
Manufacturer       (Standard disk drives)    Partition Starting Offset    1,048,576 bytes   2\4&197ED14C&0&0010
Model    HP MSA2324fc SCSI Disk Device                                                     Memory Address    0xFDDF0000-0xFDDF3FFF
Bytes/Sector       512                       [SCSI]                                         Memory Address    0xFDD80000-0xFDDBFFFF
Media Loaded       Yes                                                                      IRQ Channel      IRQ 4294967188
Media Type         Fixed hard disk           Item      Value                               IRQ Channel      IRQ 4294967187
Partitions         1                         Name      LSI Adapter, SAS2 2008 Falcon -StorPort   IRQ Channel      IRQ 4294967186
SCSI Bus  0                                  Manufacturer      LSI Corporation             IRQ Channel      IRQ 4294967185
SCSI Logical Unit   2                        Status    OK                                  IRQ Channel      IRQ 4294967184
SCSI Port 16                                 PNP Device ID                                  IRQ Channel      IRQ 4294967183
SCSI Target ID     0                                  PCI\VEN_1000&DEV_0072&SUBSYS_30B01000&REV_0   IRQ Channel      IRQ 4294967182
Sectors/Track      63                        2\4&12F0CF51&0&0058                            IRQ Channel      IRQ 4294967181
Size    1.07 TB (1,172,998,955,520 bytes)    Memory Address    0xFDEF0000-0xFDEF3FFF       IRQ Channel      IRQ 4294967180
Total Cylinders    142,609                   Memory Address    0xFDE80000-0xFDEBFFFF        IRQ Channel      IRQ 4294967179
Total Sectors      2,291,013,585             IRQ Channel      IRQ 4294967173               IRQ Channel      IRQ 4294967178
Total Tracks       36,365,295                IRQ Channel      IRQ 4294967172               IRQ Channel      IRQ 4294967177
Tracks/Cylinder    255                       IRQ Channel      IRQ 4294967171               IRQ Channel      IRQ 4294967176
Partition Disk #189, Partition #0            IRQ Channel      IRQ 4294967170               IRQ Channel      IRQ 4294967175
Partition Size    1.07 TB (1,172,996,882,432 bytes)   IRQ Channel      IRQ 4294967169      IRQ Channel      IRQ 4294967174
                                             IRQ Channel      IRQ 4294967168               Driver    c:\windows\system32\drivers\lsi_sas2.sys
Partition Starting Offset    1,048,576 bytes IRQ Channel      IRQ 4294967167               (2.0.17.0, 76.51 KB (78,344 bytes), 2/5/2010 5:53 PM)
                                             IRQ Channel      IRQ 4294967166
Description        Disk drive                IRQ Channel      IRQ 4294967165
Manufacturer       (Standard disk drives)    IRQ Channel      IRQ 4294967164               Name      LSI Adapter, SAS2 2008 Falcon -StorPort
Model    HP MSA2324fc SCSI Disk Device       IRQ Channel      IRQ 4294967163               Manufacturer      LSI Corporation
Bytes/Sector       512                       IRQ Channel      IRQ 4294967162               Status    OK
Media Loaded       Yes                       IRQ Channel      IRQ 4294967161               PNP Device ID
Media Type         Fixed hard disk           IRQ Channel      IRQ 4294967160                        PCI\VEN_1000&DEV_0072&SUBSYS_30B01000&REV_0
Partitions         1                         IRQ Channel      IRQ 4294967159               2\4&426D592&0&0058
SCSI Bus  0                                  Driver    c:\windows\system32\drivers\lsi_sas2.sys   Memory Address    0xFDAF0000-0xFDAF3FFF
SCSI Logical Unit   3                        (2.0.17.0, 76.51 KB (78,344 bytes), 2/5/2010 5:53 PM)   Memory Address    0xFDA80000-0xFDABFFFF
SCSI Port 16                                                                                IRQ Channel      IRQ 4294967218
SCSI Target ID     0                                                                        IRQ Channel      IRQ 4294967217
Sectors/Track      63                        Name      LSI Adapter, SAS2 2008 Falcon -StorPort   IRQ Channel      IRQ 4294967216
Size    1.07 TB (1,172,998,955,520 bytes)    Manufacturer      LSI Corporation             IRQ Channel      IRQ 4294967215
Total Cylinders    142,609                   Status    OK                                  IRQ Channel      IRQ 4294967214
Total Sectors      2,291,013,585             PNP Device ID                                  IRQ Channel      IRQ 4294967213
Total Tracks       36,365,295                         PCI\VEN_1000&DEV_0072&SUBSYS_30B01000&REV_0   IRQ Channel      IRQ 4294967212
Tracks/Cylinder    255                       2\4&3806BADD&0&0060                            IRQ Channel      IRQ 4294967211
Partition Disk #190, Partition #0            Memory Address    0xFDFF0000-0xFDFF3FFF        IRQ Channel      IRQ 4294967210
Partition Size    1.07 TB (1,172,996,882,432 bytes)   Memory Address    0xFDF80000-0xFDFBFFFF   IRQ Channel      IRQ 4294967209
                                             IRQ Channel      IRQ 4294967158               IRQ Channel      IRQ 4294967208
Partition Starting Offset    1,048,576 bytes IRQ Channel      IRQ 4294967157               IRQ Channel      IRQ 4294967207
                                             IRQ Channel      IRQ 4294967156               IRQ Channel      IRQ 4294967206
Description        Disk drive                IRQ Channel      IRQ 4294967155               IRQ Channel      IRQ 4294967205
Manufacturer       (Standard disk drives)    IRQ Channel      IRQ 4294967154               IRQ Channel      IRQ 4294967204
Model    HP MSA2324fc SCSI Disk Device       IRQ Channel      IRQ 4294967153
Bytes/Sector       512                       IRQ Channel      IRQ 4294967152
```

```
Driver   c:\windows\system32\drivers\lsi_sas2.sys
(2.0.17.0, 76.51 KB (78,344 bytes), 2/5/2010 5:53 PM)


Name    LSI Adapter, SAS2 2008 Falcon -StorPort
Manufacturer      LSI Corporation
Status    OK
PNP Device ID
         PCI\VEN_1000&DEV_0072&SUBSYS_30B01000&REV_0
2\4&1DEBC1A4&0&0060
Memory Address     0xFD7F0000-0xFD7F3FFF
Memory Address     0xFD780000-0xFD7BFFFF
IRQ Channel        IRQ 4294967248
IRQ Channel        IRQ 4294967247
IRQ Channel        IRQ 4294967246
IRQ Channel        IRQ 4294967245
IRQ Channel        IRQ 4294967244
IRQ Channel        IRQ 4294967243
IRQ Channel        IRQ 4294967242
IRQ Channel        IRQ 4294967241
IRQ Channel        IRQ 4294967240
IRQ Channel        IRQ 4294967239
IRQ Channel        IRQ 4294967238
IRQ Channel        IRQ 4294967237
IRQ Channel        IRQ 4294967236
IRQ Channel        IRQ 4294967235
IRQ Channel        IRQ 4294967234
Driver   c:\windows\system32\drivers\lsi_sas2.sys
(2.0.17.0, 76.51 KB (78,344 bytes), 2/5/2010 5:53 PM)


Name    Smart Array P410i Controller
Manufacturer      Hewlett-Packard Company
Status    OK
PNP Device ID
         PCI\VEN_103C&DEV_323A&SUBSYS_3245103C&REV_0
1\4&2385F642&0&0020
Memory Address     0xEDC00000-0xEDFFFFFF
Memory Address     0xEDBF0000-0xEDBF0FFF
IRQ Channel        IRQ 4294967294
IRQ Channel        IRQ 4294967293
IRQ Channel        IRQ 4294967292
IRQ Channel        IRQ 4294967291
IRQ Channel        IRQ 4294967290
IRQ Channel        IRQ 4294967289
IRQ Channel        IRQ 4294967288
IRQ Channel        IRQ 4294967287
Driver   c:\windows\system32\drivers\hpcisss2.sys
(6.18.2.64, 149.04 KB (152,616 bytes), 2/5/2010 5:57
PM)

Name    LSI Adapter, SAS2 2008 Falcon -StorPort
Manufacturer      LSI Corporation
Status    OK
PNP Device ID
         PCI\VEN_1000&DEV_0072&SUBSYS_30B01000&REV_0
2\4&2089B542&0&0018
Memory Address     0xFD3F0000-0xFD3F3FFF
Memory Address     0xFD380000-0xFD3BFFFF
IRQ Channel        IRQ 4294967278
IRQ Channel        IRQ 4294967277
IRQ Channel        IRQ 4294967276
IRQ Channel        IRQ 4294967275
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IRQ Channel        IRQ 4294967274
IRQ Channel        IRQ 4294967273
IRQ Channel        IRQ 4294967272
IRQ Channel        IRQ 4294967271
IRQ Channel        IRQ 4294967270
IRQ Channel        IRQ 4294967269
IRQ Channel        IRQ 4294967268
IRQ Channel        IRQ 4294967267
IRQ Channel        IRQ 4294967266
IRQ Channel        IRQ 4294967265
IRQ Channel        IRQ 4294967264
Driver   c:\windows\system32\drivers\lsi_sas2.sys
(2.0.17.0, 76.51 KB (78,344 bytes), 2/5/2010 5:53 PM)


Name    QLogic Fibre Channel Adapter
Manufacturer      QLogic
Status    OK
PNP Device ID
         PCI\VEN_1077&DEV_2432&SUBSYS_7041103C&REV_0
2\4&244E166E&0&0058
Memory Address     0xFD6F0000-0xFD6F3FFF
IRQ Channel        IRQ 64
Driver   c:\windows\system32\drivers\ql2300.sys
(9.1.8.17, 1.11 MB (1,160,232 bytes), 2/5/2010 5:23
PM)

Name    QLogic Fibre Channel Adapter
Manufacturer      QLogic
Status    OK
PNP Device ID
         PCI\VEN_1077&DEV_2432&SUBSYS_7041103C&REV_0
2\4&244E166E&0&0058
Memory Address     0xFD6E0000-0xFD6E3FFF
IRQ Channel        IRQ 65
Driver   c:\windows\system32\drivers\ql2300.sys
(9.1.8.17, 1.11 MB (1,160,232 bytes), 2/5/2010 5:23
PM)


Name    Smart Array P812 Controller
Manufacturer      Hewlett-Packard Company
Status    OK
PNP Device ID
         PCI\VEN_103C&DEV_323A&SUBSYS_3249103C&REV_0
1\4&25A804AF&0&0058
Memory Address     0xFCC00000-0xFCFFFFFF
Memory Address     0xFCBF0000-0xFCBF0FFF
IRQ Channel        IRQ 4294967286
IRQ Channel        IRQ 4294967285
IRQ Channel        IRQ 4294967284
IRQ Channel        IRQ 4294967283
IRQ Channel        IRQ 4294967282
IRQ Channel        IRQ 4294967281
IRQ Channel        IRQ 4294967280
IRQ Channel        IRQ 4294967279
Driver   c:\windows\system32\drivers\hpcisss2.sys
(6.18.2.64, 149.04 KB (152,616 bytes), 2/5/2010 5:57
PM)


Name    LSI Adapter, SAS2 2008 Falcon -StorPort
Manufacturer      LSI Corporation
Status    OK
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PNP Device ID
         PCI\VEN_1000&DEV_0072&SUBSYS_30B01000&REV_0
2\4&2783879&0&0060
Memory Address     0xFDBF0000-0xFDBF3FFF
Memory Address     0xFDB80000-0xFDBBFFFF
IRQ Channel        IRQ 4294967203
IRQ Channel        IRQ 4294967202
IRQ Channel        IRQ 4294967201
IRQ Channel        IRQ 4294967200
IRQ Channel        IRQ 4294967199
IRQ Channel        IRQ 4294967198
IRQ Channel        IRQ 4294967197
IRQ Channel        IRQ 4294967196
IRQ Channel        IRQ 4294967195
IRQ Channel        IRQ 4294967194
IRQ Channel        IRQ 4294967193
IRQ Channel        IRQ 4294967192
IRQ Channel        IRQ 4294967191
IRQ Channel        IRQ 4294967190
IRQ Channel        IRQ 4294967189
Driver   c:\windows\system32\drivers\lsi_sas2.sys
(2.0.17.0, 76.51 KB (78,344 bytes), 2/5/2010 5:53 PM)


Name    LSI Adapter, SAS2 2008 Falcon -StorPort
Manufacturer      LSI Corporation
Status    OK
PNP Device ID
         PCI\VEN_1000&DEV_0072&SUBSYS_30B01000&REV_0
2\4&12D62CFD&0&0010
Memory Address     0xFD9F0000-0xFD9F3FFF
Memory Address     0xFD980000-0xFD9BFFFF
IRQ Channel        IRQ 4294967233
IRQ Channel        IRQ 4294967232
IRQ Channel        IRQ 4294967231
IRQ Channel        IRQ 4294967230
IRQ Channel        IRQ 4294967229
IRQ Channel        IRQ 4294967228
IRQ Channel        IRQ 4294967227
IRQ Channel        IRQ 4294967226
IRQ Channel        IRQ 4294967225
IRQ Channel        IRQ 4294967224
IRQ Channel        IRQ 4294967223
IRQ Channel        IRQ 4294967222
IRQ Channel        IRQ 4294967221
IRQ Channel        IRQ 4294967220
IRQ Channel        IRQ 4294967219
Driver   c:\windows\system32\drivers\lsi_sas2.sys
(2.0.17.0, 76.51 KB (78,344 bytes), 2/5/2010 5:53 PM)


Name    LSI Adapter, SAS2 2008 Falcon -StorPort
Manufacturer      LSI Corporation
Status    OK
PNP Device ID
         PCI\VEN_1000&DEV_0072&SUBSYS_30B01000&REV_0
2\4&32FD6DD9&0&0010
Memory Address     0xFD5F0000-0xFD5F3FFF
Memory Address     0xFD580000-0xFD5BFFFF
IRQ Channel        IRQ 4294967263
IRQ Channel        IRQ 4294967262
IRQ Channel        IRQ 4294967261
IRQ Channel        IRQ 4294967260
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IRQ Channel        IRQ 4294967259
IRQ Channel        IRQ 4294967258
IRQ Channel        IRQ 4294967257
IRQ Channel        IRQ 4294967256
IRQ Channel        IRQ 4294967255
IRQ Channel        IRQ 4294967254
IRQ Channel        IRQ 4294967253
IRQ Channel        IRQ 4294967252
IRQ Channel        IRQ 4294967251
IRQ Channel        IRQ 4294967250
IRQ Channel        IRQ 4294967249
Driver   c:\windows\system32\drivers\lsi_sas2.sys
(2.0.17.0, 76.51 KB (78,344 bytes), 2/5/2010 5:53 PM)


[IDE]

Item     Value
Name     ATA Channel 0
Manufacturer        (Standard IDE ATA/ATAPI
controllers)
Status   OK
PNP Device ID       PCIIDE\IDECHANNEL\4&8120232&0&0

I/O Port  0x000001F0-0x000001F7
I/O Port  0x000003F6-0x000003F6
IRQ Channel       IRQ 14
Driver   c:\windows\system32\drivers\atapi.sys
(6.1.7600.16385, 23.56 KB (24,128 bytes), 7/13/2009
6:19 PM)

Name     ATA Channel 1
Manufacturer        (Standard IDE ATA/ATAPI
controllers)
Status   OK
PNP Device ID       PCIIDE\IDECHANNEL\4&8120232&0&1

I/O Port  0x00000170-0x00000177
I/O Port  0x00000376-0x00000376
IRQ Channel       IRQ 15
Driver   c:\windows\system32\drivers\atapi.sys
(6.1.7600.16385, 23.56 KB (24,128 bytes), 7/13/2009
6:19 PM)

Name     ATA Channel 0
Manufacturer        (Standard IDE ATA/ATAPI
controllers)
Status   OK
PNP Device ID       PCIIDE\IDECHANNEL\4&C1BABAC&0&0

Driver   c:\windows\system32\drivers\atapi.sys
(6.1.7600.16385, 23.56 KB (24,128 bytes), 7/13/2009
6:19 PM)

Name     Standard Dual Channel PCI IDE Controller

Manufacturer        (Standard IDE ATA/ATAPI
controllers)
Status   OK
PNP Device ID
         PCI\VEN_1002&DEV_439C&SUBSYS_1773103C&REV_0
0\3&3097523A&0&A1
I/O Port  0x00000500-0x0000050F
```

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Driver   c:\windows\system32\drivers\pciide.sys
(6.1.7600.16385, 12.06 KB (12,352 bytes), 7/13/2009
6:19 PM)

Name     ATA Channel 1
Manufacturer        (Standard IDE ATA/ATAPI
controllers)
Status   OK
PNP Device ID       PCIIDE\IDECHANNEL\4&C1BABAC&0&1

Driver   c:\windows\system32\drivers\atapi.sys
(6.1.7600.16385, 23.56 KB (24,128 bytes), 7/13/2009
6:19 PM)

Name     Standard Dual Channel PCI IDE Controller

Manufacturer        (Standard IDE ATA/ATAPI
controllers)
Status   OK
PNP Device ID
         PCI\VEN_1002&DEV_4390&SUBSYS_176E103C&REV_0
0\3&3097523A&0&88
I/O Port  0x00001000-0x00001007
I/O Port  0x00001008-0x0000100B
I/O Port  0x00001010-0x00001017
I/O Port  0x00001018-0x0000101B
I/O Port  0x00001020-0x0000102F
Memory Address      0xED6F0000-0xED6F03FF
IRQ Channel       IRQ 16
Driver   c:\windows\system32\drivers\pciide.sys
(6.1.7600.16385, 12.06 KB (12,352 bytes), 7/13/2009
6:19 PM)

[Printing]


Can't Collect Information

[Problem Devices]

Device    PNP Device ID       Error Code
Base System Device
          PCI\VEN_103C&DEV_3306&SUBSYS_3309103C&REV_0
4\4&2F88CDA0&0&0050 The drivers for this device are
not installed.
Base System Device
          PCI\VEN_103C&DEV_3307&SUBSYS_3309103C&REV_0
4\4&2F88CDA0&0&0250 The drivers for this device are
not installed.

[USB]

Device    PNP Device ID
Standard OpenHCD USB Host Controller
          PCI\VEN_1002&DEV_4397&SUBSYS_176F103C&REV_0
0\3&3097523A&0&98
Standard OpenHCD USB Host Controller
          PCI\VEN_1002&DEV_4398&SUBSYS_1770103C&REV_0
0\3&3097523A&0&91
Standard OpenHCD USB Host Controller
          PCI\VEN_1002&DEV_4398&SUBSYS_1770103C&REV_0
0\3&3097523A&0&99
```

```
Standard Enhanced PCI to USB Host Controller
          PCI\VEN_1002&DEV_4396&SUBSYS_1771103C&REV_0
0\3&3097523A&0&92
Standard Enhanced PCI to USB Host Controller
          PCI\VEN_1002&DEV_4396&SUBSYS_1771103C&REV_0
0\3&3097523A&0&9A
Standard Universal PCI to USB Host Controller
          PCI\VEN_103C&DEV_3300&SUBSYS_3309103C&REV_0
1\4&2F88CDA0&0&0450
Standard OpenHCD USB Host Controller
          PCI\VEN_1002&DEV_4397&SUBSYS_176F103C&REV_0
0\3&3097523A&0&90

[Software Environment]


[System Drivers]

Name      Description      File      Type
          Started   Start Mode      State
          Status    Error Control      Accept Pause
          Accept Stop
1394ohci  1394 OHCI Compliant Host Controller
          c:\windows\system32\drivers\1394ohci.sys
          Kernel Driver      No      Manual
          Stopped   OK      Normal   No      No

acpi      Microsoft ACPI Driver
          c:\windows\system32\drivers\acpi.sys
          Kernel Driver      Yes      Boot
          Running   OK      Critical No      Yes

acpipmi   ACPI Power Meter Driver
          c:\windows\system32\drivers\acpipmi.sys
          Kernel Driver      Yes      Manual
          Running   OK      Normal   No      Yes

adp94xx   adp94xx
          c:\windows\system32\drivers\adp94xx.sys
          Kernel Driver      No      Manual
          Stopped   OK      Normal   No      No

adpahci   adpahci
          c:\windows\system32\drivers\adpahci.sys
          Kernel Driver      No      Manual
          Stopped   OK      Normal   No      No

adpu320   adpu320
          c:\windows\system32\drivers\adpu320.sys
          Kernel Driver      No      Manual
          Stopped   OK      Normal   No      No

afd       Ancillary Function Driver for Winsock
          c:\windows\system32\drivers\afd.sys
          Kernel Driver      Yes      System
          Running   OK      Normal   No      Yes

agp440    Intel AGP Bus Filter
          c:\windows\system32\drivers\agp440.sys
          Kernel Driver      No      Manual
          Stopped   OK      Normal   No      No
```

```
aliide    aliide                              Running  OK      Critical  No    Yes       cdrom    CD-ROM Driver
          c:\windows\system32\drivers\aliide.sys                                                   c:\windows\system32\drivers\cdrom.sys
          Kernel Driver   No      Manual       b06bdrv  Broadcom NetXtreme II VBD                   Kernel Driver   Yes     System
          Stopped  OK     Critical No    No              c:\windows\system32\drivers\bxvbda.sys     Running  OK     Normal  No    Yes
                                                         Kernel Driver   No      Manual
amdide    amdide                                        Stopped  OK     Normal  No    No       clfs     Common Log (CLFS)
          c:\windows\system32\drivers\amdide.sys                                                    c:\windows\system32\clfs.sys Kernel Driver
          Kernel Driver   No      Manual       b57nd60a Broadcom NetXtreme Gigabit Ethernet - NDIS   Yes      Boot    Running  OK
          Stopped  OK     Critical No    No     6.0      c:\windows\system32\drivers\b57nd60a.sys    Critical No      Yes
                                                         Kernel Driver   No      Manual       cmbatt   Microsoft ACPI Control Method Battery
amdk8     AMD K8 Processor Driver                       Stopped  OK     Normal  No    No       Driver   c:\windows\system32\drivers\cmbatt.sys
          c:\windows\system32\drivers\amdk8.sys                                                     Kernel Driver   No      Manual
          Kernel Driver   No      Manual       beep     Beep                                        Stopped  OK     Normal  No    No
          Stopped  OK     Normal  No    No              c:\windows\system32\drivers\beep.sys
                                                         Kernel Driver   No      Manual       cmdide   cmdide
amdppm    AMD Processor Driver                          Stopped  OK     Normal  No    No              c:\windows\system32\drivers\cmdide.sys
          c:\windows\system32\drivers\amdppm.sys                                                    Kernel Driver   No      Manual
          Kernel Driver   Yes     Manual       blbdrive blbdrive                                    Stopped  OK     Critical No    No
          Running  OK     Normal  No    Yes             c:\windows\system32\drivers\blbdrive.sys
                                                         Kernel Driver   Yes     System      cng      CNG
amdsata   amdsata                                       Running  OK     Normal  No    Yes             c:\windows\system32\drivers\cng.sys
          c:\windows\system32\drivers\amdsata.sys                                                   Kernel Driver   Yes     Boot
          Kernel Driver   No      Manual       bowser   Browser Support Driver                      Running  OK     Critical No    Yes
          Stopped  OK     Normal  No    No              c:\windows\system32\drivers\bowser.sys
                                                         File System Driver Yes    Manual      compbatt Compbatt
amdsbs    amdsbs                                        Running  OK     Normal  No    Yes             c:\windows\system32\drivers\compbatt.sys
          c:\windows\system32\drivers\amdsbs.sys                                                    Kernel Driver   No      Manual
          Kernel Driver   No      Manual       brfiltlo Brother USB Mass-Storage Lower Filter       Stopped  OK     Critical No    No
          Stopped  OK     Normal  No    No     Driver   c:\windows\system32\drivers\brfiltlo.sys
                                                         Kernel Driver   No      Manual      compositebus        Composite Bus Enumerator Driver
amdtools64         AMD Special Tools Driver             Stopped  OK     Normal  No    No              c:\windows\system32\drivers\compositebus.sy
          c:\windows\system32\drivers\amdtools64.sys                                           s        Kernel Driver   Yes     Manual
          Kernel Driver   Yes     Manual       brfiltup Brother USB Mass-Storage Upper Filter        Running  OK     Normal  No    Yes
          Running  OK     Normal  No    Yes    Driver   c:\windows\system32\drivers\brfiltup.sys
                                                         Kernel Driver   No      Manual      cpqteam  HP Network Configuration Utility
amdxata   amdxata                                       Stopped  OK     Normal  No    No              c:\windows\system32\drivers\cpqteam.sys
          c:\windows\system32\drivers\amdxata.sys                                                   Kernel Driver   No      Manual
          Kernel Driver   Yes     Boot         brserid  Brother MFC Serial Port Interface Driver    Stopped  OK     Normal  No    No
          Running  OK     Normal  No    Yes    (WDM)    c:\windows\system32\drivers\brserid.sys
                                                         Kernel Driver   No      Manual      cpuspy3  CpuSpy3 Driver
appid     AppID Driver                                  Stopped  OK     Normal  No    No              \??\c:\windows\system32\drivers\cpuspy3.sys
          c:\windows\system32\drivers\appid.sys                                                     Kernel Driver   No      Manual
          Kernel Driver   No      Manual       brserwdm Brother WDM Serial driver                    Stopped  OK     Normal  No    No
          Stopped  OK     Normal  No    No              c:\windows\system32\drivers\brserwdm.sys
                                                         Kernel Driver   No      Manual      crcdisk  Crcdisk Filter Driver
arc       arc                                           Stopped  OK     Normal  No    No              c:\windows\system32\drivers\crcdisk.sys
          c:\windows\system32\drivers\arc.sys                                                       Kernel Driver   No      Disabled
          Kernel Driver   No      Manual       brusbmdm Brother MFC USB Fax Only Modem               Stopped  OK     Normal  No    No
          Stopped  OK     Normal  No    No              c:\windows\system32\drivers\brusbmdm.sys
                                                         Kernel Driver   No      Manual      dfsc     DFS Namespace Client Driver
arcsas    arcsas                                        Stopped  OK     Normal  No    No              c:\windows\system32\drivers\dfsc.sys
          c:\windows\system32\drivers\arcsas.sys                                                    File System Driver Yes    System
          Kernel Driver   No      Manual       brusbser Brother MFC USB Serial WDM Driver            Running  OK     Normal  No    Yes
          Stopped  OK     Normal  No    No              c:\windows\system32\drivers\brusbser.sys
                                                         Kernel Driver   No      Manual      discache System Attribute Cache
asyncmac  RAS Asynchronous Media Driver                 Stopped  OK     Normal  No    No              c:\windows\system32\drivers\discache.sys
          c:\windows\system32\drivers\asyncmac.sys                                                  Kernel Driver   Yes     System
          Kernel Driver   Yes     Manual       cdfs     CD/DVD File System Reader                    Running  OK     Normal  No    Yes
          Running  OK     Normal  No    Yes             c:\windows\system32\drivers\cdfs.sys
                                                         File System Driver No     Disabled    disk     Disk Driver
atapi     IDE Channel                                   Stopped  OK     Normal  No    No              c:\windows\system32\drivers\disk.sys
          c:\windows\system32\drivers\atapi.sys                                                     Kernel Driver   Yes     Boot
          Kernel Driver   Yes     Boot
```

```
                Running   OK      Normal   No    Yes

dxgkrnl   LDDM Graphics Subsystem
          c:\windows\system32\drivers\dxgkrnl.sys
          Kernel Driver    No      Manual
          Stopped   OK     Ignore   No     No

ebdrv     Broadcom NetXtreme II 10 GigE VBD
          c:\windows\system32\drivers\evbda.sys
          Kernel Driver    No      Manual
          Stopped   OK     Normal   No     No

elxstor   elxstor
          c:\windows\system32\drivers\elxstor.sys
          Kernel Driver    No      Manual
          Stopped   OK     Normal   No     No

errdev    Microsoft Hardware Error Device Driver
          c:\windows\system32\drivers\errdev.sys
          Kernel Driver    No      Manual
          Stopped   OK     Normal   No     No

exfat     exFAT File System Driver
          c:\windows\system32\drivers\exfat.sys
          File System Driver No     Manual
          Stopped   OK     Normal   No     No

fastfat   FAT12/16/32 File System Driver
          c:\windows\system32\drivers\fastfat.sys
          File System Driver No     Manual
          Stopped   OK     Normal   No     No

fdc       Floppy Disk Controller Driver
          c:\windows\system32\drivers\fdc.sys
          Kernel Driver    No      Manual
          Stopped   OK     Normal   No     No

fileinfo  File Information FS MiniFilter
          c:\windows\system32\drivers\fileinfo.sys
          File System Driver No     Manual
          Stopped   OK     Normal   No     No

filetrace Filetrace
          c:\windows\system32\drivers\filetrace.sys
          File System Driver No     Manual
          Stopped   OK     Normal   No     No

flpydisk  Floppy Disk Driver
          c:\windows\system32\drivers\flpydisk.sys
          Kernel Driver    No      Manual
          Stopped   OK     Normal   No     No

fltmgr    FltMgr
          c:\windows\system32\drivers\fltmgr.sys
          File System Driver Yes    Boot
          Running   OK     Critical No    Yes

fsdepends File System Dependency Minifilter
          c:\windows\system32\drivers\fsdepends.sys
          File System Driver No     Manual
          Stopped   OK     Critical No    No

gagp30kx  Microsoft Generic AGPv3.0 Filter for K8
Processor Platforms
          c:\windows\system32\drivers\gagp30kx.sys
          Kernel Driver    No      Manual
          Stopped   OK     Normal   No     No

hdaudbus  Microsoft UAA Bus Driver for High
Definition Audio
          c:\windows\system32\drivers\hdaudbus.sys
          Kernel Driver    No      Manual
          Stopped   OK     Normal   No     No

hidbatt   HID UPS Battery Driver
          c:\windows\system32\drivers\hidbatt.sys
          Kernel Driver    No      Manual
          Stopped   OK     Normal   No     No

hidusb    Microsoft HID Class Driver
          c:\windows\system32\drivers\hidusb.sys
          Kernel Driver    Yes     Manual
          Running   OK     Ignore   No     Yes

hpcisss2  HpCISSs2
          c:\windows\system32\drivers\hpcisss2.sys
          Kernel Driver    Yes     Boot
          Running   OK     Normal   No     Yes

hpsamd    HpSAMD
          c:\windows\system32\drivers\hpsamd.sys
          Kernel Driver    Yes     Boot
          Running   OK     Normal   No     Yes

http      HTTP
          c:\windows\system32\drivers\http.sys
          Kernel Driver    Yes     Manual
          Running   OK     Normal   No     Yes

hwpolicy  Hardware Policy Driver
          c:\windows\system32\drivers\hwpolicy.sys
          Kernel Driver    Yes     Boot
          Running   OK     Normal   No     Yes

i8042prt  i8042 Keyboard and PS/2 Mouse Port Driver
          c:\windows\system32\drivers\i8042prt.sys
          Kernel Driver    Yes     Manual
          Running   OK     Normal   No     Yes

iastorv   iaStorV
          c:\windows\system32\drivers\iastorv.sys
          Kernel Driver    No      Manual
          Stopped   OK     Normal   No     No

iirsp     iirsp
          c:\windows\system32\drivers\iirsp.sys
          Kernel Driver    No      Manual
          Stopped   OK     Normal   No     No

intelide  intelide
          c:\windows\system32\drivers\intelide.sys
          Kernel Driver    No      Manual
          Stopped   OK     Critical No    No

intelppm  Intel Processor Driver
          c:\windows\system32\drivers\intelppm.sys
          Kernel Driver    No      Manual
          Stopped   OK     Normal   No     No

ioatdma   Intel(R) QuickData Technology Device
          c:\windows\system32\drivers\qd260x64.sys
          Kernel Driver    No      Manual
          Stopped   OK     Normal   No     No

ipfilterdriver    IP Traffic Filter Driver
          c:\windows\system32\drivers\ipfltdrv.sys
          Kernel Driver    No      Manual
          Stopped   OK     Normal   No     No

ipmidrv   IPMIDRV
          c:\windows\system32\drivers\ipmidrv.sys
          Kernel Driver    Yes     Manual
          Running   OK     Normal   No     Yes

ipnat     IP Network Address Translator
          c:\windows\system32\drivers\ipnat.sys
          Kernel Driver    No      Manual
          Stopped   OK     Normal   No     No

isapnp    isapnp
          c:\windows\system32\drivers\isapnp.sys
          Kernel Driver    No      Manual
          Stopped   OK     Critical No    No

iscsiprt  iScsiPort Driver
          c:\windows\system32\drivers\msiscsi.sys
          Kernel Driver    No      Manual
          Stopped   OK     Normal   No     No

kbdclass  Keyboard Class Driver
          c:\windows\system32\drivers\kbdclass.sys
          Kernel Driver    Yes     Manual
          Running   OK     Normal   No     Yes

kbdhid    Keyboard HID Driver
          c:\windows\system32\drivers\kbdhid.sys
          Kernel Driver    Yes     Manual
          Running   OK     Ignore   No     Yes

ksecdd    KSecDD
          c:\windows\system32\drivers\ksecdd.sys
          Kernel Driver    Yes     Boot
          Running   OK     Critical No    Yes

ksecpkg   KSecPkg
          c:\windows\system32\drivers\ksecpkg.sys
          Kernel Driver    Yes     Boot
          Running   OK     Critical No    Yes

ksthunk   Kernel Streaming Thunks
          c:\windows\system32\drivers\ksthunk.sys
          Kernel Driver    No      Manual
          Stopped   OK     Normal   No     No

lltdio    Link-Layer Topology Discovery Mapper I/O
Driver    c:\windows\system32\drivers\lltdio.sys
          Kernel Driver    Yes     Auto
```

```
              Running  OK    Normal   No    Yes
lsi_fc   LSI_FC
         c:\windows\system32\drivers\lsi_fc.sys
         Kernel Driver    No     Manual
         Stopped  OK   Normal   No    No

lsi_sas  LSI_SAS
         c:\windows\system32\drivers\lsi_sas.sys
         Kernel Driver    No     Manual
         Stopped  OK   Normal   No    No

lsi_sas2 LSI_SAS2
         c:\windows\system32\drivers\lsi_sas2.sys
         Kernel Driver    Yes    Boot
         Running  OK   Normal   No    Yes

lsi_scsi LSI_SCSI
         c:\windows\system32\drivers\lsi_scsi.sys
         Kernel Driver    No     Manual
         Stopped  OK   Normal   No    No

luafv    UAC File Virtualization
         c:\windows\system32\drivers\luafv.sys
         File System Driver Yes   Auto
         Running  OK   Normal   No    Yes

megasas  megasas
         c:\windows\system32\drivers\megasas.sys
         Kernel Driver    No     Manual
         Stopped  OK   Normal   No    No

megasr   MegaSR
         c:\windows\system32\drivers\megasr.sys
         Kernel Driver    No     Manual
         Stopped  OK   Normal   No    No

modem    Modem
         c:\windows\system32\drivers\modem.sys
         Kernel Driver    No     Manual
         Stopped  OK   Ignore   No    No

monitor  Microsoft Monitor Class Function Driver
Service  c:\windows\system32\drivers\monitor.sys
         Kernel Driver    Yes    Manual
         Running  OK   Normal   No    Yes

mouclass Mouse Class Driver
         c:\windows\system32\drivers\mouclass.sys
         Kernel Driver    Yes    Manual
         Running  OK   Normal   No    Yes

mouhid   Mouse HID Driver
         c:\windows\system32\drivers\mouhid.sys
         Kernel Driver    Yes    Manual
         Running  OK   Ignore   No    Yes

mountmgr Mount Point Manager
         c:\windows\system32\drivers\mountmgr.sys
         Kernel Driver    Yes    Boot
         Running  OK   Critical No    Yes


mpio     mpio
         c:\windows\system32\drivers\mpio.sys
         Kernel Driver    No     Manual
         Stopped  OK   Normal   No    No

mpsdrv   Windows Firewall Authorization Driver
         c:\windows\system32\drivers\mpsdrv.sys
         Kernel Driver    Yes    Manual
         Running  OK   Normal   No    Yes

mrxsmb   SMB MiniRedirector Wrapper and Engine
         c:\windows\system32\drivers\mrxsmb.sys
         File System Driver Yes   Manual
         Running  OK   Normal   No    Yes

mrxsmb10 SMB 1.x MiniRedirector
         c:\windows\system32\drivers\mrxsmb10.sys
         File System Driver Yes   Manual
         Running  OK   Normal   No    Yes

mrxsmb20 SMB 2.0 MiniRedirector
         c:\windows\system32\drivers\mrxsmb20.sys
         File System Driver Yes   Manual
         Running  OK   Normal   No    Yes

msahci   msahci
         c:\windows\system32\drivers\msahci.sys
         Kernel Driver    No     Manual
         Stopped  OK   Critical No    No

msdsm    msdsm
         c:\windows\system32\drivers\msdsm.sys
         Kernel Driver    No     Manual
         Stopped  OK   Normal   No    No

msfs     Msfs
         c:\windows\system32\drivers\msfs.sys
         File System Driver Yes   System
         Running  OK   Normal   No    Yes

mshidkmdf Pass-through HID to KMDF Filter Driver
         c:\windows\system32\drivers\mshidkmdf.sys
         Kernel Driver    No     Manual
         Stopped  OK   Ignore   No    No

msisadrv msisadrv
         c:\windows\system32\drivers\msisadrv.sys
         Kernel Driver    Yes    Boot
         Running  OK   Critical No    Yes

msrpc    MsRPC
         c:\windows\system32\drivers\msrpc.sys
         Kernel Driver    No     Manual
         Stopped  OK   Normal   No    No

mssmbios Microsoft System Management BIOS Driver
         c:\windows\system32\drivers\mssmbios.sys
         Kernel Driver    Yes    System
         Running  OK   Normal   No    Yes

mtconfig Microsoft Input Configuration Driver
         c:\windows\system32\drivers\mtconfig.sys
         Kernel Driver    No     Manual


         Stopped  OK   Normal   No    No

multevent MultEvent Driver
         \??\c:\windows\system32\drivers\multeventdr
iver.sys Kernel Driver    No     Manual
         Stopped  OK   Normal   No    No

mup      Mup
         c:\windows\system32\drivers\mup.sys
         File System Driver Yes   Boot
         Running  OK   Normal   No    Yes

ndis     NDIS System Driver
         c:\windows\system32\drivers\ndis.sys
         Kernel Driver    Yes    Boot
         Running  OK   Critical No    Yes

ndiscap  NDIS Capture LightWeight Filter
         c:\windows\system32\drivers\ndiscap.sys
         Kernel Driver    No     Manual
         Stopped  OK   Normal   No    No

ndistapi Remote Access NDIS TAPI Driver
         c:\windows\system32\drivers\ndistapi.sys
         Kernel Driver    Yes    Manual
         Running  OK   Normal   No    Yes

ndisuio  NDIS Usermode I/O Protocol
         c:\windows\system32\drivers\ndisuio.sys
         Kernel Driver    No     Manual
         Stopped  OK   Normal   No    No

ndiswan  Remote Access NDIS WAN Driver
         c:\windows\system32\drivers\ndiswan.sys
         Kernel Driver    Yes    Manual
         Running  OK   Normal   No    Yes

ndproxy  NDIS Proxy
         c:\windows\system32\drivers\ndproxy.sys
         Kernel Driver    Yes    Manual
         Running  OK   Normal   No    Yes

netbios  NetBIOS Interface
         c:\windows\system32\drivers\netbios.sys
         File System Driver Yes   System
         Running  OK   Normal   No    Yes

netbt    NetBT
         c:\windows\system32\drivers\netbt.sys
         Kernel Driver    Yes    System
         Running  OK   Normal   No    Yes

nfrd960  nfrd960
         c:\windows\system32\drivers\nfrd960.sys
         Kernel Driver    No     Manual
         Stopped  OK   Normal   No    No

npfs     Npfs
         c:\windows\system32\drivers\npfs.sys
         File System Driver Yes   System
         Running  OK   Normal   No    Yes
```

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nsiproxy  NSI proxy service driver.                              Stopped   OK      Normal   No    No      rdbss     Redirected Buffering Sub Sysytem
          c:\windows\system32\drivers\nsiproxy.sys    pcw       Performance Counters for Windows Driver            c:\windows\system32\drivers\rdbss.sys
          Kernel Driver   Yes      System                        c:\windows\system32\drivers\pcw.sys                File System Driver Yes      System
          Running  OK     Normal   No    Yes                     Kernel Driver   Yes      Boot                      Running  OK     Normal   No    Yes

ntfs      Ntfs                                                    Running  OK     Normal   No    Yes      rdpbus    Remote Desktop Device Redirector Bus Driver
          c:\windows\system32\drivers\ntfs.sys        peauth    PEAUTH                                             c:\windows\system32\drivers\rdpbus.sys
          File System Driver Yes   Manual                        c:\windows\system32\drivers\peauth.sys             Kernel Driver   Yes      Manual
          Running  OK     Normal   No    Yes                     Kernel Driver   Yes      Auto                      Running  OK     Normal   No    Yes

null      Null                                                    Running  OK     Normal   No    Yes      rdpcdd    RDPCDD
          c:\windows\system32\drivers\null.sys        pptpminiport       WAN Miniport (PPTP)                        c:\windows\system32\drivers\rdpcdd.sys
          Kernel Driver   Yes      System                        c:\windows\system32\drivers\raspptp.sys            Kernel Driver   Yes      System
          Running  OK     Normal   No    Yes                     Kernel Driver   Yes      Manual                    Running  OK     Ignore   No    Yes
                                                                  Running  OK     Normal   No    Yes
nvraid    nvraid                                                                                           rdpdr     Terminal Server Device Redirector Driver
          c:\windows\system32\drivers\nvraid.sys      processor Processor Driver                                   c:\windows\system32\drivers\rdpdr.sys
          Kernel Driver   No       Manual                        c:\windows\system32\drivers\processr.sys           Kernel Driver   Yes      Manual
          Stopped  OK     Normal   No    No                      Kernel Driver   No       Manual                    Running  OK     Normal   No    Yes
                                                                  Stopped  OK     Normal   No    No
nvstor    nvstor                                                                                           rdpencdd  RDP Encoder Mirror Driver
          c:\windows\system32\drivers\nvstor.sys      psched    QoS Packet Scheduler                               c:\windows\system32\drivers\rdpencdd.sys
          Kernel Driver   No       Manual                        c:\windows\system32\drivers\pacer.sys              Kernel Driver   Yes      System
          Stopped  OK     Critical No    No                      Kernel Driver   Yes      System                    Running  OK     Ignore   No    Yes
                                                                  Running  OK     Normal   No    Yes
nv_agp    NVIDIA nForce AGP Bus Filter                                                                     rdprefmp  Reflector Display Driver used to gain
          c:\windows\system32\drivers\nv_agp.sys      ql2300    QLogic Fibre Channel STOR Miniport Driver access to graphics data
          Kernel Driver   No       Manual            (wx64 IP) c:\windows\system32\drivers\ql2300.sys             c:\windows\system32\drivers\rdprefmp.sys
          Stopped  OK     Normal   No    No                      Kernel Driver   Yes      Boot                      Kernel Driver   Yes      System
                                                                  Running  OK     Normal   No    Yes                Running  OK     Ignore   No    Yes
nxnd6hp   HP Multifunctions 1/10 Gigabit Server
Adapter   c:\windows\system32\drivers\hpnd6x64.sys    ql40xx    ql40xx                                     rdpwd     RDP Winstation Driver
          Kernel Driver   Yes      Manual                        c:\windows\system32\drivers\ql40xx.sys             c:\windows\system32\drivers\rdpwd.sys
          Running  OK     Normal   No    Yes                     Kernel Driver   No       Manual                    Kernel Driver   Yes      Manual
                                                                  Stopped  OK     Normal   No    No                 Running  OK     Ignore   No    Yes
ohci1394  1394 OHCI Compliant Host Controller
(Legacy)  c:\windows\system32\drivers\ohci1394.sys    rasacd    Remote Access Auto Connection Driver       rspndr    Link-Layer Topology Discovery Responder
          Kernel Driver   No       Manual                        c:\windows\system32\drivers\rasacd.sys             c:\windows\system32\drivers\rspndr.sys
          Stopped  OK     Normal   No    No                      Kernel Driver   No       Manual                    Kernel Driver   Yes      Auto
                                                                  Stopped  OK     Normal   No    No                 Running  OK     Normal   No    Yes
parport   Parallel port driver
          c:\windows\system32\drivers\parport.sys     rasagilevpn        WAN Miniport (IKEv2)               s3cap     s3cap
          Kernel Driver   No       Manual                        c:\windows\system32\drivers\agilevpn.sys           c:\windows\system32\drivers\vms3cap.sys
          Stopped  OK     Ignore   No    No                      Kernel Driver   Yes      Manual                    Kernel Driver   No       Manual
                                                                  Running  OK     Normal   No    Yes                Stopped  OK     Normal   No    No
partmgr   Partition Manager
          c:\windows\system32\drivers\partmgr.sys     rasl2tp   WAN Miniport (L2TP)                         sacdrv    sacdrv
          Kernel Driver   Yes      Boot                          c:\windows\system32\drivers\rasl2tp.sys            c:\windows\system32\drivers\sacdrv.sys
          Running  OK     Critical No    Yes                     Kernel Driver   Yes      Manual                    Kernel Driver   No       Boot
                                                                  Running  OK     Normal   No    Yes                Stopped  OK     Ignore   No    No
pci       PCI Bus Driver
          c:\windows\system32\drivers\pci.sys         raspppoe  Remote Access PPPOE Driver                 sbp2port  sbp2port
          Kernel Driver   Yes      Boot                          c:\windows\system32\drivers\raspppoe.sys           c:\windows\system32\drivers\sbp2port.sys
          Running  OK     Critical No    Yes                     Kernel Driver   Yes      Manual                    Kernel Driver   No       Manual
                                                                  Running  OK     Normal   No    Yes                Stopped  OK     Normal   No    No
pciide    pciide
          c:\windows\system32\drivers\pciide.sys      rassstp   WAN Miniport (SSTP)                         scfilter  Smart card PnP Class Filter Driver
          Kernel Driver   Yes      Boot                          c:\windows\system32\drivers\rassstp.sys            c:\windows\system32\drivers\scfilter.sys
          Running  OK     Critical No    Yes                     Kernel Driver   Yes      Manual                    Kernel Driver   No       Manual
                                                                  Running  OK     Normal   No    Yes                Stopped  OK     Normal   No    No
pcmcia    pcmcia
          c:\windows\system32\drivers\pcmcia.sys                                                           secdrv    Security Driver
          Kernel Driver   No       Manual                                                                           c:\windows\system32\drivers\secdrv.sys
```

```
                  Kernel Driver      Yes      Auto                          Running   OK      Normal     No      Yes        tdx       NetIO Legacy TDI Support Driver
                  Running   OK      Normal     No      Yes                                                                            c:\windows\system32\drivers\tdx.sys
serenum   Serenum Filter Driver                               srv2      Server SMB 2.xxx Driver                                       Kernel Driver      Yes      System
          c:\windows\system32\drivers\serenum.sys                       c:\windows\system32\drivers\srv2.sys                          Running   OK      Normal     No      Yes
          Kernel Driver      Yes      Manual                            File System Driver  Yes      Manual
          Running   OK      Normal     No      Yes                       Running   OK      Normal     No      Yes        termdd    Terminal Device Driver
                                                                                                                                      c:\windows\system32\drivers\termdd.sys
serial    Serial port driver                                  srvnet    srvnet                                                        Kernel Driver      Yes      System
          c:\windows\system32\drivers\serial.sys                        c:\windows\system32\drivers\srvnet.sys                        Running   OK      Normal     No      Yes
          Kernel Driver      Yes      System                            File System Driver  Yes      Manual
          Running   OK      Ignore     No      Yes                       Running   OK      Normal     No      Yes        tssecsrv  Remote Desktop Services Security Filter
                                                                                                                          Driver    c:\windows\system32\drivers\tssecsrv.sys
sermouse  Serial Mouse Driver                                 stexstor  stexstor                                                      Kernel Driver      Yes      Manual
          c:\windows\system32\drivers\sermouse.sys                      c:\windows\system32\drivers\stexstor.sys                      Running   OK      Ignore     No      Yes
          Kernel Driver      No       Manual                            Kernel Driver      No       Manual
          Stopped   OK      Normal     No      No                        Stopped   OK      Normal     No      No         tunnel    Microsoft Tunnel Miniport Adapter Driver
                                                                                                                                      c:\windows\system32\drivers\tunnel.sys
sffdisk   SFF Storage Class Driver                            storflt   Disk Virtual Machine Bus Acceleration                         Kernel Driver      Yes      Manual
          c:\windows\system32\drivers\sffdisk.sys             Filter Driver                                                           Running   OK      Normal     No      Yes
          Kernel Driver      No       Manual                            c:\windows\system32\drivers\vmstorfl.sys
          Stopped   OK      Normal     No      No                        Kernel Driver      Yes      Boot                  uagp35    Microsoft AGPv3.5 Filter
                                                                          Running   OK      Normal     No      Yes                   c:\windows\system32\drivers\uagp35.sys
sffp_mmc  SFF Storage Protocol Driver for MMC                                                                                         Kernel Driver      No       Manual
          c:\windows\system32\drivers\sffp_mmc.sys            storvsc   storvsc                                                       Stopped   OK      Normal     No      No
          Kernel Driver      No       Manual                            c:\windows\system32\drivers\storvsc.sys
          Stopped   OK      Normal     No      No                        Kernel Driver      No       Manual                 udfs      udfs
                                                                          Stopped   OK      Normal     No      No                    c:\windows\system32\drivers\udfs.sys
sffp_sd   SFF Storage Protocol Driver for SDBus                                                                                       File System Driver  No       Disabled
          c:\windows\system32\drivers\sffp_sd.sys             storvsp   storvsp                                                       Stopped   OK      Normal     No      No
          Kernel Driver      No       Manual                            c:\windows\system32\drivers\storvsp.sys
          Stopped   OK      Normal     No      No                        Kernel Driver      No       Manual                 uliagpkx  Uli AGP Bus Filter
                                                                          Stopped   OK      Normal     No      No                    c:\windows\system32\drivers\uliagpkx.sys
sfloppy   High-Capacity Floppy Disk Drive                                                                                             Kernel Driver      No       Manual
          c:\windows\system32\drivers\sfloppy.sys             swenum    Software Bus Driver                                           Stopped   OK      Normal     No      No
          Kernel Driver      No       Manual                            c:\windows\system32\drivers\swenum.sys
          Stopped   OK      Normal     No      No                        Kernel Driver      Yes      Manual                 umbus     UMBus Enumerator Driver
                                                                          Running   OK      Normal     No      Yes                   c:\windows\system32\drivers\umbus.sys
sisraid2  SiSRaid2                                                                                                                    Kernel Driver      Yes      Manual
          c:\windows\system32\drivers\sisraid2.sys            tcpip     TCP/IP Protocol Driver                                        Running   OK      Normal     No      Yes
          Kernel Driver      No       Manual                            c:\windows\system32\drivers\tcpip.sys
          Stopped   OK      Normal     No      No                        Kernel Driver      Yes      Boot                   umpass    Microsoft UMPass Driver
                                                                          Running   OK      Normal     No      Yes                   c:\windows\system32\drivers\umpass.sys
sisraid4  SiSRaid4                                                                                                                    Kernel Driver      No       Manual
          c:\windows\system32\drivers\sisraid4.sys            tcpip6    Microsoft IPv6 Protocol Driver                                Stopped   OK      Normal     No      No
          Kernel Driver      No       Manual                            c:\windows\system32\drivers\tcpip.sys
          Stopped   OK      Normal     No      No                        Kernel Driver      No       Manual                 usbccgp   Microsoft USB Generic Parent Driver
                                                                          Stopped   OK      Normal     No      No                    c:\windows\system32\drivers\usbccgp.sys
smb       Message-oriented TCP/IP and TCP/IPv6                                                                                        Kernel Driver      Yes      Manual
Protocol (SMB session)                                        tcpipreg  TCP/IP Registry Compatibility                                 Running   OK      Normal     No      Yes
          c:\windows\system32\drivers\smb.sys                           c:\windows\system32\drivers\tcpipreg.sys
          Kernel Driver      No       Manual                            Kernel Driver      Yes      Auto                   usbehci   Microsoft USB 2.0 Enhanced Host Controller
          Stopped   OK      Normal     No      No                        Running   OK      Normal     No      Yes        Miniport Driver
                                                                                                                                      c:\windows\system32\drivers\usbehci.sys
spldr     Security Processor Loader Driver                    tdpipe    TDPIPE                                                        Kernel Driver      Yes      Manual
          c:\windows\system32\drivers\spldr.sys                         c:\windows\system32\drivers\tdpipe.sys                        Running   OK      Normal     No      Yes
          Kernel Driver      Yes      Boot                              Kernel Driver      No       Manual
          Running   OK      Critical   No      Yes                       Stopped   OK      Normal     No      No         usbhub    Microsoft USB Standard Hub Driver
                                                                                                                                      c:\windows\system32\drivers\usbhub.sys
srv       Server SMB 1.xxx Driver                             tdtcp     TDTCP                                                         Kernel Driver      Yes      Manual
          c:\windows\system32\drivers\srv.sys                           c:\windows\system32\drivers\tdtcp.sys                         Running   OK      Normal     No      Yes
          File System Driver  Yes      Manual                           Kernel Driver      Yes      Manual
                                                                          Running   OK      Normal     No      Yes        usbohci   Microsoft USB Open Host Controller Miniport
                                                                                                                          Driver    c:\windows\system32\drivers\usbohci.sys
```

```
                Kernel Driver     Yes      Manual
                Running   OK       Normal     No      Yes

usbprint  Microsoft USB PRINTER Class
                c:\windows\system32\drivers\usbprint.sys
                Kernel Driver     No       Manual
                Stopped   OK       Normal     No      No

usbstor   USB Mass Storage Driver
                c:\windows\system32\drivers\usbstor.sys
                Kernel Driver     No       Manual
                Stopped   OK       Normal     No      No

usbuhci   Microsoft USB Universal Host Controller
Miniport Driver
                c:\windows\system32\drivers\usbuhci.sys
                Kernel Driver     Yes      Manual
                Running   OK       Normal     No      Yes

vdrvroot  Microsoft Virtual Drive Enumerator Driver
                c:\windows\system32\drivers\vdrvroot.sys
                Kernel Driver     Yes      Boot
                Running   OK       Critical   No      Yes

vga       vga
                c:\windows\system32\drivers\vgapnp.sys
                Kernel Driver     Yes      Manual
                Running   OK       Ignore     No      Yes

vgasave   VgaSave
                c:\windows\system32\drivers\vga.sys
                Kernel Driver     Yes      System
                Running   OK       Ignore     No      Yes

vhdmp     vhdmp
                c:\windows\system32\drivers\vhdmp.sys
                Kernel Driver     No       Manual
                Stopped   OK       Normal     No      No

viaide    viaide
                c:\windows\system32\drivers\viaide.sys
                Kernel Driver     No       Manual
                Stopped   OK       Critical   No      No

vid       Vid
                c:\windows\system32\drivers\vid.sys
                Kernel Driver     No       Manual
                Stopped   OK       Normal     No      No

vmbus     Virtual Machine Bus
                c:\windows\system32\drivers\vmbus.sys
                Kernel Driver     No       Manual
                Stopped   OK       Normal     No      No

vmbushid  VMBusHID
                c:\windows\system32\drivers\vmbushid.sys
                Kernel Driver     No       Manual
                Stopped   OK       Ignore     No      No

volmgr    Volume Manager Driver
                c:\windows\system32\drivers\volmgr.sys
                Kernel Driver     Yes      Boot


                Running   OK       Critical   No      Yes
volmgrx   Dynamic Volume Manager
                c:\windows\system32\drivers\volmgrx.sys
                Kernel Driver     Yes      Boot
                Running   OK       Critical   No      Yes

volsnap   Storage volumes
                c:\windows\system32\drivers\volsnap.sys
                Kernel Driver     Yes      Boot
                Running   OK       Critical   No      Yes

vsmraid   vsmraid
                c:\windows\system32\drivers\vsmraid.sys
                Kernel Driver     No       Manual
                Stopped   OK       Normal     No      No

wacompen  Wacom Serial Pen HID Driver
                c:\windows\system32\drivers\wacompen.sys
                Kernel Driver     No       Manual
                Stopped   OK       Normal     No      No

wanarp    Remote Access IP ARP Driver
                c:\windows\system32\drivers\wanarp.sys
                Kernel Driver     No       Manual
                Stopped   OK       Normal     No      No

wanarpv6  Remote Access IPv6 ARP Driver
                c:\windows\system32\drivers\wanarp.sys
                Kernel Driver     Yes      System
                Running   OK       Normal     No      Yes

wd        Wd
                c:\windows\system32\drivers\wd.sys
                Kernel Driver     No       Manual
                Stopped   OK       Normal     No      No

wdf01000  Kernel Mode Driver Frameworks service
                c:\windows\system32\drivers\wdf01000.sys
                Kernel Driver     Yes      Boot
                Running   OK       Normal     No      Yes

wfplwf    WFP Lightweight Filter
                c:\windows\system32\drivers\wfplwf.sys
                Kernel Driver     Yes      System
                Running   OK       Normal     No      Yes

wimmount  WIMMount
                c:\windows\system32\drivers\wimmount.sys
                File System Driver  No     Manual
                Stopped   OK       Normal     No      No

wmiacpi   Microsoft Windows Management Interface for
ACPI      c:\windows\system32\drivers\wmiacpi.sys
                Kernel Driver     No       Manual
                Stopped   OK       Normal     No      No

ws2ifsl   Winsock IFS Driver
                c:\windows\system32\drivers\ws2ifsl.sys
                Kernel Driver     No       Disabled
                Stopped   OK       Normal     No      No
```

```
wudfpf    User Mode Driver Frameworks Platform Driver
                c:\windows\system32\drivers\wudfpf.sys
                Kernel Driver     No       Manual
                Stopped   OK       Normal     No      No


[Environment Variables]

Variable  Value      User Name
ComSpec   %SystemRoot%\system32\cmd.exe <SYSTEM>
FP_NO_HOST_CHECK   NO         <SYSTEM>
OS        Windows_NT          <SYSTEM>
Path      C:\Program
Files\HP\NCU;%SystemRoot%\system32;%SystemRoot%;%Syst
emRoot%\System32\Wbem;%SYSTEMROOT%\System32\WindowsPo
werShell\v1.0\;C:\Program Files (x86)\Microsoft SQL
Server\80\Tools\Binn\;C:\Program Files\Microsoft SQL
Server\90\Tools\binn\;C:\Program Files
(x86)\Microsoft SQL Server\90\Tools\binn\;C:\Program
Files (x86)\Microsoft SQL
Server\90\DTS\Binn\;C:\Program Files (x86)\Microsoft
SQL
Server\90\Tools\Binn\VSShell\Common7\IDE\;C:\Program
Files (x86)\Microsoft Visual Studio
8\Common7\IDE\PrivateAssemblies\;C:\Program
Files\Microsoft SQL Server\90\DTS\Binn\ <SYSTEM>
PATHEXT
          .COM;.EXE;.BAT;.CMD;.VBS;.VBE;.JS;.JSE;.WSF
;.WSH;.MSC        <SYSTEM>
PROCESSOR_ARCHITECTURE        AMD64      <SYSTEM>
TEMP      %SystemRoot%\TEMP  <SYSTEM>
TMP       %SystemRoot%\TEMP  <SYSTEM>
USERNAME  SYSTEM     <SYSTEM>
windir    %SystemRoot%       <SYSTEM>
PSModulePath
          %SystemRoot%\system32\WindowsPowerShell\v1.
0\Modules\        <SYSTEM>
NUMBER_OF_PROCESSORS          48         <SYSTEM>
PROCESSOR_LEVEL    16         <SYSTEM>
PROCESSOR_IDENTIFIER          AMD64 Family 16 Model 9
Stepping 1, AuthenticAMD      <SYSTEM>
PROCESSOR_REVISION 0901       <SYSTEM>
lib       C:\Program Files\SQLXML 4.0\bin\
          <SYSTEM>
TEMP      %USERPROFILE%\AppData\Local\Temp      NT
AUTHORITY\SYSTEM
TMP       %USERPROFILE%\AppData\Local\Temp      NT
AUTHORITY\SYSTEM
TEMP      %USERPROFILE%\AppData\Local\Temp      NT
AUTHORITY\LOCAL SERVICE
TMP       %USERPROFILE%\AppData\Local\Temp      NT
AUTHORITY\LOCAL SERVICE
TEMP      %USERPROFILE%\AppData\Local\Temp      NT
AUTHORITY\NETWORK SERVICE
TMP       %USERPROFILE%\AppData\Local\Temp      NT
AUTHORITY\NETWORK SERVICE
TEMP      %USERPROFILE%\AppData\Local\Temp
          VENOM\Administrator
TMP       %USERPROFILE%\AppData\Local\Temp
          VENOM\Administrator


[Print Jobs]
```

Can't Collect Information

[Network Connections]

Local Name   Remote Name   Type
        Status   User Name

[Running Tasks]

Name   Path   Process ID   Priority Min
Working Set   Max Working Set   Start Time
        Version   Size   File Date
system idle process Not Available   0   0
        Not Available   Not Available   Not
Available Not Available   Not Available   Not
Available
system   Not Available   4   8   Not
Available Not Available   6/15/2010 8:59 AM   Not
Available Not Available   Not Available
smss.exe   Not Available   600   11   200
        1380   6/15/2010 8:59 AM   Not Available
        Not Available   Not Available
csrss.exe c:\windows\system32\csrss.exe 720   13
        200   1380   6/15/2010 8:59 AM
        6.1.7600.16385   7.50 KB (7,680 bytes)
        7/13/2009 6:19 PM
wininit.exe   c:\windows\system32\wininit.exe
        760   13   200   1380
        6/15/2010 8:59 AM   6.1.7600.16385
        126.00 KB (129,024 bytes)   7/13/2009
6:52 PM
csrss.exe c:\windows\system32\csrss.exe 768   13
        200   1380   6/15/2010 8:59 AM
        6.1.7600.16385   7.50 KB (7,680 bytes)
        7/13/2009 6:19 PM
services.exe   c:\windows\system32\services.exe
        816   9   200   1380
        6/15/2010 8:59 AM   6.1.7600.16385
        321.00 KB (328,704 bytes)   7/13/2009
6:19 PM
lsass.exe c:\windows\system32\lsass.exe 824   9
        200   1380   6/15/2010 8:59 AM
        6.1.7600.16385   30.50 KB (31,232 bytes)
        7/13/2009 6:20 PM
lsm.exe   c:\windows\system32\lsm.exe   832   8
        200   1380   6/15/2010 8:59 AM
        6.1.7600.16385   325.50 KB (333,312
bytes)   7/13/2009 7:17 PM
winlogon.exe   c:\windows\system32\winlogon.exe
        884   13   200   1380
        6/15/2010 8:59 AM   6.1.7600.16385
        380.00 KB (389,120 bytes)   7/13/2009
6:52 PM
svchost.exe   c:\windows\system32\svchost.exe
        964   8   200   1380
        6/15/2010 8:59 AM   6.1.7600.16385
        26.50 KB (27,136 bytes)   7/13/2009
6:31 PM
svchost.exe   c:\windows\system32\svchost.exe
        356   8   200   1380
        6/15/2010 8:59 AM   6.1.7600.16385

26.50 KB (27,136 bytes)   7/13/2009
6:31 PM
svchost.exe   c:\windows\system32\svchost.exe
        368   8   200   1380
        6/15/2010 8:59 AM   6.1.7600.16385
        26.50 KB (27,136 bytes)   7/13/2009
6:31 PM
svchost.exe   c:\windows\system32\svchost.exe
        400   8   200   1380
        6/15/2010 8:59 AM   6.1.7600.16385
        26.50 KB (27,136 bytes)   7/13/2009
6:31 PM
svchost.exe   c:\windows\system32\svchost.exe
        652   8   200   1380
        6/15/2010 8:59 AM   6.1.7600.16385
        26.50 KB (27,136 bytes)   7/13/2009
6:31 PM
svchost.exe   c:\windows\system32\svchost.exe
        728   8   200   1380
        6/15/2010 8:59 AM   6.1.7600.16385
        26.50 KB (27,136 bytes)   7/13/2009
6:31 PM
svchost.exe   c:\windows\system32\svchost.exe
        756   8   200   1380
        6/15/2010 8:59 AM   6.1.7600.16385
        26.50 KB (27,136 bytes)   7/13/2009
6:31 PM
svchost.exe   c:\windows\system32\svchost.exe
        1056   8   200   1380
        6/15/2010 8:59 AM   6.1.7600.16385
        26.50 KB (27,136 bytes)   7/13/2009
6:31 PM
svchost.exe   c:\windows\system32\svchost.exe
        1204   8   200   1380
        6/15/2010 8:59 AM   6.1.7600.16385
        26.50 KB (27,136 bytes)   7/13/2009
6:31 PM
taskhost.exe   c:\windows\system32\taskhost.exe
        1876   8   200   1380
        6/15/2010 8:59 AM   6.1.7600.16385
        67.50 KB (69,120 bytes)   7/13/2009
6:31 PM
dwm.exe   c:\windows\system32\dwm.exe   1984   8
        200   1380   6/15/2010 8:59 AM
        6.1.7600.16385   117.50 KB (120,320
bytes)   7/13/2009 6:37 PM
explorer.exe   c:\windows\explorer.exe
        1244   8   200   1380
        6/15/2010 8:59 AM   6.1.7600.16385
        2.74 MB (2,868,224 bytes)   7/13/2009
6:56 PM
svchost.exe   c:\windows\system32\svchost.exe
        2448   8   200   1380
        6/15/2010 8:59 AM   6.1.7600.16385
        26.50 KB (27,136 bytes)   7/13/2009
6:31 PM
cpqteam.exe   c:\program
files\hp\ncu\cpqteam.exe   3328   8   200
        1380   6/15/2010 8:59 AM   9.90.0.17
        72.00 KB (73,728 bytes)   1/29/2010
1:54 PM
msdtc.exe c:\windows\system32\msdtc.exe 3656   8
        200   1380   6/15/2010 9:01 AM

2001.12.8530.16385 138.50 KB (141,824
bytes)   7/13/2009 6:59 PM
wmiprvse.exe
        c:\windows\system32\wbem\wmiprvse.exe
        3960   8   200   1380
        6/15/2010 9:03 AM   6.1.7600.16385
        360.00 KB (368,640 bytes)   7/13/2009
6:47 PM
csrss.exe c:\windows\system32\csrss.exe 2092   13
        200   1380   6/15/2010 9:09 AM
        6.1.7600.16385   7.50 KB (7,680 bytes)
        7/13/2009 6:19 PM
winlogon.exe   c:\windows\system32\winlogon.exe
        3176   13   200   1380
        6/15/2010 9:09 AM   6.1.7600.16385
        380.00 KB (389,120 bytes)   7/13/2009
6:52 PM
logonui.exe   c:\windows\system32\logonui.exe
        2480   13   200   1380
        6/15/2010 9:09 AM   6.1.7600.16385
        27.00 KB (27,648 bytes)   7/13/2009
6:52 PM
rdpclip.exe   c:\windows\system32\rdpclip.exe
        2496   8   200   1380
        6/15/2010 9:09 AM   6.1.7600.16385
        204.50 KB (209,408 bytes)   7/13/2009
7:17 PM
msinfo32.exe   c:\windows\system32\msinfo32.exe
        2688   8   200   1380
        6/15/2010 9:10 AM   6.1.7600.16385
        370.00 KB (378,880 bytes)   7/13/2009
6:31 PM
wmiprvse.exe
        c:\windows\system32\wbem\wmiprvse.exe
        2804   8   200   1380
        6/15/2010 9:10 AM   6.1.7600.16385
        360.00 KB (368,640 bytes)   7/13/2009
6:47 PM

[Loaded Modules]

Name   Version   Size   File Date Manufacturer
        Path
csrss   6.1.7600.16385   7.50 KB (7,680 bytes)
        7/13/2009 6:19 PM   Microsoft Corporation
        c:\windows\system32\csrss.exe
ntdll   6.1.7600.16385   1.66 MB (1,736,792
bytes)   7/13/2009 6:22 PM   Microsoft Corporation
        c:\windows\system32\ntdll.dll
csrsrv   6.1.7600.16385   42.50 KB (43,520 bytes)
        7/13/2009 6:19 PM   Microsoft Corporation
        c:\windows\system32\csrsrv.dll
basesrv   6.1.7600.16385   51.50 KB (52,736 bytes)
        7/13/2009 6:18 PM   Microsoft Corporation
        c:\windows\system32\basesrv.dll
winsrv   6.1.7600.16385   209.00 KB (214,016
bytes)   7/13/2009 6:38 PM   Microsoft Corporation
        c:\windows\system32\winsrv.dll
user32   6.1.7600.16385   985.00 KB (1,008,640
bytes)   7/13/2009 6:38 PM   Microsoft Corporation
        c:\windows\system32\user32.dll

gdi32   6.1.7600.16385   395.00 KB (404,480 bytes)   7/13/2009 6:39 PM   Microsoft Corporation   c:\windows\system32\gdi32.dll

kernel32   6.1.7600.16385   1.11 MB (1,162,240 bytes)   7/13/2009 6:28 PM   Microsoft Corporation   c:\windows\system32\kernel32.dll

kernelbase   6.1.7600.16385   411.50 KB (421,376 bytes)   7/13/2009 6:20 PM   Microsoft Corporation   c:\windows\system32\kernelbase.dll

lpk   6.1.7600.16385   41.00 KB (41,984 bytes)   7/13/2009 6:38 PM   Microsoft Corporation   c:\windows\system32\lpk.dll

usp10   1.626.7600.16385   782.50 KB (801,280 bytes)   7/13/2009 6:38 PM   Microsoft Corporation   c:\windows\system32\usp10.dll

msvcrt   7.0.7600.16385   620.00 KB (634,880 bytes)   7/13/2009 6:19 PM   Microsoft Corporation   c:\windows\system32\msvcrt.dll

sxssrv   6.1.7600.16385   31.00 KB (31,744 bytes)   7/13/2009 6:26 PM   Microsoft Corporation   c:\windows\system32\sxssrv.dll

sxs   6.1.7600.16385   569.50 KB (583,168 bytes)   7/13/2009 6:27 PM   Microsoft Corporation   c:\windows\system32\sxs.dll

rpcrt4   6.1.7600.16385   1.17 MB (1,221,632 bytes)   7/13/2009 6:23 PM   Microsoft Corporation   c:\windows\system32\rpcrt4.dll

cryptbase   6.1.7600.16385   43.00 KB (44,032 bytes)   7/13/2009 6:20 PM   Microsoft Corporation   c:\windows\system32\cryptbase.dll

wininit   6.1.7600.16385   126.00 KB (129,024 bytes)   7/13/2009 6:52 PM   Microsoft Corporation   c:\windows\system32\wininit.exe

sechost   6.1.7600.16385   111.00 KB (113,664 bytes)   7/13/2009 6:20 PM   Microsoft Corporation   c:\windows\system32\sechost.dll

profapi   6.1.7600.16385   43.00 KB (44,032 bytes)   7/13/2009 6:20 PM   Microsoft Corporation   c:\windows\system32\profapi.dll

imm32   6.1.7600.16385   163.50 KB (167,424 bytes)   7/13/2009 6:38 PM   Microsoft Corporation   c:\windows\system32\imm32.dll

msctf   6.1.7600.16385   1.02 MB (1,067,008 bytes)   7/13/2009 6:40 PM   Microsoft Corporation   c:\windows\system32\msctf.dll

rpcrtremote   6.1.7600.16385   63.50 KB (65,024 bytes)   7/13/2009 6:59 PM   Microsoft Corporation   c:\windows\system32\rpcrtremote.dll

apphelp   6.1.7600.16385   330.50 KB (338,432 bytes)   7/13/2009 6:21 PM   Microsoft Corporation   c:\windows\system32\apphelp.dll

ws2_32   6.1.7600.16385   289.50 KB (296,448 bytes)   7/13/2009 6:21 PM   Microsoft Corporation   c:\windows\system32\ws2_32.dll

nsi   6.1.7600.16385   13.50 KB (13,824 bytes)   7/13/2009 6:21 PM   Microsoft Corporation   c:\windows\system32\nsi.dll

mswsock   6.1.7600.16385   312.50 KB (320,000 bytes)   7/13/2009 6:21 PM   Microsoft Corporation   c:\windows\system32\mswsock.dll

wshtcpip   6.1.7600.16385   13.00 KB (13,312 bytes)   7/13/2009 6:21 PM   Microsoft Corporation   c:\windows\system32\wshtcpip.dll

wship6   6.1.7600.16385   13.50 KB (13,824 bytes)   7/13/2009 6:21 PM   Microsoft Corporation   c:\windows\system32\wship6.dll

secur32   6.1.7600.16385   27.50 KB (28,160 bytes)   7/13/2009 6:50 PM   Microsoft Corporation   c:\windows\system32\secur32.dll

sspicli   6.1.7600.16385   133.00 KB (136,192 bytes)   7/13/2009 6:20 PM   Microsoft Corporation   c:\windows\system32\sspicli.dll

credssp   6.1.7600.16385   20.00 KB (20,480 bytes)   7/13/2009 6:50 PM   Microsoft Corporation   c:\windows\system32\credssp.dll

advapi32   6.1.7600.16385   856.50 KB (877,056 bytes)   7/13/2009 7:41 PM   Microsoft Corporation   c:\windows\system32\advapi32.dll

services   6.1.7600.16385   321.00 KB (328,704 bytes)   7/13/2009 6:19 PM   Microsoft Corporation   c:\windows\system32\services.exe

scext   6.1.7600.16385   87.00 KB (89,088 bytes)   7/13/2009 6:31 PM   Microsoft Corporation   c:\windows\system32\scext.dll

scesrv   6.1.7600.16385   396.50 KB (406,016 bytes)   7/13/2009 6:49 PM   Microsoft Corporation   c:\windows\system32\scesrv.dll

srvcli   6.1.7600.16385   124.50 KB (127,488 bytes)   7/13/2009 6:53 PM   Microsoft Corporation   c:\windows\system32\srvcli.dll

authz   6.1.7600.16385   173.50 KB (177,664 bytes)   7/13/2009 6:50 PM   Microsoft Corporation   c:\windows\system32\authz.dll

ubpm   6.1.7600.16385   209.00 KB (214,016 bytes)   7/13/2009 6:31 PM   Microsoft Corporation   c:\windows\system32\ubpm.dll

wtsapi32   6.1.7600.16385   53.00 KB (54,272 bytes)   7/13/2009 7:17 PM   Microsoft Corporation   c:\windows\system32\wtsapi32.dll

winsta   6.1.7600.16385   228.00 KB (233,472 bytes)   7/13/2009 7:17 PM   Microsoft Corporation   c:\windows\system32\winsta.dll

lsass   6.1.7600.16385   30.50 KB (31,232 bytes)   7/13/2009 6:20 PM   Microsoft Corporation   c:\windows\system32\lsass.exe

sspisrv   6.1.7600.16385   28.00 KB (28,672 bytes)   7/13/2009 6:20 PM   Microsoft Corporation   c:\windows\system32\sspisrv.dll

lsasrv   6.1.7600.16385   1.38 MB (1,446,912 bytes)   7/13/2009 6:51 PM   Microsoft Corporation   c:\windows\system32\lsasrv.dll

samsrv   6.1.7600.16385   740.00 KB (757,760 bytes)   7/13/2009 6:54 PM   Microsoft Corporation   c:\windows\system32\samsrv.dll

cryptdll   6.1.7600.16385   64.50 KB (66,048 bytes)   7/13/2009 6:49 PM   Microsoft Corporation   c:\windows\system32\cryptdll.dll

msasn1   6.1.7600.16385   43.00 KB (44,032 bytes)   7/13/2009 6:49 PM   Microsoft Corporation   c:\windows\system32\msasn1.dll

wevtapi   6.1.7600.16385   418.00 KB (428,032 bytes)   7/13/2009 6:46 PM   Microsoft Corporation   c:\windows\system32\wevtapi.dll

cngaudit   6.1.7600.16385   18.50 KB (18,944 bytes)   7/13/2009 6:49 PM   Microsoft Corporation   c:\windows\system32\cngaudit.dll

ncrypt   6.1.7600.16385   300.00 KB (307,200 bytes)   7/13/2009 6:49 PM   Microsoft Corporation   c:\windows\system32\ncrypt.dll

bcrypt   6.1.7600.16385   121.00 KB (123,904 bytes)   7/13/2009 6:49 PM   Microsoft Corporation   c:\windows\system32\bcrypt.dll

msprivs   6.1.7600.16385   2.00 KB (2,048 bytes)   7/13/2009 6:50 PM   Microsoft Corporation   c:\windows\system32\msprivs.dll

netjoin   6.1.7600.16385   184.50 KB (188,928 bytes)   7/13/2009 6:53 PM   Microsoft Corporation   c:\windows\system32\netjoin.dll

negoexts   6.1.7600.16385   114.50 KB (117,248 bytes)   7/13/2009 6:50 PM   Microsoft Corporation   c:\windows\system32\negoexts.dll

kerberos   6.1.7600.16385   697.50 KB (714,240 bytes)   7/13/2009 6:51 PM   Microsoft Corporation   c:\windows\system32\kerberos.dll

cryptsp   6.1.7600.16385   78.00 KB (79,872 bytes)   7/13/2009 6:53 PM   Microsoft Corporation   c:\windows\system32\cryptsp.dll

msv1_0   6.1.7600.16385   304.00 KB (311,296 bytes)   7/13/2009 6:50 PM   Microsoft Corporation   c:\windows\system32\msv1_0.dll

netlogon   6.1.7600.16385   676.50 KB (692,736 bytes)   7/13/2009 6:53 PM   Microsoft Corporation   c:\windows\system32\netlogon.dll

dnsapi   6.1.7600.16385   348.00 KB (356,352 bytes)   7/13/2009 6:21 PM   Microsoft Corporation   c:\windows\system32\dnsapi.dll

logoncli   6.1.7600.16385   182.00 KB (186,368 bytes)   7/13/2009 6:53 PM   Microsoft Corporation   c:\windows\system32\logoncli.dll

schannel   6.1.7600.16385   340.50 KB (348,672 bytes)   7/13/2009 6:50 PM   Microsoft Corporation   c:\windows\system32\schannel.dll

crypt32   6.1.7600.16385   1.39 MB (1,454,592 bytes)   7/13/2009 6:50 PM   Microsoft Corporation   c:\windows\system32\crypt32.dll

wdigest   6.1.7600.16385   205.50 KB (210,432 bytes)   7/13/2009 6:50 PM   Microsoft Corporation   c:\windows\system32\wdigest.dll

rsaenh   6.1.7600.16385   274.66 KB (281,256 bytes)   7/13/2009 6:53 PM   Microsoft Corporation   c:\windows\system32\rsaenh.dll

tspkg   6.1.7600.16385   84.00 KB (86,016 bytes)   7/13/2009 6:50 PM   Microsoft Corporation   c:\windows\system32\tspkg.dll

pku2u   6.1.7600.16385   235.00 KB (240,640 bytes)   7/13/2009 6:50 PM   Microsoft Corporation   c:\windows\system32\pku2u.dll

bcryptprimitives   6.1.7600.16385   291.32 KB (298,312 bytes)   7/13/2009 6:49 PM   Microsoft Corporation   c:\windows\system32\bcryptprimitives.dll

efslsaext   6.1.7600.16385   55.50 KB (56,832 bytes)   7/13/2009 6:50 PM   Microsoft Corporation   c:\windows\system32\efslsaext.dll

```
scecli     6.1.7600.16385    227.00 KB (232,448        winlogon 6.1.7600.16385     380.00 KB (389,120        wintrust 6.1.7600.16385     215.00 KB (220,160
bytes)     7/13/2009 6:49 PM   Microsoft Corporation    bytes)   7/13/2009 6:52 PM   Microsoft Corporation    bytes)   7/13/2009 6:49 PM   Microsoft Corporation
           c:\windows\system32\scecli.dll                        c:\windows\system32\winlogon.exe                  c:\windows\system32\wintrust.dll
rassfm     6.1.7600.16385    28.50 KB (29,184 bytes)    uxinit   6.1.7600.16385     24.50 KB (25,088 bytes)    rpcepmap 6.1.7600.16385     65.50 KB (67,072 bytes)
           7/13/2009 7:10 PM   Microsoft Corporation             7/13/2009 6:54 PM   Microsoft Corporation             7/13/2009 6:21 PM   Microsoft Corporation
           c:\windows\system32\rassfm.dll                        c:\windows\system32\uxinit.dll                        c:\windows\system32\rpcepmap.dll
iphlpapi   6.1.7600.16385    142.50 KB (145,920         slc      6.1.7600.16385     30.00 KB (30,720 bytes)    firewallapi     6.1.7600.16385    730.50 KB
bytes)     7/13/2009 6:21 PM   Microsoft Corporation             7/13/2009 6:51 PM   Microsoft Corporation    (748,032 bytes)     7/13/2009 7:08 PM   Microsoft
           c:\windows\system32\iphlpapi.dll                      c:\windows\system32\slc.dll                  Corporation
winnsi     6.1.7600.16385    25.50 KB (26,112 bytes)    mpr      6.1.7600.16385     79.00 KB (80,896 bytes)            c:\windows\system32\firewallapi.dll
           7/13/2009 6:21 PM   Microsoft Corporation             7/13/2009 7:10 PM   Microsoft Corporation    version  6.1.7600.16385     28.50 KB (29,184 bytes)
           c:\windows\system32\winnsi.dll                        c:\windows\system32\mpr.dll                            7/13/2009 6:57 PM   Microsoft Corporation
netutils   6.1.7600.16385    28.00 KB (28,672 bytes)    uxtheme  6.1.7600.16385     324.50 KB (332,288                 c:\windows\system32\version.dll
           7/13/2009 6:53 PM   Microsoft Corporation    bytes)   7/13/2009 6:55 PM   Microsoft Corporation    fwpuclnt 6.1.7600.16385     316.50 KB (324,096
           c:\windows\system32\netutils.dll                      c:\windows\system32\uxtheme.dll              bytes)   7/13/2009 7:09 PM   Microsoft Corporation
userenv    6.1.7600.16385    104.50 KB (107,008         svchost  6.1.7600.16385     26.50 KB (27,136 bytes)            c:\windows\system32\fwpuclnt.dll
bytes)     7/13/2009 6:50 PM   Microsoft Corporation             7/13/2009 6:31 PM   Microsoft Corporation    wevtsvc  6.1.7600.16385     1.57 MB (1,646,080
           c:\windows\system32\userenv.dll                       c:\windows\system32\svchost.exe              bytes)   7/13/2009 6:49 PM   Microsoft Corporation
samcli     6.1.7600.16385    65.50 KB (67,072 bytes)    umpnpmgr 6.1.7600.16385     395.00 KB (404,480                 c:\windows\system32\wevtsvc.dll
           7/13/2009 6:53 PM   Microsoft Corporation    bytes)   7/13/2009 6:27 PM   Microsoft Corporation    gpsvc    6.1.7600.16385     758.00 KB (776,192
           c:\windows\system32\samcli.dll                        c:\windows\system32\umpnpmgr.dll             bytes)   7/13/2009 6:54 PM   Microsoft Corporation
samlib     6.1.7600.16385    104.50 KB (107,008         spinf    6.1.7600.16385     103.00 KB (105,472                 c:\windows\system32\gpsvc.dll
bytes)     7/13/2009 6:53 PM   Microsoft Corporation    bytes)   7/13/2009 6:26 PM   Microsoft Corporation    nlaapi   6.1.7600.16385     68.50 KB (70,144 bytes)
           c:\windows\system32\samlib.dll                        c:\windows\system32\spinf.dll                         7/13/2009 7:09 PM   Microsoft Corporation
dssenh     6.1.7600.16385    186.41 KB (190,880         devrtl   6.1.7600.16385     57.00 KB (58,368 bytes)            c:\windows\system32\nlaapi.dll
bytes)     7/13/2009 6:53 PM   Microsoft Corporation             7/13/2009 6:26 PM   Microsoft Corporation    profsvc  6.1.7600.16385     203.50 KB (208,384
           c:\windows\system32\dssenh.dll                        c:\windows\system32\devrtl.dll               bytes)   7/13/2009 6:50 PM   Microsoft Corporation
gpapi      6.1.7600.16385    94.50 KB (96,768 bytes)    umpo     6.1.7600.16385     160.00 KB (163,840                 c:\windows\system32\profsvc.dll
           7/13/2009 6:54 PM   Microsoft Corporation    bytes)   7/13/2009 6:27 PM   Microsoft Corporation    shlwapi  6.1.7600.16385     439.00 KB (449,536
           c:\windows\system32\gpapi.dll                         c:\windows\system32\umpo.dll                 bytes)   7/13/2009 6:55 PM   Microsoft Corporation
cryptnet   6.1.7600.16385    135.50 KB (138,752         setupapi 6.1.7600.16385     1.81 MB (1,899,520                 c:\windows\system32\shlwapi.dll
bytes)     7/13/2009 6:49 PM   Microsoft Corporation    bytes)   7/13/2009 6:27 PM   Microsoft Corporation    atl      3.5.2284.0         88.50 KB (90,624 bytes)
           c:\windows\system32\cryptnet.dll                      c:\windows\system32\setupapi.dll                      7/13/2009 7:34 PM   Microsoft Corporation
wldap32    6.1.7600.16385    304.50 KB (311,808         cfgmgr32 6.1.7600.16385     202.50 KB (207,360                 c:\windows\system32\atl.dll
bytes)     7/13/2009 6:54 PM   Microsoft Corporation    bytes)   7/13/2009 6:26 PM   Microsoft Corporation    dsrole   6.1.7600.16385     32.00 KB (32,768 bytes)
           c:\windows\system32\wldap32.dll                       c:\windows\system32\cfgmgr32.dll                      7/13/2009 6:50 PM   Microsoft Corporation
lsm        6.1.7600.16385    325.50 KB (333,312         devobj   6.1.7600.16385     91.00 KB (93,184 bytes)            c:\windows\system32\dsrole.dll
bytes)     7/13/2009 7:17 PM   Microsoft Corporation             7/13/2009 6:26 PM   Microsoft Corporation    sens     6.1.7600.16385     63.00 KB (64,512 bytes)
           c:\windows\system32\lsm.exe                           c:\windows\system32\devobj.dll                        7/13/2009 6:34 PM   Microsoft Corporation
sysntfy    6.1.7600.16385    22.50 KB (23,040 bytes)    rpcss    6.1.7600.16385     497.50 KB (509,440                 c:\windows\system32\sens.dll
           7/13/2009 6:52 PM   Microsoft Corporation    bytes)   7/13/2009 7:00 PM   Microsoft Corporation    shsvcs   6.1.7600.16385     361.00 KB (369,664
           c:\windows\system32\sysntfy.dll                       c:\windows\system32\rpcss.dll                bytes)   7/13/2009 6:55 PM   Microsoft Corporation
wmsgapi    6.1.7600.16385    14.50 KB (14,848 bytes)    wmidcprv 6.1.7600.16385     187.00 KB (191,488                 c:\windows\system32\shsvcs.dll
           7/13/2009 6:52 PM   Microsoft Corporation    bytes)   7/13/2009 6:47 PM   Microsoft Corporation    schedsvc 6.1.7600.16385     1.05 MB (1,104,384
           c:\windows\system32\wmsgapi.dll                       c:\windows\system32\wbem\wmidcprv.dll        bytes)   7/13/2009 6:47 PM   Microsoft Corporation
pcwum      6.1.7600.16385    36.00 KB (36,864 bytes)    fastprox 6.1.7600.16385     888.00 KB (909,312                 c:\windows\system32\schedsvc.dll
           7/13/2009 6:19 PM   Microsoft Corporation    bytes)   7/13/2009 6:47 PM   Microsoft Corporation    shell32  6.1.7600.16385     13.51 MB (14,161,920
           c:\windows\system32\pcwum.dll                         c:\windows\system32\wbem\fastprox.dll        bytes)   7/13/2009 7:04 PM   Microsoft Corporation
ole32      6.1.7600.16385    1.99 MB (2,084,352         wbemcomn 6.1.7600.16385     517.50 KB (529,920                 c:\windows\system32\shell32.dll
bytes)     7/13/2009 7:02 PM   Microsoft Corporation    bytes)   7/13/2009 6:47 PM   Microsoft Corporation    netapi32 6.1.7600.16385     71.00 KB (72,704 bytes)
           c:\windows\system32\ole32.dll                         c:\windows\system32\wbemcomn.dll                      7/13/2009 6:53 PM   Microsoft Corporation
ntmarta    6.1.7600.16385    158.50 KB (162,304         ntdsapi  6.1.7600.16385     148.50 KB (152,064                 c:\windows\system32\netapi32.dll
bytes)     7/13/2009 6:50 PM   Microsoft Corporation    bytes)   7/13/2009 6:54 PM   Microsoft Corporation    wkscli   6.1.7600.16385     70.00 KB (71,680 bytes)
           c:\windows\system32\ntmarta.dll                       c:\windows\system32\ntdsapi.dll                       7/13/2009 6:53 PM   Microsoft Corporation
clbcatq    2001.12.8530.16385 593.50 KB (607,744        wbemprox 6.1.7600.16385     42.50 KB (43,520 bytes)            c:\windows\system32\wkscli.dll
bytes)     7/13/2009 7:00 PM   Microsoft Corporation             7/13/2009 6:46 PM   Microsoft Corporation    ktmw32   6.1.7600.16385     22.50 KB (23,040 bytes)
           c:\windows\system32\clbcatq.dll                       c:\windows\system32\wbem\wbemprox.dll                 7/13/2009 6:19 PM   Microsoft Corporation
oleaut32   6.1.7600.16385    841.00 KB (861,184         wbemsvc  6.1.7600.16385     63.00 KB (64,512 bytes)            c:\windows\system32\ktmw32.dll
bytes)     7/13/2009 6:59 PM   Microsoft Corporation             7/13/2009 6:46 PM   Microsoft Corporation    xmllite  1.3.1000.0         195.00 KB (199,680
           c:\windows\system32\oleaut32.dll                      c:\windows\system32\wbem\wbemsvc.dll         bytes)   7/13/2009 7:41 PM   Microsoft Corporation
lsmproxy   6.1.7600.16385    47.50 KB (48,640 bytes)    wmiutils 6.1.7600.16385     134.00 KB (137,216                 c:\windows\system32\xmllite.dll
           7/13/2009 7:17 PM   Microsoft Corporation    bytes)   7/13/2009 6:47 PM   Microsoft Corporation
           c:\windows\system32\lsmproxy.dll                      c:\windows\system32\wbem\wmiutils.dll
```

Name	Version	Size	Date	Vendor	Path
taskcomp	6.1.7600.16385	462.50 KB (473,600 bytes)	7/13/2009 6:47 PM	Microsoft Corporation	c:\windows\system32\taskcomp.dll
comctl32	6.10.7600.16385	1.94 MB (2,030,080 bytes)	7/13/2009 6:56 PM	Microsoft Corporation	c:\windows\winsxs\amd64_microsoft.windows.common-controls_6595b64144ccf1df_6.0.7600.16385_none_fa6453033170382f6\comctl32.dll
propsys	7.0.7600.16385	1.16 MB (1,212,416 bytes)	7/13/2009 6:56 PM	Microsoft Corporation	c:\windows\system32\propsys.dll
ikeext	6.1.7600.16385	826.00 KB (845,824 bytes)	7/13/2009 7:10 PM	Microsoft Corporation	c:\windows\system32\ikeext.dll
wmisvc	6.1.7600.16385	237.00 KB (242,688 bytes)	7/13/2009 6:47 PM	Microsoft Corporation	c:\windows\system32\wbem\wmisvc.dll
srvsvc	6.1.7600.16385	230.00 KB (235,520 bytes)	7/13/2009 6:53 PM	Microsoft Corporation	c:\windows\system32\srvsvc.dll
browser	6.1.7600.16385	133.00 KB (136,192 bytes)	7/13/2009 6:53 PM	Microsoft Corporation	c:\windows\system32\browser.dll
iphlpsvc	6.1.7600.16385	552.50 KB (565,760 bytes)	7/13/2009 7:09 PM	Microsoft Corporation	c:\windows\system32\iphlpsvc.dll
rtutils	6.1.7600.16385	50.50 KB (51,712 bytes)	7/13/2009 7:09 PM	Microsoft Corporation	c:\windows\system32\rtutils.dll
sqmapi	6.1.7600.16385	229.50 KB (235,008 bytes)	7/13/2009 6:40 PM	Microsoft Corporation	c:\windows\system32\sqmapi.dll
wdscore	6.1.7600.16385	265.00 KB (271,360 bytes)	7/13/2009 6:28 PM	Microsoft Corporation	c:\windows\system32\wdscore.dll
sscore	6.1.7600.16385	13.00 KB (13,312 bytes)	7/13/2009 6:53 PM	Microsoft Corporation	c:\windows\system32\sscore.dll
clusapi	6.1.7600.16385	307.00 KB (314,368 bytes)	7/13/2009 6:34 PM	Microsoft Corporation	c:\windows\system32\clusapi.dll
resutils	6.1.7600.16385	84.00 KB (86,016 bytes)	7/13/2009 6:34 PM	Microsoft Corporation	c:\windows\system32\resutils.dll
vssapi	6.1.7600.16385	1.66 MB (1,745,408 bytes)	7/13/2009 6:38 PM	Microsoft Corporation	c:\windows\system32\vssapi.dll
vsstrace	6.1.7600.16385	75.00 KB (76,800 bytes)	7/13/2009 6:36 PM	Microsoft Corporation	c:\windows\system32\vsstrace.dll
dhcpcsvc6	6.1.7600.16385	53.00 KB (54,272 bytes)	7/13/2009 6:21 PM	Microsoft Corporation	c:\windows\system32\dhcpcsvc6.dll
dhcpcsvc	6.1.7600.16385	85.00 KB (87,040 bytes)	7/13/2009 6:21 PM	Microsoft Corporation	c:\windows\system32\dhcpcsvc.dll
netprofm	6.1.7600.16385	449.00 KB (459,776 bytes)	7/13/2009 7:12 PM	Microsoft Corporation	c:\windows\system32\netprofm.dll
nci	6.1.7600.16385	87.50 KB (89,600 bytes)	7/13/2009 7:09 PM	Microsoft Corporation	c:\windows\system32\nci.dll
wbemcore	6.1.7600.16385	1.16 MB (1,220,096 bytes)	7/13/2009 6:48 PM	Microsoft Corporation	c:\windows\system32\wbem\wbemcore.dll
esscli	6.1.7600.16385	430.00 KB (440,320 bytes)	7/13/2009 6:47 PM	Microsoft Corporation	c:\windows\system32\wbem\esscli.dll
repdrvfs	6.1.7600.16385	441.00 KB (451,584 bytes)	7/13/2009 6:47 PM	Microsoft Corporation	c:\windows\system32\wbem\repdrvfs.dll
wmiprvsd	6.1.7600.16385	732.50 KB (750,080 bytes)	7/13/2009 6:48 PM	Microsoft Corporation	c:\windows\system32\wbem\wmiprvsd.dll
ncobjapi	6.1.7600.16385	67.50 KB (69,120 bytes)	7/13/2009 6:47 PM	Microsoft Corporation	c:\windows\system32\ncobjapi.dll
wbemess	6.1.7600.16385	494.00 KB (505,856 bytes)	7/13/2009 6:47 PM	Microsoft Corporation	c:\windows\system32\wbem\wbemess.dll
ncprov	6.1.7600.16385	76.50 KB (78,336 bytes)	7/13/2009 6:47 PM	Microsoft Corporation	c:\windows\system32\wbem\ncprov.dll
rasadhlp	6.1.7600.16385	16.00 KB (16,384 bytes)	7/13/2009 7:10 PM	Microsoft Corporation	c:\windows\system32\rasadhlp.dll
npmproxy	6.1.7600.16385	31.00 KB (31,744 bytes)	7/13/2009 7:12 PM	Microsoft Corporation	c:\windows\system32\npmproxy.dll
certprop	6.1.7600.16385	78.50 KB (80,384 bytes)	7/13/2009 6:50 PM	Microsoft Corporation	c:\windows\system32\certprop.dll
winscard	6.1.7600.16385	212.50 KB (217,600 bytes)	7/13/2009 6:50 PM	Microsoft Corporation	c:\windows\system32\winscard.dll
sessenv	6.1.7600.16385	102.50 KB (104,960 bytes)	7/13/2009 7:17 PM	Microsoft Corporation	c:\windows\system32\sessenv.dll
es	2001.12.8530.16385	393.50 KB (402,944 bytes)	7/13/2009 7:00 PM	Microsoft Corporation	c:\windows\system32\es.dll
nsisvc	6.1.7600.16385	25.00 KB (25,600 bytes)	7/13/2009 6:21 PM	Microsoft Corporation	c:\windows\system32\nsisvc.dll
uxsms	6.1.7600.16385	38.00 KB (38,912 bytes)	7/13/2009 6:37 PM	Microsoft Corporation	c:\windows\system32\uxsms.dll
trkwks	6.1.7600.16385	117.00 KB (119,808 bytes)	7/13/2009 6:59 PM	Microsoft Corporation	c:\windows\system32\trkwks.dll
umrdp	6.1.7600.16385	190.50 KB (195,072 bytes)	7/13/2009 7:18 PM	Microsoft Corporation	c:\windows\system32\umrdp.dll
winspool	6.1.7600.16385	431.50 KB (441,856 bytes)	7/13/2009 7:39 PM	Microsoft Corporation	c:\windows\system32\winspool.drv
umb	6.1.7600.16385	58.50 KB (59,904 bytes)	7/13/2009 6:35 PM	Microsoft Corporation	c:\windows\system32\umb.dll
netman	6.1.7600.16385	352.00 KB (360,448 bytes)	7/13/2009 7:08 PM	Microsoft Corporation	c:\windows\system32\netman.dll
netshell	6.1.7600.16385	2.53 MB (2,651,136 bytes)	7/13/2009 7:09 PM	Microsoft Corporation	c:\windows\system32\netshell.dll
rasdlg	6.1.7600.16385	840.50 KB (860,672 bytes)	7/13/2009 7:10 PM	Microsoft Corporation	c:\windows\system32\rasdlg.dll
mprapi	6.1.7600.16385	215.50 KB (220,672 bytes)	7/13/2009 7:10 PM	Microsoft Corporation	c:\windows\system32\mprapi.dll
rasapi32	6.1.7600.16385	375.50 KB (384,512 bytes)	7/13/2009 7:10 PM	Microsoft Corporation	c:\windows\system32\rasapi32.dll
rasman	6.1.7600.16385	98.00 KB (100,352 bytes)	7/13/2009 7:10 PM	Microsoft Corporation	c:\windows\system32\rasman.dll
netcfgx	6.1.7600.16385	505.00 KB (517,120 bytes)	7/13/2009 7:08 PM	Microsoft Corporation	c:\windows\system32\netcfgx.dll
hnetcfg	6.1.7600.16385	414.50 KB (424,448 bytes)	7/13/2009 7:08 PM	Microsoft Corporation	c:\windows\system32\hnetcfg.dll
wdi	6.1.7600.16385	88.50 KB (90,624 bytes)	7/13/2009 6:31 PM	Microsoft Corporation	c:\windows\system32\wdi.dll
apphlpdm	6.1.7600.16385	33.00 KB (33,792 bytes)	7/13/2009 6:32 PM	Microsoft Corporation	c:\windows\system32\apphlpdm.dll
wer	6.1.7600.16385	473.00 KB (484,352 bytes)	7/13/2009 6:41 PM	Microsoft Corporation	c:\windows\system32\wer.dll
dnsrslvr	6.1.7600.16385	178.00 KB (182,272 bytes)	7/13/2009 6:21 PM	Microsoft Corporation	c:\windows\system32\dnsrslvr.dll
dnsext	6.1.7600.16385	8.00 KB (8,192 bytes)	7/13/2009 7:12 PM	Microsoft Corporation	c:\windows\system32\dnsext.dll
wkssvc	6.1.7600.16385	116.00 KB (118,784 bytes)	7/13/2009 6:53 PM	Microsoft Corporation	c:\windows\system32\wkssvc.dll
cryptsvc	6.1.7600.16385	171.00 KB (175,104 bytes)	7/13/2009 6:49 PM	Microsoft Corporation	c:\windows\system32\cryptsvc.dll
nlasvc	6.1.7600.16385	295.00 KB (302,080 bytes)	7/13/2009 7:09 PM	Microsoft Corporation	c:\windows\system32\nlasvc.dll
ncsi	6.1.7600.16385	204.50 KB (209,408 bytes)	7/13/2009 7:08 PM	Microsoft Corporation	c:\windows\system32\ncsi.dll
winhttp	6.1.7600.16385	428.50 KB (438,784 bytes)	7/13/2009 7:11 PM	Microsoft Corporation	c:\windows\system32\winhttp.dll
webio	6.1.7600.16385	385.50 KB (394,752 bytes)	7/13/2009 7:11 PM	Microsoft Corporation	c:\windows\system32\webio.dll
ssdpapi	6.1.7600.16385	50.00 KB (51,200 bytes)	7/13/2009 7:10 PM	Microsoft Corporation	c:\windows\system32\ssdpapi.dll
esent	6.1.7600.16385	2.45 MB (2,565,120 bytes)	7/13/2009 6:50 PM	Microsoft Corporation	c:\windows\system32\esent.dll
psapi	6.1.7600.16385	9.00 KB (9,216 bytes)	7/13/2009 6:26 PM	Microsoft Corporation	c:\windows\system32\psapi.dll
wsmsvc	6.1.7600.16385	1.93 MB (2,018,816 bytes)	7/13/2009 6:49 PM	Microsoft Corporation	c:\windows\system32\wsmsvc.dll

```
httpapi      6.1.7600.16385        44.00 KB (45,056 bytes)      dwmcore   6.1.7600.16385        1.56 MB (1,634,304      mmdevapi   6.1.7600.16385        277.50 KB (284,160
             7/13/2009 6:21 PM   Microsoft Corporation           bytes)   7/13/2009 6:39 PM   Microsoft Corporation     bytes)   7/13/2009 7:18 PM   Microsoft Corporation
             c:\windows\system32\httpapi.dll                              c:\windows\system32\dwmcore.dll                        c:\windows\system32\mmdevapi.dll
wevtfwd      6.1.7600.16385        114.00 KB (116,736           windowscodecs     6.1.7600.16385        1.13 MB         timedate   6.1.7600.16385        503.00 KB (515,072
bytes)       7/13/2009 6:46 PM   Microsoft Corporation           (1,189,888 bytes)   7/13/2009 6:42 PM   Microsoft      bytes)   7/13/2009 6:56 PM   Microsoft Corporation
             c:\windows\system32\wevtfwd.dll                     Corporation                                                     c:\windows\system32\timedate.cpl
bfe          6.1.7600.16385        687.00 KB (703,488                      c:\windows\system32\windowscodecs.dll       winbrand   6.1.7600.16385        16.00 KB (16,384 bytes)
bytes)       7/13/2009 7:09 PM   Microsoft Corporation           d3d10_1   6.1.7600.16385        192.50 KB (197,120              7/13/2009 6:30 PM   Microsoft Corporation
             c:\windows\system32\bfe.dll                         bytes)   7/13/2009 6:41 PM   Microsoft Corporation             c:\windows\system32\winbrand.dll
mpssvc       6.1.7600.16385        805.50 KB (824,832                      c:\windows\system32\d3d10_1.dll             actxprxy   6.1.7600.16385        936.50 KB (958,976
bytes)       7/13/2009 7:09 PM   Microsoft Corporation           d3d10_1core       6.1.7600.16385        311.50 KB      bytes)   7/13/2009 7:41 PM   Microsoft Corporation
             c:\windows\system32\mpssvc.dll                      (318,976 bytes)   7/13/2009 6:41 PM   Microsoft                  c:\windows\system32\actxprxy.dll
wfapigp      6.1.7600.16385        22.00 KB (22,528 bytes)       Corporation                                           shdocvw    6.1.7600.16385        191.50 KB (196,096
             7/13/2009 7:08 PM   Microsoft Corporation                    c:\windows\system32\d3d10_1core.dll         bytes)   7/13/2009 6:55 PM   Microsoft Corporation
             c:\windows\system32\wfapigp.dll                     dxgi      6.1.7600.16385        643.00 KB (658,432              c:\windows\system32\shdocvw.dll
pla          6.1.7600.16385        1.33 MB (1,390,080            bytes)   7/13/2009 6:41 PM   Microsoft Corporation     shacct   6.1.7600.16385        132.00 KB (135,168
bytes)       7/13/2009 6:32 PM   Microsoft Corporation                    c:\windows\system32\dxgi.dll                 bytes)   7/13/2009 6:55 PM   Microsoft Corporation
             c:\windows\system32\pla.dll                         dwmapi    6.1.7600.16385        80.50 KB (82,432 bytes)          c:\windows\system32\shacct.dll
pdh          6.1.7600.16385        293.00 KB (300,032                     7/13/2009 6:37 PM   Microsoft Corporation     linkinfo   6.1.7600.16385        29.00 KB (29,696 bytes)
bytes)       7/13/2009 6:31 PM   Microsoft Corporation                    c:\windows\system32\dwmapi.dll                        7/13/2009 6:55 PM   Microsoft Corporation
             c:\windows\system32\pdh.dll                         explorer  6.1.7600.16385        2.74 MB (2,868,224               c:\windows\system32\linkinfo.dll
tdh          6.1.7600.16385        825.00 KB (844,800            bytes)   7/13/2009 6:56 PM   Microsoft Corporation     msls31   3.10.349.0        217.00 KB (222,208
bytes)       7/13/2009 6:32 PM   Microsoft Corporation                    c:\windows\system32\explorer.exe             bytes)   7/13/2009 6:39 PM   Microsoft Corporation
             c:\windows\system32\tdh.dll                         explorerframe     6.1.7600.16385        1.78 MB                 c:\windows\system32\msls31.dll
dps          6.1.7600.16385        159.00 KB (162,816            (1,863,680 bytes)   7/13/2009 6:57 PM   Microsoft      authui   6.1.7600.16385        1.84 MB (1,926,144
bytes)       7/13/2009 6:31 PM   Microsoft Corporation           Corporation                                           bytes)   7/13/2009 6:58 PM   Microsoft Corporation
             c:\windows\system32\dps.dll                                  c:\windows\system32\explorerframe.dll                  c:\windows\system32\authui.dll
taskschd     6.1.7600.16385        1.11 MB (1,168,896            duser     6.1.7600.16385        254.50 KB (260,608      cryptui   6.1.7600.16385        1.02 MB (1,065,984
bytes)       7/13/2009 6:47 PM   Microsoft Corporation           bytes)   7/13/2009 6:39 PM   Microsoft Corporation     bytes)   7/13/2009 6:49 PM   Microsoft Corporation
             c:\windows\system32\taskschd.dll                             c:\windows\system32\duser.dll                          c:\windows\system32\cryptui.dll
pnpts        6.1.7600.16385        12.00 KB (12,288 bytes)       dui70     6.1.7600.16385        954.00 KB (976,896      urlmon   8.0.7600.16385        1.42 MB (1,492,480
             7/13/2009 6:31 PM   Microsoft Corporation           bytes)   7/13/2009 6:41 PM   Microsoft Corporation     bytes)   7/13/2009 7:01 PM   Microsoft Corporation
             c:\windows\system32\pnpts.dll                                c:\windows\system32\dui70.dll                          c:\windows\system32\urlmon.dll
radardt      6.1.7600.16385        95.50 KB (97,792 bytes)       powrprof  6.1.7600.16385        163.50 KB (167,424      iertutil   8.0.7600.16385        2.33 MB (2,440,704
             7/13/2009 6:32 PM   Microsoft Corporation           bytes)   7/13/2009 6:27 PM   Microsoft Corporation     bytes)   7/13/2009 6:59 PM   Microsoft Corporation
             c:\windows\system32\radardt.dll                              c:\windows\system32\powrprof.dll                       c:\windows\system32\iertutil.dll
wdiasqmmodule        6.1.7600.16385        35.00 KB              gdiplus   6.1.7600.16385        2.06 MB (2,165,248      winmm    6.1.7600.16385        212.50 KB (217,600
(35,840 bytes)       7/13/2009 6:40 PM   Microsoft               bytes)   7/13/2009 6:40 PM   Microsoft Corporation     bytes)   7/13/2009 7:18 PM   Microsoft Corporation
Corporation                                                               c:\windows\winsxs\amd64_microsoft.windows.g             c:\windows\system32\winmm.dll
             c:\windows\system32\wdiasqmmodule.dll               diplus_6595b64144ccf1df_1.1.7600.16385_none_2b4f45e87  stobject   6.1.7600.16385        250.00 KB (256,000
regsvc       6.1.7600.16385        155.50 KB (159,232            195fcc4\gdiplus.dll                                    bytes)   7/13/2009 6:56 PM   Microsoft Corporation
bytes)       7/13/2009 6:31 PM   Microsoft Corporation           ehstorshell       6.1.7600.16385        198.50 KB               c:\windows\system32\stobject.dll
             c:\windows\system32\regsvc.dll                      (203,264 bytes)   7/13/2009 7:00 PM   Microsoft         batmeter   6.1.7600.16385        730.50 KB (748,032
taskhost     6.1.7600.16385        67.50 KB (69,120 bytes)       Corporation                                           bytes)   7/13/2009 6:56 PM   Microsoft Corporation
             7/13/2009 6:31 PM   Microsoft Corporation                    c:\windows\system32\ehstorshell.dll                    c:\windows\system32\batmeter.dll
             c:\windows\system32\taskhost.exe                    ntshrui   6.1.7600.16385        498.00 KB (509,952      prnfldr   6.1.7600.16385        407.00 KB (416,768
msctfmonitor         6.1.7600.16385        27.50 KB              bytes)   7/13/2009 6:57 PM   Microsoft Corporation     bytes)   7/13/2009 7:40 PM   Microsoft Corporation
(28,160 bytes)       7/13/2009 6:39 PM   Microsoft                        c:\windows\system32\ntshrui.dll                        c:\windows\system32\prnfldr.dll
Corporation                                                     cscapi    6.1.7600.16385        45.00 KB (46,080 bytes)  dxp      6.1.7600.16385        449.00 KB (459,776
             c:\windows\system32\msctfmonitor.dll                         7/13/2009 6:24 PM   Microsoft Corporation     bytes)   7/13/2009 7:21 PM   Microsoft Corporation
msutb        6.1.7600.16385        230.00 KB (235,520                     c:\windows\system32\cscapi.dll                         c:\windows\system32\dxp.dll
bytes)       7/13/2009 6:39 PM   Microsoft Corporation           iconcodecservice  6.1.7600.16385        14.00 KB       syncreg   2007.94.7600.16385 72.00 KB (73,728 bytes)
             c:\windows\system32\msutb.dll                       (14,336 bytes)   7/13/2009 6:37 PM   Microsoft                  7/13/2009 7:22 PM   Microsoft Corporation
dimsjob      6.1.7600.16385        39.50 KB (40,448 bytes)       Corporation                                                     c:\windows\system32\syncreg.dll
             7/13/2009 6:53 PM   Microsoft Corporation                    c:\windows\system32\iconcodecservice.dll      pnidui   6.1.7600.16385        1.72 MB (1,807,872
             c:\windows\system32\dimsjob.dll                                                                            bytes)   7/13/2009 7:08 PM   Microsoft Corporation
dwm          6.1.7600.16385        117.50 KB (120,320           sndvolsso 6.1.7600.16385        220.00 KB (225,280               c:\windows\system32\pnidui.dll
bytes)       7/13/2009 6:37 PM   Microsoft Corporation           bytes)   7/13/2009 7:19 PM   Microsoft Corporation     qutil   6.1.7600.16385        105.00 KB (107,520
             c:\windows\system32\dwm.exe                                  c:\windows\system32\sndvolsso.dll            bytes)   7/13/2009 7:07 PM   Microsoft Corporation
dwmredir     6.1.7600.16385        125.50 KB (128,512           hid       6.1.7600.16385        29.50 KB (30,208 bytes)           c:\windows\system32\qutil.dll
bytes)       7/13/2009 6:37 PM   Microsoft Corporation                    7/13/2009 7:06 PM   Microsoft Corporation     actioncenter      6.1.7600.16385        762.50 KB
             c:\windows\system32\dwmredir.dll                             c:\windows\system32\hid.dll                   (780,800 bytes)   7/13/2009 6:56 PM   Microsoft
```

Corporation
        c:\windows\system32\actioncenter.dll
imapi2   6.1.7600.16385   493.50 KB (505,344
bytes)   7/13/2009 7:01 PM   Microsoft Corporation
        c:\windows\system32\imapi2.dll
qagent   6.1.7600.16385   259.00 KB (265,216
bytes)   7/13/2009 7:07 PM   Microsoft Corporation
        c:\windows\system32\qagent.dll
hgcpl   6.1.7600.16385   324.50 KB (332,288
bytes)   7/13/2009 6:57 PM   Microsoft Corporation
        c:\windows\system32\hgcpl.dll
werconcpl 6.1.7600.16385   1.22 MB (1,280,512
bytes)   7/13/2009 6:41 PM   Microsoft Corporation
        c:\windows\system32\werconcpl.dll
framedynos   6.1.7600.16385   288.50 KB
(295,424 bytes)   7/13/2009 6:47 PM   Microsoft
Corporation
        c:\windows\system32\framedynos.dll
wercplsupport   6.1.7600.16385   82.50 KB
(84,480 bytes)   7/13/2009 6:40 PM   Microsoft
Corporation
        c:\windows\system32\wercplsupport.dll
msxml6   6.30.7600.16385   1.91 MB (1,999,360
bytes)   7/13/2009 7:43 PM   Microsoft Corporation
        c:\windows\system32\msxml6.dll
hcproviders   6.1.7600.16385   30.50 KB
(31,232 bytes)   7/13/2009 6:56 PM   Microsoft
Corporation
        c:\windows\system32\hcproviders.dll
ieproxy   8.0.7600.16385   438.00 KB (448,512
bytes)   7/13/2009 6:58 PM   Microsoft Corporation
        c:\program files\internet
explorer\ieproxy.dll
msftedit 5.41.21.2509   781.00 KB (799,744
bytes)   7/13/2009 6:39 PM   Microsoft Corporation
        c:\windows\system32\msftedit.dll
drprov   6.1.7600.16385   24.00 KB (24,576 bytes)
         7/13/2009 7:17 PM   Microsoft Corporation
        c:\windows\system32\drprov.dll
ntlanman 6.1.7600.16385   126.50 KB (129,536
bytes)   7/13/2009 6:48 PM   Microsoft Corporation
        c:\windows\system32\ntlanman.dll
searchfolder   6.1.7600.16385   845.00 KB
(865,280 bytes)   7/13/2009 6:59 PM   Microsoft
Corporation
        c:\windows\system32\searchfolder.dll
ieframe   8.0.7600.16385   11.78 MB (12,352,000
bytes)   7/13/2009 7:16 PM   Microsoft Corporation
        c:\windows\system32\ieframe.dll
oleacc   7.0.0.0   324.00 KB (331,776 bytes)
         7/13/2009 6:39 PM   Microsoft Corporation
        c:\windows\system32\oleacc.dll
mlang   6.1.7600.16385   221.50 KB (226,816
bytes)   7/13/2009 6:55 PM   Microsoft Corporation
        c:\windows\system32\mlang.dll
wininet   8.0.7600.16385   1.14 MB (1,193,472
bytes)   7/13/2009 7:00 PM   Microsoft Corporation
        c:\windows\system32\wininet.dll
normaliz 6.1.7600.16385   2.50 KB (2,560 bytes)
         7/13/2009 6:26 PM   Microsoft Corporation
        c:\windows\system32\normaliz.dll

termsrv 6.1.7600.16385   690.00 KB (706,560
bytes)   7/13/2009 7:17 PM   Microsoft Corporation
        c:\windows\system32\termsrv.dll
icaapi   6.1.7600.16385   22.00 KB (22,528 bytes)
         7/13/2009 7:16 PM   Microsoft Corporation
        c:\windows\system32\icaapi.dll
regapi   6.1.7600.16385   92.50 KB (94,720 bytes)
         7/13/2009 7:17 PM   Microsoft Corporation
        c:\windows\system32\regapi.dll
tlscsp   6.1.7600.16385   72.00 KB (73,728 bytes)
         7/13/2009 7:16 PM   Microsoft Corporation
        c:\windows\system32\tlscsp.dll
rdpcorekmts   6.1.7600.16385   146.00 KB
(149,504 bytes)   7/13/2009 7:17 PM   Microsoft
Corporation
        c:\windows\system32\rdpcorekmts.dll
rdpwsx   6.1.7600.16385   74.50 KB (76,288 bytes)
         7/13/2009 7:17 PM   Microsoft Corporation
        c:\windows\system32\rdpwsx.dll
cpqteam 9.90.0.17 72.00 KB (73,728 bytes)
         1/29/2010 1:54 PM   Hewlett-Packard Company
        c:\program files\hp\ncu\cpqteam.exe
msdtc   2001.12.8530.16385   138.50 KB (141,824
bytes)   7/13/2009 6:59 PM   Microsoft Corporation
        c:\windows\system32\msdtc.exe
msdtctm 2001.12.8530.16385   1.44 MB (1,509,888
bytes)   7/13/2009 7:00 PM   Microsoft Corporation
        c:\windows\system32\msdtctm.dll
msdtcprx 2001.12.8530.16385   728.00 KB (745,472
bytes)   7/13/2009 6:59 PM   Microsoft Corporation
        c:\windows\system32\msdtcprx.dll
mtxclu   2001.12.8530.16385   364.00 KB (372,736
bytes)   7/13/2009 6:59 PM   Microsoft Corporation
        c:\windows\system32\mtxclu.dll
msdtclog 2001.12.8530.16385   122.00 KB (124,928
bytes)   7/13/2009 6:59 PM   Microsoft Corporation
        c:\windows\system32\msdtclog.dll
xolehlp 2001.12.8530.16385   58.00 KB (59,392 bytes)
         7/13/2009 6:59 PM   Microsoft Corporation
        c:\windows\system32\xolehlp.dll
comres   2001.12.8530.16385   1.24 MB (1,297,408
bytes)   7/13/2009 6:59 PM   Microsoft Corporation
        c:\windows\system32\comres.dll
msdtcvsp1res   2001.12.8530.16385   21.00 KB
(21,504 bytes)   7/13/2009 6:59 PM   Microsoft
Corporation
        c:\windows\system32\msdtcvsp1res.dll
mtxoci   2001.12.8530.16385   153.00 KB (156,672
bytes)   7/13/2009 6:59 PM   Microsoft Corporation
        c:\windows\system32\mtxoci.dll
wmiprvse 6.1.7600.16385   360.00 KB (368,640
bytes)   7/13/2009 6:47 PM   Microsoft Corporation
        c:\windows\system32\wbem\wmiprvse.exe
wmiperfclass   6.1.7600.16385   133.00 KB
(136,192 bytes)   7/13/2009 6:31 PM   Microsoft
Corporation
        c:\windows\system32\wbem\wmiperfclass.dll

logonui 6.1.7600.16385   27.00 KB (27,648 bytes)
         7/13/2009 6:52 PM   Microsoft Corporation
        c:\windows\system32\logonui.exe
vaultcredprovider 6.1.7600.16385   78.50 KB
(80,384 bytes)   7/13/2009 6:53 PM   Microsoft

Corporation
        c:\windows\system32\vaultcredprovider.dll

smartcardcredentialprovider   6.1.7600.16385
        185.50 KB (189,952 bytes)   7/13/2009
6:50 PM   Microsoft Corporation
        c:\windows\system32\smartcardcredentialprov
ider.dll
certcredprovider   6.1.7600.16385   126.00 KB
(129,024 bytes)   7/13/2009 6:49 PM   Microsoft
Corporation
        c:\windows\system32\certcredprovider.dll

rasplap 6.1.7600.16385   396.00 KB (405,504
bytes)   7/13/2009 7:10 PM   Microsoft Corporation
        c:\windows\system32\rasplap.dll
rdpclip 6.1.7600.16385   204.50 KB (209,408
bytes)   7/13/2009 7:17 PM   Microsoft Corporation
        c:\windows\system32\rdpclip.exe
msinfo32 6.1.7600.16385   370.00 KB (378,880
bytes)   7/13/2009 6:31 PM   Microsoft Corporation
        c:\windows\system32\msinfo32.exe
mfc42u   6.6.8063.0   1.29 MB (1,357,312
bytes)   7/13/2009 7:35 PM   Microsoft Corporation
        c:\windows\system32\mfc42u.dll
odbc32   6.1.7600.16385   696.00 KB (712,704
bytes)   7/13/2009 7:29 PM   Microsoft Corporation
        c:\windows\system32\odbc32.dll
comdlg32 6.1.7600.16385   581.50 KB (595,456
bytes)   7/13/2009 6:55 PM   Microsoft Corporation
        c:\windows\system32\comdlg32.dll
odbcint 6.1.7600.16385   224.00 KB (229,376
bytes)   7/13/2009 7:28 PM   Microsoft Corporation
        c:\windows\system32\odbcint.dll
structuredquery   7.0.7600.16385   472.50 KB
(483,840 bytes)   7/13/2009 7:29 PM   Microsoft
Corporation
        c:\windows\system32\structuredquery.dll
thumbcache   6.1.7600.16385   110.50 KB
(113,152 bytes)   7/13/2009 6:55 PM   Microsoft
Corporation
        c:\windows\system32\thumbcache.dll
networkexplorer   6.1.7600.16385   1.60 MB
(1,672,704 bytes)   7/13/2009 7:08 PM   Microsoft
Corporation
        c:\windows\system32\networkexplorer.dll
ehstorapi 6.1.7600.16385   141.50 KB (144,896
bytes)   7/13/2009 7:00 PM   Microsoft Corporation
        c:\windows\system32\ehstorapi.dll
cimwin32 6.1.7600.16385   1.96 MB (2,055,168
bytes)   7/13/2009 6:48 PM   Microsoft Corporation
        c:\windows\system32\wbem\cimwin32.dll
security 6.1.7600.16385   5.00 KB (5,120 bytes)
         7/13/2009 6:50 PM   Microsoft Corporation
        c:\windows\system32\security.dll
browcli 6.1.7600.16385   57.00 KB (58,368 bytes)
         7/13/2009 6:53 PM   Microsoft Corporation
        c:\windows\system32\browcli.dll
schedcli 6.1.7600.16385   23.50 KB (24,064 bytes)
         7/13/2009 6:53 PM   Microsoft Corporation
        c:\windows\system32\schedcli.dll

```
wmi     6.1.7600.16385    5.00 KB (5,120 bytes)
        7/13/2009 7:41 PM   Microsoft Corporation
        c:\windows\system32\wmi.dll
ntevt   6.1.7600.16385    260.00 KB (266,240
bytes)  7/13/2009 6:47 PM   Microsoft Corporation
        c:\windows\system32\wbem\ntevt.dll
provthrd 6.1.7600.16385   300.00 KB (307,200
bytes)  7/13/2009 6:47 PM   Microsoft Corporation
        c:\windows\system32\provthrd.dll
msvcirt 7.0.7600.16385    76.50 KB (78,336 bytes)
        7/13/2009 6:18 PM   Microsoft Corporation
        c:\windows\system32\msvcirt.dll
wsock32 6.1.7600.16385    18.00 KB (18,432 bytes)
        7/13/2009 7:10 PM   Microsoft Corporation
        c:\windows\system32\wsock32.dll
tapi32  6.1.7600.16385    243.00 KB (248,832
bytes)  7/13/2009 7:41 PM   Microsoft Corporation
        c:\windows\system32\tapi32.dll

[Services]

Display Name      Name       State    Start Mode
        Service Type   Path     Error Control
        Start Name    Tag ID
Application Experience    AeLookupSvc
        Stopped  Manual  Share Process
        c:\windows\system32\svchost.exe -k netsvcs
        Normal  localSystem   0
Application Layer Gateway Service    ALG
        Stopped  Manual  Own Process
        c:\windows\system32\alg.exe  Normal   NT
AUTHORITY\LocalService   0
Application Identity      AppIDSvc  Stopped
        Manual   Share Process
        c:\windows\system32\svchost.exe -k
localserviceandnoimpersonation      Normal   NT
Authority\LocalService   0
Application Information   Appinfo  Stopped
        Manual   Share Process
        c:\windows\system32\svchost.exe -k netsvcs
        Normal   LocalSystem   0
Application Management    AppMgmt  Stopped
        Manual   Share Process
        c:\windows\system32\svchost.exe -k netsvcs
        Normal   LocalSystem   0
Windows Audio Endpoint Builder
        AudioEndpointBuilder       Stopped
        Manual   Share Process
        c:\windows\system32\svchost.exe -k
localsystemnetworkrestricted  Normal   LocalSystem
        0
Windows Audio     AudioSrv Stopped  Manual
        Share Process
        c:\windows\system32\svchost.exe -k
localservicenetworkrestricted Normal   NT
AUTHORITY\LocalService   0
Base Filtering Engine     BFE      Running
        Auto    Share Process
        c:\windows\system32\svchost.exe -k
localservicenonetwork     Normal   NT
AUTHORITY\LocalService   0
Background Intelligent Transfer Service BITS
        Stopped  Manual  Share Process

        c:\windows\system32\svchost.exe -k netsvcs
        Normal   LocalSystem   0
Computer Browser   Browser  Stopped  Disabled
        Share Process
        c:\windows\system32\svchost.exe -k netsvcs
        Normal   LocalSystem   0
Certificate Propagation       CertPropSvc
        Running  Manual   Share Process
        c:\windows\system32\svchost.exe -k netsvcs
        Normal   LocalSystem   0
Microsoft .NET Framework NGEN v2.0.50727_X86
        clr_optimization_v2.0.50727_32
        Stopped  Manual   Own Process
        c:\windows\microsoft.net\framework\v2.0.507
27\mscorsvw.exe   Ignore  LocalSystem   0

Microsoft .NET Framework NGEN v2.0.50727_X64
        clr_optimization_v2.0.50727_64
        Stopped  Manual   Own Process
        c:\windows\microsoft.net\framework64\v2.0.5
0727\mscorsvw.exe  Ignore  LocalSystem   0

COM+ System Application       COMSysApp Stopped
        Manual   Own Process
        c:\windows\system32\dllhost.exe
/processid:{02d4b3f1-fd88-11d1-960d-00805fc79235}
        Normal   LocalSystem   0
Cryptographic Services     CryptSvc  Running
        Auto    Share Process
        c:\windows\system32\svchost.exe -k
networkservice    Normal   NT
Authority\NetworkService   0
DCOM Server Process Launcher  DcomLaunch
        Running  Auto    Share Process
        c:\windows\system32\svchost.exe -k
dcomlaunch        Normal   LocalSystem   0

Disk Defragmenter  defragsvc Stopped  Manual   Own
Process  c:\windows\system32\svchost.exe -k
defragsvc Normal   localSystem   0
DHCP Client       Dhcp     Stopped  Manual
        Share Process
        c:\windows\system32\svchost.exe -k
localservicenetworkrestricted Normal   NT
Authority\LocalService   0
DNS Client        Dnscache Running  Auto
        Share Process
        c:\windows\system32\svchost.exe -k
networkservice    Normal   NT
AUTHORITY\NetworkService   0
Wired AutoConfig   dot3svc  Stopped  Manual
        Share Process
        c:\windows\system32\svchost.exe -k
localsystemnetworkrestricted  Normal   localSystem
        0
Diagnostic Policy Service     DPS      Running
        Auto    Share Process
        c:\windows\system32\svchost.exe -k
localservicenonetwork     Normal   NT
AUTHORITY\LocalService   0
Extensible Authentication Protocol    EapHost
        Stopped  Manual   Share Process

        c:\windows\system32\svchost.exe -k netsvcs
        Normal   localSystem   0
Encrypting File System (EFS)  EFS      Stopped
        Manual   Share Process
        c:\windows\system32\lsass.exe Normal
        LocalSystem   0
Windows Event Log  eventlog Running  Auto
        Share Process
        c:\windows\system32\svchost.exe -k
localservicenetworkrestricted Normal   NT
AUTHORITY\LocalService   0
COM+ Event System  EventSystem       Running
        Auto    Share Process
        c:\windows\system32\svchost.exe -k
localservice      Normal   NT
AUTHORITY\LocalService   0
Microsoft Fibre Channel Platform Registration Service
        FCRegSvc Stopped  Manual   Share Process
        c:\windows\system32\svchost.exe -k
localservicenetworkrestricted Normal   NT
AUTHORITY\LocalService   0
Function Discovery Provider Host      fdPHost
        Stopped  Manual   Share Process
        c:\windows\system32\svchost.exe -k
localservice      Normal   NT
AUTHORITY\LocalService   0
Function Discovery Resource Publication FDResPub
        Stopped  Manual   Share Process
        c:\windows\system32\svchost.exe -k
localserviceandnoimpersonation      Normal   NT
AUTHORITY\LocalService   0
Windows Font Cache Service    FontCache Stopped
        Manual   Share Process
        c:\windows\system32\svchost.exe -k
localserviceandnoimpersonation      Normal   NT
AUTHORITY\LocalService   0
Group Policy Client gpsvc    Running  Auto
        Share Process
        c:\windows\system32\svchost.exe -k netsvcs
        Normal   LocalSystem   0
Human Interface Device Access hidserv   Stopped
        Manual   Share Process
        c:\windows\system32\svchost.exe -k
localsystemnetworkrestricted  Normal   LocalSystem
        0
Health Key and Certificate Management   hkmsvc
        Stopped  Manual   Share Process
        c:\windows\system32\svchost.exe -k netsvcs
        Normal   localSystem   0
IKE and AuthIP IPsec Keying Modules    IKEEXT
        Running  Auto    Share Process
        c:\windows\system32\svchost.exe -k netsvcs
        Normal   LocalSystem   0
PnP-X IP Bus Enumerator       IPBusEnum Stopped
        Disabled Share Process
        c:\windows\system32\svchost.exe -k
localsystemnetworkrestricted  Normal   LocalSystem
        0
IP Helper iphlpsvc Running  Auto    Share Process
        c:\windows\system32\svchost.exe -k netsvcs
        Normal   LocalSystem   0
CNG Key Isolation  KeyIso   Stopped  Manual
        Share Process
```

c:\windows\system32\lsass.exe Normal
LocalSystem   0
KtmRm for Distributed Transaction Coordinator
        KtmRm   Stopped   Manual   Share Process
        c:\windows\system32\svchost.exe -k
networkserviceandnoimpersonation   Normal   NT
AUTHORITY\NetworkService   0
Server   LanmanServer   Running   Auto
        Share Process
        c:\windows\system32\svchost.exe -k netsvcs
        Normal   LocalSystem   0
Workstation   LanmanWorkstation   Running
        Auto   Share Process
        c:\windows\system32\svchost.exe -k
networkservice   Normal   NT
AUTHORITY\NetworkService   0
Link-Layer Topology Discovery Mapper   lltdsvc
        Stopped   Manual   Share Process
        c:\windows\system32\svchost.exe -k
localservice   Normal   NT
AUTHORITY\LocalService   0
TCP/IP NetBIOS Helper   lmhosts   Stopped
        Disabled   Share Process
        c:\windows\system32\svchost.exe -k
localservicenetworkrestricted Normal   NT
AUTHORITY\LocalService   0
Multimedia Class Scheduler   MMCSS   Stopped
        Manual   Share Process
        c:\windows\system32\svchost.exe -k netsvcs
        Normal   LocalSystem   0
Windows Firewall   MpsSvc   Running   Auto
        Share Process
        c:\windows\system32\svchost.exe -k
localservicenonetwork   Normal   NT
Authority\LocalService   0
Distributed Transaction Coordinator   MSDTC
        Running   Auto   Own Process
        c:\windows\system32\msdtc.exe Normal   NT
AUTHORITY\NetworkService   0
SQL Server FullText Search (MSSQLSERVER)
        msftesql   Stopped   Disabled   Own Process
        "c:\program files\microsoft sql
server\mssql.1\mssql\binn\msftesql.exe" -s:mssql.1 -
f:mssqlserver   Normal   LocalSystem   0

Microsoft iSCSI Initiator Service   MSiSCSI
        Stopped   Manual   Share Process
        c:\windows\system32\svchost.exe -k netsvcs
        Normal   LocalSystem   0
Windows Installer   msiserver Stopped   Manual   Own
Process   c:\windows\system32\msiexec.exe /v
        Normal   LocalSystem   0
SQL Server (MSSQLSERVER)   MSSQLSERVER
        Stopped   Manual   Own Process
        "c:\program files\microsoft sql
server\mssql.1\mssql\binn\sqlservr.exe" -smssqlserver
        Normal   LocalSystem   0
SQL Server Active Directory Helper
        MSSQLServerADHelper Stopped   Disabled   Own
Process   "c:\program files\microsoft sql
server\90\shared\sqladhlp90.exe"   Normal   NT
AUTHORITY\NetworkService   0

Network Access Protection Agent   napagent
        Stopped   Manual   Share Process
        c:\windows\system32\svchost.exe -k
networkservice   Normal   NT
AUTHORITY\NetworkService   0
Netlogon Netlogon Stopped   Manual   Share Process
        c:\windows\system32\lsass.exe Normal
        LocalSystem   0
Network Connections Netman   Running   Manual
        Share Process
        c:\windows\system32\svchost.exe -k
localsystemnetworkrestricted Normal   LocalSystem
        0
Network List Service   netprofm Running
        Manual   Share Process
        c:\windows\system32\svchost.exe -k
localservice   Normal   NT
AUTHORITY\LocalService   0
Network Location Awareness   NlaSvc   Running
        Auto   Share Process
        c:\windows\system32\svchost.exe -k
networkservice   Normal   NT
AUTHORITY\NetworkService   0
Network Store Interface Service   nsi
        Running   Auto   Share Process
        c:\windows\system32\svchost.exe -k
localservice   Normal   NT
Authority\LocalService   0
Office Source Engine   ose   Stopped
        Manual   Own Process   "c:\program
files (x86)\common files\microsoft shared\source
engine\ose.exe"   Normal   LocalSystem   0

Performance Counter DLL Host   PerfHost   Stopped
        Manual   Own Process
        c:\windows\syswow64\perfhost.exe
        Normal   NT AUTHORITY\LocalService   0

Performance Logs & Alerts   pla   Running
        Auto   Share Process
        c:\windows\system32\svchost.exe -k
localservicenonetwork   Normal   NT
AUTHORITY\LocalService   0
Plug and Play   PlugPlay Running   Auto
        Share Process
        c:\windows\system32\svchost.exe -k
dcomlaunch   Normal   LocalSystem   0

IPsec Policy Agent   PolicyAgent   Stopped
        Disabled   Share Process
        c:\windows\system32\svchost.exe -k
networkservicenetworkrestricted   Normal   NT
Authority\NetworkService   0
Power   Power   Running   Auto   Share Process
        c:\windows\system32\svchost.exe -k
dcomlaunch   Normal   LocalSystem   0

User Profile Service   ProfSvc   Running
        Auto   Share Process
        c:\windows\system32\svchost.exe -k netsvcs
        Normal   LocalSystem   0
Protected Storage   ProtectedStorage   Stopped
        Manual   Share Process

c:\windows\system32\lsass.exe Normal
        LocalSystem   0
Remote Access Auto Connection Manager   RasAuto
        Stopped   Manual   Share Process
        c:\windows\system32\svchost.exe -k netsvcs
        Normal   localSystem   0
Remote Access Connection Manager   RasMan
        Stopped   Manual   Share Process
        c:\windows\system32\svchost.exe -k netsvcs
        Normal   localSystem   0
Routing and Remote Access   RemoteAccess
        Stopped   Disabled   Share Process
        c:\windows\system32\svchost.exe -k netsvcs
        Normal   localSystem   0
Remote Registry   RemoteRegistry   Running
        Auto   Share Process
        c:\windows\system32\svchost.exe -k regsvc
        Normal   NT AUTHORITY\LocalService   0

RPC Endpoint Mapper RpcEptMapper   Running
        Auto   Share Process
        c:\windows\system32\svchost.exe -k rpcss
        Normal   NT AUTHORITY\NetworkService   0

Remote Procedure Call (RPC) Locator   RpcLocator
        Stopped   Manual   Own Process
        c:\windows\system32\locator.exe
        Normal   NT AUTHORITY\NetworkService   0

Remote Procedure Call (RPC)   RpcSs   Running
        Auto   Share Process
        c:\windows\system32\svchost.exe -k rpcss
        Normal   NT AUTHORITY\NetworkService   0

Resultant Set of Policy Provider   RSoPProv
        Stopped   Manual   Share Process
        c:\windows\system32\rsopprov.exe
        Normal   LocalSystem   0
Special Administration Console Helper   sacsvr
        Stopped   Manual   Share Process
        c:\windows\system32\svchost.exe -k netsvcs
        Normal   LocalSystem   0
Security Accounts Manager   SamSs   Running
        Auto   Share Process
        c:\windows\system32\lsass.exe Normal
        LocalSystem   0
Smart Card   SCardSvr Stopped   Manual
        Share Process
        c:\windows\system32\svchost.exe -k
localserviceandnoimpersonation   Normal   NT
AUTHORITY\LocalService   0
Task Scheduler   Schedule Running   Auto
        Share Process
        c:\windows\system32\svchost.exe -k netsvcs
        Normal   LocalSystem   0
Smart Card Removal Policy   SCPolicySvc
        Stopped   Manual   Share Process
        c:\windows\system32\svchost.exe -k netsvcs
        Normal   LocalSystem   0
Secondary Logon   seclogon Stopped   Manual
        Share Process
        c:\windows\system32\svchost.exe -k netsvcs
        Normal   LocalSystem   0

```
System Event Notification Service      SENS
        Running  Auto    Share Process
        c:\windows\system32\svchost.exe -k netsvcs
        Normal   LocalSystem      0
Remote Desktop Configuration  SessionEnv
        Running  Manual   Share Process
        c:\windows\system32\svchost.exe -k netsvcs
        Normal   localSystem      0
Internet Connection Sharing (ICS)      SharedAccess
        Stopped  Disabled Share Process
        c:\windows\system32\svchost.exe -k netsvcs
        Normal   LocalSystem      0
Shell Hardware Detection      ShellHWDetection
        Running  Auto    Share Process
        c:\windows\system32\svchost.exe -k netsvcs
        Ignore   LocalSystem      0
SNMP Trap SNMPTRAP Stopped  Manual    Own Process
        c:\windows\system32\snmptrap.exe
        Normal   NT AUTHORITY\LocalService    0

Print Spooler      Spooler  Stopped  Disabled Own
Process   c:\windows\system32\spoolsv.exe
        Normal   LocalSystem      0
Software Protection sppsvc   Stopped  Auto     Own
Process   c:\windows\system32\sppsvc.exe
        Normal   NT AUTHORITY\NetworkService      0

SPP Notification Service     sppuinotify
        Stopped  Manual   Share Process
        c:\windows\system32\svchost.exe -k
localservice       Normal   NT
AUTHORITY\LocalService   0
SQL Server Browser  SQLBrowser       Stopped
        Disabled Own Process      "c:\program
files (x86)\microsoft sql
server\90\shared\sqlbrowser.exe"       Normal
        LocalSystem      0
SQL Server Agent (MSSQLSERVER)
        SQLSERVERAGENT    Stopped  Manual   Own
Process   "c:\program files\microsoft sql
server\mssql.1\mssql\binn\sqlagent90.exe" -i
mssqlserver        Normal   LocalSystem      0

SQL Server VSS Writer        SQLWriter Stopped
        Disabled Own Process      "c:\program
files\microsoft sql server\90\shared\sqlwriter.exe"
        Normal   LocalSystem      0
SSDP Discovery     SSDPSRV  Stopped  Disabled
        Share Process
        c:\windows\system32\svchost.exe -k
localserviceandnoimpersonation         Normal   NT
AUTHORITY\LocalService   0
Secure Socket Tunneling Protocol Service
        SstpSvc  Stopped  Manual   Share Process
        c:\windows\system32\svchost.exe -k
localservice       Normal   NT
Authority\LocalService   0
Microsoft Software Shadow Copy Provider swprv
        Stopped  Manual   Own Process
        c:\windows\system32\svchost.exe -k swprv
        Normal   LocalSystem      0
Telephony TapiSrv  Stopped  Manual   Own Process
        c:\windows\system32\svchost.exe -k tapisrv

        Normal   NT AUTHORITY\NetworkService  0
TPM Base Services  TBS      Stopped  Manual
        Share Process
        c:\windows\system32\svchost.exe -k
localserviceandnoimpersonation         Normal   NT
AUTHORITY\LocalService   0
Remote Desktop Services      TermService
        Running  Manual   Share Process
        c:\windows\system32\svchost.exe -k termsvcs
        Normal   NT Authority\NetworkService  0

Thread Ordering Server       THREADORDER
        Stopped  Manual   Share Process
        c:\windows\system32\svchost.exe -k
localservice       Normal   NT
AUTHORITY\LocalService   0
Distributed Link Tracking Client       TrkWks
        Running  Auto    Share Process
        c:\windows\system32\svchost.exe -k
localsystemnetworkrestricted  Normal   LocalSystem
        0
Windows Modules Installer    TrustedInstaller
        Stopped  Manual   Own Process
        c:\windows\servicing\trustedinstaller.exe
        Normal   localSystem      0
Interactive Services Detection         UI0Detect
        Stopped  Manual   Own Process
        c:\windows\system32\ui0detect.exe
        Normal   LocalSystem      0
Remote Desktop Services UserMode Port Redirector
        UmRdpService      Running  Manual
        Share Process
        c:\windows\system32\svchost.exe -k
localsystemnetworkrestricted  Normal   localSystem
        0
UPnP Device Host   upnphost Stopped  Disabled
        Share Process
        c:\windows\system32\svchost.exe -k
localserviceandnoimpersonation         Normal   NT
AUTHORITY\LocalService   0
Desktop Window Manager Session Manager  UxSms
        Running  Auto    Share Process
        c:\windows\system32\svchost.exe -k
localsystemnetworkrestricted  Normal   localSystem
        0
Credential Manager VaultSvc Stopped  Manual
        Share Process
        c:\windows\system32\lsass.exe Normal
        LocalSystem      0
Virtual Disk       vds      Stopped  Manual   Own
Process   c:\windows\system32\vds.exe   Normal
        LocalSystem      0
Volume Shadow Copy  VSS      Stopped  Manual   Own
Process   c:\windows\system32\vssvc.exe Normal
        LocalSystem      0
Windows Time       W32Time  Stopped  Auto
        Share Process
        c:\windows\system32\svchost.exe -k
localservice       Normal   NT
AUTHORITY\LocalService   0
Windows Color System         WcsPlugInService
        Stopped  Manual   Share Process

        c:\windows\system32\svchost.exe -k wcssvc
        Normal   NT AUTHORITY\LocalService    0

Diagnostic Service Host      WdiServiceHost
        Stopped  Manual   Share Process
        c:\windows\system32\svchost.exe -k
localservice       Normal   NT
AUTHORITY\LocalService   0
Diagnostic System Host       WdiSystemHost
        Running  Manual   Share Process
        c:\windows\system32\svchost.exe -k
localsystemnetworkrestricted Normal    LocalSystem
        0
Windows Event Collector      Wecsvc   Stopped
        Manual   Share Process
        c:\windows\system32\svchost.exe -k
networkservice     Normal   NT
AUTHORITY\NetworkService 0
Problem Reports and Solutions Control Panel Support
        wercplsupport     Stopped  Manual
        Share Process
        c:\windows\system32\svchost.exe -k netsvcs
        Normal   localSystem      0
Windows Error Reporting Service        WerSvc
        Stopped  Manual   Share Process
        c:\windows\system32\svchost.exe -k
wersvcgroup        Ignore   localSystem      0

WinHTTP Web Proxy Auto-Discovery Service
        WinHttpAutoProxySvc Stopped    Manual
        Share Process
        c:\windows\system32\svchost.exe -k
localservice       Normal   NT
AUTHORITY\LocalService   0
Windows Management Instrumentation     Winmgmt
        Running  Auto    Share Process
        c:\windows\system32\svchost.exe -k netsvcs
        Ignore   localSystem      0
Windows Remote Management (WS-Management)
        WinRM    Running  Auto    Share Process
        c:\windows\system32\svchost.exe -k
networkservice     Normal   NT
AUTHORITY\NetworkService 0
WMI Performance Adapter      wmiApSrv Stopped
        Manual   Own Process
        c:\windows\system32\wbem\wmiapsrv.exe
        Normal   localSystem      0
Portable Device Enumerator Service     WPDBusEnum
        Stopped  Manual   Share Process
        c:\windows\system32\svchost.exe -k
localsystemnetworkrestricted  Normal   LocalSystem
        0
Windows Update     wuauserv Stopped  Disabled
        Share Process
        c:\windows\system32\svchost.exe -k netsvcs
        Normal   LocalSystem      0
Windows Driver Foundation - User-mode Driver
Framework wudfsvc  Stopped  Manual   Share Process
        c:\windows\system32\svchost.exe -k
localsystemnetworkrestricted Normal    LocalSystem
        0

[Program Groups]
```

```
Group Name        Name     User Name
Start Menu        Default:Start Menu  Default
Start Menu\Programs Default:Start Menu\Programs
        Default
Start Menu\Programs\Accessories       Default:Start
Menu\Programs\Accessories   Default
Start Menu\Programs\Accessories\Accessibility
        Default:Start
Menu\Programs\Accessories\Accessibility Default
Start Menu\Programs\Accessories\System Tools
        Default:Start
Menu\Programs\Accessories\System Tools  Default
Start Menu\Programs\Maintenance       Default:Start
Menu\Programs\Maintenance    Default
Start Menu        Public:Start Menu   Public
Start Menu\Programs Public:Start Menu\Programs
        Public
Start Menu\Programs\Accessories       Public:Start
Menu\Programs\Accessories   Public
Start Menu\Programs\Accessories\Accessibility
        Public:Start
Menu\Programs\Accessories\Accessibility Public
Start Menu\Programs\Accessories\System Tools
        Public:Start
Menu\Programs\Accessories\System Tools  Public
Start Menu\Programs\Accessories\Windows PowerShell
        Public:Start
Menu\Programs\Accessories\Windows PowerShell
        Public
Start Menu\Programs\Administrative Tools
        Public:Start Menu\Programs\Administrative
Tools   Public
Start Menu\Programs\Administrative Tools\Terminal
Services  Public:Start Menu\Programs\Administrative
Tools\Terminal Services     Public
Start Menu\Programs\HP System Tools    Public:Start
Menu\Programs\HP System Tools Public
Start Menu\Programs\HP System Tools\HP Array
Configuration Utility     Public:Start
Menu\Programs\HP System Tools\HP Array Configuration
Utility   Public
Start Menu\Programs\HP System Tools\HP Array
Configuration Utility CLI    Public:Start
Menu\Programs\HP System Tools\HP Array Configuration
Utility CLI     Public
Start Menu\Programs\KrView    Public:Start
Menu\Programs\KrView    Public
Start Menu\Programs\Maintenance       Public:Start
Menu\Programs\Maintenance    Public
Start Menu\Programs\Microsoft SQL Server 2005
        Public:Start Menu\Programs\Microsoft SQL
Server 2005     Public
Start Menu\Programs\Microsoft SQL Server
2005\Analysis Services     Public:Start
Menu\Programs\Microsoft SQL Server 2005\Analysis
Services  Public
Start Menu\Programs\Microsoft SQL Server
2005\Configuration Tools    Public:Start
Menu\Programs\Microsoft SQL Server 2005\Configuration
Tools     Public
Start Menu\Programs\Microsoft SQL Server
2005\Documentation and Tutorials      Public:Start

Menu\Programs\Microsoft SQL Server 2005\Documentation
and Tutorials     Public
Start Menu\Programs\Microsoft SQL Server
2005\Documentation and Tutorials\Tutorials
        Public:Start Menu\Programs\Microsoft SQL
Server 2005\Documentation and Tutorials\Tutorials
        Public
Start Menu\Programs\Microsoft SQL Server
2005\Performance Tools     Public:Start
Menu\Programs\Microsoft SQL Server 2005\Performance
Tools     Public
Start Menu\Programs\Microsoft Visual Studio 2005
        Public:Start Menu\Programs\Microsoft Visual
Studio 2005     Public
Start Menu\Programs\Microsoft Visual Studio
2005\Visual Studio Tools    Public:Start
Menu\Programs\Microsoft Visual Studio 2005\Visual
Studio Tools     Public
Start Menu\Programs\Startup    Public:Start
Menu\Programs\Startup     Public
Start Menu        VENOM\Administrator:Start Menu
        VENOM\Administrator
Start Menu\Programs VENOM\Administrator:Start
Menu\Programs    VENOM\Administrator
Start Menu\Programs\Accessories
        VENOM\Administrator:Start
Menu\Programs\Accessories   VENOM\Administrator
Start Menu\Programs\Accessories\Accessibility
        VENOM\Administrator:Start
Menu\Programs\Accessories\Accessibility
        VENOM\Administrator
Start Menu\Programs\Accessories\System Tools
        VENOM\Administrator:Start
Menu\Programs\Accessories\System Tools
        VENOM\Administrator
Start Menu\Programs\Administrative Tools
        VENOM\Administrator:Start
Menu\Programs\Administrative Tools
        VENOM\Administrator
Start Menu\Programs\AMD
        VENOM\Administrator:Start Menu\Programs\AMD
        VENOM\Administrator
Start Menu\Programs\AMD\CPUInfo
        VENOM\Administrator:Start
Menu\Programs\AMD\CPUInfo   VENOM\Administrator
Start Menu\Programs\AMD System Analysis Tools
        VENOM\Administrator:Start Menu\Programs\AMD
System Analysis Tools     VENOM\Administrator
Start Menu\Programs\AMD System Analysis
Tools\clkconfig   VENOM\Administrator:Start
Menu\Programs\AMD System Analysis Tools\clkconfig
        VENOM\Administrator
Start Menu\Programs\AMD System Analysis
Tools\configmgr   VENOM\Administrator:Start
Menu\Programs\AMD System Analysis Tools\configmgr
        VENOM\Administrator
Start Menu\Programs\AMD System Analysis Tools\CpuSpy
        VENOM\Administrator:Start Menu\Programs\AMD
System Analysis Tools\CpuSpy  VENOM\Administrator
Start Menu\Programs\AMD System Analysis
Tools\HotkeyEvent   VENOM\Administrator:Start
Menu\Programs\AMD System Analysis Tools\HotkeyEvent
        VENOM\Administrator

Start Menu\Programs\AMD System Analysis
Tools\MemBlock    VENOM\Administrator:Start
Menu\Programs\AMD System Analysis Tools\MemBlock
        VENOM\Administrator
Start Menu\Programs\AMD System Analysis Tools\mreport
        VENOM\Administrator:Start Menu\Programs\AMD
System Analysis Tools\mreport VENOM\Administrator
Start Menu\Programs\AMD System Analysis
Tools\MultEvent   VENOM\Administrator:Start
Menu\Programs\AMD System Analysis Tools\MultEvent
        VENOM\Administrator
Start Menu\Programs\AMD System Analysis
Tools\MultiProbe  VENOM\Administrator:Start
Menu\Programs\AMD System Analysis Tools\MultiProbe
        VENOM\Administrator
Start Menu\Programs\AMD System Analysis
Tools\PerfmonConfig VENOM\Administrator:Start
Menu\Programs\AMD System Analysis Tools\PerfmonConfig
        VENOM\Administrator
Start Menu\Programs\AMD System Analysis Tools\SysCAT
        VENOM\Administrator:Start Menu\Programs\AMD
System Analysis Tools\SysCAT  VENOM\Administrator
Start Menu\Programs\KrView
        VENOM\Administrator:Start
Menu\Programs\KrView     VENOM\Administrator
Start Menu\Programs\Maintenance
        VENOM\Administrator:Start
Menu\Programs\Maintenance   VENOM\Administrator
Start Menu\Programs\Startup
        VENOM\Administrator:Start
Menu\Programs\Startup     VENOM\Administrator

[Startup Programs]

Program  Command   User Name Location
CPQTEAM  c:\program files\hp\ncu\cpqteam.exe
        Public
        HKLM\SOFTWARE\Microsoft\Windows\CurrentVers
ion\Run

[OLE Registration]

Object    Local Server
WordPad Document   "%programfiles%\windows
nt\accessories\wordpad.exe"
Paintbrush Picture  %systemroot%\system32\mspaint.exe

Package  Not Available
Microsoft PenInputPanel Control      Not Available

[Windows Error Reporting]

Time     Type     Details
6/13/2010 2:24 AM  Application Error   Faulting
application name: sleep.exe, version: 0.0.0.0, time
stamp: 0x2fb0ba06&#x000d;&#x000a;Faulting module
name: sleep.exe, version: 0.0.0.0, time stamp:
0x2fb0ba06&#x000d;&#x000a;Exception code:
0xc0000005&#x000d;&#x000a;Fault offset:
0x0000566f&#x000d;&#x000a;Faulting process id:
0x1784&#x000d;&#x000a;Faulting application start
time: 0x01cb0a9f818e5c49&#x000d;&#x000a;Faulting
```

application path:
C:\mstpcc.468\tools\sleep\sleep.exe
Fa
ulting module path:
C:\mstpcc.468\tools\sleep\sleep.exe
Re
port Id: bfd27e1a-7692-11df-9622-0026551b1f07
6/13/2010 2:08 AM   Application Error   Faulting
application name: sleep.exe, version: 0.0.0.0, time
stamp: 0x2fb0ba06
Faulting module
name: sleep.exe, version: 0.0.0.0, time stamp:
0x2fb0ba06
Exception code:
0xc0000005
Fault offset:
0x0000566f
Faulting process id:
0x14c8
Faulting application start
time: 0x01cb0a9d585681c4
Faulting
application path:
C:\mstpcc.468\tools\sleep\sleep.exe
Fa
ulting module path:
C:\mstpcc.468\tools\sleep\sleep.exe
Re
port Id: 96b2bfcf-7690-11df-9622-0026551b1f07
6/8/2010 3:26 PM   Application Error   Faulting
application name: sleep.exe, version: 0.0.0.0, time
stamp: 0x2fb0ba06
Faulting module
name: sleep.exe, version: 0.0.0.0, time stamp:
0x2fb0ba06
Exception code:
0xc0000005
Fault offset:
0x0000566f
Faulting process id:
0xda8
Faulting application start time:
0x01cb071ef235202e
Faulting
application path:
C:\mstpcc.468\tools\sleep\sleep.exe
Fa
ulting module path:
C:\mstpcc.468\tools\sleep\sleep.exe
Re
port Id: 30eb3f5a-7312-11df-9622-0026551b1f07
4/27/2010 9:27 PM   Application Error   Faulting
application name: sleep.exe, version: 0.0.0.0, time
stamp: 0x2fb0ba06
Faulting module
name: sleep.exe, version: 0.0.0.0, time stamp:
0x2fb0ba06
Exception code:
0xc0000005
Fault offset:
0x0000566f
Faulting process id:
0xa08
Faulting application start time:
0x01cae6507f196f23
Faulting
application path:
C:\mstpcc.468\tools\sleep\sleep.exe
Fa
ulting module path:
C:\mstpcc.468\tools\sleep\sleep.exe
Re
port Id: bd92364a-5243-11df-8ff4-0026551b1f07
4/27/2010 2:19 AM   Application Error   Faulting
application name: sleep.exe, version: 0.0.0.0, time
stamp: 0x2fb0ba06
Faulting module
name: sleep.exe, version: 0.0.0.0, time stamp:
0x2fb0ba06
Exception code:
0xc0000005
Fault offset:
0x0000566f
Faulting process id:
0x7c4
Faulting application start time:
0x01cae5b019d7c1e4
Faulting
application path:
C:\mstpcc.468\tools\sleep\sleep.exe
Fa
ulting module path:
C:\mstpcc.468\tools\sleep\sleep.exe
Re
port Id: 57f03f32-51a3-11df-bd47-0026551b1f07
4/26/2010 4:36 AM   Application Error   Faulting
application name: sleep.exe, version: 0.0.0.0, time

stamp: 0x2fb0ba06
Faulting module
name: sleep.exe, version: 0.0.0.0, time stamp:
0x2fb0ba06
Exception code:
0xc0000005
Fault offset:
0x0000566f
Faulting process id:
0x1174
Faulting application start
time: 0x01cae4fa06cab097
Faulting
application path:
C:\mstpcc.468\tools\sleep\sleep.exe
Fa
ulting module path:
C:\mstpcc.468\tools\sleep\sleep.exe
Re
port Id: 455f6496-50ed-11df-96c8-0026551b1f07
4/26/2010 2:37 AM   Application Error   Faulting
application name: sleep.exe, version: 0.0.0.0, time
stamp: 0x2fb0ba06
Faulting module
name: sleep.exe, version: 0.0.0.0, time stamp:
0x2fb0ba06
Exception code:
0xc0000005
Fault offset:
0x0000566f
Faulting process id:
0x5fc
Faulting application start time:
0x01cae4e95d68edea
Faulting
application path:
C:\mstpcc.468\tools\sleep\sleep.exe
Fa
ulting module path:
C:\mstpcc.468\tools\sleep\sleep.exe
Re
port Id: 9c10dc12-50dc-11df-96c8-0026551b1f07
4/21/2010 6:55 AM   Application Error   Faulting
application name: sleep.exe, version: 0.0.0.0, time
stamp: 0x2fb0ba06
Faulting module
name: sleep.exe, version: 0.0.0.0, time stamp:
0x2fb0ba06
Exception code:
0xc0000005
Fault offset:
0x0000566f
Faulting process id:
0xe40
Faulting application start time:
0x01cae11fa5c846d4
Faulting
application path:
C:\mstpcc.468\tools\sleep\sleep.exe
Fa
ulting module path:
C:\mstpcc.468\tools\sleep\sleep.exe
Re
port Id: e437f07-4d12-11df-96c8-0026551b1f07
3/25/2010 12:20 PM   Application Error   Faulting
application name: sleep.exe, version: 0.0.0.0, time
stamp: 0x2fb0ba06
Faulting module
name: sleep.exe, version: 0.0.0.0, time stamp:
0x2fb0ba06
Exception code:
0xc0000005
Fault offset:
0x0000566f
Faulting process id:
0x1394
Faulting application start
time: 0x01cacc15844b8f30
Faulting
application path:
C:\mstpcc.468\tools\sleep\sleep.exe
Fa
ulting module path:
C:\mstpcc.468\tools\sleep\sleep.exe
Re
port Id: c31efaca-3808-11df-8027-0026551b1f07
3/25/2010 10:04 AM   Application Error   Faulting
application name: sleep.exe, version: 0.0.0.0, time
stamp: 0x2fb0ba06
Faulting module
name: sleep.exe, version: 0.0.0.0, time stamp:
0x2fb0ba06
Exception code:
0xc0000005
Fault offset:
0x0000566f
Faulting process id:
0xd18
Faulting application start time:
0x01cacc0280ed3630
Faulting

application path:
C:\mstpcc.468\tools\sleep\sleep.exe
Fa
ulting module path:
C:\mstpcc.468\tools\sleep\sleep.exe
Re
port Id: bfce0f7d-37f5-11df-8027-0026551b1f07
3/25/2010 9:44 AM   Application Error   Faulting
application name: sleep.exe, version: 0.0.0.0, time
stamp: 0x2fb0ba06
Faulting module
name: sleep.exe, version: 0.0.0.0, time stamp:
0x2fb0ba06
Exception code:
0xc0000005
Fault offset:
0x0000566f
Faulting process id:
0xa6c
Faulting application start time:
0x01cacbffc29d2855
Faulting
application path:
C:\mstpcc.468\tools\sleep\sleep.exe
Fa
ulting module path:
C:\mstpcc.468\tools\sleep\sleep.exe
Re
port Id: 00887a79-37f3-11df-8027-0026551b1f07
2/5/2010 11:00 PM   Application Error   Faulting
application name: cpqsetup.exe, version: 2.5.0.0,
time stamp: 0x4a48c31e
Faulting module
name: msvcrt.dll, version: 7.0.7600.16385, time
stamp: 0x4a5bdfbe
Exception code:
0xc0000005
Fault offset:
0x0000000000001188
Faulting process
id: 0xaf4
Faulting application start
time: 0x01caa6b6fefb536f
Faulting
application path:
C:\Users\ADMINI~1\AppData\Local\Temp\1\{C2FDC725-
CE9C-46FD-972F-
D6164BAA69E7}\cpqsetup.exe
Faulting
module path:
C:\Windows\system32\msvcrt.dll
Report
Id: 3e11af79-12aa-11df-a02a-9d91a72a42f0
2/5/2010 10:53 PM   Application Error   Faulting
application name: cpqsetup.exe, version: 2.5.0.0,
time stamp: 0x4a48c31b
Faulting module
name: msvcrt.dll, version: 7.0.7600.16385, time
stamp: 0x4a5bda6f
Exception code:
0xc0000005
Fault offset:
0x0000a08c
Faulting process id:
0x250
Faulting application start time:
0x01caa6b6019595bc
Faulting
application path:
C:\Users\ADMINI~1\AppData\Local\Temp\{7B85D5D4-5215-
44B8-ABD7-
3E71FFA22E0A}\cpqsetup.exe
Faulting
module path:
C:\Windows\syswow64\msvcrt.dll
Report
Id: 424c8296-12a9-11df-8065-c4b4e4d686ee
2/5/2010 10:52 PM   Application Error   Faulting
application name: cpqsetup.exe, version: 2.5.0.0,
time stamp: 0x4a48c31e
Faulting module
name: msvcrt.dll, version: 7.0.7600.16385, time
stamp: 0x4a5bdfbe
Exception code:
0xc0000005
Fault offset:
0x0000000000001188
Faulting process
id: 0x114
Faulting application start
time: 0x01caa6b5f513faee
Faulting
application path:
C:\Users\ADMINI~1\AppData\Local\Temp\{EAC496C7-4A63-
4227-BE40-

582ECE3EE8CD}\cpqsetup.exe
Faulting module path: C:\Windows\system32\msvcrt.dll
Report Id: 34552fbd-12a9-11df-8065-c4b4e4d686ee
2/5/2010 10:52 PM   Application Error   Faulting application name: cpqsetup.exe, version: 2.5.0.0, time stamp: 0x4a48c31e
Faulting module name: msvcrt.dll, version: 7.0.7600.16385, time stamp: 0x4a5bdfbe
Exception code: 0xc0000005
Fault offset: 0x0000000000001188
Faulting process id: 0x41c
Faulting application start time: 0x01caa6b5e5370f5e
Faulting application path: C:\Users\ADMINI~1\AppData\Local\Temp\{4028CA01-74F6-4F2C-B416-108947682C2E}\cpqsetup.exe
Faulting module path: C:\Windows\system32\msvcrt.dll
Report Id: 2550e166-12a9-11df-8065-c4b4e4d686ee
6/13/2010 2:24 AM   Windows Error Reporting   Fault bucket , type 0
Event Name: APPCRASH
Response: Not available
Cab Id: 0

Problem signature:
P1: sleep.exe
P2: 0.0.0.0
P3: 2fb0ba06
P4: sleep.exe
P5: 0.0.0.0
P6: 2fb0ba06
P7: c0000005
P8: 0000566f
P9: 
P10: 

Attached files:

These files may be available here:
C:\Users\Administrator\AppData\Local\Microsoft\Windows\WER\ReportArchive\AppCrash_sleep.exe_e4d6edaec3483adca39abc17680c4ff8aae021_1d731f25

Analysis symbol: 
Rechecking for solution: 0
Report Id: bfd27e1a-7692-11df-9622-0026551b1f07
Report Status: 0
6/13/2010 2:08 AM   Windows Error Reporting   Fault bucket , type 0
Event Name: APPCRASH
Response: Not available
Cab Id: 0

Problem signature:
P1: sleep.exe
P2: 0.0.0.0
P3: 2fb0ba06
P4: sleep.exe
P5: 0.0.0.0
P6: 2fb0ba06
P7: c0000005
P8: 0000566f
P9: 
P10: 

Attached files:

These files may be available here:
C:\Users\Administrator\AppData\Local\Microsoft\Windows\WER\ReportArchive\AppCrash_sle

ep.exe_e4d6edaec3483adca39abc17680c4ff8aae021_0810fa76

Analysis symbol: 
Rechecking for solution: 0
Report Id: 96b2bfcf-7690-11df-9622-0026551b1f07
Report Status: 0
6/8/2010 3:26 PM   Windows Error Reporting   Fault bucket , type 0
Event Name: APPCRASH
Response: Not available
Cab Id: 0

Problem signature:
P1: sleep.exe
P2: 0.0.0.0
P3: 2fb0ba06
P4: sleep.exe
P5: 0.0.0.0
P6: 2fb0ba06
P7: c0000005
P8: 0000566f
P9: 
P10: 

Attached files:

These files may be available here:
C:\Users\Administrator\AppData\Local\Microsoft\Windows\WER\ReportArchive\AppCrash_sleep.exe_e4d6edaec3483adca39abc17680c4ff8aae021_0f0f6ef1

Analysis symbol: 
Rechecking for solution: 0
Report Id: 30eb3f5a-7312-11df-9622-0026551b1f07
Report Status: 0
5/13/2010 7:06 PM   Windows Error Reporting   Fault bucket , type 0
Event Name: AppHangB1
Response: Not available
Cab Id: 0

Problem signature:
P1: mmc.exe
P2: 6.1.7600.16385
P3: 4a5bc808
P4: 5ea8
P5: 2
P6: 
P7: 
P8: 
P9: 
P10: 

Attached files:

These files may be available here:
C:\Users\Administrator\AppData\Local\Microsoft\Windows\WER\ReportArchive\AppHang_mmc.exe_79fa1f2563fcf1a7d02e4a358c1c4147b5ca34ec_0d1a0f05

Analysis symbol: 
Rechecking for solution: 0
Report Id: af7dce35-5ec2-11df-8054-0026551b1f07
Report Status: 0
5/12/2010 7:00 PM   Windows Error Reporting   Fault bucket , type 0
Event Name: AppHangB1
Response: Not available
Cab Id: 0

Problem signature:
P1: mmc.exe
P2: 6.1.7600.16385
P3: 4a5bc808
P4: 5ea8
P5: 2
P6: 
P7: 
P8: 
P9: 
P10:



Attached files:

These files may be available here:
C:\Users\Administrator\AppData\Local\Microsoft\Windows\WER\ReportArchive\AppHang_mmc.exe_79fa1f2563fcf1a7d02e4a358c1c4147b5ca34ec_03fd2be0

Analysis symbol: 
Rechecking for solution: 0
Report Id: 958e4555-5df8-11df-9241-0026551b1f07
Report Status: 0
4/27/2010 9:27 PM   Windows Error Reporting   Fault bucket , type 0
Event Name: APPCRASH
Response: Not available
Cab Id: 0

Problem signature:
P1: sleep.exe
P2: 0.0.0.0
P3: 2fb0ba06
P4: sleep.exe
P5: 0.0.0.0
P6: 2fb0ba06
P7: c0000005
P8: 0000566f
P9: 
P10: 

Attached files:

These files may be available here:
C:\Users\Administrator\AppData\Local\Microsoft\Windows\WER\ReportArchive\AppCrash_sleep.exe_e4d6edaec3483adca39abc17680c4ff8aae021_0546e5ad

Analysis symbol: 
Rechecking for solution: 0
Report Id: bd92364a-5243-11df-8ff4-0026551b1f07
Report Status: 0
4/27/2010 8:12 PM   Windows Error Reporting   Fault bucket , type 0
Event Name: AppHangB1
Response: Not available
Cab Id: 0

Problem signature:
P1: mmc.exe
P2: 6.1.7600.16385
P3: 4a5bc808
P4: 770d
P5: 16900
P6: 
P7: 
P8: 
P9: 
P10: 

Attached files:

These files may be available here:
C:\Users\Administrator\AppData\Local\Microsoft\Windows\WER\ReportArchive\AppHang_mmc.exe_501d3a1c374ed84f9ad59dbdaf3adc1567ce43_128265da

Analysis symbol: 
Rechecking for solution: 0
Report Id: 1d221782-5239-11df-bd47-0026551b1f07
Report Status: 0
4/27/2010 2:19 AM   Windows Error Reporting   Fault bucket , type 0
Event Name: APPCRASH
Response: Not available
Cab Id: 0

Problem signature:
P1: sleep.exe
P2:

0.0.0.0
P3: 2fb0ba06
P4: sleep.exe
P5: 0.0.0.0
P6: 2fb0ba06
P7: c0000005
P8: 0000566f
P9: 
P10: 

Attached files:

These files may be available here:
C:\Users\Administrator\AppData\Local\Microsoft\Windows\WER\ReportArchive\AppCrash_sleep.exe_e4d6edaec3483adca39abc17680c4ff8aae021_09f79462

Analysis symbol: 
Rechecking for solution: 0
Report Id: 57f03f32-51a3-11df-bd47-0026551b1f07
Report Status: 0
4/26/2010 4:36 AM   Windows Error Reporting
        Fault bucket , type 0
Event Name: APPCRASH
Response: Not available
Cab Id: 0

Problem signature:
P1: sleep.exe
P2: 0.0.0.0
P3: 2fb0ba06
P4: sleep.exe
P5: 0.0.0.0
P6: 2fb0ba06
P7: c0000005
P8: 0000566f
P9: 
P10: 

Attached files:

These files may be available here:
C:\Users\Administrator\AppData\Local\Microsoft\Windows\WER\ReportArchive\AppCrash_sleep.exe_e4d6edaec3483adca39abc17680c4ff8aae021_0a16a01b

Analysis symbol: 
Rechecking for solution: 0
Report Id: 455f6496-50ed-11df-96c8-0026551b1f07
Report Status: 0
4/26/2010 2:37 AM   Windows Error Reporting
        Fault bucket , type 0
Event Name: APPCRASH
Response: Not available
Cab Id: 0

Problem signature:
P1: sleep.exe
P2: 0.0.0.0
P3: 2fb0ba06
P4: sleep.exe
P5: 0.0.0.0
P6: 2fb0ba06
P7: c0000005
P8: 0000566f
P9: 
P10: 

Attached files:

These files may be available here:
C:\Users\Administrator\AppData\Local\Microsoft\Windows\WER\ReportArchive\AppCrash_sleep.exe_e4d6edaec3483adca39abc17680c4ff8aae021_0b7573cb

Analysis symbol: 
Rechecking for solution:

0
Report Id: 9c10dc12-50dc-11df-96c8-0026551b1f07
Report Status: 0
4/21/2010 6:55 AM   Windows Error Reporting
        Fault bucket , type 0
Event Name: APPCRASH
Response: Not available
Cab Id: 0

Problem signature:
P1: sleep.exe
P2: 0.0.0.0
P3: 2fb0ba06
P4: sleep.exe
P5: 0.0.0.0
P6: 2fb0ba06
P7: c0000005
P8: 0000566f
P9: 
P10: 

Attached files:

These files may be available here:
C:\Users\Administrator\AppData\Local\Microsoft\Windows\WER\ReportArchive\AppCrash_sleep.exe_e4d6edaec3483adca39abc17680c4ff8aae021_08ba4c3c

Analysis symbol: 
Rechecking for solution: 0
Report Id: e437bf07-4d12-11df-96c8-0026551b1f07
Report Status: 0
3/25/2010 12:20 PM   Windows Error Reporting
        Fault bucket , type 0
Event Name: APPCRASH
Response: Not available
Cab Id: 0

Problem signature:
P1: sleep.exe
P2: 0.0.0.0
P3: 2fb0ba06
P4: sleep.exe
P5: 0.0.0.0
P6: 2fb0ba06
P7: c0000005
P8: 0000566f
P9: 
P10: 

Attached files:

These files may be available here:
C:\Users\Administrator\AppData\Local\Microsoft\Windows\WER\ReportArchive\AppCrash_sleep.exe_e4d6edaec3483adca39abc17680c4ff8aae021_09760773

Analysis symbol: 
Rechecking for solution: 0
Report Id: c31efaca-3808-11df-8027-0026551b1f07
Report Status: 0
3/25/2010 10:04 AM   Windows Error Reporting
        Fault bucket , type 0
Event Name: APPCRASH
Response: Not available
Cab Id: 0

Problem signature:
P1: sleep.exe
P2: 0.0.0.0
P3: 2fb0ba06
P4: sleep.exe
P5: 0.0.0.0
P6: 2fb0ba06
P7: c0000005
P8:

0000566f
P9: 
P10: 

Attached files:

These files may be available here:
C:\Users\Administrator\AppData\Local\Microsoft\Windows\WER\ReportArchive\AppCrash_sleep.exe_e4d6edaec3483adca39abc17680c4ff8aae021_0de57060

Analysis symbol: 
Rechecking for solution: 0
Report Id: bfce0f7d-37f5-11df-8027-0026551b1f07
Report Status: 0
3/25/2010 9:44 AM   Windows Error Reporting
        Fault bucket , type 0
Event Name: APPCRASH
Response: Not available
Cab Id: 0

Problem signature:
P1: sleep.exe
P2: 0.0.0.0
P3: 2fb0ba06
P4: sleep.exe
P5: 0.0.0.0
P6: 2fb0ba06
P7: c0000005
P8: 0000566f
P9: 
P10: 

Attached files:

These files may be available here:
C:\Users\Administrator\AppData\Local\Microsoft\Windows\WER\ReportArchive\AppCrash_sleep.exe_e4d6edaec3483adca39abc17680c4ff8aae021_0f47712b

Analysis symbol: 
Rechecking for solution: 0
Report Id: 00887a79-37f3-11df-8027-0026551b1f07
Report Status: 0
3/21/2010 5:12 AM   Windows Error Reporting
        Fault bucket , type 0
Event Name: AppHangXProcB1
Response: Not available
Cab Id: 0

Problem signature:
P1: mmc.exe
P2: 6.1.7600.16385
P3: 4a5bc808
P4: 5769
P5: 321
P6: vds.exe
P7: 0.0.0.0
P8: 
P9: 
P10: 

Attached files:

These files may be available here:
C:\Users\Administrator\AppData\Local\Microsoft\Windows\WER\ReportArchive\AppHang_mmc.exe_ad3cfce79c456094a6f875212238af3e76cdeaa_0e1494c0

Analysis symbol: 
Rechecking for solution: 0
Report Id: 5f24a069-34a8-11df-9c08-0026551b1f07
Report Status: 0
2/15/2010 3:07 AM   Windows Error Reporting
        Fault bucket , type 0
Event Name: PnPDeviceProblemCode
Response: Not available
Cab Id: 0

Problem signature:
P1: x64
P2:

PCI\VEN_1000&DEV_0072&SUBSYS_00721000&REV_02&
#x000a;P3: {4d36e97b-e325-11ce-bfc1-
08002be10318}
P4:
0000000A
P5:
lsi_sas2.sys
P6:
2.0.17.0
P7: 11-12-
2009
P8: 
P9:

P10:


Attached
files:
C:\Users\Administrator\AppData\
Local\Temp\DMI54A4.tmp.log.xml
C:\Wind
ows\inf\oem4.inf
These
files may be available
here:
C:\Users\Administrator\AppData\L
ocal\Microsoft\Windows\WER\ReportQueue\NonCritical_x6
4_4658c1b9c8f91719c59e8a71c5b22cc9de90f323_cab_0dec55
02

Analysis symbol:

Rechecking for solution:
0
Report Id: 43a11922-19df-11df-98e8-
0026551b1f07
Report Status: 4
2/9/2010 9:39 PM   Windows Error Reporting
        Fault bucket , type 0
Event
Name: PnPDeviceProblemCode
Response:
Not available
Cab Id:
0

Problem
signature:
P1: x64
P2:
USB\UNKNOWN
P3: {36fc9e60-c465-11cf-
8056-444553540000}
P4:
0000002B
P5:
unknown
P6: unknown
P7:
unknown
P8: 
P9:

P10:


Attached
files:
C:\Users\Administrator\AppData\
Local\Temp\DMI37E1.tmp.log.xml
C:\Wind
ows\inf\usb.inf
These
files may be available
here:
C:\Users\Administrator\AppData\L
ocal\Microsoft\Windows\WER\ReportQueue\NonCritical_x6
4_8dd2a6bea57836935d86a299b4735d5c6f632592_cab_0b3138
7d

Analysis symbol:

Rechecking for solution:
0
Report Id: 8e5fec1a-15c3-11df-b9b2-
f4ce46be8637
Report Status: 4
2/5/2010 11:53 PM   Windows Error Reporting
        Fault bucket , type 0
Event
Name: PnPDeviceProblemCode
Response:
Not available
Cab Id:
0

Problem
signature:
P1: x64
P2:
PCI\VEN_1000&DEV_0072&SUBSYS_30B01000&REV_02&
#x000a;P3: {4d36e97b-e325-11ce-bfc1-
08002be10318}
P4:
0000000A
P5:
lsi_sas2.sys
P6:
2.0.17.0
P7: 11-12-
2009
P8: 
P9:

P10:


Attached
files:
C:\Users\Administrator\AppData\
Local\Temp\DMI46FE.tmp.log.xml
C:\Wind
ows\inf\oem4.inf
These
files may be available

here:
C:\Users\Administrator\AppData\L
ocal\Microsoft\Windows\WER\ReportQueue\NonCritical_x6
4_77a38cc3951c2f4271b455fd7248cce77cb57e4_cab_03d9474
c

Analysis symbol:

Rechecking for solution:
0
Report Id: acb34be5-12b1-11df-8206-
f4ce46be8637
Report Status: 4
2/5/2010 11:00 PM   Windows Error Reporting
        Fault bucket , type 0
Event
Name: APPCRASH
Response: Not
available
Cab Id:
0

Problem
signature:
P1:
cpqsetup.exe
P2:
2.5.0.0
P3:
4a48c31e
P4:
msvcrt.dll
P5:
7.0.7600.16385
P6:
4a5bdfbe
P7:
c0000005
P8:
0000000000001188
P9:

P10:


Attached
files:

These files may
be available
here:
C:\Users\Administrator\AppData\L
ocal\Microsoft\Windows\WER\ReportArchive\AppCrash_cpq
setup.exe_3cb648fe408b71946632e62ae1039d8613da1dc_0b1
eb135

Analysis symbol:

Rechecking for solution:
0
Report Id: 3e11af79-12aa-11df-a02a-
9d91a72a42f0
Report Status: 2
2/5/2010 10:53 PM   Windows Error Reporting
        Fault bucket , type 0
Event
Name: APPCRASH
Response: Not
available
Cab Id:
0

Problem
signature:
P1:
cpqsetup.exe
P2:
2.5.0.0
P3:
4a48c31eb
P4:
msvcrt.dll
P5:
7.0.7600.16385
P6:
4a5bda6f
P7:
c0000005
P8:
0000a08c
P9: 
P10:


Attached
files:

These files may
be available
here:
C:\Users\Administrator\AppData\L
ocal\Microsoft\Windows\WER\ReportArchive\AppCrash_cpq
setup.exe_6562c5e814b81ed0c973ceffb6c48c36b8c44f_08c2
d0a6

Analysis symbol:

Rechecking for solution:
0
Report Id: 424c8296-12a9-11df-8065-
c4b4e4d686ee
Report Status: 2
2/5/2010 10:53 PM   Windows Error Reporting
        Fault bucket , type 0
Event
Name: APPCRASH
Response: Not
available
Cab Id:
0

Problem
signature:
P1:
cpqsetup.exe
P2:

2.5.0.0
P3:
4a48c31e
P4:
msvcrt.dll
P5:
7.0.7600.16385
P6:
4a5bdfbe
P7:
c0000005
P8:
0000000000001188
P9:

P10:


Attached
files:

These files may
be available
here:
C:\Users\Administrator\AppData\L
ocal\Microsoft\Windows\WER\ReportArchive\AppCrash_cpq
setup.exe_3cb648fe408b71946632e62ae1039d8613da1dc_083
68e2b

Analysis symbol:

Rechecking for solution:
0
Report Id: 34552fbd-12a9-11df-8065-
c4b4e4d686ee
Report Status: 2
2/5/2010 10:52 PM   Windows Error Reporting
        Fault bucket , type 0
Event
Name: APPCRASH
Response: Not
available
Cab Id:
0

Problem
signature:
P1:
cpqsetup.exe
P2:
2.5.0.0
P3:
4a48c31e
P4:
msvcrt.dll
P5:
7.0.7600.16385
P6:
4a5bdfbe
P7:
c0000005
P8:
0000000000001188
P9:

P10:


Attached
files:

These files may
be available
here:
C:\Users\Administrator\AppData\L
ocal\Microsoft\Windows\WER\ReportArchive\AppCrash_cpq
setup.exe_3cb648fe408b71946632e62ae1039d8613da1dc_050
23043

Analysis symbol:

Rechecking for solution:
0
Report Id: 2550e166-12a9-11df-8065-
c4b4e4d686ee
Report Status: 2
2/5/2010 10:46 PM   Windows Error Reporting
        Fault bucket , type 0
Event
Name: PnPDeviceProblemCode
Response:
Not available
Cab Id:
0

Problem
signature:
P1: x64
P2:
PCI\VEN_1000&DEV_0072&SUBSYS_30B01000&REV_02&
#x000a;P3: {4d36e97b-e325-11ce-bfc1-
08002be10318}
P4:
0000000A
P5:
lsi_sas2.sys
P6:
2.0.2.71
P7: 07-14-
2009
P8: 
P9:

P10:


Attached
files:

These files may
be available
here:
C:\ProgramData\Microsoft\Windows
\WER\ReportQueue\NonCritical_x64_cfb08665a67724f6be81
74e9f81dad2fc19c3_03c4e021
&#x

000a;Analysis symbol: 
Rechecking for
solution: 0
Report Id: 5d3bf749-12a8-
11df-8065-c4b4e4d686ee
Report Status:
6
2/5/2010 10:46 PM   Windows Error Reporting
          Fault bucket , type 0
Event
Name: PnPDeviceProblemCode
Response:
Not available
Cab Id:
0

Problem
signature:
P1: x64
P2:
PCI\VEN_1000&DEV_0072&SUBSYS_30B01000&REV_02&
#x000a;P3: {4d36e97b-e325-11ce-bfc1-
08002be10318}
P4:
0000000A
P5:
lsi_sas2.sys
P6:
2.0.2.71
P7: 07-14-
2009
P8: 
P9:

P10:


Attached
files:
C:\Windows\Temp\DMIDE6C.tmp.log
.xml
C:\Windows\Temp\LOGDE6D.tmp&#x000
d;
C:\Windows\inf\lsi_sas2.inf


These files may be available
here:
C:\ProgramData\Microsoft\Windows
\WER\ReportQueue\NonCritical_x64_cfb08665a67724f6be81
74e9f81dad2fc19c3_cab_03bcdeaa
&#x000d
;
Analysis symbol: 
Rechecking
for solution: 0
Report Id: 5cfbb221-
12a8-11df-8065-c4b4e4d686ee
Report
Status: 6
2/5/2010 10:41 PM   Windows Error Reporting
          Fault bucket , type 0
Event
Name:
PnPRequestAdditionalSoftware
Response:
Not available
Cab Id:
0

Problem
signature:
P1: x64
P2:
USB\VID_03F0&PID_7029&REV_0002&MI_00
P
3: 6.1.0.0
P4: 0409
P5:
input.inf
P6: *
P7:

P8: 
P9:

P10:


Attached
files:

These files may
be available
here:
C:\ProgramData\Microsoft\Windows
\WER\ReportQueue\NonCritical_x64_b4a1263d9c6c8451f572
570e99e2ec7b09e1f27_cab_0942226e
&#x00
0d;
Analysis symbol:

Rechecking for solution:
0
Report Id: aa171646-12a7-11df-a385-
accc8de7d8f6
Report Status: 6
2/5/2010 10:41 PM   Windows Error Reporting
          Fault bucket , type 0
Event
Name:
PnPRequestAdditionalSoftware
Response:
Not available
Cab Id:
0

Problem
signature:
P1: x64
P2:
USB\VID_03F0&PID_7029&REV_0002&MI_01
P
3: 6.1.0.0
P4: 0409
P5:
input.inf
P6: *
P7:

P8: 
P9:


P10:


Attached
files:

These files may
be available
here:
C:\ProgramData\Microsoft\Windows
\WER\ReportQueue\NonCritical_x64_885b928beb14477d25e2
8b48e3f8b6e01477ca_cab_01b21b2d
&#x000
d;
Analysis symbol: 
Rechecking
for solution: 0
Report Id: a8fbd286-
12a7-11df-a385-accc8de7d8f6
Report
Status: 6
2/5/2010 10:41 PM   Windows Error Reporting
          Fault bucket , type 0
Event
Name: PnPDriverNotFound
Response: Not
available
Cab Id:
0

Problem
signature:
P1: x64
P2:
PCI\VEN_4040&DEV_0100&SUBSYS_705A103C&REV_42&
#x000a;P3: 
P4: 
P5:

P6: 
P7:

P8: 
P9:

P10:


Attached
files:

These files may
be available
here:
C:\ProgramData\Microsoft\Windows
\WER\ReportQueue\NonCritical_x64_b16a6418e4e8619beedd
64eae6c4ad90fc961f_0999d641
&#
x000a;Analysis symbol: 
Rechecking for
solution: 0
Report Id: 9e753cd2-12a7-
11df-a385-accc8de7d8f6
Report Status:
6
2/5/2010 10:41 PM   Windows Error Reporting
          Fault bucket , type 0
Event
Name: PnPDriverNotFound
Response: Not
available
Cab Id:
0

Problem
signature:
P1: x64
P2:
PCI\VEN_4040&DEV_0100&SUBSYS_705A103C&REV_42&
#x000a;P3: 
P4: 
P5:

P6: 
P7:

P8: 
P9:

P10:


Attached
files:

These files may
be available
here:
C:\ProgramData\Microsoft\Windows
\WER\ReportQueue\NonCritical_x64_b16a6418e4e8619beedd
64eae6c4ad90fc961f_0b49d3b2
&#
x000a;Analysis symbol: 
Rechecking for
solution: 0
Report Id: 9e114307-12a7-
11df-a385-accc8de7d8f6
Report Status:
6
2/5/2010 10:41 PM   Windows Error Reporting
          Fault bucket , type 0
Event
Name: PnPDriverNotFound
Response: Not
available
Cab Id:
0

Problem
signature:
P1: x64
P2:
PCI\VEN_103C&DEV_3307&SUBSYS_3309103C&REV_04&
#x000a;P3: 
P4: 
P5:

P6: 
P7:

P8: 
P9:


P10:


Attached
files:
C:\Windows\Temp\DMIC189.tmp.log
.xml

These files may
be available
here:
C:\ProgramData\Microsoft\Windows
\WER\ReportQueue\NonCritical_x64_87486cf7b1074d7ca641
4194e5447eda145380_cab_0ad5c199
&#x000
d;
Analysis symbol: 
Rechecking
for solution: 0
Report Id: 9b4e4a56-
12a7-11df-a385-accc8de7d8f6
Report
Status: 6
2/5/2010 10:41 PM   Windows Error Reporting
          Fault bucket , type 0
Event
Name: PnPDriverNotFound
Response: Not
available
Cab Id:
0

Problem
signature:
P1: x64
P2:
PCI\VEN_103C&DEV_3306&SUBSYS_3309103C&REV_04&
#x000a;P3: 
P4: 
P5:

P6: 
P7:

P8: 
P9:

P10:


Attached
files:
C:\Windows\Temp\DMIC09F.tmp.log
.xml

These files may
be available
here:
C:\ProgramData\Microsoft\Windows
\WER\ReportQueue\NonCritical_x64_489f5b92c7689fed4eb9
eb63f32fade4a97676_cab_07c1c0af
&#x000
d;
Analysis symbol: 
Rechecking
for solution: 0
Report Id: 9b2cf712-
12a7-11df-a385-accc8de7d8f6
Report
Status: 6
2/5/2010 10:41 PM   Windows Error Reporting
          Fault bucket , type 0
Event
Name: PnPDriverNotFound
Response: Not
available
Cab Id:
0

Problem
signature:
P1: x64
P2:
PCI\VEN_4040&DEV_0100&SUBSYS_705A103C&REV_42&
#x000a;P3: 
P4: 
P5:

P6: 
P7:

P8: 
P9:

P10:


Attached
files:

These files may
be available
here:
C:\ProgramData\Microsoft\Windows
\WER\ReportQueue\NonCritical_x64_b16a6418e4e8619beedd
64eae6c4ad90fc961f_0989be9d
&#
x000a;Analysis symbol: 
Rechecking for
solution: 0
Report Id: 9ad9a6e9-12a7-
11df-a385-accc8de7d8f6
Report Status:
6
2/5/2010 10:41 PM   Windows Error Reporting
          Fault bucket , type 0
Event
Name: PnPDriverNotFound
Response: Not
available
Cab Id:
0

Problem
signature:
P1: x64
P2:
PCI\VEN_4040&DEV_0100&SUBSYS_705A103C&REV_42&
#x000a;P3: 
P4: 
P5:


P6: 
P7: 
P8: 
P9: 
P10: 

Attached files:
C:\Windows\Temp\DMIBB71.tmp.log .xml

These files may be available here:
C:\ProgramData\Microsoft\Windows \WER\ReportQueue\NonCritical_x64_b16a6418e4e8619beedd 64eae6c4ad90fc961f_cab_0789bb81
&#x000 d;
Analysis symbol: 
Rechecking for solution: 0
Report Id: 9a6040bb-12a7-11df-a385-accc8de7d8f6
Report Status: 6

2/5/2010 10:41 PM   Windows Error Reporting
       Fault bucket , type 0
Event Name: PnPGenericDriverFound
Response: Not available
Cab Id: 0

Problem signature:
P1: x64
P2: PCI\VEN_1002&DEV_515E&SUBSYS_31FB103C&REV_02
P3: 
P4: 
P5: 
P6: 
P7: 
P8: 
P9: 
P10: 

Attached files:

These files may be available here:
C:\ProgramData\Microsoft\Windows \WER\ReportQueue\NonCritical_x64_c5ce18a1b32ff35336f0 e43b5d80ab481dbb3d3_cab_0799b51b
&#x00 0d;
Analysis symbol: 
Rechecking for solution: 0
Report Id: 99618d7e-12a7-11df-a385-accc8de7d8f6
Report Status: 6

5/13/2010 7:06 PM   Application Hang   The program mmc.exe version 6.1.7600.16385 stopped interacting with Windows and was closed. To see if more information about the problem is available, check the problem history in the Action Center control panel.
 Process ID: d14
 Start Time: 01caf2cf4427b0c1
 Termination Time: 110
 Application Path: C:\Windows\system32\mmc.exe
 Report Id: af7dce35-5ec2-11df-8054-0026551b1f07

5/12/2010 7:00 PM   Application Hang   The program mmc.exe version 6.1.7600.16385 stopped interacting with Windows and was closed. To see if more information about the problem is available, check the problem history in the Action Center control panel.
 Process ID: 7a4
 Start Time: 01caf20526139bfa
 Termination Time: 11
 Application Path: C:\Windows\system32\mmc.exe
 Report Id: 958e4555-5df8-11df-9241-0026551b1f07

4/27/2010 8:12 PM   Application Hang   The program mmc.exe version 6.1.7600.16385 stopped interacting with Windows and was closed. To see if more information about the problem is available, check the

problem history in the Action Center control panel.
 Process ID: 112c
 Start Time: 01cae63f1a9606e3
 Termination Time: 4
 Application Path: C:\Windows\system32\mmc.exe
 Report Id: 1d221782-5239-11df-bd47-0026551b1f07

3/21/2010 5:12 AM   Application Hang   The program mmc.exe version 6.1.7600.16385 stopped interacting with Windows and was closed. To see if more information about the problem is available, check the problem history in the Action Center control panel.
 Process ID: d44
 Start Time: 01cac8b41b27516e
 Termination Time: 0
 Application Path: C:\Windows\system32\mmc.exe
 Report Id: 5f24a069-34a8-11df-9c08-0026551b1f07

sqlserver_node.txt

Key Name:
HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Microsoft SQL Server\90\NodeConfiguration
Class Name: <NO CLASS>
Last Write Time: 5/5/2010 - 3:46 PM

Key Name:
HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Microsoft SQL Server\90\NodeConfiguration\Node0
Class Name: <NO CLASS>
Last Write Time: 5/6/2010 - 11:31 AM
Value 0
  Name: CPUMask
  Type: REG_DWORD
  Data: 0x3f

Key Name:
HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Microsoft SQL Server\90\NodeConfiguration\Node1
Class Name: <NO CLASS>
Last Write Time: 5/6/2010 - 11:32 AM
Value 0
  Name: CPUMask
  Type: REG_DWORD
  Data: 0x3f000

Key Name:
HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Microsoft SQL Server\90\NodeConfiguration\Node2
Class Name: <NO CLASS>
Last Write Time: 5/6/2010 - 11:33 AM
Value 0
  Name: CPUMask
  Type: REG_DWORD
  Data: 0xfc0

Key Name:
HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Microsoft SQL Server\90\NodeConfiguration\Node3
Class Name: <NO CLASS>
Last Write Time: 5/6/2010 - 11:10 AM
Value 0
  Name: CPUMask
  Type: REG_QWORD
  Data:
00000000   00 00 fc 00 00 00 00 00 - ..n.....

Key Name:
HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Microsoft SQL Server\90\NodeConfiguration\Node4
Class Name: <NO CLASS>
Last Write Time: 5/6/2010 - 11:34 AM
Value 0
  Name: CPUMask
  Type: REG_QWORD
  Data: 0x3f000000

Key Name:
HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Microsoft SQL Server\90\NodeConfiguration\Node5
Class Name: <NO CLASS>
Last Write Time: 5/6/2010 - 11:11 AM
Value 0
  Name: CPUMask
  Type: REG_QWORD
  Data:
00000000   00 00 00 c0 0f 00 00 00 - ...+....

Key Name:
HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Microsoft SQL Server\90\NodeConfiguration\Node6
Class Name: <NO CLASS>
Last Write Time: 5/6/2010 - 11:11 AM
Value 0
  Name: CPUMask
  Type: REG_QWORD
  Data:
00000000   00 00 00 00 f0 03 00 00 - ....=...

Key Name:
HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Microsoft SQL Server\90\NodeConfiguration\Node7
Class Name: <NO CLASS>
Last Write Time: 5/6/2010 - 11:11 AM
Value 0
  Name: CPUMask
  Type: REG_QWORD
  Data:
00000000   00 00 00 00 00 fc 00 00 - .....n..

sqlserver_socket.txt

Key Name:
HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Microsoft SQL
Server\MSSQL.1\MSSQLServer\SuperSocketNetLib
Class Name: <NO CLASS>
Last Write Time: 3/25/2010 - 2:37 AM
Value 0
  Name: ForceEncryption
  Type: REG_DWORD
  Data: 0

Value 1
  Name: HideInstance
  Type: REG_DWORD
  Data: 0

Value 2
  Name: Certificate
  Type: REG_SZ
  Data:

Value 3
  Name: DisplayName
  Type: REG_SZ
  Data: SQL Server Network Configuration

Key Name:
HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Microsoft SQL
Server\MSSQL.1\MSSQLServer\SuperSocketNetLib\AdminCon
nection
Class Name: <NO CLASS>
Last Write Time: 3/25/2010 - 2:37 AM
Value 0
  Name: DisplayName
  Type: REG_SZ
  Data: Dedicated Administrative
Connection

Key Name:
HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Microsoft SQL
Server\MSSQL.1\MSSQLServer\SuperSocketNetLib\AdminCon
nection\Tcp
Class Name: <NO CLASS>
Last Write Time: 3/25/2010 - 2:37 AM
Value 0
  Name: TcpDynamicPorts
  Type: REG_SZ
  Data: 1434

Value 1
  Name: DisplayName
  Type: REG_SZ
  Data: TCP/IP

Key Name:
HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Microsoft SQL
Server\MSSQL.1\MSSQLServer\SuperSocketNetLib\Np
Class Name: <NO CLASS>
Last Write Time: 3/25/2010 - 2:37 AM
Value 0
  Name: Enabled
  Type: REG_DWORD
  Data: 0

Value 1
  Name: PipeName
  Type: REG_SZ
  Data: \\.\pipe\sql\query

Value 2
  Name: DisplayName
  Type: REG_SZ
  Data: Named Pipes

Key Name:
HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Microsoft SQL
Server\MSSQL.1\MSSQLServer\SuperSocketNetLib\Sm
Class Name: <NO CLASS>
Last Write Time: 3/25/2010 - 2:37 AM
Value 0
  Name: Enabled
  Type: REG_DWORD
  Data: 0x1

Value 1
  Name: DisplayName
  Type: REG_SZ
  Data: Shared Memory

Key Name:
HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Microsoft SQL
Server\MSSQL.1\MSSQLServer\SuperSocketNetLib\Tcp
Class Name: <NO CLASS>
Last Write Time: 5/11/2010 - 1:08 PM
Value 0
  Name: Enabled
  Type: REG_DWORD
  Data: 0x1

Value 1
  Name: ListenOnAllIPs
  Type: REG_DWORD
  Data: 0

Value 2
  Name: NoDelay
  Type: REG_DWORD
  Data: 0

Value 3
  Name: KeepAlive
  Type: REG_DWORD
  Data: 0x7530

Value 4
  Name: DisplayName
  Type: REG_SZ
  Data: TCP/IP

Key Name:
HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Microsoft SQL
Server\MSSQL.1\MSSQLServer\SuperSocketNetLib\Tcp\IP1
Class Name: <NO CLASS>
Last Write Time: 6/13/2010 - 8:57 PM
Value 0
  Name: Enabled
  Type: REG_DWORD
  Data: 0x1

Value 1
  Name: Active
  Type: REG_DWORD
  Data: 0x1

Value 2
  Name: TcpPort
  Type: REG_SZ
  Data: 2001[0x1],2002[0x2]

Value 3
  Name: TcpDynamicPorts
  Type: REG_SZ
  Data:

Value 4
  Name: DisplayName
  Type: REG_SZ
  Data: Specific IP Address

Value 5
  Name: IpAddress
  Type: REG_SZ
  Data: 130.168.208.31

Key Name:
HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Microsoft SQL
Server\MSSQL.1\MSSQLServer\SuperSocketNetLib\Tcp\IP2
Class Name: <NO CLASS>
Last Write Time: 6/13/2010 - 8:57 PM
Value 0
  Name: Enabled
  Type: REG_DWORD
  Data: 0x1

Value 1
  Name: Active
  Type: REG_DWORD
  Data: 0x1

Value 2
  Name: TcpPort
  Type: REG_SZ
  Data: 2003[0x4],2004[0x8]

Value 3

```
 Name:           TcpDynamicPorts              Type:           REG_DWORD                    Class Name:       <NO CLASS>
 Type:           REG_SZ                       Data:           0x1                          Last Write Time:  4/28/2010 - 11:59 AM
 Data:                                                                                     Value 0
                                             Value 2                                        Name:           Enabled
Value 4                                        Name:           TcpPort                      Type:           REG_DWORD
 Name:           DisplayName                   Type:           REG_SZ                       Data:           0x1
 Type:           REG_SZ                        Data:           2007[0x40],2008[0x80]
 Data:           Specific IP Address                                                      Value 1
                                             Value 3                                        Name:           Active
Value 5                                        Name:           TcpDynamicPorts              Type:           REG_DWORD
 Name:           IpAddress                     Type:           REG_SZ                       Data:           0x1
 Type:           REG_SZ                        Data:
 Data:           130.168.208.32                                                           Value 2
                                             Value 4                                        Name:           TcpPort
                                               Name:           DisplayName                 Type:           REG_SZ
Key Name:                                      Type:           REG_SZ                       Data:           1433
HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Microsoft SQL    Data:           Specific IP Address
Server\MSSQL.1\MSSQLServer\SuperSocketNetLib\Tcp\IP3                                      Value 3
Class Name:       <NO CLASS>                 Value 5                                        Name:           TcpDynamicPorts
Last Write Time:  6/13/2010 - 8:57 PM          Name:           IpAddress                    Type:           REG_SZ
Value 0                                        Type:           REG_SZ                       Data:
 Name:           Enabled                       Data:           130.168.208.34
 Type:           REG_DWORD                                                                Value 4
 Data:           0x1                                                                        Name:           DisplayName
                                             Key Name:                                      Type:           REG_SZ
Value 1                                       HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Microsoft SQL    Data:           Specific IP Address
 Name:           Active                       Server\MSSQL.1\MSSQLServer\SuperSocketNetLib\Tcp\IP5
 Type:           REG_DWORD                    Class Name:       <NO CLASS>                 Value 5
 Data:           0x1                          Last Write Time:  4/28/2010 - 11:59 AM         Name:           IpAddress
                                             Value 0                                        Type:           REG_SZ
Value 2                                        Name:           Enabled                      Data:           127.0.0.1
 Name:           TcpPort                       Type:           REG_DWORD
 Type:           REG_SZ                        Data:           0x1
 Data:           2005[0x10],2006[0x20]                                                    Key Name:
                                             Value 1                                       HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Microsoft SQL
Value 3                                        Name:           Active                       Server\MSSQL.1\MSSQLServer\SuperSocketNetLib\Tcp\IPAl
 Name:           TcpDynamicPorts               Type:           REG_DWORD                    l
 Type:           REG_SZ                        Data:           0x1                          Class Name:       <NO CLASS>
 Data:                                                                                     Last Write Time:  4/28/2010 - 1:18 PM
                                             Value 2                                       Value 0
Value 4                                        Name:           TcpPort                      Name:           TcpPort
 Name:           DisplayName                   Type:           REG_SZ                       Type:           REG_SZ
 Type:           REG_SZ                        Data:           1433                         Data:
 Data:           Specific IP Address                                                      2001[0x1],2002[0x2],2003[0x4],2004[0x8],2005[0x10],20
                                             Value 3                                       06[0x20],2007[0x40],2008[0x80]
Value 5                                        Name:           TcpDynamicPorts
 Name:           IpAddress                     Type:           REG_SZ                      Value 1
 Type:           REG_SZ                        Data:                                        Name:           TcpDynamicPorts
 Data:           130.168.208.33                                                            Type:           REG_SZ
                                             Value 4                                        Data:
                                               Name:           DisplayName
Key Name:                                      Type:           REG_SZ                      Value 2
HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Microsoft SQL    Data:           Specific IP Address    Name:           DisplayName
Server\MSSQL.1\MSSQLServer\SuperSocketNetLib\Tcp\IP4                                        Type:           REG_SZ
Class Name:       <NO CLASS>                 Value 5                                        Data:           Any IP Address
Last Write Time:  6/13/2010 - 8:57 PM          Name:           IpAddress
Value 0                                        Type:           REG_SZ
 Name:           Enabled                       Data:           ::1                         Key Name:
 Type:           REG_DWORD                                                                 HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Microsoft SQL
 Data:           0x1                                                                       Server\MSSQL.1\MSSQLServer\SuperSocketNetLib\Via
                                             Key Name:                                     Class Name:       <NO CLASS>
Value 1                                       HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Microsoft SQL    Last Write Time:  3/25/2010 - 2:37 AM
 Name:           Active                       Server\MSSQL.1\MSSQLServer\SuperSocketNetLib\Tcp\IP6    Value 0
```

```
   Name:          Enabled
   Type:          REG_DWORD
   Data:          0

Value 1
   Name:          DefaultServerPort
   Type:          REG_SZ
   Data:          0:1433

Value 2
   Name:          ListenInfo
   Type:          REG_SZ
   Data:          0:1433

Value 3
   Name:          DisplayName
   Type:          REG_SZ
   Data:          VIA
```

sydbtune.ver

```
1> 2> 3> 4> 5> 6> 7> 8> 9> 10> 11> 12> --------------
------------------------------------------------------
----------
--
--
--   File:   VERSION.SQL
--
--          Microsoft TPC-C Benchmark Kit Ver. 4.62
--
--          Copyright Microsoft, 2005
--
--
--
--          - Extracts current version of SQL Server
--
--
------------------------------------------------------
------------------------
USE master
1> 2> 3> 4> 5>
SELECT  CONVERT(char(20),
SERVERPROPERTY('ProductVersion')),
        CONVERT(char(20),
SERVERPROPERTY('ProductLevel')),
        CONVERT(char(29), SERVERPROPERTY('Edition'))

-------------------- -------------------- ----------
-------------------
 9.00.4035.00        SP3                  Enterprise
Edition (64-bit)

(1 row affected)
1> 2> 3>
SELECT  CONVERT(char(30), GETDATE(), 21)
```

```
------------------------------
2010-06-18 10:20:08.360

(1 row affected)
1>
1> 2> 3> 4> 5> 6> 7> 8> 9> 10> 11> 12> 13> 14>
------------------------------------------------------
------------------------
--
--
--   File:   CONFIG.SQL
--
--          Microsoft TPC-C Benchmark Kit Ver. 4.62
--
--          Copyright Microsoft, 2005
--
--
--
--          - Collects SQL Server configuration
parameters                  --
--
--
------------------------------------------------------
------------------------

PRINT   ' '
SELECT  CONVERT(char(30), GETDATE(), 21)
PRINT   ' '

   ------------------------------
   2010-06-18 10:20:08.550

(1 row affected)

1> 2> 3> Configuration option 'show advanced options'
changed from 1 to 1. Run the RECONFIGURE statement to
install.

sp_configure 'show advanced',1
1> 2> 3>
RECONFIGURE WITH OVERRIDE
1> 2> 3>
sp_configure
 name                             minimum
maximum     config_value run_value
-------------------------------- ----------- ----
------- ------------ -----------
 Ad Hoc Distributed Queries                      0
1           0           0
 affinity I/O mask                      -2147483648
2147483647          0           0
 affinity mask                          -2147483648
2147483647         -1          -1
 affinity64 I/O mask                    -2147483648
2147483647          0           0
 affinity64 mask                        -2147483648
2147483647      65535       65535
 Agent XPs                                        0
1           0           0
 allow updates                                    0
1           0           0
 awe enabled                                      0
1           0           0
```

```
 blocked process threshold                        0
86400          0           0
 c2 audit mode                                    0
1           0           0
 clr enabled                                      0
1           0           0
 common criteria compliance enabled               0
1           0           0
 cost threshold for parallelism                   0
32767          5           5
 cross db ownership chaining                      0
1           0           0
 cursor threshold                                -1
2147483647         -1          -1
 Database Mail XPs                                0
1           0           0
 default full-text language                       0
2147483647       1033        1033
 default language                                 0
9999           0           0
 default trace enabled                            0
1           0           0
 disallow results from triggers                   0
1           0           0
 fill factor (%)                                  0
100            0           0
 ft crawl bandwidth (max)                         0
32767        100         100
 ft crawl bandwidth (min)                         0
32767          0           0
 ft notify bandwidth (max)                        0
32767        100         100
 ft notify bandwidth (min)                        0
32767          0           0
 in-doubt xact resolution                         0
2           0           0
 index create memory (KB)                       704
2147483647        704         704
 lightweight pooling                              0
1           1           1
 locks                                         5000
2147483647          0           0
 max degree of parallelism                        0
64             1           1
 max full-text crawl range                        0
256            4           4
 max server memory (MB)                          16
2147483647          0  2147483647
 max text repl size (B)                           0
2147483647      65536       65536
 max worker threads                             128
32767       6000        6000
 media retention                                  0
365            0           0
 min memory per query (KB)                      512
2147483647        512         512
 min server memory (MB)                           0
2147483647          0           0
 nested triggers                                  0
1           1           1
 network packet size (B)                        512
32767       2048        2048
```

```
 Ole Automation Procedures                0
1         0         0
 open objects                             0
2147483647         0         0
 PH timeout (s)                           1
3600      60        60
 precompute rank                          0
1         0         0
 priority boost                           0
1         1         1
 query governor cost limit               0
2147483647         0         0
 query wait (s)                          -1
2147483647        -1        -1
 recovery interval (min)                  0
32767     32767     32767
 remote access                            0
1         1         1
 remote admin connections                 0
1         0         0
 remote login timeout (s)                 0
2147483647        20        20
 remote proc trans                        0
1         0         0
 remote query timeout (s)                 0
2147483647       600       600
 Replication XPs                          0
1         0         0
 scan for startup procs                   0
1         0         0
 server trigger recursion                 0
1         1         1
 set working set size                     0
1         0         0
 show advanced options                    0
1         1         1
 SMO and DMO XPs                          0
1         1         1
 SQL Mail XPs                             0
1         0         0
 transform noise words                    0
1         0         0
 two digit year cutoff                 1753
9999      2049      2049
 user connections                         0
32767         0         0
 user options                             0
32767         0         0
 Web Assistant Procedures                 0
1         0         0
 xp_cmdshell                              0
1         0         0

1>
```

tpcc.txt

```
Key Name:
HKEY_LOCAL_MACHINE\SOFTWARE\Wow6432Node\Microsoft\TPC
C
```

```
Class Name:       <NO CLASS>
Last Write Time:  6/14/2010 - 5:11 PM
Value 0
  Name:           Path
  Type:           REG_SZ
  Data:           C:\inetpub\wwwroot\

Value 1
  Name:           NumberOfDeliveryThreads
  Type:           REG_DWORD
  Data:           0x19

Value 2
  Name:           MaxConnections
  Type:           REG_DWORD
  Data:           0xc350

Value 3
  Name:           MaxPendingDeliveries
  Type:           REG_DWORD
  Data:           0x7d0

Value 4
  Name:           DB_Protocol
  Type:           REG_SZ
  Data:           ODBC

Value 5
  Name:           TxnMonitor
  Type:           REG_SZ
  Data:           COM

Value 6
  Name:           DbServer
  Type:           REG_SZ
  Data:           tcp:130.168.208.33,2006

Value 7
  Name:           DbName
  Type:           REG_SZ
  Data:           tpcc

Value 8
  Name:           DbUser
  Type:           REG_SZ
  Data:           sa

Value 9
  Name:           DbPassword
  Type:           REG_SZ
  Data:

Value 10
  Name:           COM_SinglePool
  Type:           REG_SZ
  Data:           YES

Value 11
  Name:           CallNoDuplicatesNewOrder
  Type:           REG_DWORD
  Data:           0x1
```

w3scv.txt

```
Key Name:
HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\services\
W3SVC
Class Name:       <NO CLASS>
Last Write Time:  2/25/2010 - 3:43 PM
Value 0
  Name:           Type
  Type:           REG_DWORD
  Data:           0x20

Value 1
  Name:           Start
  Type:           REG_DWORD
  Data:           0x2

Value 2
  Name:           ErrorControl
  Type:           REG_DWORD
  Data:           0x1

Value 3
  Name:           ImagePath
  Type:           REG_EXPAND_SZ
  Data:           %windir%\system32\svchost.exe -k
iissvcs

Value 4
  Name:           DisplayName
  Type:           REG_SZ
  Data:
@%windir%\system32\inetsrv\iisres.dll,-30003

Value 5
  Name:           DependOnService
  Type:           REG_MULTI_SZ
  Data:           WAS
                  HTTP

Value 6
  Name:           ObjectName
  Type:           REG_SZ
  Data:           LocalSystem

Value 7
  Name:           Description
  Type:           REG_SZ
  Data:
@%windir%\system32\inetsrv\iisres.dll,-30004

Value 8
  Name:           RequiredPrivileges
  Type:           REG_MULTI_SZ
  Data:           SeAssignPrimaryTokenPrivilege
                  SeAuditPrivilege
                  SeBackupPrivilege
                  SeChangeNotifyPrivilege
                  SeCreateGlobalPrivilege
                  SeDebugPrivilege
                  SeImpersonatePrivilege
```

```
              SeIncreaseQuotaPrivilege               Name:          Library
              SeRestorePrivilege                     Type:          REG_EXPAND_SZ
              SeTcbPrivilege                         Data:
                                               %windir%\system32\inetsrv\w3ctrs.dll

Key Name:                                        Value 4
HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\services\    Name:          InstallType
W3SVC\Parameters                                   Type:          REG_DWORD
Class Name:     <NO CLASS>                          Data:          0x1
Last Write Time: 2/25/2010 - 4:28 PM
Value 0                                          Value 5
  Name:         MajorVersion                        Name:          PerfIniFile
  Type:         REG_DWORD                           Type:          REG_SZ
  Data:         0x7                                 Data:          w3ctrs.ini

Value 1                                          Value 6
  Name:         MinorVersion                        Name:          First Counter
  Type:         REG_DWORD                           Type:          REG_DWORD
  Data:         0x5                                 Data:          0x1dfe

Value 2                                          Value 7
  Name:         AccessDeniedMessage                 Name:          Last Counter
  Type:         REG_SZ                              Type:          REG_DWORD
  Data:         Error: Access is Denied.            Data:          0x1f04

Value 3                                          Value 8
  Name:         InstallPath                         Name:          First Help
  Type:         REG_EXPAND_SZ                       Type:          REG_DWORD
  Data:         %windir%\system32\inetsrv           Data:          0x1dff

Value 4                                          Value 9
  Name:         ServiceDll                          Name:          Last Help
  Type:         REG_EXPAND_SZ                       Type:          REG_DWORD
  Data:                                             Data:          0x1f05
%windir%\system32\inetsrv\iisw3adm.dll
                                                 Value 10
Value 5                                            Name:          Object List
  Name:         AcceptExOutstanding                 Type:          REG_SZ
  Type:         REG_DWORD                           Data:          7678 7852
  Data:         0x28
```

w3svc.txt

```
Key Name:                                        Key Name:
HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\services\    HKEY_LOCAL_MACHINE\SOFTWARE\Wow6432Node\Microsoft\W3S
W3SVC\Performance                                VC
Class Name:     <NO CLASS>                        Class Name:     <NO CLASS>
Last Write Time: 2/25/2010 - 3:43 PM             Last Write Time: 2/25/2010 - 3:43 PM
Value 0
  Name:         Close                            Key Name:
  Type:         REG_SZ                            HKEY_LOCAL_MACHINE\SOFTWARE\Wow6432Node\Microsoft\W3S
  Data:         CloseW3PerformanceData           VC\CurrentVersion
                                                 Class Name:     <NO CLASS>
Value 1                                          Last Write Time: 2/25/2010 - 3:43 PM
  Name:         Open                             Value 0
  Type:         REG_SZ                             Name:          PathName
  Data:         OpenW3PerformanceData              Type:          REG_EXPAND_SZ
                                                   Data:
Value 2                                          %windir%\system32\inetsrv\httpmib.dll
  Name:         Collect
  Type:         REG_SZ
  Data:         CollectW3PerformanceData

Value 3
```

Appendix D:
60-Day Space

					TpmC	1,193,472					
Warehouses	97,920										
Table	Rows	Data KB	Index KB	Extra 5% KB	8hr Space	Total Space KB		MSSQL_stk_fg	MSSQL_cust_fg	MSSQL_ol_fg	MSSQL_misc_fg
Warehouse	108,000	**11,520**	**1,192**	636		13,348					13,348
District	1,080,000	**120,000**	**1,656**	6,083		127,739					127,739
Customer	3,240,000,000	**2,356,363,640**	**147,017,024**	125,169,033		2,628,549,697			2,628,549,697		
History	3,240,000,000	**189,197,088**	**707,416**		36,014,417	189,904,504					225,918,921
New_order	972,000,000	**17,318,488**	**40,112**	867,930		18,226,530					18,226,530
Orders	3,240,000,000	**105,795,920**	**237,608**		40,649,985	106,033,528					146,683,513
Order_line	32,399,889,468	**2,124,582,920**	**5,003,360**		666,525,951	2,129,586,280				2,796,112,231	
Item	100,000	**9,416**	**1,056**	524		10,996					10,996
Stock	10,800,000,000	**3,456,000,000**	**7,283,016**	173,164,151		3,636,447,167		3,636,447,167			
Total		8,249,398,992	160,292,440	299,208,356	743,190,353	8,708,899,788		3,636,447,167	2,628,549,697	2,796,112,231	390,981,046
	MB						files=	**180**	**180**	**180**	**180**
Dynamic Space	2,362,867	Sum of Data for Order, Orderline and History					size=	**3,326,720**	**2,430,720**	**2,686,720**	**767,872**
Static Space	6,141,918	Sum of Data+Index+5%-Dynamic Space					Total=	598,809,600	437,529,600	483,609,600	138,216,960
Free Space	na	Total Allocated Spac - (Dynamic + Static Space)					8K blocks	4,790,476,800	3,500,236,800	3,868,876,800	1,105,735,680
Daily Growth	460,787	(Dynamic Space/(W*62.5))*tpmc						OK	OK	OK	OK
Daily Spread	-	(Free Space -1.5*Daily Growth) Zero Assumed									
60 Day Space MB	33,789,131	MB									
60 Day Space GB	32,997.20	GB									
Log Size	2,074,069.00	MB									
KB Per New Order	6.47	KB									
8 hr log MB	3,620,223	MB									
8 hr log GB	3,535.37	GB									

Space Usage	GB Needed	Disks Measured	GB Priced	Disk Size	Formatted Size
60 Day Space DB	32,997	180	20,122.20	120GB	111.79
		100	27,936.00	300GB	279.36
			0.00		
Total DB			48,058.20		
8-hr log + mirror	7,071	66	18,437.76	146GB	136.70
OS, Swap	3	2	273.40	146GB	136.70
Total Storage	40,070.95	GB	66,769.36	GB	

tpmC	1,193,472									

	Data Before KB	Index Before KB	Data After KB	Index After KB	Data Grow KB	Index Grow KB	Total Grow KB	KB/New-Order	8-Hr Growth KB	8-Hr Growth MB
History	189,197,088	707,416	209,476,696	1,349,880	20,279,608	642,464	20,922,072	0.0629	36,014,417.34	35,170.33
Order	105,795,920	237,608	129,196,368	452,200	23,400,448	214,592	23,615,040	0.0710	40,649,984.67	39,697.25
Order-Line	2,124,582,920	5,003,360	2,507,247,304	9,547,904	382,664,384	4,544,544	387,208,928	1.1635	666,525,950.77	650,904.25
										725,771.83

	sum(*) Before	sum(*) After	Num New-Order
d_next_o_id	3,241,080,000	3,573,878,815	332,798,815

	Before MB	After MB	Grow MB		KB/New-Order	8-Hr Growth MB	8-Hr Growth GB
Log	43,147.00	2,146,264.76	2,103,117.76		6.4712	3,620,222.74	3,535.37
					6,626.4623 bytes		

4,472,800.00	0.96465302	47.984814
Database tpcc log used (%)		

Appendix E:
Third Party Letters
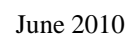
Microsoft Corporation   Tel 425 882 8080
One Microsoft Way   Fax 425 936 7329
Redmond, WA 98052-6399   http://www.microsoft.com/

Microsoft

June 16, 2010

Hewlett-Packard Company
David Adams
20555 SH 249
Houston, TX 77070

Here is the information you requested regarding pricing for several Microsoft products to
be used in conjunction with your TPC-C benchmark testing.

All pricing shown is in US Dollars ($).

Part Number	Description	Unit Price	Quantity	Price
810-03134	**SQL Server 2005 Enterprise Edition** *Per Processor License* *Open Program - Level C* *Unit Price reflects a 6% discount from the* *retail unit price of $24,999.*	$23,432	4	$93,728
P72-04217	**Windows Server 2008 R2 Enterprise Edition** *Server License with 25 CALs* *Open Program - Level C* *Unit Price reflects a 43% discount from the* *retail unit price of $3,999.*	$2,280	1	$2,280
P73-04165	**Windows Server 2008 Standard Edition** *Server License with 5 CALs* *Open Program - Level C* *Unit Price reflects a 29% discount from the* *retail unit price of $999.*	$711	24	$17,064
254-00170	**Microsoft Visual C++ Standard Edition** *No Discounts Applied*	$109	1	$109
N/A	**Microsoft Problem Resolution Services** *Professional Support* *(1 Incident).*	$259	1	$259

All Microsoft products listed above are currently orderable and available through
Microsoft's normal distribution channels. A list of Microsoft's resellers can be found at the
Microsoft Product Information Center at
http://www.microsoft.com/products/info/render.aspx?view=22&type=how

Defect support is included in the purchase price. Additional support is available from Microsoft PSS on an incident by incident basis at $259 per call.

This quote is valid for the next 90 days.

Reference ID: TPCC_g3wOpiq6ZAtgdnQQtWbatNjU7f+RiLyr_V1.0.0.

MICROLAND ELECTRONICS

QUOTE-0005

Microland Electronics

DATE: JUNE 16, 2010

1883 Ringwood Ave San Jose, CA 95131
Tel 408.850.9102 Fax 408.441.1767
raymondh@microlandusa.com

TO   David Adams
     Shipping Address:
     Hewlett-Packard Company
     11445 COMPAQ CENTER DR W
     MAILSTOP M0704-402
     HOUSTON, TX 77070

SALESPERSON	JOB	SHIPPING METHOD	SHIPPING TERMS	DELIVERY DATE	PAYMENT TERMS	DUE DATE
Raymond Huang	Account Manager	Upon request	Prepaid & bill	Upon request	C.C.	

QTY	ITEM #	DESCRIPTION	UNIT PRICE		LINE TOTAL
9	LSI00188	LSI 9200_8e (All LSI controller cards come with 3 year warranty) *Actual shipping cost, (CA/CO/TX/IN) sales tax, 3% C.C fee will be added to total amount	$328.00		$2,952.00
			SUBTOTAL		$2,952.00
			(CA /CO /TX / IN) SALES TAX		
			C.C FEE		
			SHIPPING		
			TOTAL		$2,952.00

Quotation prepared by: Raymond Huang _____

This is a quotation on the goods named, subject to the conditions noted below: (Describe any conditions pertaining to these prices and any additional terms of the agreement. You may want to include contingencies that will affect the quotation.)

To accept this quotation, sign here and return: _____

THANK YOU FOR YOUR BUSINESS!

Appendix F:
Price Verification and Availability

The d2700 drive enclosure is currently available. The 120 And 60 GB SSD drives are currently available. The SSD drives will not be supported in the D2700 enclosure until September 1, 2010. All other hardware is currently available

HP Direct: 800-203-6748
For price verification before order date: e-mail hp.pricing.desk@hp.com

Appendix G:TPC-Energy Disclosure Report

A.1. TPC-Energy Clause 2-related items (Methodology)

A.1.1. Minimum ambient temperature
The minimum ambient temperature must be disclosed

Minium Temperature reported by EMSC = 20.56 C

A.1.2. External electric power source characteristics
The characteristics of the external electric power source must be disclosed. In particular, the voltage, frequency in Hertz, and phase information must be reported.

The external electric power source has the folowing characteristics: 208V, 60Hz, single phase.

A.1.3. Air-pressure alterations
A statement is required that assures that nothing was done to alter the air-pressure in the measurement environment.

Nothing was done to alter the air-pressure in the measurement environment.

A.1.4. Temperature measurement
A description of where the temperature was measured and how it was determined that this was representative of the lowest ambient temperature is required.

Temperature was measured at the SUT air inlet and the air conditioning returns blow cold air at SUT air inlet.

A.1.5. Cooling method
If a method of cooling other than circulation of ambient air is employed in the REC, a statement describing this method must be included.

No other method of cooling was used.

A.1.6. PTD license
To be compliant with licenses associated with EMS, the following statement must be included in every FDR which contains a TPC-Energy Metric:

The power and temperature characteristics of the MEC were measured using TPC's Energy Measurement Software (EMS). This includes the EMS-PTD, a modified version of the SPEC PTDaemon, which is provided under license from the Standard Performance Evaluation Corporation (SPEC).

A.2. TPC-Energy Clause 3-related items (Metrics)

A.2.1. Primary Metric
The normalized work derived from the Performance Metric (as described in Clause 3.2.1) must be disclosed

5.93 watts / ktpmC

The computation for total energy used for each measurement segment that contributes to a Performance Metric must be disclosed. If the energy of the entire Priced Configuration is not derived from direct measurements, the methods for deriving the energy for components that were not measured must be disclosed (See Clause 7.3.3.4)

PMU	Full Load Average Watts Reading	% of Reading Uncertainty	Watts Reading Correction	Wattage Range Setting	% of Range Uncertainty	Wattage Range Correction	Total Wattage Correction	Accuarcy Correction Factor	Reported Watt / Seconds	Adjusted Watt / Seconds	Reported Seconds	Adjusted Average Watts	
				Full Load Energy									
DB Server PMU-1	948.22	0.10%	+0.95	1500	0.10%	+1.50	+2.45	0.26%	6,828,097	6,845,727	7,200	950.80	
DB Server Total	948.22								6,828,097	6,845,727		950.80	
Storage PMU-1	1310.89	0.10%	+1.31	3000	0.10%	+3.00	+4.31	0.33%	9,439,697	9,470,740	7,200	1,315.38	
Storage PMU-2	765.22	0.10%	+0.77	3000	0.10%	+3.00	+3.77	0.49%	5,510,339	5,537,452	7,200	769.09	
Storage Total	2076.11								14,950,036	15,008,192		2,084.47	
App Server PMU-1	125.2	0.10%	+0.13	6000	0.10%	+6.00	+6.13	4.89%	901,555	945,662	7,200	131.34	PMU Variation
App Server PMU-2	119.86	0.10%	+0.12	6000	0.10%	+6.00	+6.12	5.11%	863,108	907,177	7,200	126.00	104.242%
App Servers x 22	2754.4	0.00%	+0.00	0	0.00%	+0.00	+0.00	0.00%	19,834,210	21,687,157	7,200	3,012.11	
App Server Total	2999.46								21,598,873	23,539,996		3,269.44	
Misc PMU-1	71.73	0.10%	+0.07	600	0.10%	+0.60	+0.67	0.94%	516,531	521,368	7,200	72.41	
25 x Monitor NamePlate	700	0.00%	+0.00	0	0.00%	+0.00	+0.00	0.00%	5,040,000	5,040,000	7,200	700.00	
Misc Total	771.73								5,556,531	5,561,368		772.41	
REC Total	6795.52								48933537	50,955,283		7077	

The two priced application servers used in the priced configuration were measured individually for the course of the measurement interval and idle interval. The greater of the two measurments was used to extrapolate the values for the 22 substituted application servers.

In addition to using the higher of the two measurements, an additional correction of 4.242% was added to the substituted application servers Adjusted Watt Seconds calculation to compensate for the greater than 2% variation.

All monitors power consumption in the Miscellanous Subsystem were calculated using nameplate values.

The duration of each measurement that produces a Performance Metric must be disclosed

The duration of the measured runs were 120 minutes. The idle measurements were 10 minutes.

The average power requirement for each measurement that produces one of these metrics,

TPC-C measurement interval average power requirement:

	Secondary Metrics	Additional Numerical Quanties			
	Watts / KtpmC	Full Load Avg Watts	Full Load % of REC	Idle Avg. Watts	Idle % of REC
Database Server	0.80	950.80	13.4%	692.46	10.5%
Storage	1.75	2,084.47	29.5%	2,026.01	30.9%
Application Server	2.74	3,269.44	46.2%	3,073.15	46.8%
Miscellaneous	0.65	772.41	10.9%	772.59	11.8%
Total REC	5.93	7077	100%	6564	100%

The TPC-Energy Primary Metric must be disclosed, including the calculation that is used to derive it.

Total REC Energy Consumption = 849,255 Watt-minutes
SUT Total Work = 142,216,640 transactions

849,255 Watt-minutes / 142,216,640 transactions = 0.00593 watts / tpmC
0.00593 watts / tpmC * 1000 = 5.93 watts / ktpmC

A.2.2. Secondary Metrics At Reported Performance

If the TPC-Energy Secondary Metrics are reported, the components of the REC that are included in each subsystem must be identified. This can be achieved with separate lists to be included in the FDR or with a specific designation in the price spreadsheet. Every component in the REC that consumes energy must be included in exactly one subsystem.

Description	Part Number	Qty
Server Subsystem		
HP DL585R07 CTO Chassis Svr,HP NC382i nic,Smart Array P410i Controller	590480-B21	1
HP DL585G7 6176SE FIO 2P Kit	601351-L21	1
HP DL585G7 6176SE 2P Kit	601351-B21	1
HP 16GB 4Rx4 PC3-8500R-7 Kit	593915-B21	16
HP 8GB 2Rx4 PC3-10600R-9 Kit	593913-B21	32
HP Smart Array P812/1G Flash Backed Cache Controller	462832-B21	1
HP StorageWorks FC1242 Dual Channel 4Gb PCI-e HBA	AE312A	1
HP 146GB 6G SAS 15K SFF (2.5-inch)	512547-B21	2
LSI 9200_8e	LSI00188	9
Storage Subsystem		
HP StorageWorks 2324fc G2 Dual Controller Modular Smart Array (SFF)	AJ797A	1
HP 300GB 6G SAS 10K SFF (2.5-inch) Dual Port Enterprise 3yr Warranty	507127-B21	100
HP 120GB 3G SATA 2.5in MDL	572073-B21	180
HP 146GB 6G SAS 15K SFF (2.5-inch)	512547-B21	66
HP StorageWorks D2700 Disk Enclosure	AJ941A	13
HP StorageWorks MSA 70 Disk Enclosure	418800-B21	2
Application Server Subsystem		
HP ProLiant DL360 G6 Rack CTO Chassis,NC382i Dual Port nic	484184-B21	24
HP E5530 DL360 G6 FIO Kit	505882-L21	24
HP 460W CS HE Power Supply Kit	503296-B21	24
HP 2GB 2Rx8 PC3-10600R-9 Kit	500656-B21	24
HP 72GB 15k 2.5 dual Port HP SAS Drive	418371-B21	48
HP LE1851w 18.5-Inch wide Monitor	NK033AA#ABA	24
Miscellaneous Subsystem		
HP ProCurve 2910al-48G Switch	J9147A#ABA	1
HP LE1851w 18.5-Inch wide Monitor	NK033AA#ABA	25

For each defined subsystem, the calculations defined for the TPC-Energy Secondary Metrics in Clause 3.3 must be reported, using the Performance Metric of the entire SUT and the energy consumption for each REC subsystem.

	Secondary Metrics	Additional Numerical Quanties				
	Watts / KtpmC	**Full Load Avg Watts**	**Full Load % of REC**	**Full Load Watt Mins.**	**Idle Avg. Watts**	**Idle % of REC**
Database Server	0.80	950.80	13.4%	114,095	692.46	10.5%
Storage	1.75	2,084.47	29.5%	250,137	2,026.01	30.9%
Application Server	2.74	3,269.44	46.2%	392,333	3,073.15	46.8%
Miscellaneous	0.65	772.41	10.9%	92,689	772.59	11.8%
Total REC	5.93	7077	100%	849255	6564	100%
Reported tpmC	1,193,472		Sut Total Work	143,216,640		
KtpmC	1193.472		MI in Minutes	120		

1,193,472tpmC * 120 minutes MI = 143,216,640 transactions (SUT Total Work)

114,095 Watt-min / 143,216,640 transactions x 1000 = 0.80 DBServer watts/KtpmC

250,137 Watt-min / 143,216,640 transactions x 1000 = 1.75 Storage watts/KtpmC

392,333 Watt-min / 143,216,640 transactions x 1000 = 2.74 AppServer watts/KtpmC

92,689 Watt-min / 143,216,640 transactions x 1000 = 0.65 Misc. watts/KtpmC

A.2.3. Idle Power reporting

The Idle Power measurement/calculation for the REC must be reported as numerical quantities.

The Idle power measurement for REC = 6694 Watts.

If TPC-Energy Secondary Metrics are reported, then the Idle Power measurement/calculation for each subsystem must also be reported as numerical quantities.

PMU	Idle Average Watts Reading	% of Reading Uncertainty	Watts Reading Correction	Wattage Range Setting	% of Range Uncertainty	Wattage Range Correction	Total Wattage Correction	Accuarcy Correction Factor	Reported Watt / Seconds	Adjusted Watt / Seconds	Reported Seconds	Adjusted Average Watts	
						Idle Load Energy							
DB Server PMU-1	688.62	0.10%	+0.69	2000	0.10%	+2.00	+2.69	0.39%	413,859	415,475	600	692.46	
DB Server Total	688.62								413,859	415,475		692.46	
Storage PMU-1	1284.74	0.10%	+1.28	3000	0.10%	+3.00	+4.28	0.33%	772,129	774,704	600	1,291.17	
Storage PMU-2	729.89	0.10%	+0.73	3000	0.10%	+3.00	+3.73	0.51%	438,662	440,904	600	734.84	
Storage Total	2014.63								1,210,791	1,215,608		2,026.01	
App Server PMU-1	121.95	0.10%	+0.12	6000	0.10%	+6.00	+6.12	5.02%	73,291	76,970	600	128.28	PMU Variation
App Server PMU-2	116.31	0.10%	+0.12	6000	0.10%	+6.00	+6.12	5.26%	69,900	73,576	600	122.63	104.614%
App Servers x 22	2682.9	0.00%	+0.00	0	0.00%	+0.00	+0.00	0.00%	1,612,402	1,771,469	600	2,952.45	
App Server Total	2921.16								1,755,593	1,922,015		3,203.36	
Misc PMU-1	71.8	0.10%	+0.07	600	0.10%	+0.60	+0.67	0.94%	43,150	43,554	600	72.59	
25 x Monitor NamePlate	700	0.00%	+0.00	0	0.00%	+0.00	+0.00	0.00%	420,000	420,000	600	700.00	
Misc Total	771.8								463,150	463,554		772.59	
REC Total	6396.21								3843393	4016651		6694	

The length of time between the conclusion of the performance measurement and the start of the idle measurement must be reported.

Idle measurement was started 17.54 minutes after the conclusion of the performance measurement.

The duration of the idle measurement must be reported

Idle measurement duration was 10 minutes.

A statement is required that assures that the system is in a state that is ready to run the Application(s) of the benchmark for the duration of the idle measurement.

The system is in a state that is ready to run the Application(s) of the benchmark for the duration of the idle measurement. This was verified by executing one transaction after the idle measurement interval was completed. The transaction time was compared to the allowed 90[th] percentile and found to meet the required specefications.

A.2.4. Disclosure requirements when only part of the REC is measured for power

If all PMU's of the REC are not measured for energy use, the FDR must include a description of which PMUs of REC were measured with a power analyzer. The FDR must disclose which PMUs of the REC were computed based on the energy measurements of similar PMUs. A diagram must be included that identifies the portions of the configuration which were measured for energy use and which were calculated. This diagram may be combined with other diagrams required by the TPC Benchmark Standard.

- *The method used to determine which PMUs were measured must be disclosed.*
- *The power values for the each partial-REC measurement for duration of the performance and idle measurements must be disclosed.*
- *The calculation for the power requirements of the entire REC and, if applicable, each subsystem must be disclosed.*

See substitution section below for details.

A.2.5. Disclosure requirements when component substitution is used

If the TPC Benchmark Standard allows the Priced Configuration to differ from the Measured Configuration,

the methods used to assign energy or power characteristics to the substitute components must be disclosed

PMU	Full Load Average Watts Reading	% of Reading Uncertainty	Watts Reading Correction	Wattage Range Setting	% of Range Uncertainty	Wattage Range Correction	Total Wattage Correction	Accuarcy Correction Factor	Reported Watt / Seconds	Adjusted Watt / Seconds	Reported Seconds	Adjusted Average Watts	
					Full Load Energy								
DB Server PMU-1	948.22	0.10%	+0.95	1500	0.10%	+1.50	+2.45	0.26%	6,828,097	6,845,727	7,200	950.80	
DB Server Total	948.22								6,828,097	6,845,727		950.80	
Storage PMU-1	1310.89	0.10%	+1.31	3000	0.10%	+3.00	+4.31	0.33%	9,439,697	9,470,740	7,200	1,315.38	
Storage PMU-2	765.22	0.10%	+0.77	3000	0.10%	+3.00	+3.77	0.49%	5,510,339	5,537,452	7,200	769.09	
Storage Total	2076.11								14,950,036	15,008,192		2,084.47	
App Server PMU-1	125.2	0.10%	+0.13	6000	0.10%	+6.00	+6.13	4.89%	901,555	945,662	7,200	131.34	PMU Variation
App Server PMU-2	119.86	0.10%	+0.12	6000	0.10%	+6.00	+6.12	5.11%	863,108	907,177	7,200	126.00	104.242%
App Servers x 22	2754.4	0.00%	+0.00	0	0.00%	+0.00	+0.00	0.00%	19,834,210	21,687,157	7,200	3,012.11	
App Server Total	2999.46								21,598,873	23,539,996		3,269.44	
Misc PMU-1	71.73	0.10%	+0.07	600	0.10%	+0.60	+0.67	0.94%	516,531	521,368	7,200	72.41	
25 x Monitor NamePlate	700	0.00%	+0.00	0	0.00%	+0.00	+0.00	0.00%	5,040,000	5,040,000	7,200	700.00	
Misc Total	771.73								5,556,531	5,561,368		772.41	
REC Total	6795.52								48933537	50,955,283		7077	

The two priced application servers App Server PMU-1 and AppServer PMU-2 used in the priced configuration were measured individually for the course of the measurement interval and idle interval. The greater of the two measurements (App Server PMU-1) was used to extrapolate the values for the 22 substituted application servers.

In addition to using the higher of the two measurements, an additional correction of 4.242% was added to the substituted application servers Adjusted Watt Seconds calculation to compensate for the greater than 2% variation.

All monitors power consumption in the Miscellaneous Subsystem were calculated using nameplate values.

The method used to determine which PMUs were measured must be disclosed

The only two priced PMUs were measured.

The power values for the each partial-REC measurement for duration of the performance and idle measurements must be disclosed.

See Chart Above.

A.3. TPC-Energy Clause 4-related items (Drivers /Controller)

A statement indicating the version of EMS used must be included in the FDR, including a statement that no alterations of this code were made for the benchmark, except as specified by Clause 7.3.4.3. This includes levels for the EMS-PTD Manager, EMS-PTD and EMS-controller

EMS version was 1.1.1 and no alterations were made.

Input parameters for the EMS software must be disclosed

The followig EMS script was used to configure the EMS software

Any changes in the EMS components must be documented. Documentation must include a description of the issue, the reason the change was necessary for disclosure of the Result, and the changes made to resolve it. Any change to TPC-Provided Code must be included with the submission as a Supporting File.

No changes to EMS components were made.

A.4. TPC-Energy Clause 6-related items (Instrumentation)

A.4.1. Power Analyzer information

					Power Analyzer Specifications and Settings				
PMU	Make	Model	Serial Number	Calibration Date	Wattage Range Setting	Voltage Range Setting	Current Range Setting	% of reading	% of Range
DB Server PMU-1	Yokogawa	WT210	91K218964	2/19/2010	1500	300	5	0.10%	0.10%
Storage PMU-1	Yokogawa	WT210	91GB47167	12/10/2009	3000	300	10	0.10%	0.10%
Storage PMU-2	Yokogawa	WT210	91K208943	3/19/2010	3000	300	10	0.10%	0.10%
App Server PMU-1	Yokogawa	WT210	91GB45371	12/10/2009	6000	300	20	0.10%	0.10%
App Server PMU-2	Yokogawa	WT210	91GB53024	12/10/2009	6000	300	20	0.10%	0.10%
App Servers x 22	N/A								
Misc PMU-1	Yokogawa	WT210	91K208942	3/19/2010	600	300	2	0.10%	0.10%
25 x Monitor NamePlate	N/A								

A.4.2. Temperature Sensor information
Make and model.
Accuracy and the source of info

Digi Watchport/H Temperature Probe.

Temperature accuracy from Manufactures Datasheet:
+/- 3.6º F (+/- 2º C) at -40º F to 14º F (-40º C to -10º C)
+/- 0.9º F (+/- 0.5º C) at 14º F to 185º F (-10º C to 85º C)

A.5. PC-Energy Clause 8-related items

A.5.1. Auditor's attestation letter.

June 19, 2010

Mr. David Adams
Database Performance Engineer
Hewlett-Packard Company
20555 SH 249
Houston, TX 77070

I have verified by remote the TPC Benchmark™ C for the following configuration:

Platform: HP ProLiant DL585G7

Database Manager: Microsoft SQL Server 2005 Enterprise X64 Edition SP3

Operating System: Microsoft Windows Server 2008 R2 Enterprise Edition

Transaction Monitor: Microsoft COM+

System Under Test:				
CPU's	Memory	Disks (total)	90% Response	TpmC
4 AMD 12 core @ 2.3 Ghz	Main: 512 GB	100 @ 300 GB 180 @ 120 GB 2 @ 146 GB	1.69	**1,193,472**
Clients: 22 DL360 G5				
1 Intel quad core @ 1.6 Ghz	1 GB	2 @ 72 GB	NA	**NA**

Clients: 2 DL360 G6				
1 Intel quad core @ 2.4 Ghz	2 GB	2 @ 72 GB	NA	**NA**

In addition to the performance metric, the energy consumption was measured during the performance runs in compliance with the TPC-Energy specification.

- The power analyzers used were verified to be approved and calibrated within one year prior to this measurement.

- The energy measurements met all requirements of the specification unless an exception is noted below.

- The calculations for the TPC-Energy Primary Metric were verified as completed correctly.

- The EMS software was verified to be the correct version and without any changes.

- The executive summary page and the FDR were verified for accuracy.

Auditor's Notes:
The DL360G5 app server machines are no longer orderable. Two DL360G6 app servers
measured and priced as substitutes for the remaining twenty-two app servers. The energy
measurements taken on these two app servers exceeded the 2% variance of each other. The
variance calculated was 4.24%. In order to compensate for this variation, the variance of 4.24%
was added to the highest app server compensated energy measurement and then used to
extrapolate the energy consumption for the twenty-two substituted app servers. This was a
conservative approach and allowed for the normal variance of this type of server.

Sincerely,

Lorna Livingtree

Lorna Livingtree, Certified Auditor

A.6.   TPC-Energy Supporting Files Index

A.7.

Clause	Description	Path
7.4.1	PTDM Log Files (XML)	appserverclientone-004.xml
7.4.1	PTDM Log Files (XML)	appserverclientstwo-004.xml
7.4.1	PTDM Log Files (XML)	misc-004.xml
7.4.1	PTDM Log Files (XML)	rec-appservertemp-001.xml
7.4.1	PTDM Log Files (XML)	rec-dbservertemp-001.xml
7.4.1	PTDM Log Files (XML)	storagearrayone-004.xml
7.4.1	PTDM Log Files (XML)	storagearraytwo-004.xml
7.4.1	PTDM Log Files (txt)	004.report.idle-appserverclientone.txt
7.4.1	PTDM Log Files (txt)	004.report.idle-appserverclientstwo.txt
7.4.1	PTDM Log Files (txt)	004.report.idle-misc.txt
7.4.1	PTDM Log Files (txt)	004.report.idle-storagearrayone.txt
7.4.1	PTDM Log Files (txt)	004.report.idle-storagearraytwo.txt
7.4.1	PTDM Log Files (txt)	004.report.perf-appserverclientone.txt
7.4.1	PTDM Log Files (txt)	004.report.perf-appserverclientstwo.txt
7.4.1	PTDM Log Files (txt)	004.report.perf-misc.txt
7.4.1	PTDM Log Files (txt)	004.report.perf-storagearrayone.txt
7.4.1	PTDM Log Files (txt)	004.report.perf-storagearraytwo.txt
N/A	Calculation Spreadsheet	DL585G7-TPC-C-Energy_calculations.xlsx