



Hewlett-Packard Company

TPC Benchmark™ H
Full Disclosure Report
for
HP ProLiant DL760G2 8P
using
Microsoft SQL Server 2000 Enterprise Edition
and
Windows Server 2003, Enterprise Edition

First Edition
August 2003

First Edition – August, 2003

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Printed in the United States August, 2003

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Abstract

Overview

This report documents the methodology and results of the TPC Benchmark™ H test conducted on the HP ProLiant DL760G2 using Microsoft SQL Server 2000 Enterprise Edition SP3, in conformance with the requirements of the TPC Benchmark™ H Standard Specification, Revision 2.0. The operating system used for the benchmark was Microsoft Windows 2003 Enterprise Edition.

The benchmark results are summarized in the following table.

Hardware	Software	Total System Cost	QppH @ 100GB	QthH @ 100GB	QphH @ 100GB	\$ / QphH @ 100GB
HP ProLiant DL760G2 8P	Microsoft SQL Server 2000 SP3 Windows Server 2003, Enterprise Edition	\$180,721	5628.0	3171.4	4224.8	\$ 43

The TPC Benchmark™ H 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.

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

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Hewlett-Packard Company
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Standard and Executive Summary Statements

Pages ii-iv contains the Executive Summary and Numerical Quantities Summary of the benchmark results for the HP ProLiant DL760G2.

Auditor

The benchmark configuration, environment and methodology used to produce and validate the test results, and the pricing model used to calculate the cost per QppH and QthH were audited by Lorna Livingtree of Performance Metrics, Inc. to verify compliance with the relevant TPC specifications. The auditor's letter of attestation is attached in Section 9.1 "Auditors' Report."



HP ProLiant DL760G2 8P

TPC-H Rev. 2.0

Report Date:
Aug 15, 2003

Total System Cost

\$180,721

Composite Query per Hour Metric

4224.8

QphH@100GB

Price / Performance

\$43

\$ / QphH@100GB

Database Size

100GB

Database Manager

Microsoft SQL Server 2000 Enterprise Edition

Operating System

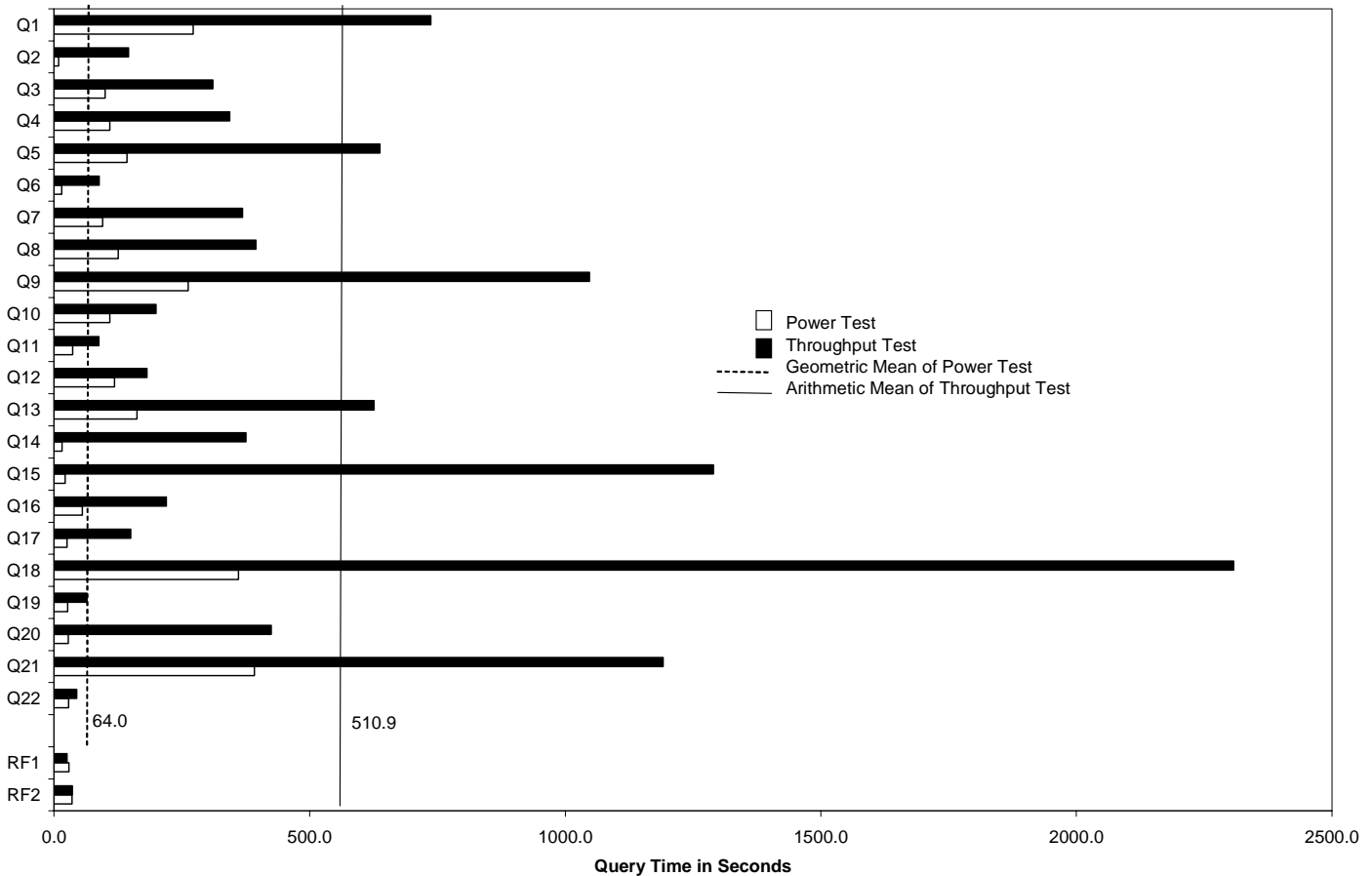
Windows Server 2003, Enterprise Edition

Other Software

Visual C++ .Net Standard

Availability Date

Aug 15, 2003



Database Load Time = 2:21:40

Load Included Backup: Y

Total Data Storage / Database Size = 24.36

RAID (Base tables only): N

RAID (Base tables and auxiliary data structures): N

RAID (All): N

System Configuration:

- Processors :** 8 x Intel Xeon MP 2.8 GHz with 2MB L2 cache
- Memory :** 16 GB memory
- Disk Controllers :** 5x Smart Array 5302
- Disks :** 144 x 18.2 GB 15K RPM drives
- Total Disk Storage:** 2436.5 GB

Note: Database Size includes only raw data (e.g., no temp, index, redundant storage space, etc).

**HP ProLiant DL760 G2 8P****TPC-H Rev. 2.0**

Report Date:

August 15, 2003

Description	Part Number	Third Party	Unit Price	Qty	Extended Price	3 yr. Maint. Price
Server Hardware						
Brand Pricing						
ProLiant DL760 G2 X2.8-2M 4P 4G - 4GB addressable RAM, 1GB redundant RAM - integrated Smart Array 5i controller	326703-B21	1	49,199	1	49,199	
X2.8-2M 4P DL760 G2	334037-B21	1	29,699	1	29,699	
512 REG PC133	236853-B21	1	499	22	10,978	
Monitor 15" S5500	261602-169	1	129	1	129	
Scroll Mouse-Carbon	231947-B21	1	5	1	5	
PS/2 Easy Access Internet Keyboard	265977-001	1	12	1	12	
Rack Model 9142 (42U - Opal) - Flat Pallet	120663-B21	1	1,321	1	1,321	
Rack Sidewall Kit	120670-B21	1	207	1	207	
18.2 GB Hot-Plug Wide U320 15K 1"	286775-B22	1	359	4	1,436	
UPS T1500 XR	204155-002	1	621	1	621	
Servers 700 Series CarePak, 3yr 7x24, 4hr resp.	401784-002	1	3,390	1		3,390
Subtotal					93,607	3,390
Storage						
Smart Array 5302/128	283552-B21	1	1,299	5	6,495	
StorageWorks Enclosure Model 4314R - Rack-mountable	190209-001	1	2,955	10	29,550	
18.2 GB Hot-Plug Wide U320 15K 1"	286775-B22	1	359	140	50,260	
18.2 GB Hot-Plug Wide U320 15K 1" (10% spare)	286775-B22	1	359	14	5,026	
CarePak 43xx Enclosure, 3yr, 7x24, 4hr resp.	171242-002	1	157	10		1,570
Subtotal					91,331	1,570
Hardware and Maintenance Discount						
Large Purchase and Net 30 discount	16.0%	1			(\$29,590)	(\$794)
Hardware Subtotal					155,348	4,166
Software						
Microsoft SQL Server 2000 Enterprise Edition	810-00652	Microsoft	2	5,549	5,549	
Database Server Support Package	RO-PRORS-16U-01	Microsoft	2	1,950		5,850
Microsoft SQL Server 2000 Client Licenses	359-00532	Microsoft	2	146	7,300	included
Windows Server 2003, Enterprise Edition	P72-00264	Microsoft	2	2,399	2,399	included
Visual C++ .Net Standard	254-00170	Microsoft	2	109	109	included
Subtotal					15,357	5,850
Total					\$170,705	\$10,016
3-Year Cost of Ownership:						\$180,721
QphH Rating:						4224.8
\$/QphH@100GB:						\$43

Pricing: 1=HP; 2= Microsoft

Note: The benchmark results and test methodology were audited by Lorna Livingtree of Performance Metrics

Audited by: Lorna Livingtree of Performance Metrics Inc.

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 specifications. If you find that the stated prices are not available according to these terms, please inform at pricing@tpc.org. Thank you.



HP ProLiant DL760G2 8P

TPC-H Rev. 2.0

Report Date:
Aug 15, 2003

Numerical Quantities

Measurement Results:

Database Scale Factor	= 100
Total Data Storage / Database Size	= 24.36
Start of Database Load	= 2003-07-04 08:02:25
End of Database Load	= 2003-07-04 10:24:05
Database Load Time	= 2:21:40
Query Streams for Throughput Test	= 5
TPC-H Power	= 5628.0
TPC-H Throughput	= 3171.4
TPC-H Composite Query-per-Hour Metric (QphH@100GB)	= 4224.8
Total System Price Over 3 Years	= \$180,721
TPC-H Price/ Performance Metric (\$/QphH@100GB)	= \$43

Measurement Intervals:

Measurement Interval in Throughput Test (Ts)	= 12486.6 seconds
--	-------------------

Duration of Stream Execution:

Stream ID	Seed	Start Date	Start time	Stop Date	Stop Time	Duration
Stream00	704102405	7/4/2003	12:49:41	7/4/2003	13:32:39	0:42:58
Stream01	704102406	7/4/2003	13:32:39	7/4/2003	16:33:11	3:00:32
Stream02	704102407	7/4/2003	13:32:39	7/4/2003	16:35:26	3:02:47
Stream03	704102408	7/4/2003	13:32:39	7/4/2003	16:55:40	3:23:01
Stream04	704102409	7/4/2003	13:32:39	7/4/2003	16:26:37	2:53:58
Stream05	704102410	7/4/2003	13:32:39	7/4/2003	16:48:58	3:16:19
Refresh00		7/4/2003	12:49:41	7/4/2003	13:32:39	0:42:58
Refresh01		7/4/2003	13:32:39	7/4/2003	16:56:37	3:23:57
Refresh02		7/4/2003	16:56:37	7/4/2003	16:57:29	0:00:53
Refresh03		7/4/2003	16:57:29	7/4/2003	16:58:33	0:01:04
Refresh04		7/4/2003	16:58:33	7/4/2003	16:59:40	0:01:07
Refresh05		7/4/2003	16:59:40	7/4/2003	17:00:46	0:01:06



HP ProLiant DL760G2 8P

TPC-H Rev. 2.0

Report Date:
Aug 15, 2003

TPC-H Timing Intervals (in seconds)

Query	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8
Stream 00	272.0	9.5	100.1	109.3	142.6	14.8	95.6	125.7
Stream 01	544.8	84.1	352.2	265.8	426.9	137.0	519.6	248.1
Stream 02	617.6	109.7	308.9	376.5	467.2	22.2	522.2	385.4
Stream 03	638.9	290.6	103.6	431.3	1039.0	129.5	239.3	783.0
Stream 04	946.2	14.4	409.8	373.2	550.8	117.4	318.6	350.3
Stream 05	937.8	231.7	380.1	271.3	705.4	36.3	244.8	207.7
Min Qi	544.8	14.4	103.6	265.8	426.9	22.2	239.3	207.7
Max Qi	946.2	290.6	409.8	431.3	1039.0	137.0	522.2	783.0
Avg Qi	737.1	146.1	310.9	343.6	637.9	88.5	368.9	394.9
Query	Q9	Q10	Q11	Q12	Q13	Q14	Q15	Q16
Stream 00	262.5	109.1	36.8	118.2	162.5	15.6	21.7	55.4
Stream 01	1051.6	209.8	118.5	193.8	879.7	79.3	1438.7	395.3
Stream 02	955.2	288.8	83.9	178.4	654.8	917.4	1133.6	325.7
Stream 03	1119.8	218.6	120.0	121.4	160.4	526.1	1548.0	56.0
Stream 04	1397.7	155.8	60.9	194.5	897.6	103.1	962.3	175.4
Stream 05	713.2	127.0	56.0	220.3	537.8	251.5	1366.4	146.0
Min Qi	713.2	127.0	56.0	121.4	160.4	79.3	962.3	56.0
Max Qi	1397.7	288.8	120.0	220.3	897.6	917.4	1548.0	395.3
Avg Qi	1047.5	200.0	87.9	181.7	626.1	375.5	1289.8	219.7
Query	Q17	Q18	Q19	Q20	Q21	Q22	RF1	RF2
Stream 00	25.7	361.0	27.1	28.2	391.7	28.7	29.0	35.0
Stream 01	251.9	2015.0	121.5	96.8	1349.0	53.6	26.4	29.5
Stream 02	284.7	2145.9	98.4	76.6	970.0	43.6	20.4	32.2
Stream 03	86.4	2980.4	28.6	879.7	640.8	40.2	25.4	38.3
Stream 04	102.4	1463.3	32.5	65.2	1699.3	47.4	27.1	39.4
Stream 05	25.7	2934.8	42.5	1007.4	1298.1	37.3	26.6	39.3
Min Qi	25.7	1463.3	28.6	65.2	640.8	37.3	20.4	29.5
Max Qi	284.7	2980.4	121.5	1007.4	1699.3	53.6	27.1	39.4
Avg Qi	150.2	2307.9	64.7	425.1	1191.4	44.4	25.2	35.7

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1.0 General Items

1.1 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.

1.2 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 Tuning Options*
- *Optimizer/Query execution options*
- *Query processing tool/language configuration parameters*
- *Recovery/commit options*
- *Consistency/locking options*
- *Operating system and configuration parameters*
- *Configuration parameters and options for any other software component incorporated into the pricing structure*
- *Compiler optimization options*

This requirement can be satisfied by providing a full list of all parameters and options, as long as all those which have been modified from their default values have been clearly identified and these parameters and options are only set once.

Appendix A, "Tunable Parameters," contains a list of all database parameters and operating system parameters.

1.3 Configuration Items

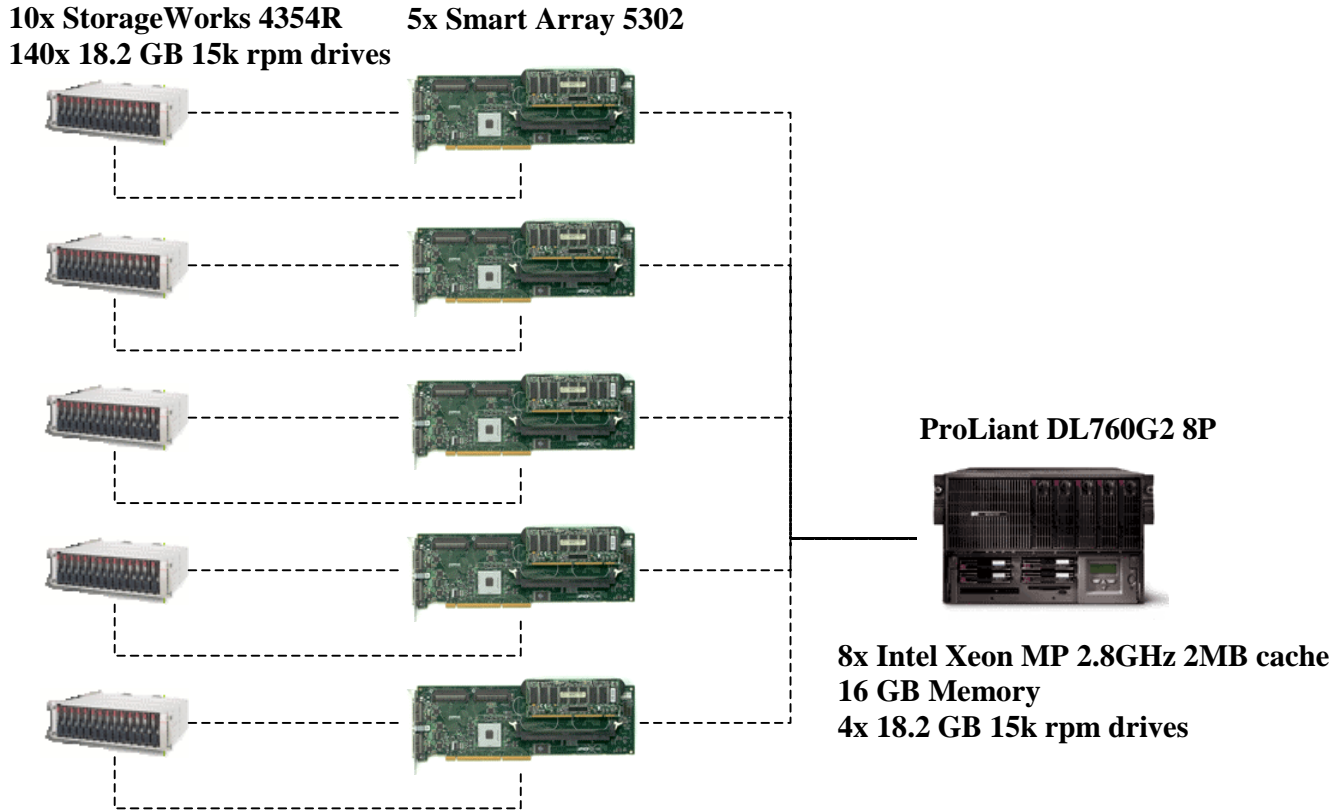
Diagrams of both measured and priced configurations must be provided, accompanied by a description of the differences. This includes, but is not limited to:

- *Number and type of processors*
- *Size of allocated memory, and any specific mapping/partitioning of memory unique to the test.*
- *Number and type of disk units (and controllers, if applicable).*
- *Number of channels or bus connections to disk units, including their protocol type.*
- *Number of LAN (e.g. Ethernet) Connections, including routers, workstations, terminals, etc., that were physically used in the test or are incorporated into the pricing structure.*
- *Type and the run-time execution location of software components (e.g., DBMS, query processing tools/languages, middle-ware components, software drivers, etc.).*

The server System Under Test (SUT), a HP ProLiant DL760G2 8P , depicted in Figure 1.1, consisted of :

- 8x Intel Xeon MP 2.8GHz with 2MB L2 Cache
- 16 GB of memory
- 5 x HP 5302 Array Controllers
- 10 x StorageWorks Enclosure 4354R
- 144 x 18.2GB Pluggable Ultra320 15K rpm 1” height drives

Figure 1.1 Benchmarked and priced configuration



2.0 Clause 1: Logical Database Design

2.1 Table Definitions

Listings must be provided for all table definition statements and all other statements used to set up the test and qualification databases. (8.1.2.1)

Appendix B, "Database Build Scripts," contains the table definitions and the program used to load the database.

2.2 Physical Organization of Database

The physical organization of tables and indices, within the test and qualification databases, must be disclosed. If the column ordering of any table is different from that specified in Clause 1.4, it must be noted.

Appendix B, "Database Build Scripts," contains the DDL for the index definitions.

2.3 Horizontal Partitioning

Horizontal partitioning of tables and rows in the test and qualification databases (see Clause 1.5.4) must be disclosed.

Horizontal partitioning was not used

2.4 Replication

Any replication of physical objects must be disclosed and must conform to the requirements of Clause 1.5.6.

No replication was used.

3.0 Clause 2: Queries and Refresh Functions Related Items

3.1 Query Language

The query language used to implement the queries must be identified.

SQL was the query language used.

3.2 Random Number Generation

The method of verification for the random number generation must be described unless the supplied DBGEN and QGEN were used.

The TPC-supplied DBGEN version 1.3.0 and QGEN version 1.3.0 were used to generate all database populations.

3.3 Substitution Parameters Generation

The method used to generate values for substitution parameters must be disclosed. If QGEN is not used for this purpose, then the source code of any non-commercial tool used must be disclosed. If QGEN is used, the version number, release number, modification number and patch level of QGEN must be disclosed.

The supplied QGEN version 1.3.0 was used to generate the substitution parameters.

3.4 Query Text and Output Data from Database

The executable query text used for query validation must be disclosed along with the corresponding output data generated during the execution of the query text against the qualification database. If minor modifications (see Clause 2.2.3) have been applied to any functional query definitions or approved variants in order to obtain executable query text, these modifications must be disclosed and justified. The justification for a particular minor query modification can apply collectively to all queries for which it has been used. The output data for the power and throughput tests must be made available electronically upon request..

Appendix C contains the query text and query output. The following modifications were used:

- In Q1, Q4, Q5, Q6, Q10, Q12, Q14, Q15 and Q20, the “dateadd” function is used to perform date arithmetic.
- In Q7, Q8 and Q9, the “datepart” function is used to extract part of a date (e.g., “YY”).
- In Q2, Q3, Q10, Q18 and Q21, the “top” function is used to restrict the number of output rows.
- The word GO is used as a command delimiter.

3.5 Query Substitution Parameters and Seeds Used

All the query substitution parameters used during the performance test must be disclosed in tabular format, along with the seeds used to generate these parameters.

Appendix D contains the seed and query substitution parameters used.

3.6 Isolation Level

The isolation level used to run the queries must be disclosed. If the isolation level does not map closely to one of the isolation levels defined in Clause 3.4, additional descriptive detail must be provided.

The queries and transactions were run with isolation level 1.

3.7 Refresh Functions

The details of how the refresh functions were implemented must be disclosed (including source code of any non-commercial program used).

Appendix E contains the source code for the refresh functions.

4.0 Clause 3: Database System Properties

4.1 Atomicity Requirements

The results of the ACID tests must be disclosed along with a description of how the ACID requirements were met. This includes disclosing the code written to implement the ACID Transaction and Query.

All ACID tests were conducted according to specification. The Atomicity, Isolation, Consistency and Durability tests were performed on the HP ProLiant DL760G2.

4.1.1 Atomicity of the Completed Transactions

Perform the ACID Transaction for a randomly selected set of input data and verify that the appropriate rows have been changed in the ORDER, LINEITEM, and HISTORY tables.

The following steps were performed to verify the Atomicity of completed transactions.

1. The total price from the ORDER table and the extended price from the LINEITEM table were retrieved for a randomly selected order key.
2. The ACID Transaction was performed using the order key from step 1.
3. The ACID Transaction committed.
4. The total price from the ORDER table and the extended price from the LINEITEM table were retrieved for the same order key. It was verified that the appropriate rows had been changed.

4.1.2 Atomicity of Aborted Transactions

Perform the ACID transaction for a randomly selected set of input data, submitting a ROLLBACK of the transaction for the COMMIT of the transaction. Verify that the appropriate rows have not been changed in the ORDER, LINEITEM, and HISTORY tables.

The following steps were performed to verify the Atomicity of the aborted ACID transaction:

1. The total price from the ORDER table and the extended price from the LINEITEM table were retrieved for a randomly selected order key.
2. The ACID Transaction was performed using the order key from step 1. The transaction was stopped prior to the commit.
3. The ACID Transaction was ROLLED BACK. .
4. The total price from the ORDER table and the extended price from the LINEITEM table were retrieved for the same order key used in steps 1 and 2. It was verified that the appropriate rows had not been changed.

4.2 Consistency Requirements

Consistency is the property of the application that requires any execution of transactions to take the database from one consistent state to another.

A consistent state for the TPC-H database is defined to exist when:

$$O_TOTALPRICE = SUM(L_EXTENDEDPRICE - L_DISCOUNT) * (1 + L_TAX)$$

For each ORDER and LINEITEM defined by (O_ORDERKEY = L_ORDERKEY)

4.2.1 Consistency Tests

Verify that ORDER and LINEITEM tables are initially consistent as defined in Clause 3.3.2.1, based upon a random sample of at least 10 distinct values of O_ORDERKEY.

The following steps were performed to verify consistency:

1. The consistency of the ORDER and LINEITEM tables was verified based on a sample of O_ORDERKEYs.
2. One hundred ACID Transactions were submitted from each of six execution streams.

3. The consistency of the ORDER and LINEITEM tables was reverified.

4.3 Isolation Requirements

Operations of concurrent transactions must yield results which are indistinguishable from the results which would be obtained by forcing each transaction to be serially executed to completion in some order.

4.3.1 Isolation Test 1 - Read-Write Conflict with Commit

Demonstrate isolation for the read-write conflict of a read-write transaction and a read-only transaction when the read-write transaction is committed.

The following steps were performed to satisfy the test of isolation for a read-only and a read-write committed transaction:

1. An ACID Transaction was started for a randomly selected O_KEY, L_KEY and DELTA. The ACID Transaction was suspended prior to Commit.
2. An ACID query was started for the same O_KEY used in step 1. The ACID query blocked and did not see any uncommitted changes made by the ACID Transaction.
3. The ACID Transaction was resumed and committed.
4. The ACID query completed. It returned the data as committed by the ACID Transaction.

4.3.2 Isolation Test 2 - Read-Write Conflict with Rollback

Demonstrate isolation for the read-write conflict of a read-write transaction and a read-only transaction when the read-write transaction is rolled back.

The following steps were performed to satisfy the test of isolation for read-only and a rolled back read-write transaction:

1. An ACID transaction was started for a randomly selected O_KEY, L_KEY and DELTA. The ACID Transaction was suspended prior to Rollback.
2. An ACID query was started for the same O_KEY used in step 1. The ACID query did not see any uncommitted changes made by the ACID Transaction.
3. The ACID Transaction was ROLLED BACK.
4. The ACID query completed.

4.3.3 Isolation Test 3 - Write-Write Conflict with Commit

Demonstrate isolation for the write-write conflict of two update transactions when the first transaction is committed.

The following steps were performed to verify isolation of two update transactions:

1. An ACID Transaction T1 was started for a randomly selected O_KEY, L_KEY and DELTA. The ACID transaction T1 was suspended prior to Commit.
2. Another ACID Transaction T2 was started using the same O_KEY and L_KEY and a randomly selected DELTA.
3. T2 waited.
4. The ACID transaction T1 was allowed to Commit and T2 completed.
5. It was verified that:

$$T2.L_EXTENDEDPRICE = T1.L_EXTENDEDPRICE + (DELTA1*(T1.L_EXTENDEDPRICE/T1.L_QUANTITY))$$

4.3.4 Isolation Test 4 - Write-Write Conflict with Rollback

Demonstrate isolation for the write-write conflict of two update transactions when the first transaction is rolled back.

The following steps were performed to verify the isolation of two update transactions after the first one is rolled back:

1. An ACID Transaction T1 was started for a randomly selected O_KEY, L_KEY and DELTA. The ACID Transaction T1 was suspended prior to Rollback.

2. Another ACID Transaction T2 was started using the same O_KEY and L_KEY used in step 1 and a randomly selected DELTA.
3. T2 waited.
4. T1 was allowed to ROLLBACK and T2 completed.
5. It was verified that T2.L_EXTENDEDPRICE = T1.L_EXTENDEDPRICE.

4.3.5 Isolation Test 5 – Concurrent Read and Write Transactions on Different Tables

Demonstrate the ability of read and write transactions affecting different database tables to make progress concurrently.

The following steps were performed:

1. An ACID Transaction T1 for a randomly selected O_KEY, L_KEY and DELTA. The ACID Transaction T1 was suspended prior to Commit.
2. Another ACID Transaction T2 was started using random values for PS_PARTKEY and PS_SUPPKEY.
3. T2 completed.
4. T1 completed and the appropriate rows in the ORDER, LINEITEM and HISTORY tables were changed.

4.3.6 Isolation Test 6 – Update Transactions During Continuous Read-Only Query Stream

Demonstrate the continuous submission of arbitrary (read-only) queries against one or more tables of the database does not indefinitely delay update transactions affecting those tables from making progress.

The following steps were performed:

1. An ACID Transaction T1 was started, executing Q1 against the qualification database. The substitution parameter was chosen from the interval [0..2159] so that the query ran for a sufficient amount of time.
2. Before T1 completed, an ACID Transaction T2 was started using randomly selected values of O_KEY, L_KEY and DELTA.
3. T2 completed before T1 completed.
4. It was verified that the appropriate rows in the ORDER, LINEITEM and HISTORY tables were changed.

4.4 Durability Requirements

The tested system must guarantee durability: the ability to preserve the effects of committed transactions and insure database consistency after recovery from any one of the failures listed in Clause 3.5.2.

4.4.1 Permanent Unrecoverable Failure of Any Durable Medium and Loss of System Power

Guarantee the database and committed updates are preserved across a permanent irrecoverable failure of any single durable medium containing TPC-H database tables or recovery log tables.

The database log was stored on a RAID-1 protected array of two physical drives. The tables for the database were stored on 10 RAID-0 arrays each containing 14 physical drives. A backup of the database was taken. The backup was spread across 10 RAID-5 arrays.

The tests were conducted on the qualification database. The steps performed are shown below:

1. The complete database was backed up.
2. Six streams of ACID transactions were started. Each stream executed a minimum of 100 transactions.
3. While the test was running, one of the disks from the database RAID-1 log was removed.
4. After it was determined that the test would still run with the loss of a log disk, one physical drive of a RAID-0 data volume was removed.
5. A checkpoint was issued to force a failure.
6. The six streams of ACID transactions failed and recorded their number of committed transaction in success files.
7. The database log was dumped to disk.
8. The database and log disks were replaced with new disks and RAID rebuild process started
9. When log RAID rebuild process finished a database restore was done.
10. A command was issued causing the database to run through its roll-forward recovery.
11. The counts in the success files and the HISTORY table count were compared and were found to match.

4.4.2 System Crash

Guarantee the database and committed updates are preserved across an instantaneous interruption (system crash/system hang) in processing which requires the system to reboot to recover.

1. Six streams of ACID transactions were started. Each stream executed a minimum of 100 transactions.
2. While the streams of ACID transactions were running, the system was powered off.
3. When power was restored, the system rebooted and the database was restarted.
4. The database went through a recovery period.
5. The success file and the HISTORY table counts were compared and were found to match.

4.4.3 Memory Failure

Guarantee the database and committed updates are preserved across failure of all or part of memory (loss of contents).

See section 4.4.2

5.0 Clause 4: Scaling and Database Population

5.1 Initial Cardinality of Tables

The cardinality (e.g., the number of rows) of each table of the test database, as it existed at the completion of the database load (see clause 4.2.5) must be disclosed.

Table 5.1 lists the TPC Benchmark H defined tables and the row count for each table as they existed upon completion of the build.

Table 5. 1: Initial Number of Rows

Table Name	Row Count
Region	5
Nation	25
Supplier	1,000,000
Customer	15,000,000
Part	20,000,000
Partsupp	80,000,000
Orders	150,000,000
Lineitem	600,037,902

5.2 Distribution of Tables and Logs Across Media

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

Microsoft SQL Server was configured on a HP ProLiant DL760G2 with the following configuration:

- 5 x Smart Array 5302 disk controllers
- 10 x StorageWorks Enclosure 4354R
- 140 x 18.2GB 15k rpm external disk drives
- 4 x 18.2GB 15k rpm internal disk drives

All 144 disks were used to hold table data, indexes, database log and the temporary database (TempDB).

A detailed description of distribution of database filegroups and log can be found in Table 5.2.1

Table 5.2.1: SMART Array Controller Disk Array to Logical Drive Mapping

SMART Array Controller	SMART Logical Drive Array Letter	Number of Physical Drives in SMART LDA	SMART Logical Drive Number	SMART Fault Tolerance	Disk Format	Size (MB)	Contents
Slot 1	A	7	1	RAID0	RAW	10000	Tpch100g
			2	RAID0	RAW	5000	TempDB
			3	RAID5	NTFS	9000	LoadFg
			4	RAID5	NTFS	25000	Flatfiles
Slot 1	B	7	1	RAID0	RAW	10000	Tpch100g
			2	RAID0	RAW	5000	TempDB
			3	RAID5	NTFS	9000	LoadFg
			4	RAID5	NTFS	25000	Flatfiles
Slot 1	C	7	1	RAID0	RAW	10000	Tpch100g
			2	RAID0	RAW	5000	TempDB
			3	RAID5	NTFS	9000	LoadFg
			4	RAID5	NTFS	25000	Flatfiles
Slot 1	D	7	1	RAID0	RAW	10000	Tpch100g
			2	RAID0	RAW	5000	TempDB
			3	RAID5	NTFS	9000	LoadFg
			4	RAID5	NTFS	25000	Flatfiles
Slot 3	A	7	1	RAID0	RAW	10000	Tpch100g
			2	RAID0	RAW	5000	TempDB
			3	RAID5	NTFS	9000	LoadFg
			4	RAID5	NTFS	25000	Flatfiles
Slot 3	B	7	1	RAID0	RAW	10000	Tpch100g
			2	RAID0	RAW	5000	TempDB
			3	RAID5	NTFS	9000	LoadFg
			4	RAID5	NTFS	25000	Flatfiles
Slot 3	C	7	1	RAID0	RAW	10000	Tpch100g
			2	RAID0	RAW	5000	TempDB
			3	RAID5	NTFS	9000	LoadFg
			4	RAID5	NTFS	25000	Flatfiles
Slot 3	D	7	1	RAID0	RAW	10000	Tpch100g
			2	RAID0	RAW	5000	TempDB
			3	RAID5	NTFS	9000	LoadFg
			4	RAID5	NTFS	25000	Flatfiles
Slot 5	A	7	1	RAID0	RAW	10000	Tpch100g
			2	RAID0	RAW	5000	TempDB
			3	RAID5	NTFS	9000	LoadFg
			4	RAID5	NTFS	25000	Flatfiles
Slot 5	B	7	1	RAID0	RAW	10000	Tpch100g
			2	RAID0	RAW	5000	TempDB
			3	RAID5	NTFS	9000	LoadFg
			4	RAID5	NTFS	25000	Flatfiles
Slot 5	C	7	1	RAID0	RAW	10000	Tpch100g
			2	RAID0	RAW	5000	TempDB
			3	RAID5	NTFS	9000	LoadFg
			4	RAID5	NTFS	25000	Flatfiles
Slot 5	D	7	1	RAID0	RAW	10000	Tpch100g
			2	RAID0	RAW	5000	TempDB
			3	RAID5	NTFS	9000	LoadFg
			4	RAID5	NTFS	25000	Flatfiles
Slot 7	A	7	1	RAID0	RAW	10000	Tpch100g
			2	RAID0	RAW	5000	TempDB
			3	RAID5	NTFS	9000	LoadFg
			4	RAID5	NTFS	25000	Flatfiles
Slot 7	B	7	1	RAID0	RAW	10000	Tpch100g
			2	RAID0	RAW	5000	TempDB
			3	RAID5	NTFS	9000	LoadFg

Slot 7	C	7	1	RAID0	RAW	10000	Tpch100g
			2	RAID0	RAW	5000	TempDB
			3	RAID5	NTFS	9000	LoadFg
Slot 7	D	7	1	RAID0	RAW	10000	Tpch100g
			2	RAID0	RAW	5000	TempDB
			3	RAID5	NTFS	9000	LoadFg
Slot 11	A	7	1	RAID0	RAW	10000	Tpch100g
			2	RAID0	RAW	5000	TempDB
			3	RAID5	NTFS	9000	LoadFg
			4	RAID5	NTFS	25000	Flatfiles
			5	RAID0	RAW	4000	Tpch1g
Slot 11	B	7	1	RAID0	RAW	10000	Tpch100g
			2	RAID0	RAW	5000	TempDB
			3	RAID5	NTFS	9000	LoadFg
Slot 11	C	7	1	RAID0	RAW	10000	Tpch100g
			2	RAID0	RAW	5000	TempDB
			3	RAID5	NTFS	9000	LoadFg
Slot 11	D	7	1	RAID0	RAW	10000	Tpch100g
			2	RAID0	RAW	5000	TempDB
			3	RAID5	NTFS	9000	LoadFg
Embedded	A	2	1	RAID1+0	NTFS	18000	OS
Embedded	B	2	1	RAID1+0	RAW	12000	TpchLog
			2	RAID0	RAW	6000	TempLog
			1	RAID1+0	RAW	1000	Tpch1GLog

5.3 Mapping of Database Partitions/Replications

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

Database partitioning/replication was not used..

5.4 Implementation of RAID

Implementations may use some form of RAID to ensure high availability. If used for data, auxiliary storage (e.g. indexes) or temporary space, the level of RAID used must be disclosed for each device.

RAID 0 was used for database filegroups and tempdb, and RAID 1 for database recovery logs.

5.5 DBGEN Modifications

The version number, release number, modification number, and patch level of DBGEN must be disclosed. Any modifications to the DBGEN (see Clause 4.2.1) source code must be disclosed. In the event that a program other than DBGEN was used to populate the database, it must be disclosed in its entirety.

The standard distribution DBGEN version 1.3.0 was used for database population. No modifications were made.

5.6 Database Load time

The database load time for the test database (see clause 4.3) must be disclosed.

The database load time was 2 hour 21 minutes 40 seconds.

5.7 Data Storage Ratio

The data storage ratio must be disclosed. It is computed by dividing the total data storage of the priced configuration (expressed in GB) by the size chosen for the test database as defined in 4.1.3.1. The ratio must be reported to the nearest 1/100th, rounded up.

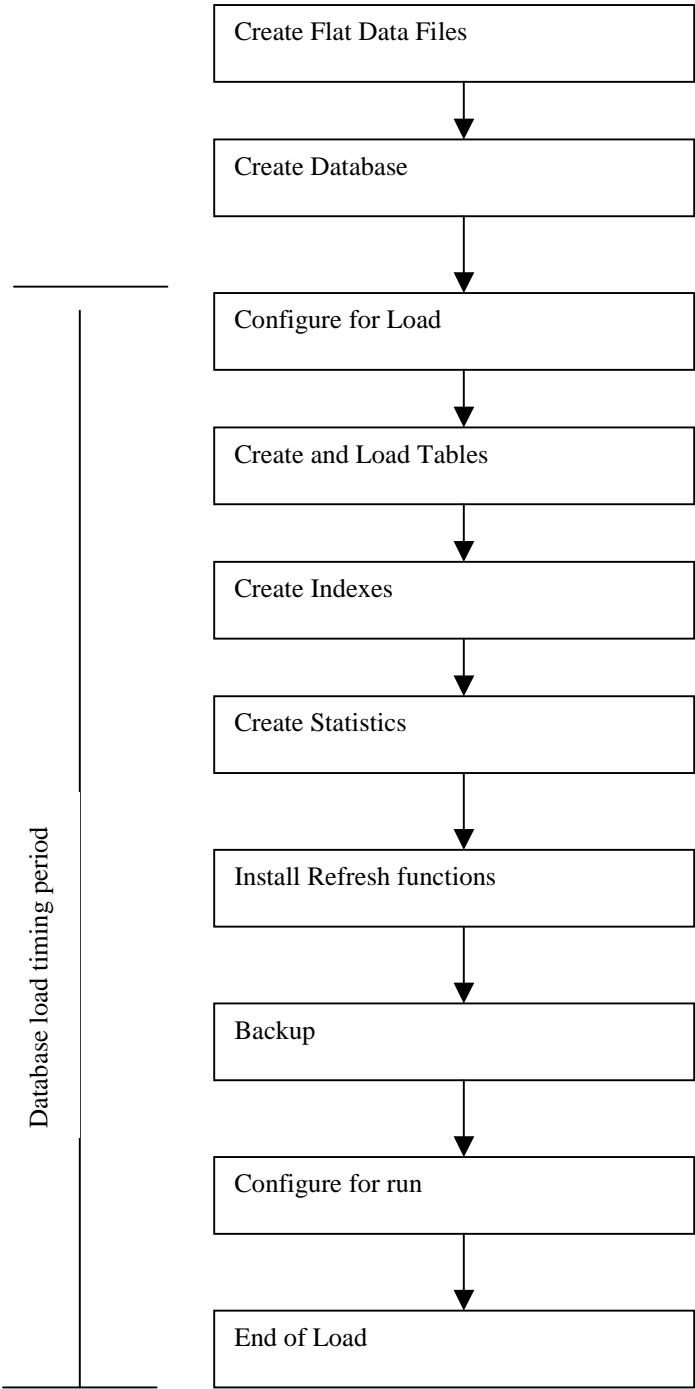
Disk Type	Number of Disks	Space per Disk	Total Disk Space	Data Storage Ratio
18.2 GB 15k rpm Ultra320 SCSI	144	16.92 GB	2436.4 GB	24.36

5.8 Database Load Mechanism Details and Illustration

The details of the database load must be disclosed, including a block diagram illustrating the overall process. Disclosure of the load procedure includes all steps, scripts, input and configuration files required to completely reproduce the test and qualification databases.

Flat files for each of the tables were created using DBGEN.
The tables were loaded as depicted in Figure 5-8.

Figure 5.8: Block Diagram of Database Load Process



6.0 Clause 5: Performance Metrics and Execution Rules Related Items

6.1 Steps in the Power Test

The details of the steps followed to implement the power test (e.g., system boot, database restart, etc.) must be disclosed.

The following steps were used to implement the power test:

1. The system was rebooted
2. RF1 Refresh Transaction
3. Stream 00 Execution
4. RF2 Refresh Transaction.

6.2 Timing Intervals for Each Query and Refresh Function

The timing intervals (see Clause 5.3.6) for each query of the measured set and for both refresh functions must be reported for the power test.

The timing intervals for each query and both refresh functions are given in the Numerical Quantities Summary earlier in the executive summary.

6.3 Number of Streams for The Throughput Test

The number of execution streams used for the throughput test must be disclosed.

Five streams were used for the Throughput Test.

6.4 Start and End Date/Times for Each Query Stream

The start time and finish time for each query execution stream must be reported for the throughput test.

The Numerical Quantities Summary contains the start and stop times for the query execution streams run on the system reported.

6.5 Total Elapsed Time for the Measurement Interval

The total elapsed time of the measurement interval(see Clause 5.3.5) must be reported for the throughput test.

The Numerical Quantities Summary contains the timing intervals for the throughput test run on the system reported.

6.6 Refresh Function Start Date/Time and Finish Date/Time

Start and finish time for each update function in the update stream must be reported for the throughput test.

Stream ID	RF	Start Date	Start time	Stop Date	Stop Time
Stream00	RF1	7/4/2003	12:49:41	7/4/2003	12:50:10
Stream00	RF2	7/4/2003	13:32:04	7/4/2003	13:32:39
Stream01	RF1	7/4/2003	16:55:41	7/4/2003	16:56:07
Stream01	RF2	7/4/2003	16:56:07	7/4/2003	16:56:37
Stream02	RF1	7/4/2003	16:56:37	7/4/2003	16:56:57
Stream02	RF2	7/4/2003	16:56:57	7/4/2003	16:57:29
Stream03	RF1	7/4/2003	16:57:29	7/4/2003	16:57:55
Stream03	RF2	7/4/2003	16:57:55	7/4/2003	16:58:33
Stream04	RF1	7/4/2003	16:58:33	7/4/2003	16:59:00
Stream04	RF2	7/4/2003	16:59:00	7/4/2003	16:59:40
Stream05	RF1	7/4/2003	16:59:40	7/4/2003	17:00:07
Stream05	RF2	7/4/2003	17:00:07	7/4/2003	17:00:46

6.7 Timing Intervals for Each Query and Each Refresh Function for Each Stream

The timing intervals (see Clause 5.3.6) for each query of each stream and for each update function must be reported for the throughput test.

The timing intervals for each query and each update function are given in the Numerical Quantities Summary earlier in the executive summary.

6.8 Performance Metrics

The computed performance metrics, related numerical quantities and the price performance metric must be reported.

The Numerical Quantities Summary contains the performance metrics, related numerical quantities, and the price/performance metric for the system reported.

6.9 The Performance Metric and Numerical Quantities from Both Runs

A description of the method used to determine the reproducibility of the measurement results must be reported. This must include the performance metrics (QppH and QthH) from the reproducibility runs.

Performance results from the first two executions of the TPC-H benchmark indicated the following difference for the metric points:

Run	QppH @ 100GB	QthH @ 100GB	QphH @ 100GB
Run 1	5628.0	3171.4	4224.8
Run 2	5695.4	3204.4	4272.0

6.11 System Activity Between Tests

Any activity on the SUT that takes place between the conclusion of Run1 and the beginning of Run2 must be disclosed.

SQL Server was restarted between runs.

7.0 Clause 6: SUT and Driver Implementation

Related Items

7.1 Driver

A detailed description of how the driver performs its functions must be supplied, including any related source code or scripts. This description should allow an independent reconstruction of the driver.

Two scripts were used. The first one was used to create and load the database, while the second was used to run the Power and Throughput tests. These scripts are in Appendix F. A C program, semaphore.c, was used for coordination of parallel processes..

7.2 Implementation Specific Layer (ISL)

If an implementation-specific layer is used, then a detailed description of how it performs its functions must be supplied, including any related source code or scripts. This description should allow an independent reconstruction of the implementation-specific layer.

A command script was used to control and track the execution of queries. The scripts are contained in Appendix F. Qgen was used to generate the query streams, along with the appropriate substitution values.

The following steps are performed, to accomplish the Power and Throughput Runs:

1. Power Run

- Execute 64 concurrent RF1 processes, each of which will apply a segment of an update set generated by dbgen.
- Each process submits multiple transactions, where a transaction spans a set of orders and their associated line items.
- Execute the Stream0 queries, in the prescribed order.
- Execute 64 concurrent RF2 processes, each of which will apply a segment of an update set generated by dbgen. Each thread submits multiple transactions, where a transaction spans a set of orders and their associated line items.

2. Throughput Run

- Execute five concurrent query streams. Each stream executes queries in the prescribed order for the appropriate Stream Id (1-5). Upon completion of each stream, a semaphore is set to indication completion.
- Execute five consecutive RF1/RF2 transactions, against ascending Update sets produced by dbgen. The first RF1 waits on a semaphore prior to beginning its insert operations.

Each step is timed by the script. The timing information is stored in the database for later analysis. The inputs and outputs of steps are stored in text files for later analysis.

7.3 Profile-Directed Optimization

If profile-directed optimization as described in Clause 5.2.9 is used, such used must be disclosed.

Profile-directed optimization was not used.

8.0 Clause 7: Pricing Related Items

8.1 Hardware and Software Used

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

A detailed list of all hardware and software, including the 3-year price, is provided in the Executive Summary at the front of this report. The price quotations are included in Appendix G, at the end of this document.

8.2 Total 3 Year Price

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.

A detailed list of all hardware and software, including the 3-year price, is provided in the Executive Summary at the front of this report. The price quotations are included in Appendix G, at the end of this document. As a large purchase, this purchase qualifies for a 16% discount from Hewlett-Packard Company.

8.3 Availability Date

The committed delivery date for general availability of products used in the price calculations must be reported. When the priced system includes products with different availability dates, the availability date reported on the executive summary must be the date by which all components are committed to being available. The full disclosure report must report availability dates individually for at least each of the categories for which a pricing subtotal must be provided.

The HP ProLiant DL760G2, system memory, additional processors, disk controllers and hard drives are available at the time of publication. All other hardware is generally available at the time of publication.

The system software, Microsoft Windows Server 2003, Enterprise Edition and the database software, Microsoft SQL Server 2000 Enterprise Edition is generally available at the time of publication. Service Pack 3 for Microsoft SQL Server 2000 is generally available at the time of publication.

8.4 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.

The configuration is priced for the United States of America.

9.0 Clause 9: Related Items

9.1 Auditors' Report

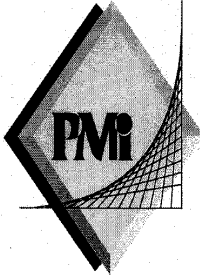
The auditor's agency name, address, phone number, and Attestation letter with a brief audit summary report indicating compliance must be included in the full disclosure report. A statement should be included specifying who to contact in order to obtain further information regarding the audit process.

This implementation of the TPC Benchmark H was audited by Lorna Livingtree of Performance Metrics. Further information regarding the audit process may be obtained from:

Performance Metrics, Inc.
137 Yankton St., Suite 101
Folsom, CA 95630
(phone) (916) 985-1131
(fax) (916) 985-1185
e-mail: lorna@perfmtrics.com

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

Transaction Processing Performance Council
c/o Shanley Public Relations
777 North First Street, Suite 6000
San Jose, CA 95112-6311 USA
Telephone: (408) 295-8894
Fax: (408) 295-9768



PERFORMANCE METRICS INC.
TPC Certified Auditors

August 8, 2003

Mr. Daniel Pol
Hewlett-Packard
Database Performance Lab
20555 SH 249
Houston, TX 77070

I have verified the TPC Benchmark™ H for the following configuration:

Platform: Proliant DL760G2 8P
Database Manager: Microsoft SQL Server 2000 Enterprise Edition
Operating System: Microsoft Windows Server 2003, Enterprise Server

CPU's	Memory	Total Disks	QppH@100GB	QthH@100GB	QphH@100GB
8 Intel Xeon MP @ 2.8 Ghz	16 GB	144 @ 18GB,15Krpm	5,628.0	3,171.4	4,224.8

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 database tables were defined with the proper columns, layout and sizes.
- The tested database was correctly scaled and populated for 100GB using DBGEN. The version of DBGEN was 1.3.0.
- The qualification database layout was identical to the tested database except for the size of the files.
- The query text was verified to use only compliant variants and minor modifications.
- The executable query text was generated by QGEN and submitted through Microsoft's standard OSQL interactive interface. The version of QGEN was 1.3.0.
- The validation of the query text against the qualification database produced compliant results.

PERFORMANCE METRICS INC.
TPC Certified Auditors

- The refresh functions were properly implemented and executed the correct number of inserts and deletes.
- The load timing was properly measured and reported.
- The execution times were correctly measured and reported.
- The performance metrics were correctly computed and reported.
- The repeatability of the measurement was verified.
- The ACID properties were tested and verified.
- Sufficient mirrored log space was present on the tested system.
- The system pricing was checked for major components and maintenance.
- The executive summary pages of the FDR were verified for accuracy.

Auditor's Notes:
None.

Sincerely,



Lorna Livingtree
Auditor

Appendix A: Tunable Parameters

- Note: These are the settings used during the power test. The settings altered for the load are documented in Appendix B.

A.1 Microsoft SQL Server 2000 Version

The following text was output was generated by executing the select @@version command:

```
Microsoft SQL Server 2000 - 8.00.761 (Intel X86)
Feb 27 2003 12:09:37
Copyright (c) 1988-2003 Microsoft Corporation
Enterprise Edition on Windows NT 5.2 (Build 3790: )
```

A.2 SQL Server 2000 Installation

Microsoft SQL Server 2000 was installed on the SUT. All default options were selected during the install except:

- Database Server Enterprise Edition was installed.
- “Custom installation” was selected. The SQL Server
- Development tools were not installed.
- Binary Sort Order was used. (Collation Settings>SQL Collation>Binary)
- Services Accounts > Customized > SQL Server > Use Local System Account Authentication Mode > Mixed > Blank Password
- Microsoft SQL Server 2000 Service Pack 3 was installed using the default settings during installation.

A.3 SQL Server 2000 Startup Parameters

```
SQLSERVER -x -c -g100
```

Where :

- x Disable the Keeping of CPU time and cache-hit ratio statistics.
- c Start SQL Server independently of Windows NT Service Control Manager
- g Reserve 100MB for non-buffer pool allocations.

A.4 Microsoft SQL Server 2000 Configuration Parameters

name	,minimum	,maximum	,config_value	,run_value
affinity mask	,-2147483648,	2147483647,	65535,	65535
allow updates	, 0,	1,	1,	1
awe enabled	, 0,	1,	1,	1
c2 audit mode	, 0,	1,	0,	0
cost threshold for parallelism	, 0,	32767,	0,	0
Cross DB Ownership Chaining	, 0,	1,	0,	0
cursor threshold	, -1,	2147483647,	-1,	-1
default full-text language	, 0,	2147483647,	1033,	1033
default language	, 0,	9999,	0,	0
fill factor (%)	, 0,	100,	0,	0
index create memory (KB)	, 704,	2147483647,	0,	0
lightweight pooling	, 0,	1,	1,	1
locks	, 5000,	2147483647,	0,	0

max degree of parallelism	, 0,	32,	15,	15
max server memory (MB)	, 4,	2147483647,	2147483647,	2147483647
max text repl size (B)	, 0,	2147483647,	65536,	65536
max worker threads	, 32,	32767,	1800,	1800
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,	65536,	32768,	32768
open objects	, 0,	2147483647,	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 login timeout (s)	, 0,	2147483647,	20,	20
remote proc trans	, 0,	1,	0,	0
remote query timeout (s)	, 0,	2147483647,	600,	600
scan for startup procs	, 0,	1,	0,	0
set working set size	, 0,	1,	0,	0
show advanced options	, 0,	1,	1,	1
two digit year cutoff	, 1753,	9999,	2049,	2049
user connections	, 0,	32767,	0,	0
user options	, 0,	32767,	0,	0

A.5 Windows 2003 Configuration

The default installation of Windows 2003 Enterprise Edition was used. All default options were selected during the install except:

- A TCP/IP address was configured on the system.

Updated installation to optimize performance for applications. (System Properties > Advanced > Performance Options > Programs)

Boot.ini parameters:

- /3GB - Give SQL Server access to 3GB memory
- /PAE - Allow the system to use addresses above 4GB

A.6 HP SMART Array Controller Cache Settings and registry entries

The HP SMART Array Controller cache settings for all drives was configured for the cache ratio of 0% read / 100% write .

The HP SMART Array Controller cache was enabled for all drives.

Windows Registry Editor Version 5.00

```
[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\hpcqis
b]
"Type"=dword:00000001
"Start"=dword:00000000
"ErrorControl"=dword:00000001
"Tag"=dword:00000102
"ImagePath"=hex(2):73,00,79,00,73,00,74,00,65,00,6d,00,33,00,32,00,5c,00,44,00,\
```



```

52,00,49,00,56,00,45,00,52,00,53,00,5c,00,68,00,70,00,71,00,63,00,69,00,73
.\
00,73,00,62,00,2e,00,73,00,79,00,73,00,00,00
"DisplayName"="Smart Array Controllers Non-Miniport Bus Driver"
"Group"="port"

[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\hpcqiss
b\Parameters]
"CompletionMode"=dword:00000001

[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\hpcqiss
b\Security]
"Security"=hex:01,00,14,80,90,00,00,00,9c,00,00,00,14,00,00,00,30,00,00,0
0,02,\
00,1c,00,01,00,00,00,02,80,14,00,ff,01,0f,00,01,01,00,00,00,00,01,00,00,\
00,00,02,00,60,00,04,00,00,00,00,00,14,00,fd,01,02,00,01,01,00,00,00,00,00
.\
05,12,00,00,00,00,00,18,00,ff,01,0f,00,01,02,00,00,00,00,00,05,20,00,00,00,\
20,02,00,00,00,00,14,00,8d,01,02,00,01,01,00,00,00,00,00,05,0b,00,00,00,00
.\
00,18,00,fd,01,02,00,01,02,00,00,00,00,00,05,20,00,00,00,23,02,00,00,01,01
.\
00,00,00,00,00,05,12,00,00,00,01,01,00,00,00,00,00,05,12,00,00,00

[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\hpcqiss
b\Enum]
"0"="Root\LEGACY_HPQCISB\0000"
"Count"=dword:00000001
"NextInstance"=dword:00000001

```

A.7 System Hardware Information

System Information report written at: 08/13/03 14:36:59

System Name: DB2BUSTER

[System Summary]

Item	Value
OS Name	Microsoft(R) Windows(R) Server 2003, Enterprise Edition

Version	5.2.3790 Build 3790
OS Manufacturer	Microsoft Corporation
System Name	DB2BUSTER
System Manufacturer	HP
System Model	ProLiant DL760 G2
System Type	X86-based PC
Processor	x86 Family 15 Model 2 Stepping 5 GenuineIntel ~2799 Mhz

Processor x86 Family 15 Model 2 Stepping 5 GenuineIntel ~2799 Mhz

Processor x86 Family 15 Model 2 Stepping 5 GenuineIntel ~2799 Mhz

Processor x86 Family 15 Model 2 Stepping 5 GenuineIntel ~2799 Mhz

Processor x86 Family 15 Model 2 Stepping 5 GenuineIntel ~2799 Mhz

Processor x86 Family 15 Model 2 Stepping 5 GenuineIntel ~2799 Mhz

Processor x86 Family 15 Model 2 Stepping 5 GenuineIntel ~2799 Mhz

```

Processor x86 Family 15 Model 2 Stepping 5 GenuineIntel ~2799 Mhz
Processor x86 Family 15 Model 2 Stepping 5 GenuineIntel ~2799 Mhz
Processor x86 Family 15 Model 2 Stepping 5 GenuineIntel ~2799 Mhz
Processor x86 Family 15 Model 2 Stepping 5 GenuineIntel ~2799 Mhz
Processor x86 Family 15 Model 2 Stepping 5 GenuineIntel ~2799 Mhz
Processor x86 Family 15 Model 2 Stepping 5 GenuineIntel ~2799 Mhz
Processor x86 Family 15 Model 2 Stepping 5 GenuineIntel ~2799 Mhz
Processor x86 Family 15 Model 2 Stepping 5 GenuineIntel ~2799 Mhz
Processor x86 Family 15 Model 2 Stepping 5 GenuineIntel ~2799 Mhz
Processor x86 Family 15 Model 2 Stepping 5 GenuineIntel ~2799 Mhz
Processor x86 Family 15 Model 2 Stepping 5 GenuineIntel ~2799 Mhz
BIOS Version/Date HP P44-06/19/2003, 6/19/2003
SMBIOS Version 2.3
Windows Directory C:\WINDOWS
System Directory C:\WINDOWS\system32
Boot Device \Device\HarddiskVolume62
Locale United States
Hardware Abstraction Layer Version = "5.2.3790.0 (srv03_rtm.030324-
2048)"
User Name DB2BUSTER\Administrator
Time Zone Central Daylight Time
Total Physical Memory 16,388.00 MB
Available Physical Memory 369.07 MB
Total Virtual Memory 33.37 GB
Available Virtual Memory 2.74 GB
Page File Space 17.62 GB
Page File C:\pagefile.sys

```

[Hardware Resources]

[Conflicts/Sharing]

Resource	Device
IRQ 3	Compaq PCI Hotplug Controller
IRQ 3	Compaq PCI Hotplug Controller
IRQ 3	Compaq PCI Hotplug Controller
IRQ 3	Compaq PCI Hotplug Controller
IRQ 3	Compaq PCI Hotplug Controller
IRQ 3	Compaq PCI Hotplug Controller
I/O Port 0x00000000-0x000017FF	PCI bus
I/O Port 0x00000000-0x000017FF	Direct memory access controller
I/O Port 0x000003C0-0x000003DF	PCI bus
I/O Port 0x000003C0-0x000003DF	Standard VGA Graphics Adapter
I/O Port 0x00006000-0x00006FFF	PCI bus
I/O Port 0x00006000-0x00006FFF	Smart Array 5300 Controller (Non-Miniport)
I/O Port 0x00003000-0x00003FFF	PCI bus
I/O Port 0x00003000-0x00003FFF	Smart Array 5300 Controller (Non-Miniport)
I/O Port 0x00005000-0x00005FFF	PCI bus
I/O Port 0x00005000-0x00005FFF	Smart Array 5300 Controller (Non-Miniport)
I/O Port 0x00001800-0x00002FFF	PCI bus

I/O Port 0x00001800-0x00002FFF Management Controller	Compaq Advanced System	0x00001000-0x0000107F	Motherboard resources	OK
Memory Address 0xA0000-0xBFFFF Memory Address 0xA0000-0xBFFFF Adapter	PCI bus Standard VGA Graphics	0x00001080-0x000010FF 0x00000040-0x00000043 0x00000080-0x0000008F	Motherboard resources System timer Direct memory access controller	OK OK OK
I/O Port 0x00007000-0x00007FFF I/O Port 0x00007000-0x00007FFF (Non-Miniport)	PCI bus Smart Array 5300 Controller	0x000000C0-0x000000DF 0x0000040B-0x0000040B	Direct memory access controller Direct memory access controller	OK OK
I/O Port 0x000003B0-0x000003BB I/O Port 0x000003B0-0x000003BB Adapter	PCI bus Standard VGA Graphics	0x000004D6-0x000004D6 0x00000061-0x00000061 0x000003F8-0x000003FF	Direct memory access controller System speaker Communications Port (COM1)	OK OK OK
I/O Port 0x00008000-0x00008FFF I/O Port 0x00008000-0x00008FFF (Non-Miniport)	PCI bus Smart Array 5300 Controller	0x000003F2-0x000003F5 0x000003F7-0x000003F7	Standard floppy disk controller Standard floppy disk controller	OK OK
[DMA]		0x00000060-0x00000060 Natural PS/2 Keyboard	Standard 101/102-Key or Microsoft	OK
Resource Device Status Channel 7 Direct memory access controller Channel 2 Standard floppy disk controller	OK OK	0x00000064-0x00000064 Natural PS/2 Keyboard 0x00002820-0x0000282F 0x000001F0-0x000001F7 0x000003F6-0x000003F6 0x00000170-0x00000177	Standard 101/102-Key or Microsoft CSB5 IDE Controller Primary IDE Channel Primary IDE Channel Secondary IDE Channel	OK OK OK OK OK
[Forced Hardware]				
Device PNP Device ID		0x00000376-0x00000376	Secondary IDE Channel	OK
[I/O]		0x00000A79-0x00000A79	ISAPNP Read Data Port	OK
Resource Device Status 0x00000000-0x000017FF 0x00000000-0x000017FF	PCI bus OK Direct memory access controller OK	0x00000279-0x00000279 0x00000274-0x00000277	ISAPNP Read Data Port ISAPNP Read Data Port	OK OK
0x000003B0-0x000003BB 0x000003B0-0x000003BB	PCI bus OK Standard VGA Graphics Adapter OK	0x00000020-0x00000021 OK	Programmable interrupt controller	
0x000003C0-0x000003DF 0x000003C0-0x000003DF	PCI bus OK Standard VGA Graphics Adapter OK	0x000000A0-0x000000A1 OK	Programmable interrupt controller	
0x00001800-0x00002FFF 0x00001800-0x00002FFF Controller OK	PCI bus OK Compaq Advanced System Management	0x000004D0-0x000004D1 OK	Programmable interrupt controller	
0x00002000-0x000020FF	Standard VGA Graphics Adapter OK	0x00003000-0x00003FFF 0x00003000-0x00003FFF Miniport) OK	PCI bus OK Smart Array 5300 Controller (Non- Miniport) OK	
0x00002400-0x000024FF OK	Compaq Smart Array 5i Controller	0x00005000-0x00005FFF 0x00005000-0x00005FFF	PCI bus OK Smart Array 5300 Controller (Non- Miniport) OK	
0x00000F50-0x00000F58	Motherboard resources	0x00006000-0x00006FFF 0x00006000-0x00006FFF	PCI bus OK Smart Array 5300 Controller (Non- Miniport) OK	
0x00000F57-0x00000F57	Motherboard resources	0x00007000-0x00007FFF 0x00007000-0x00007FFF	PCI bus OK Smart Array 5300 Controller (Non- Miniport) OK	
0x00000700-0x0000076F	Motherboard resources	0x00008000-0x00008FFF 0x00008000-0x00008FFF	PCI bus OK Smart Array 5300 Controller (Non- Miniport) OK	
0x00000900-0x0000095F	Motherboard resources			
0x00000800-0x0000081F	Motherboard resources			
0x00000010-0x0000001F	Motherboard resources			
0x00000022-0x0000002F	Motherboard resources			
0x00000070-0x00000073	Motherboard resources			
0x00000092-0x00000092	Motherboard resources			
0x00000C00-0x00000CD7	Motherboard resources			
		[IRQs]		
		Resource Device Status		
		IRQ 9 Microsoft ACPI-Compliant System		OK
		IRQ 47 BCM5701 Gigabit Ethernet		OK
		IRQ 5 Compaq Advanced System Management Controller		OK
		IRQ 40 Compaq Smart Array 5i Controller		OK
		IRQ 0 System timer		OK
		IRQ 4 Communications Port (COM1)		OK
		IRQ 6 Standard floppy disk controller		OK

IRQ 12 PS/2 Compatible Mouse OK
 IRQ 1 Standard 101/102-Key or Microsoft Natural PS/2 Keyboard OK
 IRQ 14 Primary IDE Channel OK
 IRQ 11 ServerWorks (RCC) PCI to USB Open Host Controller OK

 IRQ 39 hp Memory Host Controller OK
 IRQ 32 hp Memory Host Controller OK
 IRQ 38 hp Memory Host Controller OK
 IRQ 3 Compaq PCI Hotplug Controller OK
 IRQ 3 Compaq PCI Hotplug Controller OK
 IRQ 3 Compaq PCI Hotplug Controller OK
 IRQ 3 Compaq PCI Hotplug Controller OK
 IRQ 3 Compaq PCI Hotplug Controller OK
 IRQ 3 Compaq PCI Hotplug Controller OK
 IRQ 43 Smart Array 5300 Controller (Non-Miniport) OK

 IRQ 19 Smart Array 5300 Controller (Non-Miniport) OK

 IRQ 23 Smart Array 5300 Controller (Non-Miniport) OK

 IRQ 27 Smart Array 5300 Controller (Non-Miniport) OK

 IRQ 31 Smart Array 5300 Controller (Non-Miniport) OK

[Memory]

Resource	Device	Status
0xA0000-0xBFFFF	PCI bus	OK
0xA0000-0xBFFFF	Standard VGA Graphics Adapter	OK
0xF5E0000-0xF7FFFFF	PCI bus	OK
0xF7FF0000-0xF7FFFFF	BCM5701 Gigabit Ethernet	OK
0xF7FE0000-0xF7FE00FF	Compaq Advanced System Management Controller	OK
0xF6000000-0xF6FFFFFFF	Standard VGA Graphics Adapter	OK
0xF5FF0000-0xF5FF0FFF	Standard VGA Graphics Adapter	OK
0xF5F80000-0xF5FBFFFF	Compaq Smart Array 5i Controller	OK
0xF5EF0000-0xF5EF3FFF	Compaq Smart Array 5i Controller	OK
0xC0000-0xDFFFF	Motherboard resources	OK
0xF5F70000-0xF5F70FFF	ServerWorks (RCC) PCI to USB Open Host Controller	OK
0xF5F60000-0xF5F607FF	hp Memory Host Controller	OK
0xF5F50000-0xF5F507FF	hp Memory Host Controller	OK
0xF5F40000-0xF5F407FF	hp Memory Host Controller	OK
0xF5F30000-0xF5F30FFF	Compaq PCI Hotplug Controller	OK
0xFEC00000-0xFFFFFFFF	Advanced programmable interrupt controller	OK
0xF5B00000-0xF5DFFFFF	PCI bus	OK
0xF5DC0000-0xF5DFFFFF	Smart Array 5300 Controller (Non-Miniport)	OK
0xF5C00000-0xF5CFFFFF	Smart Array 5300 Controller (Non-Miniport)	OK
0xF5BF0000-0xF5BF0FFF	Compaq PCI Hotplug Controller	OK
0xF5800000-0xF5AFFFFF	PCI bus	OK
0xF5AC0000-0xF5AFFFFF	Smart Array 5300 Controller (Non-Miniport)	OK
0xF5900000-0xF59FFFFF	Smart Array 5300 Controller (Non-Miniport)	OK

0xF58F0000-0xF58F0FFF Compaq PCI Hotplug Controller OK

 0xF5500000-0xF57FFFFF PCI bus OK
 0xF57C0000-0xF57FFFFF Smart Array 5300 Controller (Non-Miniport) OK
 0xF5600000-0xF56FFFFF Smart Array 5300 Controller (Non-Miniport) OK
 0xF55F0000-0xF55F0FFF Compaq PCI Hotplug Controller OK

 0xF5200000-0xF54FFFFF PCI bus OK
 0xF54C0000-0xF54FFFFF Smart Array 5300 Controller (Non-Miniport) OK
 0xF5300000-0xF53FFFFF Smart Array 5300 Controller (Non-Miniport) OK
 0xF52F0000-0xF52F0FFF Compaq PCI Hotplug Controller OK

 0xF4F00000-0xF51FFFFF PCI bus OK
 0xF51C0000-0xF51FFFFF Smart Array 5300 Controller (Non-Miniport) OK
 0xF5000000-0xF50FFFFF Smart Array 5300 Controller (Non-Miniport) OK
 0xF4FF0000-0xF4FF0FFF Compaq PCI Hotplug Controller OK

[Components]

[Multimedia]

[Audio Codecs]

CODEC	Manufacturer	Description	Status	File
	Version	Size	Creation Date	
c:\windows\system32\sl_anet.acm	Sipro Lab Telecom Inc.			
	Sipro Lab Telecom Audio Codec			
C:\WINDOWS\system32\SL_ANET.ACM	3.02	84.00 KB		
(86,016 bytes)	3/25/2003 12:00 AM			
c:\windows\system32\imaadp32.acm	Microsoft Corporation			
	OK			
C:\WINDOWS\system32\IMAADP32.ACM	5.2.3790.0			
(srv03_rtm.030324-2048)	15.50 KB (15,872 bytes)			
	3/25/2003 12:00 AM			
c:\windows\system32\msaud32.acm	Microsoft Corporation			
	Windows Media Audio Codec			
C:\WINDOWS\system32\MSAUD32.ACM	8.00.00.4487			
288.00 KB (294,912 bytes)	3/25/2003 12:00 AM			
c:\windows\system32\msg723.acm	Microsoft Corporation			
	OK			
C:\WINDOWS\system32\MSG723.ACM	4.4.4000	116.00 KB (118,784 bytes)		
	4/23/2003 10:58 AM			
c:\windows\system32\msadp32.acm	Microsoft Corporation			
	OK			
C:\WINDOWS\system32\MSADP32.ACM	5.2.3790.0 (srv03_rtm.030324-2048)	14.50 KB (14,848 bytes)		
	3/25/2003 12:00 AM			
c:\windows\system32\msg711.acm	Microsoft Corporation			
	OK			
C:\WINDOWS\system32\MSG711.ACM	5.2.3790.0 (srv03_rtm.030324-2048)	10.00 KB (10,240 bytes)		
	3/25/2003 12:00 AM			
c:\windows\system32\l3codeca.acm	Fraunhofer Institut Integrierte Schaltungen IIS			
	Fraunhofer IIS MPEG Layer-3 Codec			
C:\WINDOWS\system32\L3CODECA.ACM	1, 9, 0, 0305	284.00 KB (290,816 bytes)		
	3/25/2003 12:00 AM			
c:\windows\system32\msgsm32.acm	Microsoft Corporation			
	OK			
C:\WINDOWS\system32\MSGSM32.ACM	5.2.3790.0			
(srv03_rtm.030324-2048)	20.50 KB (20,992 bytes)			
	3/25/2003 12:00 AM			

c:\windows\system32\tsoft32.acm DSP GROUP, INC.
 OK C:\WINDOWS\system32\TSSOFT32.ACM 1.01
 9.50 KB (9,728 bytes) 3/25/2003 12:00 AM

[Video Codecs]

CODEC	Manufacturer	Description	Status	File
	Version	Size	Creation Date	
c:\windows\system32\msh261.drv	Microsoft Corporation			
	OK	C:\WINDOWS\system32\MSH261.DRV		
	4.4.4000	180.00 KB (184,320 bytes)	4/23/2003 10:58 AM	

c:\windows\system32\msyuv.dll	Microsoft Corporation			
	OK	C:\WINDOWS\system32\MSYUV.DLL		
	5.2.3790.0 (srv03_rtm.030324-2048)	16.50 KB (16,896 bytes)	3/24/2003 7:49 PM	

c:\windows\system32\iyuv_32.dll	Microsoft Corporation			
	OK	C:\WINDOWS\system32\IYUV_32.DLL		
	5.2.3790.0 (srv03_rtm.030324-2048)	45.00 KB (46,080 bytes)	3/24/2003 7:49 PM	

c:\windows\system32\msvidc32.dll	Microsoft Corporation			
	OK	C:\WINDOWS\system32\MSVIDC32.DLL	5.2.3790.0	
	(srv03_rtm.030324-2048)	26.50 KB (27,136 bytes)	3/25/2003 12:00 AM	

c:\windows\system32\msh263.drv	Microsoft Corporation			
	OK	C:\WINDOWS\system32\MSH263.DRV		
	4.4.4000	284.00 KB (290,816 bytes)	3/24/2003 7:46 PM	

c:\windows\system32\tsbyuv.dll	Microsoft Corporation			
	OK	C:\WINDOWS\system32\TSBYUV.DLL		
	5.2.3790.0 (srv03_rtm.030324-2048)	8.00 KB (8,192 bytes)	3/24/2003 7:50 PM	

c:\windows\system32\msrle32.dll	Microsoft Corporation			
	OK	C:\WINDOWS\system32\MSRLE32.DLL		
	5.2.3790.0 (srv03_rtm.030324-2048)	10.50 KB (10,752 bytes)	3/25/2003 12:00 AM	

[CD-ROM]

Item	Value
Drive	D:
Description	CD-ROM Drive
Media Loaded	No
Media Type	CD-ROM
Name	COMPAQ CD-224E
Manufacturer	(Standard CD-ROM drives)
Status	OK
Transfer Rate	Not Available
SCSI Target ID	0
PNP Device ID	IDE\CDROMCOMPAQ_CD-224E\A.8D\5&FB0C83D&0&0.0.0
Driver	c:\windows\system32\drivers\cdrom.sys (5.2.3790.0 (srv03_rtm.030324-2048), 49.50 KB (50,688 bytes), 3/25/2003 12:00 AM)

[Sound Device]

Item	Value
------	-------

[Display]

Item	Value
Name	Standard VGA Graphics Adapter
PNP Device ID	PCI\VEN_1002&DEV_4752&SUBSYS_001E0E11&REV_27\3&267A616A&0&68
Adapter Type	ATI MACH64, (Standard display types) compatible

Adapter Description	Standard VGA Graphics Adapter
Adapter RAM	7.94 MB (8,323,072 bytes)
Installed Drivers	vga.dll,framebuf.dll,vga256.dll,vga64k.dll
Driver Version	5.2.3790.0
INF File	display.inf (vga section)
Color Planes	1
Color Table Entries	65536
Resolution	1024 x 768 x 1 hertz
Bits/Pixel	16
Memory Address	0xF6000000-0xF6FFFFFF
I/O Port	0x00002000-0x000020FF
Memory Address	0xF5FF0000-0xF5FF0FFF
I/O Port	0x000003B0-0x000003BB
I/O Port	0x000003C0-0x000003DF
Memory Address	0xA0000-0xBFFFF
Driver	c:\windows\system32\drivers\vgapnp.sys (5.2.3790.0 (srv03_rtm.030324-2048), 23.00 KB (23,552 bytes), 4/23/2003 11:20 AM)

[Infrared]

Item	Value
------	-------

[Input]

[Keyboard]

Item	Value
Description	Standard 101/102-Key or Microsoft Natural PS/2 Keyboard
Name	Enhanced (101- or 102-key)
Layout	00000409
PNP Device ID	ACPI\PNP0303\4&35118DFF&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 (5.2.3790.0 (srv03_rtm.030324-2048), 68.50 KB (70,144 bytes), 3/25/2003 12:00 AM)

[Pointing Device]

Item	Value
Hardware Type	PS/2 Compatible Mouse
Number of Buttons	3
Status	OK
PNP Device ID	ACPI\PNP0F13\4&35118DFF&0
Power Management Supported	No
Double Click Threshold	6
Handedness	Right Handed Operation
IRQ Channel	IRQ 12
Driver	c:\windows\system32\drivers\i8042prt.sys (5.2.3790.0 (srv03_rtm.030324-2048), 68.50 KB (70,144 bytes), 3/25/2003 12:00 AM)

[Modem]

Item	Value
------	-------

[Network]

[Adapter]

Item	Value
Name	[00000001] BCM5701 Gigabit Ethernet

Adapter Type Ethernet 802.3
 Product Type BCM5701 Gigabit Ethernet
 Installed Yes
 PNP Device ID PCI\VEN_14E4&DEV_1645&SUBSYS_007C0E11&REV_15\3
 &267A616A&0&08
 Last Reset 7/4/2003 12:37 PM
 Index 1
 Service Name b57w2k
 IP Address 130.168.253.49
 IP Subnet 255.255.0.0
 Default IP Gateway Not Available
 DHCP Enabled Yes
 DHCP Server 130.168.253.2
 DHCP Lease Expires 8/14/2003 9:42 AM
 DHCP Lease Obtained 8/13/2003 9:42 AM
 MAC Address 00:08:02:ED:24:7E
 Memory Address 0xF7FF0000-0xF7FFFFFF
 IRQ Channel IRQ 47
 Driver c:\windows\system32\drivers\b57xp32.sys (2.91.0.0 built by:
 WinDDK, 137.00 KB (140,288 bytes), 4/23/2003 5:45 AM)

Name [00000002] RAS Async Adapter
 Adapter Type Not Available
 Product Type RAS Async Adapter
 Installed Yes
 PNP Device ID Not Available
 Last Reset 7/4/2003 12:37 PM
 Index 2
 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 Not Available

Name [00000003] WAN Miniport (L2TP)
 Adapter Type Not Available
 Product Type WAN Miniport (L2TP)
 Installed Yes
 PNP Device ID ROOT\MS_L2TPMINIPORT\0000
 Last Reset 7/4/2003 12:37 PM
 Index 3
 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 (5.2.3790.0
 (srv03_rtm.030324-2048), 77.00 KB (78,848 bytes), 3/25/2003 12:00 AM)

Name [00000004] WAN Miniport (PPTP)
 Adapter Type Wide Area Network (WAN)
 Product Type WAN Miniport (PPTP)
 Installed Yes
 PNP Device ID ROOT\MS_PPTPMINIPORT\0000
 Last Reset 7/4/2003 12:37 PM
 Index 4
 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 50:50:54:50:30:30
 Driver c:\windows\system32\drivers\raspptp.sys (5.2.3790.0
 (srv03_rtm.030324-2048), 70.50 KB (72,192 bytes), 3/25/2003 12:00 AM)

Name [00000005] WAN Miniport (PPPOE)
 Adapter Type Wide Area Network (WAN)
 Product Type WAN Miniport (PPPOE)
 Installed Yes
 PNP Device ID ROOT\MS_PPPOEMINIPORT\0000
 Last Reset 7/4/2003 12:37 PM
 Index 5
 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 33:50:6F:45:30:30
 Driver c:\windows\system32\drivers\raspmpoe.sys (5.2.3790.0
 (srv03_rtm.030324-2048), 38.00 KB (38,912 bytes), 3/25/2003 12:00 AM)

Name [00000006] Direct Parallel
 Adapter Type Not Available
 Product Type Direct Parallel
 Installed Yes
 PNP Device ID ROOT\MS_PTMINIPORT\0000
 Last Reset 7/4/2003 12:37 PM
 Index 6
 Service Name Raspti
 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\raspti.sys (5.2.3790.0
 (srv03_rtm.030324-2048), 18.50 KB (18,944 bytes), 3/25/2003 12:00 AM)

Name [00000007] WAN Miniport (IP)
 Adapter Type Not Available
 Product Type WAN Miniport (IP)
 Installed Yes
 PNP Device ID ROOT\MS_NDISWANIP\0000
 Last Reset 7/4/2003 12:37 PM
 Index 7
 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 (5.2.3790.0
 (srv03_rtm.030324-2048), 96.50 KB (98,816 bytes), 3/25/2003 12:00 AM)

[Protocol]

Item Value
 Name MSAFD Tcpiip [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 Tcpiip [UDP/IP]
 Connectionless Service Yes
 Guarantees Delivery No
 Guarantees Sequencing No
 Maximum Address Size 16 bytes
 Maximum Message Size 63.93 KB (65,467 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 RSVP UDP Service Provider
 Connectionless Service Yes
 Guarantees Delivery No
 Guarantees Sequencing No
 Maximum Address Size 16 bytes
 Maximum Message Size 63.93 KB (65,467 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

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 MSAFD NetBIOS [\Device\NetBT_Tcpiip_{CA2439EE-BE9E-4085-A654-C735B28BA36E}] SEQPACKE T 0
 Connectionless Service No
 Guarantees Delivery Yes
 Guarantees Sequencing Yes
 Maximum Address Size 20 bytes
 Maximum Message Size 62.50 KB (64,000 bytes)
 Message Oriented Yes
 Minimum Address Size 20 bytes
 Pseudo Stream Oriented No
 Supports Broadcasting No
 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 No

Name MSAFD NetBIOS [\Device\NetBT_Tcpiip_{CA2439EE-BE9E-4085-A654-C735B28BA36E}] DATAGRAM 0
 Connectionless Service Yes
 Guarantees Delivery No
 Guarantees Sequencing No
 Maximum Address Size 20 bytes
 Maximum Message Size 62.50 KB (64,000 bytes)
 Message Oriented Yes
 Minimum Address Size 20 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 No

Name MSAFD NetBIOS [\Device\NetBT_Tcpiip_{20534380-CFA6-4C5A-AACB-7052D7B3EAF5}] SEQPACKE T 1
 Connectionless Service No
 Guarantees Delivery Yes
 Guarantees Sequencing Yes
 Maximum Address Size 20 bytes
 Maximum Message Size 62.50 KB (64,000 bytes)
 Message Oriented Yes
 Minimum Address Size 20 bytes
 Pseudo Stream Oriented No
 Supports Broadcasting No
 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 No

Name MSAFD NetBIOS [\Device\NetBT_Tcpiip_{20534380-CFA6-4C5A-AACB-7052D7B3EAF5}] DATAGRAM 1
 Connectionless Service Yes
 Guarantees Delivery No
 Guarantees Sequencing No
 Maximum Address Size 20 bytes
 Maximum Message Size 62.50 KB (64,000 bytes)
 Message Oriented Yes
 Minimum Address Size 20 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 No

Name MSAFD NetBIOS [\Device\NetBT_Tcpip_{D00E26DD-F8E7-44E4-ABA3-6BC585769BC9}] SEQUENCE 2
 Connectionless Service No
 Guarantees Delivery Yes
 Guarantees Sequencing Yes
 Maximum Address Size 20 bytes
 Maximum Message Size 62.50 KB (64,000 bytes)
 Message Oriented Yes
 Minimum Address Size 20 bytes
 Pseudo Stream Oriented No
 Supports Broadcasting No
 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 No

Name MSAFD NetBIOS [\Device\NetBT_Tcpip_{D00E26DD-F8E7-44E4-ABA3-6BC585769BC9}] DATAGRAM 2
 Connectionless Service Yes
 Guarantees Delivery No
 Guarantees Sequencing No
 Maximum Address Size 20 bytes
 Maximum Message Size 62.50 KB (64,000 bytes)
 Message Oriented Yes
 Minimum Address Size 20 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 No

[WinSock]

Item Value
 File c:\windows\system32\winsock.dll
 Size 2.80 KB (2,864 bytes)
 Version 3.10
 File c:\windows\system32\wsock32.dll
 Size 22.00 KB (22,528 bytes)
 Version 5.2.3790.0 (srv03_rtm.030324-2048)

[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 (5.2.3790.0 (srv03_rtm.030324-2048), 76.00 KB (77,824 bytes), 3/25/2003 12:00 AM)

[Parallel]

Item Value

[Storage]

[Drives]

Item Value
 Drive A:
 Description 3 1/2 Inch Floppy Drive
 Drive C:
 Description Local Fixed Disk
 Compressed No
 File System NTFS
 Size 16.95 GB (18,198,999,040 bytes)
 Free Space 10.21 GB (10,959,015,936 bytes)
 Volume Name
 Volume Serial Number 50EDFD29
 Drive D:
 Description CD-ROM Disc
 Drive Z:
 Description Local Fixed Disk

Compressed No
 File System NTFS
 Size 122.03 GB (131,024,809,984 bytes)
 Free Space 9.92 GB (10,655,133,696 bytes)
 Volume Name New Volume
 Volume Serial Number E811000C

[Disks]

Item Value
 Description \\.\PHYSICALDRIVE40
 Manufacturer Not Available
 Model Not Available
 Bytes/Sector 512
 Media Loaded Yes
 Media Type Fixed hard disk
 Partitions 1
 SCSI Bus Not Available
 SCSI Logical Unit Not Available
 SCSI Port Not Available
 SCSI Target ID Not Available
 Sectors/Track 63
 Size 9.76 GB (10,479,006,720 bytes)
 Total Cylinders 1,274
 Total Sectors 20,466,810
 Total Tracks 324,870
 Tracks/Cylinder 255
 Partition Disk #40, Partition #0
 Partition Size 9.76 GB (10,478,974,464 bytes)
 Partition Starting Offset 32,256 bytes

Description \\.\PHYSICALDRIVE41
 Manufacturer Not Available
 Model Not Available
 Bytes/Sector 512
 Media Loaded Yes
 Media Type Fixed hard disk
 Partitions 1
 SCSI Bus Not Available
 SCSI Logical Unit Not Available
 SCSI Port Not Available
 SCSI Target ID Not Available
 Sectors/Track 63
 Size 4.88 GB (5,239,503,360 bytes)
 Total Cylinders 637
 Total Sectors 10,233,405
 Total Tracks 162,435
 Tracks/Cylinder 255
 Partition Disk #41, Partition #0
 Partition Size 4.88 GB (5,239,471,104 bytes)
 Partition Starting Offset 32,256 bytes

Description \\.\PHYSICALDRIVE42
 Manufacturer Not Available
 Model Not Available
 Bytes/Sector 512
 Media Loaded Yes
 Media Type Fixed hard disk
 Partitions 1
 SCSI Bus Not Available
 SCSI Logical Unit Not Available
 SCSI Port Not Available
 SCSI Target ID Not Available
 Sectors/Track 63
 Size 8.79 GB (9,434,396,160 bytes)
 Total Cylinders 1,147
 Total Sectors 18,426,555
 Total Tracks 292,485
 Tracks/Cylinder 255
 Partition Disk #42, Partition #0

Partition Size 8.79 GB (9,434,363,904 bytes)
 Partition Starting Offset 32,256 bytes

Description \\.\PHYSICALDRIVE43
 Manufacturer Not Available
 Model Not Available
 Bytes/Sector 512
 Media Loaded Yes
 Media Type Fixed hard disk
 Partitions 1
 SCSI Bus Not Available
 SCSI Logical Unit Not Available
 SCSI Port Not Available
 SCSI Target ID Not Available
 Sectors/Track 63
 Size 9.76 GB (10,479,006,720 bytes)
 Total Cylinders 1,274
 Total Sectors 20,466,810
 Total Tracks 324,870
 Tracks/Cylinder 255
 Partition Disk #43, Partition #0
 Partition Size 9.76 GB (10,478,974,464 bytes)
 Partition Starting Offset 32,256 bytes

Description \\.\PHYSICALDRIVE44
 Manufacturer Not Available
 Model Not Available
 Bytes/Sector 512
 Media Loaded Yes
 Media Type Fixed hard disk
 Partitions 1
 SCSI Bus Not Available
 SCSI Logical Unit Not Available
 SCSI Port Not Available
 SCSI Target ID Not Available
 Sectors/Track 63
 Size 4.88 GB (5,239,503,360 bytes)
 Total Cylinders 637
 Total Sectors 10,233,405
 Total Tracks 162,435
 Tracks/Cylinder 255
 Partition Disk #44, Partition #0
 Partition Size 4.88 GB (5,239,471,104 bytes)
 Partition Starting Offset 32,256 bytes

Description \\.\PHYSICALDRIVE45
 Manufacturer Not Available
 Model Not Available
 Bytes/Sector 512
 Media Loaded Yes
 Media Type Fixed hard disk
 Partitions 1
 SCSI Bus Not Available
 SCSI Logical Unit Not Available
 SCSI Port Not Available
 SCSI Target ID Not Available
 Sectors/Track 63
 Size 8.79 GB (9,434,396,160 bytes)
 Total Cylinders 1,147
 Total Sectors 18,426,555
 Total Tracks 292,485
 Tracks/Cylinder 255
 Partition Disk #45, Partition #0
 Partition Size 8.79 GB (9,434,363,904 bytes)
 Partition Starting Offset 32,256 bytes

Description \\.\PHYSICALDRIVE46
 Manufacturer Not Available
 Model Not Available
 Bytes/Sector 512

Media Loaded Yes
 Media Type Fixed hard disk
 Partitions 1
 SCSI Bus Not Available
 SCSI Logical Unit Not Available
 SCSI Port Not Available
 SCSI Target ID Not Available
 Sectors/Track 63
 Size 9.76 GB (10,479,006,720 bytes)
 Total Cylinders 1,274
 Total Sectors 20,466,810
 Total Tracks 324,870
 Tracks/Cylinder 255
 Partition Disk #46, Partition #0
 Partition Size 9.76 GB (10,478,974,464 bytes)
 Partition Starting Offset 32,256 bytes

Description \\.\PHYSICALDRIVE47
 Manufacturer Not Available
 Model Not Available
 Bytes/Sector 512
 Media Loaded Yes
 Media Type Fixed hard disk
 Partitions 1
 SCSI Bus Not Available
 SCSI Logical Unit Not Available
 SCSI Port Not Available
 SCSI Target ID Not Available
 Sectors/Track 63
 Size 4.88 GB (5,239,503,360 bytes)
 Total Cylinders 637
 Total Sectors 10,233,405
 Total Tracks 162,435
 Tracks/Cylinder 255
 Partition Disk #47, Partition #0
 Partition Size 4.88 GB (5,239,471,104 bytes)
 Partition Starting Offset 32,256 bytes

Description \\.\PHYSICALDRIVE48
 Manufacturer Not Available
 Model Not Available
 Bytes/Sector 512
 Media Loaded Yes
 Media Type Fixed hard disk
 Partitions 1
 SCSI Bus Not Available
 SCSI Logical Unit Not Available
 SCSI Port Not Available
 SCSI Target ID Not Available
 Sectors/Track 63
 Size 8.79 GB (9,434,396,160 bytes)
 Total Cylinders 1,147
 Total Sectors 18,426,555
 Total Tracks 292,485
 Tracks/Cylinder 255
 Partition Disk #48, Partition #0
 Partition Size 8.79 GB (9,434,363,904 bytes)
 Partition Starting Offset 32,256 bytes

Description \\.\PHYSICALDRIVE49
 Manufacturer Not Available
 Model Not Available
 Bytes/Sector 512
 Media Loaded Yes
 Media Type Fixed hard disk
 Partitions 1
 SCSI Bus Not Available
 SCSI Logical Unit Not Available
 SCSI Port Not Available
 SCSI Target ID Not Available

Sectors/Track 63
 Size 9.76 GB (10,479,006,720 bytes)
 Total Cylinders 1,274
 Total Sectors 20,466,810
 Total Tracks 324,870
 Tracks/Cylinder 255
 Partition Disk #49, Partition #0
 Partition Size 9.76 GB (10,478,974,464 bytes)
 Partition Starting Offset 32,256 bytes

Description \\.\PHYSICALDRIVE50
 Manufacturer Not Available
 Model Not Available
 Bytes/Sector 512
 Media Loaded Yes
 Media Type Fixed hard disk
 Partitions 1
 SCSI Bus Not Available
 SCSI Logical Unit Not Available
 SCSI Port Not Available
 SCSI Target ID Not Available
 Sectors/Track 63
 Size 4.88 GB (5,239,503,360 bytes)
 Total Cylinders 637
 Total Sectors 10,233,405
 Total Tracks 162,435
 Tracks/Cylinder 255
 Partition Disk #50, Partition #0
 Partition Size 4.88 GB (5,239,471,104 bytes)
 Partition Starting Offset 32,256 bytes

Description \\.\PHYSICALDRIVE51
 Manufacturer Not Available
 Model Not Available
 Bytes/Sector 512
 Media Loaded Yes
 Media Type Fixed hard disk
 Partitions 1
 SCSI Bus Not Available
 SCSI Logical Unit Not Available
 SCSI Port Not Available
 SCSI Target ID Not Available
 Sectors/Track 63
 Size 8.79 GB (9,434,396,160 bytes)
 Total Cylinders 1,147
 Total Sectors 18,426,555
 Total Tracks 292,485
 Tracks/Cylinder 255
 Partition Disk #51, Partition #0
 Partition Size 8.79 GB (9,434,363,904 bytes)
 Partition Starting Offset 32,256 bytes

Description \\.\PHYSICALDRIVE52
 Manufacturer Not Available
 Model Not Available
 Bytes/Sector 512
 Media Loaded Yes
 Media Type Fixed hard disk
 Partitions 1
 SCSI Bus Not Available
 SCSI Logical Unit Not Available
 SCSI Port Not Available
 SCSI Target ID Not Available
 Sectors/Track 63
 Size 24.41 GB (26,205,742,080 bytes)
 Total Cylinders 3,186
 Total Sectors 51,183,090
 Total Tracks 812,430
 Tracks/Cylinder 255
 Partition Disk #52, Partition #0

Partition Size 24.41 GB (26,205,709,824 bytes)
Partition Starting Offset 32,256 bytes

Description \\.\PHYSICALDRIVE53
Manufacturer Not Available
Model Not Available
Bytes/Sector 512
Media Loaded Yes
Media Type Fixed hard disk
Partitions 1
SCSI Bus Not Available
SCSI Logical Unit Not Available
SCSI Port Not Available
SCSI Target ID Not Available
Sectors/Track 63
Size 9.76 GB (10,479,006,720 bytes)
Total Cylinders 1,274
Total Sectors 20,466,810
Total Tracks 324,870
Tracks/Cylinder 255
Partition Disk #53, Partition #0
Partition Size 9.76 GB (10,478,974,464 bytes)
Partition Starting Offset 32,256 bytes

Description \\.\PHYSICALDRIVE54
Manufacturer Not Available
Model Not Available
Bytes/Sector 512
Media Loaded Yes
Media Type Fixed hard disk
Partitions 1
SCSI Bus Not Available
SCSI Logical Unit Not Available
SCSI Port Not Available
SCSI Target ID Not Available
Sectors/Track 63
Size 4.88 GB (5,239,503,360 bytes)
Total Cylinders 637
Total Sectors 10,233,405
Total Tracks 162,435
Tracks/Cylinder 255
Partition Disk #54, Partition #0
Partition Size 4.88 GB (5,239,471,104 bytes)
Partition Starting Offset 32,256 bytes

Description \\.\PHYSICALDRIVE55
Manufacturer Not Available
Model Not Available
Bytes/Sector 512
Media Loaded Yes
Media Type Fixed hard disk
Partitions 1
SCSI Bus Not Available
SCSI Logical Unit Not Available
SCSI Port Not Available
SCSI Target ID Not Available
Sectors/Track 63
Size 8.79 GB (9,434,396,160 bytes)
Total Cylinders 1,147
Total Sectors 18,426,555
Total Tracks 292,485
Tracks/Cylinder 255
Partition Disk #55, Partition #0
Partition Size 8.79 GB (9,434,363,904 bytes)
Partition Starting Offset 32,256 bytes

Description \\.\PHYSICALDRIVE56
Manufacturer Not Available
Model Not Available
Bytes/Sector 512

Media Loaded Yes
Media Type Fixed hard disk
Partitions 1
SCSI Bus Not Available
SCSI Logical Unit Not Available
SCSI Port Not Available
SCSI Target ID Not Available
Sectors/Track 63
Size 9.76 GB (10,479,006,720 bytes)
Total Cylinders 1,274
Total Sectors 20,466,810
Total Tracks 324,870
Tracks/Cylinder 255
Partition Disk #56, Partition #0
Partition Size 9.76 GB (10,478,974,464 bytes)
Partition Starting Offset 32,256 bytes

Description \\.\PHYSICALDRIVE57
Manufacturer Not Available
Model Not Available
Bytes/Sector 512
Media Loaded Yes
Media Type Fixed hard disk
Partitions 1
SCSI Bus Not Available
SCSI Logical Unit Not Available
SCSI Port Not Available
SCSI Target ID Not Available
Sectors/Track 63
Size 4.88 GB (5,239,503,360 bytes)
Total Cylinders 637
Total Sectors 10,233,405
Total Tracks 162,435
Tracks/Cylinder 255
Partition Disk #57, Partition #0
Partition Size 4.88 GB (5,239,471,104 bytes)
Partition Starting Offset 32,256 bytes

Description \\.\PHYSICALDRIVE58
Manufacturer Not Available
Model Not Available
Bytes/Sector 512
Media Loaded Yes
Media Type Fixed hard disk
Partitions 1
SCSI Bus Not Available
SCSI Logical Unit Not Available
SCSI Port Not Available
SCSI Target ID Not Available
Sectors/Track 63
Size 8.79 GB (9,434,396,160 bytes)
Total Cylinders 1,147
Total Sectors 18,426,555
Total Tracks 292,485
Tracks/Cylinder 255
Partition Disk #58, Partition #0
Partition Size 8.79 GB (9,434,363,904 bytes)
Partition Starting Offset 32,256 bytes

Description \\.\PHYSICALDRIVE59
Manufacturer Not Available
Model Not Available
Bytes/Sector 512
Media Loaded Yes
Media Type Fixed hard disk
Partitions 1
SCSI Bus Not Available
SCSI Logical Unit Not Available
SCSI Port Not Available
SCSI Target ID Not Available

Sectors/Track 63
 Size 9.76 GB (10,479,006,720 bytes)
 Total Cylinders 1,274
 Total Sectors 20,466,810
 Total Tracks 324,870
 Tracks/Cylinder 255
 Partition Disk #59, Partition #0
 Partition Size 9.76 GB (10,478,974,464 bytes)
 Partition Starting Offset 32,256 bytes

Description \\.\PHYSICALDRIVE60
 Manufacturer Not Available
 Model Not Available
 Bytes/Sector 512
 Media Loaded Yes
 Media Type Fixed hard disk
 Partitions 1
 SCSI Bus Not Available
 SCSI Logical Unit Not Available
 SCSI Port Not Available
 SCSI Target ID Not Available
 Sectors/Track 63
 Size 4.88 GB (5,239,503,360 bytes)
 Total Cylinders 637
 Total Sectors 10,233,405
 Total Tracks 162,435
 Tracks/Cylinder 255
 Partition Disk #60, Partition #0
 Partition Size 4.88 GB (5,239,471,104 bytes)
 Partition Starting Offset 32,256 bytes

Description \\.\PHYSICALDRIVE61
 Manufacturer Not Available
 Model Not Available
 Bytes/Sector 512
 Media Loaded Yes
 Media Type Fixed hard disk
 Partitions 1
 SCSI Bus Not Available
 SCSI Logical Unit Not Available
 SCSI Port Not Available
 SCSI Target ID Not Available
 Sectors/Track 63
 Size 9.76 GB (10,479,006,720 bytes)
 Total Cylinders 1,274
 Total Sectors 20,466,810
 Total Tracks 324,870
 Tracks/Cylinder 255
 Partition Disk #61, Partition #0
 Partition Size 9.76 GB (10,478,974,464 bytes)
 Partition Starting Offset 32,256 bytes

Description \\.\PHYSICALDRIVE62
 Manufacturer Not Available
 Model Not Available
 Bytes/Sector 512
 Media Loaded Yes
 Media Type Fixed hard disk
 Partitions 1
 SCSI Bus Not Available
 SCSI Logical Unit Not Available
 SCSI Port Not Available
 SCSI Target ID Not Available
 Sectors/Track 63
 Size 4.88 GB (5,239,503,360 bytes)
 Total Cylinders 637
 Total Sectors 10,233,405
 Total Tracks 162,435
 Tracks/Cylinder 255
 Partition Disk #62, Partition #0

Partition Size 4.88 GB (5,239,471,104 bytes)
 Partition Starting Offset 32,256 bytes

Description \\.\PHYSICALDRIVE63
 Manufacturer Not Available
 Model Not Available
 Bytes/Sector 512
 Media Loaded Yes
 Media Type Fixed hard disk
 Partitions 1
 SCSI Bus Not Available
 SCSI Logical Unit Not Available
 SCSI Port Not Available
 SCSI Target ID Not Available
 Sectors/Track 63
 Size 8.79 GB (9,434,396,160 bytes)
 Total Cylinders 1,147
 Total Sectors 18,426,555
 Total Tracks 292,485
 Tracks/Cylinder 255
 Partition Disk #63, Partition #0
 Partition Size 8.79 GB (9,434,363,904 bytes)
 Partition Starting Offset 32,256 bytes

Description \\.\PHYSICALDRIVE64
 Manufacturer Not Available
 Model Not Available
 Bytes/Sector 512
 Media Loaded Yes
 Media Type Fixed hard disk
 Partitions 1
 SCSI Bus Not Available
 SCSI Logical Unit Not Available
 SCSI Port Not Available
 SCSI Target ID Not Available
 Sectors/Track 63
 Size 8.79 GB (9,434,396,160 bytes)
 Total Cylinders 1,147
 Total Sectors 18,426,555
 Total Tracks 292,485
 Tracks/Cylinder 255
 Partition Disk #64, Partition #0
 Partition Size 8.79 GB (9,434,363,904 bytes)
 Partition Starting Offset 32,256 bytes

Description \\.\PHYSICALDRIVE65
 Manufacturer Not Available
 Model Not Available
 Bytes/Sector 512
 Media Loaded Yes
 Media Type Fixed hard disk
 Partitions 1
 SCSI Bus Not Available
 SCSI Logical Unit Not Available
 SCSI Port Not Available
 SCSI Target ID Not Available
 Sectors/Track 63
 Size 24.41 GB (26,205,742,080 bytes)
 Total Cylinders 3,186
 Total Sectors 51,183,090
 Total Tracks 812,430
 Tracks/Cylinder 255
 Partition Disk #65, Partition #0
 Partition Size 24.41 GB (26,205,709,824 bytes)
 Partition Starting Offset 32,256 bytes

Description \\.\PHYSICALDRIVE14
 Manufacturer Not Available
 Model Not Available
 Bytes/Sector 512

Media Loaded Yes
 Media Type Fixed hard disk
 Partitions 1
 SCSI Bus Not Available
 SCSI Logical Unit Not Available
 SCSI Port Not Available
 SCSI Target ID Not Available
 Sectors/Track 63
 Size 9.76 GB (10,479,006,720 bytes)
 Total Cylinders 1,274
 Total Sectors 20,466,810
 Total Tracks 324,870
 Tracks/Cylinder 255
 Partition Disk #14, Partition #0
 Partition Size 9.76 GB (10,478,974,464 bytes)
 Partition Starting Offset 32,256 bytes

Description \\.\PHYSICALDRIVE15
 Manufacturer Not Available
 Model Not Available
 Bytes/Sector 512
 Media Loaded Yes
 Media Type Fixed hard disk
 Partitions 1
 SCSI Bus Not Available
 SCSI Logical Unit Not Available
 SCSI Port Not Available
 SCSI Target ID Not Available
 Sectors/Track 63
 Size 4.88 GB (5,239,503,360 bytes)
 Total Cylinders 637
 Total Sectors 10,233,405
 Total Tracks 162,435
 Tracks/Cylinder 255
 Partition Disk #15, Partition #0
 Partition Size 4.88 GB (5,239,471,104 bytes)
 Partition Starting Offset 32,256 bytes

Description \\.\PHYSICALDRIVE16
 Manufacturer Not Available
 Model Not Available
 Bytes/Sector 512
 Media Loaded Yes
 Media Type Fixed hard disk
 Partitions 1
 SCSI Bus Not Available
 SCSI Logical Unit Not Available
 SCSI Port Not Available
 SCSI Target ID Not Available
 Sectors/Track 63
 Size 8.79 GB (9,434,396,160 bytes)
 Total Cylinders 1,147
 Total Sectors 18,426,555
 Total Tracks 292,485
 Tracks/Cylinder 255
 Partition Disk #16, Partition #0
 Partition Size 8.79 GB (9,434,363,904 bytes)
 Partition Starting Offset 32,256 bytes

Description \\.\PHYSICALDRIVE17
 Manufacturer Not Available
 Model Not Available
 Bytes/Sector 512
 Media Loaded Yes
 Media Type Fixed hard disk
 Partitions 1
 SCSI Bus Not Available
 SCSI Logical Unit Not Available
 SCSI Port Not Available
 SCSI Target ID Not Available

Sectors/Track 63
 Size 9.76 GB (10,479,006,720 bytes)
 Total Cylinders 1,274
 Total Sectors 20,466,810
 Total Tracks 324,870
 Tracks/Cylinder 255
 Partition Disk #17, Partition #0
 Partition Size 9.76 GB (10,478,974,464 bytes)
 Partition Starting Offset 32,256 bytes

Description \\.\PHYSICALDRIVE18
 Manufacturer Not Available
 Model Not Available
 Bytes/Sector 512
 Media Loaded Yes
 Media Type Fixed hard disk
 Partitions 1
 SCSI Bus Not Available
 SCSI Logical Unit Not Available
 SCSI Port Not Available
 SCSI Target ID Not Available
 Sectors/Track 63
 Size 4.88 GB (5,239,503,360 bytes)
 Total Cylinders 637
 Total Sectors 10,233,405
 Total Tracks 162,435
 Tracks/Cylinder 255
 Partition Disk #18, Partition #0
 Partition Size 4.88 GB (5,239,471,104 bytes)
 Partition Starting Offset 32,256 bytes

Description \\.\PHYSICALDRIVE19
 Manufacturer Not Available
 Model Not Available
 Bytes/Sector 512
 Media Loaded Yes
 Media Type Fixed hard disk
 Partitions 1
 SCSI Bus Not Available
 SCSI Logical Unit Not Available
 SCSI Port Not Available
 SCSI Target ID Not Available
 Sectors/Track 63
 Size 8.79 GB (9,434,396,160 bytes)
 Total Cylinders 1,147
 Total Sectors 18,426,555
 Total Tracks 292,485
 Tracks/Cylinder 255
 Partition Disk #19, Partition #0
 Partition Size 8.79 GB (9,434,363,904 bytes)
 Partition Starting Offset 32,256 bytes

Description \\.\PHYSICALDRIVE20
 Manufacturer Not Available
 Model Not Available
 Bytes/Sector 512
 Media Loaded Yes
 Media Type Fixed hard disk
 Partitions 1
 SCSI Bus Not Available
 SCSI Logical Unit Not Available
 SCSI Port Not Available
 SCSI Target ID Not Available
 Sectors/Track 63
 Size 9.76 GB (10,479,006,720 bytes)
 Total Cylinders 1,274
 Total Sectors 20,466,810
 Total Tracks 324,870
 Tracks/Cylinder 255
 Partition Disk #20, Partition #0

Partition Size 9.76 GB (10,478,974,464 bytes)
Partition Starting Offset 32,256 bytes

Description \\.\PHYSICALDRIVE21
Manufacturer Not Available
Model Not Available
Bytes/Sector 512
Media Loaded Yes
Media Type Fixed hard disk
Partitions 1
SCSI Bus Not Available
SCSI Logical Unit Not Available
SCSI Port Not Available
SCSI Target ID Not Available
Sectors/Track 63
Size 4.88 GB (5,239,503,360 bytes)
Total Cylinders 637
Total Sectors 10,233,405
Total Tracks 162,435
Tracks/Cylinder 255
Partition Disk #21, Partition #0
Partition Size 4.88 GB (5,239,471,104 bytes)
Partition Starting Offset 32,256 bytes

Description \\.\PHYSICALDRIVE22
Manufacturer Not Available
Model Not Available
Bytes/Sector 512
Media Loaded Yes
Media Type Fixed hard disk
Partitions 1
SCSI Bus Not Available
SCSI Logical Unit Not Available
SCSI Port Not Available
SCSI Target ID Not Available
Sectors/Track 63
Size 8.79 GB (9,434,396,160 bytes)
Total Cylinders 1,147
Total Sectors 18,426,555
Total Tracks 292,485
Tracks/Cylinder 255
Partition Disk #22, Partition #0
Partition Size 8.79 GB (9,434,363,904 bytes)
Partition Starting Offset 32,256 bytes

Description \\.\PHYSICALDRIVE23
Manufacturer Not Available
Model Not Available
Bytes/Sector 512
Media Loaded Yes
Media Type Fixed hard disk
Partitions 1
SCSI Bus Not Available
SCSI Logical Unit Not Available
SCSI Port Not Available
SCSI Target ID Not Available
Sectors/Track 63
Size 9.76 GB (10,479,006,720 bytes)
Total Cylinders 1,274
Total Sectors 20,466,810
Total Tracks 324,870
Tracks/Cylinder 255
Partition Disk #23, Partition #0
Partition Size 9.76 GB (10,478,974,464 bytes)
Partition Starting Offset 32,256 bytes

Description \\.\PHYSICALDRIVE24
Manufacturer Not Available
Model Not Available
Bytes/Sector 512

Media Loaded Yes
Media Type Fixed hard disk
Partitions 1
SCSI Bus Not Available
SCSI Logical Unit Not Available
SCSI Port Not Available
SCSI Target ID Not Available
Sectors/Track 63
Size 4.88 GB (5,239,503,360 bytes)
Total Cylinders 637
Total Sectors 10,233,405
Total Tracks 162,435
Tracks/Cylinder 255
Partition Disk #24, Partition #0
Partition Size 4.88 GB (5,239,471,104 bytes)
Partition Starting Offset 32,256 bytes

Description \\.\PHYSICALDRIVE25
Manufacturer Not Available
Model Not Available
Bytes/Sector 512
Media Loaded Yes
Media Type Fixed hard disk
Partitions 1
SCSI Bus Not Available
SCSI Logical Unit Not Available
SCSI Port Not Available
SCSI Target ID Not Available
Sectors/Track 63
Size 8.79 GB (9,434,396,160 bytes)
Total Cylinders 1,147
Total Sectors 18,426,555
Total Tracks 292,485
Tracks/Cylinder 255
Partition Disk #25, Partition #0
Partition Size 8.79 GB (9,434,363,904 bytes)
Partition Starting Offset 32,256 bytes

Description \\.\PHYSICALDRIVE26
Manufacturer Not Available
Model Not Available
Bytes/Sector 512
Media Loaded Yes
Media Type Fixed hard disk
Partitions 1
SCSI Bus Not Available
SCSI Logical Unit Not Available
SCSI Port Not Available
SCSI Target ID Not Available
Sectors/Track 63
Size 24.41 GB (26,205,742,080 bytes)
Total Cylinders 3,186
Total Sectors 51,183,090
Total Tracks 812,430
Tracks/Cylinder 255
Partition Disk #26, Partition #0
Partition Size 24.41 GB (26,205,709,824 bytes)
Partition Starting Offset 32,256 bytes

Description \\.\PHYSICALDRIVE27
Manufacturer Not Available
Model Not Available
Bytes/Sector 512
Media Loaded Yes
Media Type Fixed hard disk
Partitions 1
SCSI Bus Not Available
SCSI Logical Unit Not Available
SCSI Port Not Available
SCSI Target ID Not Available

Sectors/Track 63
 Size 9.76 GB (10,479,006,720 bytes)
 Total Cylinders 1,274
 Total Sectors 20,466,810
 Total Tracks 324,870
 Tracks/Cylinder 255
 Partition Disk #27, Partition #0
 Partition Size 9.76 GB (10,478,974,464 bytes)
 Partition Starting Offset 32,256 bytes

Description \\.\PHYSICALDRIVE28
 Manufacturer Not Available
 Model Not Available
 Bytes/Sector 512
 Media Loaded Yes
 Media Type Fixed hard disk
 Partitions 1
 SCSI Bus Not Available
 SCSI Logical Unit Not Available
 SCSI Port Not Available
 SCSI Target ID Not Available
 Sectors/Track 63
 Size 4.88 GB (5,239,503,360 bytes)
 Total Cylinders 637
 Total Sectors 10,233,405
 Total Tracks 162,435
 Tracks/Cylinder 255
 Partition Disk #28, Partition #0
 Partition Size 4.88 GB (5,239,471,104 bytes)
 Partition Starting Offset 32,256 bytes

Description \\.\PHYSICALDRIVE29
 Manufacturer Not Available
 Model Not Available
 Bytes/Sector 512
 Media Loaded Yes
 Media Type Fixed hard disk
 Partitions 1
 SCSI Bus Not Available
 SCSI Logical Unit Not Available
 SCSI Port Not Available
 SCSI Target ID Not Available
 Sectors/Track 63
 Size 8.79 GB (9,434,396,160 bytes)
 Total Cylinders 1,147
 Total Sectors 18,426,555
 Total Tracks 292,485
 Tracks/Cylinder 255
 Partition Disk #29, Partition #0
 Partition Size 8.79 GB (9,434,363,904 bytes)
 Partition Starting Offset 32,256 bytes

Description \\.\PHYSICALDRIVE30
 Manufacturer Not Available
 Model Not Available
 Bytes/Sector 512
 Media Loaded Yes
 Media Type Fixed hard disk
 Partitions 1
 SCSI Bus Not Available
 SCSI Logical Unit Not Available
 SCSI Port Not Available
 SCSI Target ID Not Available
 Sectors/Track 63
 Size 9.76 GB (10,479,006,720 bytes)
 Total Cylinders 1,274
 Total Sectors 20,466,810
 Total Tracks 324,870
 Tracks/Cylinder 255
 Partition Disk #30, Partition #0

Partition Size 9.76 GB (10,478,974,464 bytes)
 Partition Starting Offset 32,256 bytes

Description \\.\PHYSICALDRIVE31
 Manufacturer Not Available
 Model Not Available
 Bytes/Sector 512
 Media Loaded Yes
 Media Type Fixed hard disk
 Partitions 1
 SCSI Bus Not Available
 SCSI Logical Unit Not Available
 SCSI Port Not Available
 SCSI Target ID Not Available
 Sectors/Track 63
 Size 4.88 GB (5,239,503,360 bytes)
 Total Cylinders 637
 Total Sectors 10,233,405
 Total Tracks 162,435
 Tracks/Cylinder 255
 Partition Disk #31, Partition #0
 Partition Size 4.88 GB (5,239,471,104 bytes)
 Partition Starting Offset 32,256 bytes

Description \\.\PHYSICALDRIVE32
 Manufacturer Not Available
 Model Not Available
 Bytes/Sector 512
 Media Loaded Yes
 Media Type Fixed hard disk
 Partitions 1
 SCSI Bus Not Available
 SCSI Logical Unit Not Available
 SCSI Port Not Available
 SCSI Target ID Not Available
 Sectors/Track 63
 Size 8.79 GB (9,434,396,160 bytes)
 Total Cylinders 1,147
 Total Sectors 18,426,555
 Total Tracks 292,485
 Tracks/Cylinder 255
 Partition Disk #32, Partition #0
 Partition Size 8.79 GB (9,434,363,904 bytes)
 Partition Starting Offset 32,256 bytes

Description \\.\PHYSICALDRIVE33
 Manufacturer Not Available
 Model Not Available
 Bytes/Sector 512
 Media Loaded Yes
 Media Type Fixed hard disk
 Partitions 1
 SCSI Bus Not Available
 SCSI Logical Unit Not Available
 SCSI Port Not Available
 SCSI Target ID Not Available
 Sectors/Track 63
 Size 9.76 GB (10,479,006,720 bytes)
 Total Cylinders 1,274
 Total Sectors 20,466,810
 Total Tracks 324,870
 Tracks/Cylinder 255
 Partition Disk #33, Partition #0
 Partition Size 9.76 GB (10,478,974,464 bytes)
 Partition Starting Offset 32,256 bytes

Description \\.\PHYSICALDRIVE34
 Manufacturer Not Available
 Model Not Available
 Bytes/Sector 512

Media Loaded Yes
 Media Type Fixed hard disk
 Partitions 1
 SCSI Bus Not Available
 SCSI Logical Unit Not Available
 SCSI Port Not Available
 SCSI Target ID Not Available
 Sectors/Track 63
 Size 4.88 GB (5,239,503,360 bytes)
 Total Cylinders 637
 Total Sectors 10,233,405
 Total Tracks 162,435
 Tracks/Cylinder 255
 Partition Disk #34, Partition #0
 Partition Size 4.88 GB (5,239,471,104 bytes)
 Partition Starting Offset 32,256 bytes

Description \\.\PHYSICALDRIVE35
 Manufacturer Not Available
 Model Not Available
 Bytes/Sector 512
 Media Loaded Yes
 Media Type Fixed hard disk
 Partitions 1
 SCSI Bus Not Available
 SCSI Logical Unit Not Available
 SCSI Port Not Available
 SCSI Target ID Not Available
 Sectors/Track 63
 Size 8.79 GB (9,434,396,160 bytes)
 Total Cylinders 1,147
 Total Sectors 18,426,555
 Total Tracks 292,485
 Tracks/Cylinder 255
 Partition Disk #35, Partition #0
 Partition Size 8.79 GB (9,434,363,904 bytes)
 Partition Starting Offset 32,256 bytes

Description \\.\PHYSICALDRIVE36
 Manufacturer Not Available
 Model Not Available
 Bytes/Sector 512
 Media Loaded Yes
 Media Type Fixed hard disk
 Partitions 1
 SCSI Bus Not Available
 SCSI Logical Unit Not Available
 SCSI Port Not Available
 SCSI Target ID Not Available
 Sectors/Track 63
 Size 9.76 GB (10,479,006,720 bytes)
 Total Cylinders 1,274
 Total Sectors 20,466,810
 Total Tracks 324,870
 Tracks/Cylinder 255
 Partition Disk #36, Partition #0
 Partition Size 9.76 GB (10,478,974,464 bytes)
 Partition Starting Offset 32,256 bytes

Description \\.\PHYSICALDRIVE37
 Manufacturer Not Available
 Model Not Available
 Bytes/Sector 512
 Media Loaded Yes
 Media Type Fixed hard disk
 Partitions 1
 SCSI Bus Not Available
 SCSI Logical Unit Not Available
 SCSI Port Not Available
 SCSI Target ID Not Available

Sectors/Track 63
 Size 4.88 GB (5,239,503,360 bytes)
 Total Cylinders 637
 Total Sectors 10,233,405
 Total Tracks 162,435
 Tracks/Cylinder 255
 Partition Disk #37, Partition #0
 Partition Size 4.88 GB (5,239,471,104 bytes)
 Partition Starting Offset 32,256 bytes

Description \\.\PHYSICALDRIVE38
 Manufacturer Not Available
 Model Not Available
 Bytes/Sector 512
 Media Loaded Yes
 Media Type Fixed hard disk
 Partitions 1
 SCSI Bus Not Available
 SCSI Logical Unit Not Available
 SCSI Port Not Available
 SCSI Target ID Not Available
 Sectors/Track 63
 Size 8.79 GB (9,434,396,160 bytes)
 Total Cylinders 1,147
 Total Sectors 18,426,555
 Total Tracks 292,485
 Tracks/Cylinder 255
 Partition Disk #38, Partition #0
 Partition Size 8.79 GB (9,434,363,904 bytes)
 Partition Starting Offset 32,256 bytes

Description \\.\PHYSICALDRIVE39
 Manufacturer Not Available
 Model Not Available
 Bytes/Sector 512
 Media Loaded Yes
 Media Type Fixed hard disk
 Partitions 1
 SCSI Bus Not Available
 SCSI Logical Unit Not Available
 SCSI Port Not Available
 SCSI Target ID Not Available
 Sectors/Track 63
 Size 24.41 GB (26,205,742,080 bytes)
 Total Cylinders 3,186
 Total Sectors 51,183,090
 Total Tracks 812,430
 Tracks/Cylinder 255
 Partition Disk #39, Partition #0
 Partition Size 24.41 GB (26,205,709,824 bytes)
 Partition Starting Offset 32,256 bytes

Description \\.\PHYSICALDRIVE0
 Manufacturer Not Available
 Model Not Available
 Bytes/Sector 512
 Media Loaded Yes
 Media Type Fixed hard disk
 Partitions 1
 SCSI Bus Not Available
 SCSI Logical Unit Not Available
 SCSI Port Not Available
 SCSI Target ID Not Available
 Sectors/Track 63
 Size 9.76 GB (10,479,006,720 bytes)
 Total Cylinders 1,274
 Total Sectors 20,466,810
 Total Tracks 324,870
 Tracks/Cylinder 255
 Partition Disk #0, Partition #0

Partition Size 9.76 GB (10,478,974,464 bytes)
Partition Starting Offset 32,256 bytes

Description \\.\PHYSICALDRIVE1
Manufacturer Not Available
Model Not Available
Bytes/Sector 512
Media Loaded Yes
Media Type Fixed hard disk
Partitions 1
SCSI Bus Not Available
SCSI Logical Unit Not Available
SCSI Port Not Available
SCSI Target ID Not Available
Sectors/Track 63
Size 4.88 GB (5,239,503,360 bytes)
Total Cylinders 637
Total Sectors 10,233,405
Total Tracks 162,435
Tracks/Cylinder 255
Partition Disk #1, Partition #0
Partition Size 4.88 GB (5,239,471,104 bytes)
Partition Starting Offset 32,256 bytes

Description \\.\PHYSICALDRIVE2
Manufacturer Not Available
Model Not Available
Bytes/Sector 512
Media Loaded Yes
Media Type Fixed hard disk
Partitions 1
SCSI Bus Not Available
SCSI Logical Unit Not Available
SCSI Port Not Available
SCSI Target ID Not Available
Sectors/Track 63
Size 8.79 GB (9,434,396,160 bytes)
Total Cylinders 1,147
Total Sectors 18,426,555
Total Tracks 292,485
Tracks/Cylinder 255
Partition Disk #2, Partition #0
Partition Size 8.79 GB (9,434,363,904 bytes)
Partition Starting Offset 32,256 bytes

Description \\.\PHYSICALDRIVE3
Manufacturer Not Available
Model Not Available
Bytes/Sector 512
Media Loaded Yes
Media Type Fixed hard disk
Partitions 1
SCSI Bus Not Available
SCSI Logical Unit Not Available
SCSI Port Not Available
SCSI Target ID Not Available
Sectors/Track 63
Size 9.76 GB (10,479,006,720 bytes)
Total Cylinders 1,274
Total Sectors 20,466,810
Total Tracks 324,870
Tracks/Cylinder 255
Partition Disk #3, Partition #0
Partition Size 9.76 GB (10,478,974,464 bytes)
Partition Starting Offset 32,256 bytes

Description \\.\PHYSICALDRIVE4
Manufacturer Not Available
Model Not Available
Bytes/Sector 512

Media Loaded Yes
Media Type Fixed hard disk
Partitions 1
SCSI Bus Not Available
SCSI Logical Unit Not Available
SCSI Port Not Available
SCSI Target ID Not Available
Sectors/Track 63
Size 4.88 GB (5,239,503,360 bytes)
Total Cylinders 637
Total Sectors 10,233,405
Total Tracks 162,435
Tracks/Cylinder 255
Partition Disk #4, Partition #0
Partition Size 4.88 GB (5,239,471,104 bytes)
Partition Starting Offset 32,256 bytes

Description \\.\PHYSICALDRIVE5
Manufacturer Not Available
Model Not Available
Bytes/Sector 512
Media Loaded Yes
Media Type Fixed hard disk
Partitions 1
SCSI Bus Not Available
SCSI Logical Unit Not Available
SCSI Port Not Available
SCSI Target ID Not Available
Sectors/Track 63
Size 8.79 GB (9,434,396,160 bytes)
Total Cylinders 1,147
Total Sectors 18,426,555
Total Tracks 292,485
Tracks/Cylinder 255
Partition Disk #5, Partition #0
Partition Size 8.79 GB (9,434,363,904 bytes)
Partition Starting Offset 32,256 bytes

Description \\.\PHYSICALDRIVE6
Manufacturer Not Available
Model Not Available
Bytes/Sector 512
Media Loaded Yes
Media Type Fixed hard disk
Partitions 1
SCSI Bus Not Available
SCSI Logical Unit Not Available
SCSI Port Not Available
SCSI Target ID Not Available
Sectors/Track 63
Size 9.76 GB (10,479,006,720 bytes)
Total Cylinders 1,274
Total Sectors 20,466,810
Total Tracks 324,870
Tracks/Cylinder 255
Partition Disk #6, Partition #0
Partition Size 9.76 GB (10,478,974,464 bytes)
Partition Starting Offset 32,256 bytes

Description \\.\PHYSICALDRIVE7
Manufacturer Not Available
Model Not Available
Bytes/Sector 512
Media Loaded Yes
Media Type Fixed hard disk
Partitions 1
SCSI Bus Not Available
SCSI Logical Unit Not Available
SCSI Port Not Available
SCSI Target ID Not Available

Sectors/Track 63
 Size 4.88 GB (5,239,503,360 bytes)
 Total Cylinders 637
 Total Sectors 10,233,405
 Total Tracks 162,435
 Tracks/Cylinder 255
 Partition Disk #7, Partition #0
 Partition Size 4.88 GB (5,239,471,104 bytes)
 Partition Starting Offset 32,256 bytes

Description \\.\PHYSICALDRIVE8
 Manufacturer Not Available
 Model Not Available
 Bytes/Sector 512
 Media Loaded Yes
 Media Type Fixed hard disk
 Partitions 1

SCSI Bus Not Available
 SCSI Logical Unit Not Available
 SCSI Port Not Available
 SCSI Target ID Not Available
 Sectors/Track 63
 Size 8.79 GB (9,434,396,160 bytes)
 Total Cylinders 1,147
 Total Sectors 18,426,555
 Total Tracks 292,485
 Tracks/Cylinder 255
 Partition Disk #8, Partition #0
 Partition Size 8.79 GB (9,434,363,904 bytes)
 Partition Starting Offset 32,256 bytes

Description \\.\PHYSICALDRIVE9
 Manufacturer Not Available
 Model Not Available
 Bytes/Sector 512
 Media Loaded Yes
 Media Type Fixed hard disk
 Partitions 1

SCSI Bus Not Available
 SCSI Logical Unit Not Available
 SCSI Port Not Available
 SCSI Target ID Not Available
 Sectors/Track 63
 Size 9.76 GB (10,479,006,720 bytes)
 Total Cylinders 1,274
 Total Sectors 20,466,810
 Total Tracks 324,870
 Tracks/Cylinder 255
 Partition Disk #9, Partition #0
 Partition Size 9.76 GB (10,478,974,464 bytes)
 Partition Starting Offset 32,256 bytes

Description \\.\PHYSICALDRIVE10
 Manufacturer Not Available
 Model Not Available
 Bytes/Sector 512
 Media Loaded Yes
 Media Type Fixed hard disk
 Partitions 1

SCSI Bus Not Available
 SCSI Logical Unit Not Available
 SCSI Port Not Available
 SCSI Target ID Not Available
 Sectors/Track 63
 Size 4.88 GB (5,239,503,360 bytes)
 Total Cylinders 637
 Total Sectors 10,233,405
 Total Tracks 162,435
 Tracks/Cylinder 255
 Partition Disk #10, Partition #0

Partition Size 4.88 GB (5,239,471,104 bytes)
 Partition Starting Offset 32,256 bytes

Description \\.\PHYSICALDRIVE11
 Manufacturer Not Available
 Model Not Available
 Bytes/Sector 512
 Media Loaded Yes
 Media Type Fixed hard disk
 Partitions 1

SCSI Bus Not Available
 SCSI Logical Unit Not Available
 SCSI Port Not Available
 SCSI Target ID Not Available
 Sectors/Track 63
 Size 8.79 GB (9,434,396,160 bytes)
 Total Cylinders 1,147
 Total Sectors 18,426,555
 Total Tracks 292,485
 Tracks/Cylinder 255
 Partition Disk #11, Partition #0
 Partition Size 8.79 GB (9,434,363,904 bytes)
 Partition Starting Offset 32,256 bytes

Description \\.\PHYSICALDRIVE12
 Manufacturer Not Available
 Model Not Available
 Bytes/Sector 512
 Media Loaded Yes
 Media Type Fixed hard disk
 Partitions 1

SCSI Bus Not Available
 SCSI Logical Unit Not Available
 SCSI Port Not Available
 SCSI Target ID Not Available
 Sectors/Track 63
 Size 24.41 GB (26,205,742,080 bytes)
 Total Cylinders 3,186
 Total Sectors 51,183,090
 Total Tracks 812,430
 Tracks/Cylinder 255
 Partition Disk #12, Partition #0
 Partition Size 24.41 GB (26,205,709,824 bytes)
 Partition Starting Offset 32,256 bytes

Description \\.\PHYSICALDRIVE13
 Manufacturer Not Available
 Model Not Available
 Bytes/Sector 512
 Media Loaded Yes
 Media Type Fixed hard disk
 Partitions 1

SCSI Bus Not Available
 SCSI Logical Unit Not Available
 SCSI Port Not Available
 SCSI Target ID Not Available
 Sectors/Track 63
 Size 3.90 GB (4,186,667,520 bytes)
 Total Cylinders 509
 Total Sectors 8,177,085
 Total Tracks 129,795
 Tracks/Cylinder 255
 Partition Disk #13, Partition #0
 Partition Size 3.90 GB (4,186,635,264 bytes)
 Partition Starting Offset 32,256 bytes

Description Disk drive
 Manufacturer (Standard disk drives)
 Model COMPAQ LOGICAL VOLUME SCSI Disk Device
 Bytes/Sector 512

Media Loaded Yes
 Media Type Fixed hard disk
 Partitions 1
 SCSI Bus 4
 SCSI Logical Unit 0
 SCSI Port 2
 SCSI Target ID 0
 Sectors/Track 32
 Size 16.95 GB (18,203,197,440 bytes)
 Total Cylinders 4,357
 Total Sectors 35,553,120
 Total Tracks 1,111,035
 Tracks/Cylinder 255
 Partition Disk #66, Partition #0
 Partition Size 16.95 GB (18,199,003,136 bytes)
 Partition Starting Offset 16,384 bytes

Description Disk drive
 Manufacturer (Standard disk drives)
 Model COMPAQ LOGICAL VOLUME SCSI Disk Device
 Bytes/Sector 512
 Media Loaded Yes
 Media Type Fixed hard disk
 Partitions 1
 SCSI Bus 4
 SCSI Logical Unit 0
 SCSI Port 2
 SCSI Target ID 1
 Sectors/Track 32
 Size 11.72 GB (12,583,895,040 bytes)
 Total Cylinders 3,012
 Total Sectors 24,577,920
 Total Tracks 768,060
 Tracks/Cylinder 255
 Partition Disk #67, Partition #0
 Partition Size 11.72 GB (12,579,700,736 bytes)
 Partition Starting Offset 16,384 bytes

Description Disk drive
 Manufacturer (Standard disk drives)
 Model COMPAQ LOGICAL VOLUME SCSI Disk Device
 Bytes/Sector 512
 Media Loaded Yes
 Media Type Fixed hard disk
 Partitions 1
 SCSI Bus 4
 SCSI Logical Unit 0
 SCSI Port 2
 SCSI Target ID 2
 Sectors/Track 32
 Size 5.86 GB (6,291,947,520 bytes)
 Total Cylinders 1,506
 Total Sectors 12,288,960
 Total Tracks 384,030
 Tracks/Cylinder 255
 Partition Disk #68, Partition #0
 Partition Size 5.86 GB (6,287,753,216 bytes)
 Partition Starting Offset 16,384 bytes

Description Disk drive
 Manufacturer (Standard disk drives)
 Model COMPAQ LOGICAL VOLUME SCSI Disk Device
 Bytes/Sector 512
 Media Loaded Yes
 Media Type Fixed hard disk
 Partitions 1
 SCSI Bus 4
 SCSI Logical Unit 0
 SCSI Port 2
 SCSI Target ID 3

Sectors/Track 32
 Size 1,000.08 MB (1,048,657,920 bytes)
 Total Cylinders 251
 Total Sectors 2,048,160
 Total Tracks 64,005
 Tracks/Cylinder 255
 Partition Disk #69, Partition #0
 Partition Size 996.19 MB (1,044,578,304 bytes)
 Partition Starting Offset 32,256 bytes

[SCSI]

Item Value
 Name Compaq Smart Array 5i Controller
 Manufacturer Compaq
 Status OK
 PNP Device ID
 PCI\VEN_0E11&DEV_B178&SUBSYS_40800E11&REV_01\3
 &267A616A&0&70
 Memory Address 0xF5F80000-0xF5FBFFFF
 I/O Port 0x00002400-0x000024FF
 Memory Address 0xF5EF0000-0xF5EF3FFF
 IRQ Channel IRQ 40
 Driver c:\windows\system32\drivers\cpqcissm.sys (5.8.74.1 built by:
 Microsoft, 13.00 KB (13,312 bytes), 6/6/2003 10:01 AM)

Name Smart Array 5300 Controller (Non-Miniport)
 Manufacturer Hewlett-Packard
 Status OK
 PNP Device ID
 PCI\VEN_0E11&DEV_B060&SUBSYS_40700E11&REV_02\3
 &13C0B0C5&0&10
 Memory Address 0xF5DC0000-0xF5DFFFFF
 Memory Address 0xF5C00000-0xF5CFFFFF
 I/O Port 0x00003000-0x00003FFF
 IRQ Channel IRQ 43
 Driver c:\windows\system32\drivers\hpqcissb.sys (5.6.2.32 built by:
 WinDDK, 38.00 KB (38,912 bytes), 4/23/2003 11:34 AM)

Name Smart Array 5300 Controller (Non-Miniport)
 Manufacturer Hewlett-Packard
 Status OK
 PNP Device ID
 PCI\VEN_0E11&DEV_B060&SUBSYS_40700E11&REV_02\3
 &1070020&0&08
 Memory Address 0xF5AC0000-0xF5AFFFFF
 Memory Address 0xF5900000-0xF59FFFFF
 I/O Port 0x00005000-0x00005FFF
 IRQ Channel IRQ 19
 Driver c:\windows\system32\drivers\hpqcissb.sys (5.6.2.32 built by:
 WinDDK, 38.00 KB (38,912 bytes), 4/23/2003 11:34 AM)

Name Smart Array 5300 Controller (Non-Miniport)
 Manufacturer Hewlett-Packard
 Status OK
 PNP Device ID
 PCI\VEN_0E11&DEV_B060&SUBSYS_40700E11&REV_02\3
 &29E81982&0&08
 Memory Address 0xF57C0000-0xF57FFFFF
 Memory Address 0xF5600000-0xF56FFFFF
 I/O Port 0x00006000-0x00006FFF
 IRQ Channel IRQ 23
 Driver c:\windows\system32\drivers\hpqcissb.sys (5.6.2.32 built by:
 WinDDK, 38.00 KB (38,912 bytes), 4/23/2003 11:34 AM)

Name Smart Array 5300 Controller (Non-Miniport)
 Manufacturer Hewlett-Packard
 Status OK

PNP Device ID
 PCI\VEN_0E11&DEV_B060&SUBSYS_40700E11&REV_02\3
 &172E68DD&0&08
 Memory Address 0xF54C0000-0xF54FFFFF
 Memory Address 0xF5300000-0xF53FFFFF
 I/O Port 0x00007000-0x00007FFF
 IRQ Channel IRQ 27
 Driver c:\windows\system32\drivers\hpqcissb.sys (5.6.2.32 built by:
 WinDDK, 38.00 KB (38,912 bytes), 4/23/2003 11:34 AM)

Name Smart Array 5300 Controller (Non-Miniport)
 Manufacturer Hewlett-Packard
 Status OK
 PNP Device ID
 PCI\VEN_0E11&DEV_B060&SUBSYS_40700E11&REV_02\3
 &474B838&0&08
 Memory Address 0xF51C0000-0xF51FFFFF
 Memory Address 0xF5000000-0xF50FFFFF
 I/O Port 0x00008000-0x00008FFF
 IRQ Channel IRQ 31
 Driver c:\windows\system32\drivers\hpqcissb.sys (5.6.2.32 built by:
 WinDDK, 38.00 KB (38,912 bytes), 4/23/2003 11:34 AM)

[IDE]

Item Value
 Name CSB5 IDE Controller
 Manufacturer ServerWorks
 Status OK
 PNP Device ID
 PCI\VEN_1166&DEV_0212&SUBSYS_02121166&REV_93\3
 &267A616A&0&79
 I/O Port 0x00002820-0x0000282F
 Driver c:\windows\system32\drivers\pciide.sys (5.2.3790.0
 (srv03_rtm.030324-2048), 5.50 KB (5,632 bytes), 3/25/2003 12:00 AM)

Name Primary IDE Channel
 Manufacturer (Standard IDE ATA/ATAPI controllers)
 Status OK
 PNP Device ID PCIIDE\IDECHANNEL\4&1024D5C6&0&0
 I/O Port 0x000001F0-0x000001F7
 I/O Port 0x000003F6-0x000003F6
 IRQ Channel IRQ 14
 Driver c:\windows\system32\drivers\atapi.sys (5.2.3790.0
 (srv03_rtm.030324-2048), 89.00 KB (91,136 bytes), 3/25/2003 12:00 AM)

Name Secondary IDE Channel
 Manufacturer (Standard IDE ATA/ATAPI controllers)
 Status OK
 PNP Device ID PCIIDE\IDECHANNEL\4&1024D5C6&0&1
 I/O Port 0x00000170-0x00000177
 I/O Port 0x00000376-0x00000376
 Driver c:\windows\system32\drivers\atapi.sys (5.2.3790.0
 (srv03_rtm.030324-2048), 89.00 KB (91,136 bytes), 3/25/2003 12:00 AM)

[Printing]

Name Driver Port Name Server Name
 CCA15109 on ccaprint02 (from DPOL) in session 2 HP LaserJet 4100
 Series PCL TS002
 Labprinter on inforb (from DPOL) in session 2 HP LaserJet 5Si/5Si
 MX PS TS001

[Problem Devices]

Device	PNP Device ID	Error Code			
[USB]					
Device	PNP Device ID				
ServerWorks (RCC) PCI to USB Open Host Controller	PCI\VEN_1166&DEV_0220&SUBSYS_02201166&REV_05\3 &267A616A&0&7A				
USB Root Hub	USB\ROOT_HUB\4&AF5358C&0				
[Software Environment]					
[System Drivers]					
Name	Description	File	Type	Started	Start
Mode	State	Status	Error Control	Accept	Pause
abiosdsk	Abiosdsk	Not Available	Kernel Driver	No	No
	Disabled	Stopped	OK	Ignore	No
acpi	Microsoft ACPI Driver	c:\windows\system32\drivers\acpi.sys	Kernel Driver	Yes	Normal
	Yes	Boot	Running	OK	No
	Yes				
acpiec	ACPIEC	c:\windows\system32\drivers\acpiec.sys	Kernel		
Driver	No	Disabled	Stopped	OK	Normal
	No				No
adpu160m	adpu160m	Not Available	Kernel Driver	No	No
	Disabled	Stopped	OK	Normal	No
adpu320	adpu320	Not Available	Kernel Driver	No	No
	Disabled	Stopped	OK	Normal	No
afent	afent	Not Available	Kernel Driver	No	No
	Disabled	Stopped	OK	Normal	No
afd	AFD Networking Support Environment	c:\windows\system32\drivers\afd.sys	Kernel Driver	Yes	Normal
	Yes	Auto	Running	OK	No
	Yes				
aha154x	Aha154x	Not Available	Kernel Driver	No	No
	Disabled	Stopped	OK	Normal	No
aic78u2	aic78u2	Not Available	Kernel Driver	No	No
	Disabled	Stopped	OK	Normal	No
aic78xx	aic78xx	Not Available	Kernel Driver	No	No
	Disabled	Stopped	OK	Normal	No
aliide	AliIde	Not Available	Kernel Driver	No	No
	Disabled	Stopped	OK	Normal	No
asynmac	RAS Asynchronous Media Driver	c:\windows\system32\drivers\asynmac.sys	Kernel Driver	No	Normal
	No	Manual	Stopped	OK	No
	No				
atapi	Standard IDE/ESDI Hard Disk Controller	c:\windows\system32\drivers\atapi.sys	Kernel Driver	Yes	Normal
	Yes	Boot	Running	OK	No
	Yes				
atdisk	Atdisk	Not Available	Kernel Driver	No	No
	Disabled	Stopped	OK	Ignore	No
ati2mpad	ati2mpad	c:\windows\system32\drivers\ati2mpad.sys	Kernel		
Driver	No	Manual	Stopped	OK	Ignore
	No				No
atmarpc	ATM ARP Client Protocol	c:\windows\system32\drivers\atmarpc.sys	Kernel Driver		

	No	Manual	Stopped	OK	Normal	No		Yes	Boot	Running	OK	Normal	No
audstub	No Audio Stub Driver							Yes dmload					
	Kernel Driver			Yes	Manual	Running	OK	Yes	Boot	Running	OK	Normal	No
	Normal	No	Yes					Yes					
b57w2k	BCM5701 Gigabit Ethernet							dpti2o	Not Available			Kernel Driver	No
	c:\windows\system32\drivers\b57xp32.sys							Disabled	Stopped	OK		Normal	No
	Yes	Manual	Running	OK									
	Yes												
beep	Beep							fastfat	Fastfat			c:\windows\system32\drivers\fastfat.sys	File
Driver	Yes	System	Running	OK				System Driver	No	Disabled	Stopped	OK	Normal
	Yes								No				
cbidf2k	cbidf2k							fdc	Floppy Disk Controller Driver				
Driver	No	Disabled	Stopped	OK					c:\windows\system32\drivers\fdc.sys			Kernel Driver	
	No								Yes	Manual	Running	OK	Normal
	No								Yes				No
cd20xmt	cd20xmt							fips	Fips			c:\windows\system32\drivers\fips.sys	Kernel
	Disabled	Not Available	Stopped	OK				Driver	Yes	System	Running	OK	Normal
									Yes				No
									Yes				
cdfs	Cdfs							flpydisk	Floppy Disk Driver			c:\windows\system32\drivers\flpydisk.sys	Kernel
System Driver	Yes	Disabled	Running	OK					Kernel Driver	Yes	Manual	Running	OK
	No	Yes							Normal	No	Yes		
cdrom	CD-ROM Driver							ftdisk	Volume Manager Driver				
	Kernel Driver								c:\windows\system32\drivers\ftdisk.sys			Kernel Driver	
	Normal	No	Yes						Yes	Boot	Running	OK	Normal
changer	Changer								Yes				No
	System	Not Available	Stopped	OK				gpc	Generic Packet Classifier				
									c:\windows\system32\drivers\msgpc.sys			Kernel Driver	
									Yes	Manual	Running	OK	Normal
									Yes				No
clusdisk	Cluster Disk Driver							hpn	hpn			Not Available	Kernel Driver
	Kernel Driver								Disabled	Stopped	OK	Normal	No
	Normal	No	No										No
cmdide	CmdIde							hpqcissb	Smart Array Controllers Non-Miniport Bus Driver				
	Disabled	Not Available	Stopped	OK					c:\windows\system32\drivers\hpqcissb.sys			Kernel Driver	
									Yes	Boot	Running	OK	Normal
									Yes				No
cpqarray	Cpqarray							hpqcissd	Smart Array Controllers Non-Miniport Disk Driver				
	Disabled	Not Available	Stopped	OK					c:\windows\system32\drivers\hpqcissd.sys			Kernel Driver	
									Yes	Boot	Running	OK	Normal
									Yes				No
cpqarry2	cpqarry2							hpt3xx	hpt3xx			Not Available	Kernel Driver
	Disabled	Not Available	Stopped	OK					Disabled	Stopped	OK	Normal	No
													No
cpqcissm	cpqcissm							http	HTTP			c:\windows\system32\drivers\http.sys	Kernel
Driver	Yes	Boot	Running	OK				Driver	No	Manual	Stopped	OK	Normal
	Yes								No				No
cpqfcalm	cpqfcalm							i2omgmt	i2omgmt			Not Available	Kernel Driver
	Disabled	Not Available	Stopped	OK					System	Stopped	OK	Normal	No
													No
cpqmhp	hp ProLiant Hot Plug Memory Driver							i2omp	i2omp			Not Available	Kernel Driver
	c:\windows\system32\drivers\cpqmhp.sys								Disabled	Stopped	OK	Normal	No
	Yes	Manual	Running	OK									No
	Yes												
crdisk	CRC Disk Filter Driver							i8042prt	i8042 Keyboard and PS/2 Mouse Port Driver				
	c:\windows\system32\drivers\crdisk.sys								c:\windows\system32\drivers\i8042prt.sys			Kernel Driver	
	Yes	Boot	Running	OK					Yes	System	Running	OK	Normal
	Yes								Yes				No
dac960nt	dac960nt							iirsp	iirsp			Not Available	Kernel Driver
	Disabled	Not Available	Stopped	OK					Disabled	Stopped	OK	Normal	No
													No
dellcerc	dellcerc							imapi	CD-Burning Filter Driver				
	Disabled	Not Available	Stopped	OK					c:\windows\system32\drivers\imapi.sys			Kernel Driver	
									No	System	Stopped	OK	Normal
									No				No
dfsdriver	DfsDriver							intelide	IntelIde			Not Available	Kernel Driver
System Driver	Yes	Boot	Running	OK					Disabled	Stopped	OK	Normal	No
	No	Yes											No
disk	Disk Driver							ipfilterdriver	IP Traffic Filter Driver				
	Kernel Driver								c:\windows\system32\drivers\ipfltdrv.sys			Kernel Driver	
	Normal	No	Yes						No	Manual	Stopped	OK	Normal
dmboot	dmboot								No				No
Driver	Yes	Disabled	Running	OK									
	Yes												
dmio	Logical Disk Manager Driver												
	c:\windows\system32\drivers\dmio.sys											Kernel Driver	

ipinip	IP in IP Tunnel Driver	c:\windows\system32\drivers\ipinip.sys	Kernel Driver	No	Manual	Stopped	OK	Yes	Manual	Running	OK	Normal	No
ipnat	IP Network Address Translator	c:\windows\system32\drivers\ipnat.sys	Kernel Driver	No	Manual	Stopped	OK	Normal	No	Yes	System	Running	OK
ipsecclass	IPSEC driver	c:\windows\system32\drivers\ipsecclass.sys	Kernel Driver	Yes	System	Running	OK	Normal	No	Yes	System	Running	OK
ipsraidn	ipsraidn	Not Available	Kernel Driver	No	Disabled	Stopped	OK	Normal	No	Yes	System	Running	OK
isapnp	PnP ISA/EISA Bus Driver	c:\windows\system32\drivers\isapnp.sys	Kernel Driver	Yes	Boot	Running	OK	Critical	No	Yes	System	Running	OK
kbdclass	Keyboard Class Driver	c:\windows\system32\drivers\kbdclass.sys	Kernel Driver	Yes	System	Running	OK	Normal	No	Yes	System	Running	OK
ksecdd	KSecDD Driver	c:\windows\system32\drivers\ksecdd.sys	Kernel Driver	Yes	Boot	Running	OK	Normal	No	Yes	System	Running	OK
lp6nds35	lp6nds35	Not Available	Kernel Driver	No	Disabled	Stopped	OK	Normal	No	Yes	System	Running	OK
mmdd	mmdd	c:\windows\system32\drivers\mmdd.sys	Kernel Driver	Yes	System	Running	OK	Ignore	No	Yes	System	Running	OK
modem	Modem Driver	c:\windows\system32\drivers\modem.sys	Kernel Driver	No	Manual	Stopped	OK	Ignore	No	Yes	System	Running	OK
mouclass	Mouse Class Driver	c:\windows\system32\drivers\mouclass.sys	Kernel Driver	Yes	System	Running	OK	Normal	No	Yes	System	Running	OK
mountmgr	Mount Point Manager	c:\windows\system32\drivers\mountmgr.sys	Kernel Driver	Yes	Boot	Running	OK	Normal	No	Yes	System	Running	OK
mraid35x	mraid35x	Not Available	Kernel Driver	No	Disabled	Stopped	OK	Normal	No	Yes	System	Running	OK
mrxdav	WebDav Client Redirector	c:\windows\system32\drivers\mrxdav.sys	File System Driver	No	Manual	Stopped	OK	Normal	No	Yes	System	Running	OK
mrxsmbs	MRXSMB System Driver	c:\windows\system32\drivers\mrxsmbs.sys	File System Driver	Yes	System	Running	OK	Normal	No	Yes	System	Running	OK
msfs	Msfs System Driver	c:\windows\system32\drivers\msfs.sys	File System Driver	Yes	System	Running	OK	Normal	No	Yes	System	Running	OK
mup	Mup System Driver	c:\windows\system32\drivers\mup.sys	File System Driver	Yes	Boot	Running	OK	Normal	No	Yes	System	Running	OK
ndis	NDIS System Driver	c:\windows\system32\drivers\ndis.sys	Kernel Driver	Yes	Boot	Running	OK	Normal	No	Yes	System	Running	OK
ndistapi	Remote Access NDIS TAPI Driver	c:\windows\system32\drivers\ndistapi.sys	Kernel Driver	Yes	Manual	Running	OK	Normal	No	Yes	System	Running	OK
ndisuio	NDIS Usermode I/O Protocol	c:\windows\system32\drivers\ndisuio.sys	Kernel Driver	Yes	Manual	Running	OK	Normal	No	Yes	System	Running	OK
ndiswan	Remote Access NDIS WAN Driver	c:\windows\system32\drivers\ndiswan.sys	Kernel Driver	Yes	Manual	Running	OK	Normal	No	Yes	System	Running	OK
ndproxy	NDIS Proxy	c:\windows\system32\drivers\ndproxy.sys	Kernel Driver	Yes	Manual	Running	OK	Normal	No	Yes	System	Running	OK
netbios	NetBIOS Interface	c:\windows\system32\drivers\netbios.sys	File System Driver	Yes	System	Running	OK	Normal	No	Yes	System	Running	OK
netbt	NetBios over Tcpip	c:\windows\system32\drivers\netbt.sys	Kernel Driver	Yes	System	Running	OK	Normal	No	Yes	System	Running	OK
nfrd960	nfrd960	Not Available	Kernel Driver	No	Disabled	Stopped	OK	Normal	No	Yes	System	Running	OK
npfs	Npfs System Driver	c:\windows\system32\drivers\npfs.sys	File System Driver	Yes	System	Running	OK	Normal	No	Yes	System	Running	OK
ntfs	Ntfs System Driver	c:\windows\system32\drivers\ntfs.sys	File System Driver	Yes	Disabled	Running	OK	Normal	No	Yes	System	Running	OK
null	Null Driver	c:\windows\system32\drivers\null.sys	Kernel Driver	Yes	System	Running	OK	Normal	No	Yes	System	Running	OK
parport	Parport Driver	c:\windows\system32\drivers\parport.sys	Kernel Driver	No	Manual	Stopped	OK	Ignore	No	Yes	System	Running	OK
partmgr	Partition Manager	c:\windows\system32\drivers\partmgr.sys	Kernel Driver	Yes	Boot	Running	OK	Normal	No	Yes	System	Running	OK
pci	PCI Bus Driver	c:\windows\system32\drivers\pci.sys	Kernel Driver	Yes	Boot	Running	OK	Critical	No	Yes	System	Running	OK
pciide	PCIide Driver	c:\windows\system32\drivers\pciide.sys	Kernel Driver	Yes	Boot	Running	OK	Normal	No	Yes	System	Running	OK
pcmcia	Pcmcia Driver	c:\windows\system32\drivers\pcmcia.sys	Kernel Driver	No	Disabled	Stopped	OK	Normal	No	Yes	System	Running	OK
pdcomp	PDCOMP	Not Available	Kernel Driver	No	Manual	Stopped	OK	Ignore	No	Yes	System	Running	OK
pdframe	PDFRAME	Not Available	Kernel Driver	No	Manual	Stopped	OK	Ignore	No	Yes	System	Running	OK
pdreli	PDRELI	Not Available	Kernel Driver	No	Manual	Stopped	OK	Ignore	No	Yes	System	Running	OK
pdrframe	PDRFRAME	Not Available	Kernel Driver	No	Manual	Stopped	OK	Ignore	No	Yes	System	Running	OK
perc2	perc2	Not Available	Kernel Driver	No	Disabled	Stopped	OK	Normal	No	Yes	System	Running	OK
perc2hib	perc2hib	Not Available	Kernel Driver	No	Disabled	Stopped	OK	Normal	No	Yes	System	Running	OK
pptpminiport	WAN Miniport (PPTP)	c:\windows\system32\drivers\rasppptp.sys	Kernel Driver	Yes	Manual	Running	OK	Normal	No	Yes	System	Running	OK
processor	Processor Driver	c:\windows\system32\drivers\processr.sys	Kernel Driver	Yes	Manual	Running	OK	Normal	No	Yes	System	Running	OK
ptilink	Direct Parallel Link Driver	c:\windows\system32\drivers\ptilink.sys	Kernel Driver	Yes	Manual	Running	OK	Normal	No	Yes	System	Running	OK
ql1080	ql1080	Not Available	Kernel Driver	No	Disabled	Stopped	OK	Normal	No	Yes	System	Running	OK

ql10wnt	Ql10wnt Disabled	Not Available Stopped	OK	Kernel Driver Normal	No No	No No	sparrow	Sparrow Disabled	Not Available Stopped	OK	Kernel Driver Normal	No No	No No	
ql12160	ql12160 Disabled	Not Available Stopped	OK	Kernel Driver Normal	No No	No No	srv	Srv System Driver	c:\windows\system32\drivers\srv.sys Yes Manual	Running	OK	File Normal		
ql1240	ql1240 Disabled	Not Available Stopped	OK	Kernel Driver Normal	No No	No No	startdss	startdss Driver	c:\windows\system32\drivers\startdss.sys No Disabled	Stopped	OK	Normal	Kernel No	
ql1280	ql1280 Disabled	Not Available Stopped	OK	Kernel Driver Normal	No No	No No	swenum	Software Bus Driver Kernel Driver	c:\windows\system32\drivers\swenum.sys Yes Manual	Running	OK			
ql2100	ql2100 Disabled	Not Available Stopped	OK	Kernel Driver Normal	No No	No No	symc810	symc810 Disabled	Not Available Stopped	OK	Kernel Driver Normal	No No	No No	
ql2200	ql2200 Disabled	Not Available Stopped	OK	Kernel Driver Normal	No No	No No	symc8xx	symc8xx Disabled	Not Available Stopped	OK	Kernel Driver Normal	No No	No No	
ql2300	ql2300 Disabled	Not Available Stopped	OK	Kernel Driver Normal	No No	No No	symmpi	symmpi Disabled	Not Available Stopped	OK	Kernel Driver Normal	No No	No No	
rasacd	Remote Access Auto Connection Driver c:\windows\system32\drivers\rasacd.sys	Yes	System	Running	OK	Kernel Driver Normal	No No	sym_hi	sym_hi Disabled	Not Available Stopped	OK	Kernel Driver Normal	No No	
rasl2tp	WAN Miniport (L2TP) c:\windows\system32\drivers\rasl2tp.sys	Yes	Manual	Running	OK	Kernel Driver Normal	No No	sym_u3	sym_u3 Disabled	Not Available Stopped	OK	Kernel Driver Normal	No No	
rasppoe	Remote Access PPPOE Driver c:\windows\system32\drivers\rasppoe.sys	Yes	Manual	Running	OK	Kernel Driver Normal	No No	tcpip	TCP/IP Protocol Driver c:\windows\system32\drivers\tcpip.sys	Yes	System	Running	OK	Kernel Driver Normal
raspti	Direct Parallel Kernel Driver c:\windows\system32\drivers\raspti.sys	Yes	Manual	Running	OK	Kernel Driver Normal	No No	tdpipe	TDPIPE Driver	c:\windows\system32\drivers\tdpipe.sys No Manual	Stopped	OK	Ignore	Kernel No
rdbss	Rdbss c:\windows\system32\drivers\rdbss.sys	Yes	System	Running	OK	File Normal		tdtcp	TDTCP Driver	c:\windows\system32\drivers\tdtcp.sys Yes Manual	Running	OK	Ignore	Kernel No
rdpcdd	RDPCDD c:\windows\system32\drivers\rdpcdd.sys	Yes	System	Running	OK	Kernel Ignore	No	termdd	Terminal Device Driver c:\windows\system32\drivers\termdd.sys	Yes	System	Running	OK	Kernel Driver Normal
rdpdr	Terminal Server Device Redirector Driver c:\windows\system32\drivers\rdpdr.sys	Yes	Manual	Running	OK	Kernel Driver Normal	No No	toside	TosIde Disabled	Not Available Stopped	OK	Kernel Driver Normal	No No	
rdpwd	RDPWD c:\windows\system32\drivers\rdpwd.sys	Yes	Manual	Running	OK	Kernel Ignore	No	udfs	Udfs System Driver	c:\windows\system32\drivers\udfs.sys No No	Disabled	Stopped	OK	File Normal
redbook	Digital CD Audio Playback Filter Driver c:\windows\system32\drivers\redbook.sys	Yes	System	Running	OK	Kernel Driver Normal	No No	ultra	ultra Disabled	Not Available Stopped	OK	Kernel Driver Normal	No No	
secdrv	Secdrv c:\windows\system32\drivers\secdrv.sys	No	Manual	Stopped	OK	Kernel Normal	No	update	Microcode Update Driver c:\windows\system32\drivers\update.sys	Yes	Manual	Running	OK	Kernel Driver Normal
serenum	Serenum Filter Driver c:\windows\system32\drivers\serenum.sys	Kernel Driver Normal	Yes No	Manual Yes	Running OK	OK		usbhub	USB2 Enabled Hub Kernel Driver	c:\windows\system32\drivers\usbhub.sys Yes Manual	Running	OK		
serial	Serial port driver c:\windows\system32\drivers\serial.sys	Kernel Driver Ignore	Yes No	System Yes	Running OK	OK		usbohci	Microsoft USB Open Host Controller Miniport Driver c:\windows\system32\drivers\usbohci.sys	Yes Yes	Manual	Running	OK	Kernel Driver Normal
sfloppy	Sfloppy c:\windows\system32\drivers\sfloppy.sys	No	System	Stopped	OK	Kernel Ignore	No	vga	vga Driver	c:\windows\system32\drivers\vgapnp.sys Yes Manual	Running	OK	Ignore	Kernel No
simbad	Simbad Disabled	Not Available Stopped	OK	Kernel Driver Normal	No No	No No	vgasave	VGA Display Controller. c:\windows\system32\drivers\vga.sys	No	System	Stopped	OK	Ignore	Kernel Driver No

viaide	Vialde Disabled	Not Available Stopped	OK	Kernel Driver Normal	No No	ACPI\GENUINEINTEL_-_X86_FAMILY_15_MODEL_2\9
volsnap	Storage volumes	c:\windows\system32\drivers\volsnap.sys		Kernel Driver Yes	Boot Running OK	Processor Yes PROCESSOR 5.2.3790.0 10/1/2002 (Standard processor types) cpu.inf Not Available ACPI\GENUINEINTEL_-_X86_FAMILY_15_MODEL_2\10
wanarp	Remote Access IP ARP Driver	c:\windows\system32\drivers\wanarp.sys		Kernel Driver Yes	Manual Running OK	Processor Yes PROCESSOR 5.2.3790.0 10/1/2002 (Standard processor types) cpu.inf Not Available ACPI\GENUINEINTEL_-_X86_FAMILY_15_MODEL_2\11
wdica	WDICA	Not Available	OK	Kernel Driver	Ignore No	Processor Yes PROCESSOR 5.2.3790.0 10/1/2002 (Standard processor types) cpu.inf Not Available ACPI\GENUINEINTEL_-_X86_FAMILY_15_MODEL_2\12
wlbs	Network Load Balancing	c:\windows\system32\drivers\wlbs.sys		Kernel Driver No	Manual Stopped OK	Processor Yes PROCESSOR 5.2.3790.0 10/1/2002 (Standard processor types) cpu.inf Not Available ACPI\GENUINEINTEL_-_X86_FAMILY_15_MODEL_2\13
[Signed Drivers]						
Device Name	Signed Driver Date	Device Class Manufacturer	Driver Version INF Name	Driver		Processor Yes PROCESSOR 5.2.3790.0 10/1/2002 (Standard processor types) cpu.inf Not Available ACPI\GENUINEINTEL_-_X86_FAMILY_15_MODEL_2\14
Name	Device ID					Processor Yes PROCESSOR 5.2.3790.0 10/1/2002 (Standard processor types) cpu.inf Not Available ACPI\GENUINEINTEL_-_X86_FAMILY_15_MODEL_2\15
Not Available	Not Available	Not Available	Not Available	Not Available		
Available	Not Available	HTREE\ROOT\0				
ACPI Multiprocessor PC	5.2.3790.0 10/1/2002	Yes	COMPUTER	hal.inf	Not Available	PCI bus Yes SYSTEM 5.2.3790.0 10/1/2002 (Standard system devices) machine.inf Not Available ACPI\PNP0A03\0
Available	ROOT\ACPL_HAL\0000					
Microsoft ACPI-Compliant System	5.2.3790.0 10/1/2002	Yes	SYSTEM	acpi.inf	Not Available	BCM5701 Gigabit Ethernet Yes NET 2.91.0.0 10/1/2002 Narrowcom netb57xp.inf Not Available
Processor Yes	PROCESSOR	5.2.3790.0 10/1/2002	(Standard processor types)	cpu.inf	Not Available	PCI\VEN_14E4&DEV_1645&SUBSYS_007C0E11&REV_15\3 &267A616A&0&08
ACPI\GENUINEINTEL_-_X86_FAMILY_15_MODEL_2\0						Compaq Advanced System Management Controller Yes SYSTEM 5.2.3790.0 10/1/2002 Compaq machine.inf Not Available
Processor Yes	PROCESSOR	5.2.3790.0 10/1/2002	(Standard processor types)	cpu.inf	Not Available	PCI\VEN_0E11&DEV_A0F0&SUBSYS_B0F30E11&REV_00\3 &267A616A&0&60
ACPI\GENUINEINTEL_-_X86_FAMILY_15_MODEL_2\1						Standard VGA Graphics Adapter Yes DISPLAY 5.2.3790.0 10/1/2002 (Standard display types) display.inf Not Available
Processor Yes	PROCESSOR	5.2.3790.0 10/1/2002	(Standard processor types)	cpu.inf	Not Available	PCI\VEN_1002&DEV_4752&SUBSYS_001E0E11&REV_27\3 &267A616A&0&68
ACPI\GENUINEINTEL_-_X86_FAMILY_15_MODEL_2\2						Default Monitor Yes MONITOR 5.1.2001.0 6/6/2001 (Standard monitor types) monitor.inf Not Available
Processor Yes	PROCESSOR	5.2.3790.0 10/1/2002	(Standard processor types)	cpu.inf	Not Available	DISPLAY\DEFAULT_MONITOR\4&85FC1EE&0&12345678 &00&0D
ACPI\GENUINEINTEL_-_X86_FAMILY_15_MODEL_2\4						Compaq Smart Array 5i Controller Yes SCSIADAPTER 5.2.3790.0 10/1/2002 Compaq pnpscsi.inf Not Available
Processor Yes	PROCESSOR	5.2.3790.0 10/1/2002	(Standard processor types)	cpu.inf	Not Available	PCI\VEN_0E11&DEV_B178&SUBSYS_40800E11&REV_01\3 &267A616A&0&70
ACPI\GENUINEINTEL_-_X86_FAMILY_15_MODEL_2\5						Compaq Virtual LUN Yes SYSTEM 5.2.3790.0 10/1/2002 Compaq scsidev.inf Not Available
Processor Yes	PROCESSOR	5.2.3790.0 10/1/2002	(Standard processor types)	cpu.inf	Not Available	SCSI\OTHER&VEN_COMPAQ&PROD_SCSI_COMMUNICA TE&REV_CISS\4&37E0A253&0&000
ACPI\GENUINEINTEL_-_X86_FAMILY_15_MODEL_2\6						Disk drive Yes DISKDRIVE 5.2.3790.0 10/1/2002 (Standard disk drives) disk.inf Not Available
Processor Yes	PROCESSOR	5.2.3790.0 10/1/2002	(Standard processor types)	cpu.inf	Not Available	SCSI\DISK&VEN_COMPAQ&PROD_LOGICAL_VOLUME& REV_2.48\4&37E0A253&0&400
ACPI\GENUINEINTEL_-_X86_FAMILY_15_MODEL_2\7						Disk drive Yes DISKDRIVE 5.2.3790.0 10/1/2002 (Standard disk drives) disk.inf Not Available
Processor Yes	PROCESSOR	5.2.3790.0 10/1/2002	(Standard processor types)	cpu.inf	Not Available	SCSI\DISK&VEN_COMPAQ&PROD_LOGICAL_VOLUME& REV_2.48\4&37E0A253&0&410
ACPI\GENUINEINTEL_-_X86_FAMILY_15_MODEL_2\8						Disk drive Yes DISKDRIVE 5.2.3790.0 10/1/2002 (Standard disk drives) disk.inf Not Available
Processor Yes	PROCESSOR	5.2.3790.0 10/1/2002	(Standard processor types)	cpu.inf	Not Available	SCSI\DISK&VEN_COMPAQ&PROD_LOGICAL_VOLUME& REV_2.48\4&37E0A253&0&420

Disk drive	Yes	DISKDRIVE	5.2.3790.0	10/1/2002	(Standard disk drives)	disk.inf	Not Available
SCSI\DISK&VEN_COMPAQ&PROD_LOGICAL_VOLUME&REV_2.48\4&37E0A253&0&430							
ServerWorks Champion CSB5 - SouthBridge 5	Yes	SYSTEM	5.2.3790.0	10/1/2002	ServerWorks (RCC)	machine.inf	Not Available
PCI\VEN_1166&DEV_0201&SUBSYS_00000000&REV_93\3&267A616A&0&78							
Motherboard resources	Yes	SYSTEM	5.2.3790.0	10/1/2002	(Standard system devices)	machine.inf	Not Available
ACPI\PNP0C02\0							
System timer	Yes	SYSTEM	5.2.3790.0	10/1/2002	(Standard system devices)	machine.inf	Not Available
ACPI\PNP0100\4&35118DFF&0							
Direct memory access controller	Yes	SYSTEM	5.2.3790.0	10/1/2002	(Standard system devices)	machine.inf	Not Available
ACPI\PNP0200\4&35118DFF&0							
System speaker	Yes	SYSTEM	5.2.3790.0	10/1/2002	(Standard system devices)	machine.inf	Not Available
ACPI\PNP0800\4&35118DFF&0							
Extended IO Bus	Yes	SYSTEM	5.2.3790.0	10/1/2002	(Standard system devices)	machine.inf	Not Available
ACPI\PNP0A06\4&35118DFF&0							
Communications Port	Yes	PORTS	5.2.3790.0	10/1/2002	(Standard port types)	msports.inf	Not Available
ACPI\PNP0501\0							
Standard floppy disk controller	Yes	FDC	5.2.3790.0	10/1/2002	(Standard floppy disk controllers)	fdc.inf	Not Available
ACPI\PNP0700\5&13237358&0							
Floppy disk drive	Yes	FLOPPYDISK	5.2.3790.0	10/1/2002	(Standard floppy disk drives)	flydisk.inf	Not Available
FDC\GENERIC_FLOPPY_DRIVE\6&1C650E5D&0&0							
PS/2 Compatible Mouse	Yes	MOUSE	5.2.3790.0	10/1/2002	Microsoft	msmouse.inf	Not Available
ACPI\PNP0F13\4&35118DFF&0							
Standard 101/102-Key or Microsoft Natural PS/2 Keyboard	Yes	KEYBOARD	5.2.3790.0	10/1/2002	(Standard keyboards)	keyboard.inf	Not Available
ACPI\PNP0303\4&35118DFF&0							
CSB5 IDE Controller	Yes	HDC	5.2.3790.0	10/1/2002	ServerWorks	mshdc.inf	Not Available
PCI\VEN_1166&DEV_0212&SUBSYS_02121166&REV_93\3&267A616A&0&79							
Primary IDE Channel	Yes	HDC	5.2.3790.0	10/1/2002	(Standard IDE ATA/ATAPI controllers)	mshdc.inf	Not Available
PCI\IDE\IDECHANNEL\4&1024D5C6&0&0							
CD-ROM Drive	Yes	CDROM	5.2.3790.0	10/1/2002	(Standard CD-ROM drives)	cdrom.inf	Not Available
IDE\CDROMCOMPAQ_CD-224E_____A.8D_____5&FB0C83D&0&0.0.0							
Secondary IDE Channel	Yes	HDC	5.2.3790.0	10/1/2002	(Standard IDE ATA/ATAPI controllers)	mshdc.inf	Not Available
PCI\IDE\IDECHANNEL\4&1024D5C6&0&1							
ServerWorks (RCC) PCI to USB Open Host Controller	Yes	USB	5.2.3790.0	10/1/2002	ServerWorks (RCC)	usbport.inf	Not Available
Available							
PCI\VEN_1166&DEV_0220&SUBSYS_02201166&REV_05\3&267A616A&0&7A							
USB Root Hub	Yes	USB	5.2.3790.0	10/1/2002	(Standard USB Host Controller)	usbport.inf	Not Available
USB\ROOT_HUB\4&AF5358C&0							
Serverworks Champion CSB5 - SouthBridge 5 LPC	Yes	SYSTEM	5.2.3790.0	10/1/2002	ServerWorks (RCC)	machine.inf	Not Available
PCI\VEN_1166&DEV_0225&SUBSYS_00000000&REV_00\3&267A616A&0&7B							
ISAPNP Read Data Port	Yes	SYSTEM	5.2.3790.0	10/1/2002	(Standard system devices)	machine.inf	Not Available
ISAPNP\READDATAPORT\0							
hp Memory Host Controller	No	SYSTEM	1.0.1108.3	11/8/2002	Compaq Information Technologies Group, L.P.	oem0.inf	Not Available
PCI\VEN_0E11&DEV_B200&SUBSYS_00010E11&REV_03\3&267A616A&0&80							
hp Memory Host Controller	No	SYSTEM	1.0.1108.3	11/8/2002	Compaq Information Technologies Group, L.P.	oem0.inf	Not Available
PCI\VEN_0E11&DEV_B200&SUBSYS_B2000E11&REV_03\3&267A616A&0&81							
hp Memory Host Controller	No	SYSTEM	1.0.1108.3	11/8/2002	Compaq Information Technologies Group, L.P.	oem0.inf	Not Available
PCI\VEN_0E11&DEV_B200&SUBSYS_B2000E11&REV_03\3&267A616A&0&82							
PCI standard host CPU bridge	Yes	SYSTEM	5.2.3790.0	10/1/2002	(Standard system devices)	machine.inf	Not Available
PCI\VEN_0E11&DEV_B1C2&SUBSYS_00000000&REV_00\3&267A616A&0&B8							
ServerWorks Grand Champion CIOB_X - I/O Bridge 100 Mhz	Yes	SYSTEM	5.2.3790.0	10/1/2002	ServerWorks (RCC)	machine.inf	Not Available
PCI\VEN_1166&DEV_0010&SUBSYS_00000000&REV_04\3&267A616A&0&C0							
ServerWorks Grand Champion CIOB_X - I/O Bridge 100 Mhz	Yes	SYSTEM	5.2.3790.0	10/1/2002	ServerWorks (RCC)	machine.inf	Not Available
PCI\VEN_1166&DEV_0010&SUBSYS_00000000&REV_04\3&267A616A&0&C2							
ServerWorks Grand Champion CIOB_X - I/O Bridge 100 Mhz	Yes	SYSTEM	5.2.3790.0	10/1/2002	ServerWorks (RCC)	machine.inf	Not Available
PCI\VEN_1166&DEV_0010&SUBSYS_00000000&REV_04\3&267A616A&0&C4							
ServerWorks Grand Champion CIOB_X - I/O Bridge 100 Mhz	Yes	SYSTEM	5.2.3790.0	10/1/2002	ServerWorks (RCC)	machine.inf	Not Available
PCI\VEN_1166&DEV_0010&SUBSYS_00000000&REV_04\3&267A616A&0&C6							
ServerWorks Grand Champion CIOB_X - I/O Bridge 100 Mhz	Yes	SYSTEM	5.2.3790.0	10/1/2002	ServerWorks (RCC)	machine.inf	Not Available
PCI\VEN_1166&DEV_0010&SUBSYS_00000000&REV_04\3&267A616A&0&C8							
ServerWorks Grand Champion CIOB_X - I/O Bridge 100 Mhz	Yes	SYSTEM	5.2.3790.0	10/1/2002	ServerWorks (RCC)	machine.inf	Not Available
PCI\VEN_1166&DEV_0010&SUBSYS_00000000&REV_04\3&267A616A&0&CA							
Compaq PCI Hotplug Controller	Yes	SYSTEM	5.2.3790.0	10/1/2002	Compaq	machine.inf	Not Available
PCI\VEN_0E11&DEV_A0F7&SUBSYS_A2F80E11&REV_14\3&267A616A&0&F0							
Advanced programmable interrupt controller	Yes	SYSTEM	5.2.3790.0	10/1/2002	(Standard system devices)	machine.inf	Not Available
ACPI\PNP0003\3&267A616A&0							
Programmable interrupt controller	Yes	SYSTEM	5.2.3790.0	10/1/2002	(Standard system devices)	machine.inf	Not Available
ACPI\PNP0000\3&267A616A&0							
PCI bus	Yes	SYSTEM	5.2.3790.0	10/1/2002	(Standard system devices)	machine.inf	Not Available
ACPI\PNP0A03\1							

Smart Array 5300 Controller (Non-Miniport)	No	oem1.inf	Not Available
SCSIADAPTER	5.6.59.32	4/8/2003	Hewlett-Packard
PCI\VEN_0E11&DEV_B060&SUBSYS_40700E11&REV_02\3			
&13C0B0C5&0&10			
Smart Array Logical Volume	No	DISKDRIVE	5.6.56.32
4/8/2003	Hewlett-Packard	oem2.inf	Not Available
HPQCISS\DISK&VEN_COMPAQ&PROD_LOGICAL_VOLU			
ME\4&E6AAC0F&0&0000004000000000			
Smart Array Logical Volume	No	DISKDRIVE	5.6.56.32
4/8/2003	Hewlett-Packard	oem2.inf	Not Available
HPQCISS\DISK&VEN_COMPAQ&PROD_LOGICAL_VOLU			
ME\4&E6AAC0F&0&0100004000000000			
Smart Array Logical Volume	No	DISKDRIVE	5.6.56.32
4/8/2003	Hewlett-Packard	oem2.inf	Not Available
HPQCISS\DISK&VEN_COMPAQ&PROD_LOGICAL_VOLU			
ME\4&E6AAC0F&0&0200004000000000			
Smart Array Logical Volume	No	DISKDRIVE	5.6.56.32
4/8/2003	Hewlett-Packard	oem2.inf	Not Available
HPQCISS\DISK&VEN_COMPAQ&PROD_LOGICAL_VOLU			
ME\4&E6AAC0F&0&0300004000000000			
Smart Array Logical Volume	No	DISKDRIVE	5.6.56.32
4/8/2003	Hewlett-Packard	oem2.inf	Not Available
HPQCISS\DISK&VEN_COMPAQ&PROD_LOGICAL_VOLU			
ME\4&E6AAC0F&0&0400004000000000			
Smart Array Logical Volume	No	DISKDRIVE	5.6.56.32
4/8/2003	Hewlett-Packard	oem2.inf	Not Available
HPQCISS\DISK&VEN_COMPAQ&PROD_LOGICAL_VOLU			
ME\4&E6AAC0F&0&0500004000000000			
Smart Array Logical Volume	No	DISKDRIVE	5.6.56.32
4/8/2003	Hewlett-Packard	oem2.inf	Not Available
HPQCISS\DISK&VEN_COMPAQ&PROD_LOGICAL_VOLU			
ME\4&E6AAC0F&0&0600004000000000			
Smart Array Logical Volume	No	DISKDRIVE	5.6.56.32
4/8/2003	Hewlett-Packard	oem2.inf	Not Available
HPQCISS\DISK&VEN_COMPAQ&PROD_LOGICAL_VOLU			
ME\4&E6AAC0F&0&0700004000000000			
Smart Array Logical Volume	No	DISKDRIVE	5.6.56.32
4/8/2003	Hewlett-Packard	oem2.inf	Not Available
HPQCISS\DISK&VEN_COMPAQ&PROD_LOGICAL_VOLU			
ME\4&E6AAC0F&0&0800004000000000			
Smart Array Logical Volume	No	DISKDRIVE	5.6.56.32
4/8/2003	Hewlett-Packard	oem2.inf	Not Available
HPQCISS\DISK&VEN_COMPAQ&PROD_LOGICAL_VOLU			
ME\4&E6AAC0F&0&0900004000000000			
Smart Array Logical Volume	No	DISKDRIVE	5.6.56.32
4/8/2003	Hewlett-Packard	oem2.inf	Not Available
HPQCISS\DISK&VEN_COMPAQ&PROD_LOGICAL_VOLU			
ME\4&E6AAC0F&0&0A00004000000000			
Smart Array Logical Volume	No	DISKDRIVE	5.6.56.32
4/8/2003	Hewlett-Packard	oem2.inf	Not Available
HPQCISS\DISK&VEN_COMPAQ&PROD_LOGICAL_VOLU			
ME\4&E6AAC0F&0&0B00004000000000			
Smart Array Logical Volume	No	DISKDRIVE	5.6.56.32
4/8/2003	Hewlett-Packard	oem2.inf	Not Available
HPQCISS\DISK&VEN_COMPAQ&PROD_LOGICAL_VOLU			
ME\4&E6AAC0F&0&0C00004000000000			
Compaq PCI Hotplug Controller	Yes	SYSTEM	5.2.3790.0
10/1/2002	Compaq	machine.inf	Not Available
PCI\VEN_0E11&DEV_A0F7&SUBSYS_A2FE0E11&REV_14\			
3&1070020&0&F0			
PCI bus	Yes	SYSTEM	5.2.3790.0
10/1/2002	(Standard system		
devices)	machine.inf	Not Available	ACPI\PNP0A03\3
Smart Array 5300 Controller (Non-Miniport)	No	oem1.inf	Not Available
SCSIADAPTER	5.6.59.32	4/8/2003	Hewlett-Packard
PCI\VEN_0E11&DEV_B060&SUBSYS_40700E11&REV_02\3			
&29E81982&0&08			
Smart Array Logical Volume	No	DISKDRIVE	5.6.56.32
4/8/2003	Hewlett-Packard	oem2.inf	Not Available

HPQCISS\DISK&VEN_COMPAQ&PROD_LOGICAL_VOLU ME\4&27F87BD9&0&0300004000000000	STORAGE\VOLUME\1&30A96598&0&SIGNATUREB31F02 C1OFFSET7E00LENGTH23254F800
Smart Array Logical Volume No DISKDRIVE 5.6.56.32 4/8/2003 Hewlett-Packard oem2.inf Not Available	Generic volume Yes VOLUME 5.2.3790.0 10/1/2002 Microsoft volume.inf Not Available
HPQCISS\DISK&VEN_COMPAQ&PROD_LOGICAL_VOLU ME\4&27F87BD9&0&0400004000000000	STORAGE\VOLUME\1&30A96598&0&SIGNATUREB31F02 C0OFFSET7E00LENGTH270987600
Smart Array Logical Volume No DISKDRIVE 5.6.56.32 4/8/2003 Hewlett-Packard oem2.inf Not Available	Generic volume Yes VOLUME 5.2.3790.0 10/1/2002 Microsoft volume.inf Not Available
HPQCISS\DISK&VEN_COMPAQ&PROD_LOGICAL_VOLU ME\4&27F87BD9&0&0500004000000000	STORAGE\VOLUME\1&30A96598&0&SIGNATUREB31F02 CFOFFSET7E00LENGTH1384BFC00
Smart Array Logical Volume No DISKDRIVE 5.6.56.32 4/8/2003 Hewlett-Packard oem2.inf Not Available	Generic volume Yes VOLUME 5.2.3790.0 10/1/2002 Microsoft volume.inf Not Available
HPQCISS\DISK&VEN_COMPAQ&PROD_LOGICAL_VOLU ME\4&27F87BD9&0&0600004000000000	STORAGE\VOLUME\1&30A96598&0&SIGNATUREB31F02 CEOFFSET7E00LENGTH23254F800
Smart Array Logical Volume No DISKDRIVE 5.6.56.32 4/8/2003 Hewlett-Packard oem2.inf Not Available	Generic volume Yes VOLUME 5.2.3790.0 10/1/2002 Microsoft volume.inf Not Available
HPQCISS\DISK&VEN_COMPAQ&PROD_LOGICAL_VOLU ME\4&27F87BD9&0&0700004000000000	STORAGE\VOLUME\1&30A96598&0&SIGNATUREB31F02 CDOFFSET7E00LENGTH270987600
Smart Array Logical Volume No DISKDRIVE 5.6.56.32 4/8/2003 Hewlett-Packard oem2.inf Not Available	Generic volume Yes VOLUME 5.2.3790.0 10/1/2002 Microsoft volume.inf Not Available
HPQCISS\DISK&VEN_COMPAQ&PROD_LOGICAL_VOLU ME\4&27F87BD9&0&0800004000000000	STORAGE\VOLUME\1&30A96598&0&SIGNATUREB31F02 CCOFFSET7E00LENGTH1384BFC00
Smart Array Logical Volume No DISKDRIVE 5.6.56.32 4/8/2003 Hewlett-Packard oem2.inf Not Available	Generic volume Yes VOLUME 5.2.3790.0 10/1/2002 Microsoft volume.inf Not Available
HPQCISS\DISK&VEN_COMPAQ&PROD_LOGICAL_VOLU ME\4&27F87BD9&0&0900004000000000	STORAGE\VOLUME\1&30A96598&0&SIGNATUREB31F02 CBOFFSET7E00LENGTH23254F800
Smart Array Logical Volume No DISKDRIVE 5.6.56.32 4/8/2003 Hewlett-Packard oem2.inf Not Available	Generic volume Yes VOLUME 5.2.3790.0 10/1/2002 Microsoft volume.inf Not Available
HPQCISS\DISK&VEN_COMPAQ&PROD_LOGICAL_VOLU ME\4&27F87BD9&0&0A00004000000000	STORAGE\VOLUME\1&30A96598&0&SIGNATUREB31F02 CAOFFSET7E00LENGTH270987600
Smart Array Logical Volume No DISKDRIVE 5.6.56.32 4/8/2003 Hewlett-Packard oem2.inf Not Available	Generic volume Yes VOLUME 5.2.3790.0 10/1/2002 Microsoft volume.inf Not Available
HPQCISS\DISK&VEN_COMPAQ&PROD_LOGICAL_VOLU ME\4&27F87BD9&0&0B00004000000000	STORAGE\VOLUME\1&30A96598&0&SIGNATUREB31F02 C9OFFSET7E00LENGTH1384BFC00
Smart Array Logical Volume No DISKDRIVE 5.6.56.32 4/8/2003 Hewlett-Packard oem2.inf Not Available	Generic volume Yes VOLUME 5.2.3790.0 10/1/2002 Microsoft volume.inf Not Available
HPQCISS\DISK&VEN_COMPAQ&PROD_LOGICAL_VOLU ME\4&27F87BD9&0&0C00004000000000	STORAGE\VOLUME\1&30A96598&0&SIGNATUREB31F02 C8OFFSET7E00LENGTH23254F800
Compaq PCI Hotplug Controller Yes SYSTEM 5.2.3790.0 10/1/2002 Compaq machine.inf Not Available	Generic volume Yes VOLUME 5.2.3790.0 10/1/2002 Microsoft volume.inf Not Available
PCI\VEN_0E11&DEV_A0F7&SUBSYS_A2FE0E11&REV_14\3&474B838&0&F0	STORAGE\VOLUME\1&30A96598&0&SIGNATURECFB27E C1OFFSET7E00LENGTH9F98AFC00
ACPI Thermal Zone Yes SYSTEM 5.2.3790.0 10/1/2002 (Standard system devices) machine.inf Not Available	Generic volume Yes VOLUME 5.2.3790.0 10/1/2002 Microsoft volume.inf Not Available
ACPI\THERMALZONE\THM1	STORAGE\VOLUME\1&30A96598&0&SIGNATUREB31F02 D6OFFSET7E00LENGTH270987600
ACPI Fixed Feature Button Yes SYSTEM 5.2.3790.0 10/1/2002 (Standard system devices) machine.inf Not Available ACPI\FIXEDBUTTON\2&DABA3FF&0	Generic volume Yes VOLUME 5.2.3790.0 10/1/2002 Microsoft volume.inf Not Available
Logical Disk Manager Yes SYSTEM 5.2.3790.0 10/1/2002 (Standard system devices) machine.inf Not Available	STORAGE\VOLUME\1&30A96598&0&SIGNATUREB31F02 D5OFFSET7E00LENGTH1384BFC00
ROOT\DMIO\0000	Generic volume Yes VOLUME 5.2.3790.0 10/1/2002 Microsoft volume.inf Not Available
Generic volume Yes VOLUME 5.2.3790.0 10/1/2002 Microsoft volume.inf Not Available	STORAGE\VOLUME\1&30A96598&0&SIGNATUREB31F02 D4OFFSET7E00LENGTH23254F800
STORAGE\VOLUME\1&3735C57B&0&LDM#\{B1F32BFA-92F4-4D64-A32E-DB3F7060DBA8}	Generic volume Yes VOLUME 5.2.3790.0 10/1/2002 Microsoft volume.inf Not Available
Volume Manager Yes SYSTEM 5.2.3790.0 10/1/2002 (Standard system devices) machine.inf Not Available	STORAGE\VOLUME\1&30A96598&0&SIGNATUREB31F02 D3OFFSET7E00LENGTH270987600
ROOT\FTDISK\0000	Generic volume Yes VOLUME 5.2.3790.0 10/1/2002 Microsoft volume.inf Not Available
Generic volume Yes VOLUME 5.2.3790.0 10/1/2002 Microsoft volume.inf Not Available	STORAGE\VOLUME\1&30A96598&0&SIGNATUREB31F02 D2OFFSET7E00LENGTH1384BFC00
STORAGE\VOLUME\1&30A96598&0&SIGNATUREB31F02 C3OFFSET7E00LENGTH270987600	Generic volume Yes VOLUME 5.2.3790.0 10/1/2002 Microsoft volume.inf Not Available
Generic volume Yes VOLUME 5.2.3790.0 10/1/2002 Microsoft volume.inf Not Available	STORAGE\VOLUME\1&30A96598&0&SIGNATUREB31F02 D1OFFSET7E00LENGTH23254F800
STORAGE\VOLUME\1&30A96598&0&SIGNATUREB31F02 C2OFFSET7E00LENGTH1384BFC00	Generic volume Yes VOLUME 5.2.3790.0 10/1/2002 Microsoft volume.inf Not Available
Generic volume Yes VOLUME 5.2.3790.0 10/1/2002 Microsoft volume.inf Not Available	STORAGE\VOLUME\1&30A96598&0&SIGNATUREB31F02 D0OFFSET7E00LENGTH270987600

Generic volume	Yes	VOLUME 5.2.3790.0 10/1/2002 Microsoft	ksecdd	Not Available	LEGACYDRIVER	Not Available
volume.inf	Not Available			Not Available	Not Available	Not Available
STORAGE\	VOLUME\1&30A96598&0&SIGNATUREB31F02F90	OFFSET7E00LENGTH270987600		Not Available	ROOT\LEGACY_KSECCDD\0000	
Generic volume	Yes	VOLUME 5.2.3790.0 10/1/2002 Microsoft	mmmd	Not Available	LEGACYDRIVER	Not Available
volume.inf	Not Available			Not Available	Not Available	Not Available
STORAGE\	VOLUME\1&30A96598&0&SIGNATUREB31F02F80	OFFSET7E00LENGTH1384BFC00		Not Available	ROOT\LEGACY_MNMDD\0000	
Generic volume	Yes	VOLUME 5.2.3790.0 10/1/2002 Microsoft	mountmgr	Not Available	LEGACYDRIVER	Not Available
volume.inf	Not Available			Not Available	Not Available	Not Available
STORAGE\	VOLUME\1&30A96598&0&SIGNATUREB31F03070	OFFSET7E00LENGTH270987600		Not Available	ROOT\LEGACY_MOUNTMGR\0000	
Generic volume	Yes	VOLUME 5.2.3790.0 10/1/2002 Microsoft	NDIS System Driver	Not Available	LEGACYDRIVER	Not Available
volume.inf	Not Available		Available	Not Available	Not Available	Not Available
STORAGE\	VOLUME\1&30A96598&0&SIGNATUREB31F03060	OFFSET7E00LENGTH1384BFC00		Not Available	ROOT\LEGACY_NDIS\0000	
Generic volume	Yes	VOLUME 5.2.3790.0 10/1/2002 Microsoft	Remote Access NDIS TAPI Driver	Not Available	LEGACYDRIVER	Not Available
volume.inf	Not Available			Not Available	Not Available	Not Available
STORAGE\	VOLUME\1&30A96598&0&SIGNATUREB31F03050	OFFSET7E00LENGTH23254F800		Not Available	ROOT\LEGACY_NDISAPI\0000	
Generic volume	Yes	VOLUME 5.2.3790.0 10/1/2002 Microsoft	NDIS Usermode I/O Protocol	Not Available	LEGACYDRIVER	Not Available
volume.inf	Not Available			Not Available	Not Available	Not Available
STORAGE\	VOLUME\1&30A96598&0&SIGNATUREB31F03040	OFFSET7E00LENGTH23254F800		Not Available	ROOT\LEGACY_NDISUIO\0000	
Generic volume	Yes	VOLUME 5.2.3790.0 10/1/2002 Microsoft	NDProxy	Not Available	LEGACYDRIVER	Not Available
volume.inf	Not Available			Not Available	Not Available	Not Available
STORAGE\	VOLUME\1&30A96598&0&SIGNATURECCAE45C70	OFFSET4000LENGTH43CBEC000		Not Available	ROOT\LEGACY_NDPROXY\0000	
Generic volume	Yes	VOLUME 5.2.3790.0 10/1/2002 Microsoft	NetBios over Tcpip	Not Available	LEGACYDRIVER	Not Available
volume.inf	Not Available		Available	Not Available	Not Available	Not Available
STORAGE\	VOLUME\1&30A96598&0&SIGNATUREB31F03010	OFFSET4000LENGTH2EDCF0000		Not Available	ROOT\LEGACY_NETBT\0000	
Generic volume	Yes	VOLUME 5.2.3790.0 10/1/2002 Microsoft	Null	Not Available	LEGACYDRIVER	Not Available
volume.inf	Not Available			Not Available	Not Available	Not Available
STORAGE\	VOLUME\1&30A96598&0&SIGNATUREB31F030FO	OFFSET4000LENGTH176C78000		Not Available	ROOT\LEGACY_NULL\0000	
Generic volume	Yes	VOLUME 5.2.3790.0 10/1/2002 Microsoft	Partition Manager	Not Available	LEGACYDRIVER	Not Available
volume.inf	Not Available		Available	Not Available	Not Available	Not Available
STORAGE\	VOLUME\1&30A96598&0&SIGNATUREB31F030FO	OFFSET4000LENGTH176C78000		Not Available	ROOT\LEGACY_PARTMGR\0000	
Generic volume	Yes	VOLUME 5.2.3790.0 10/1/2002 Microsoft	Remote Access Auto Connection Driver	Not Available	LEGACYDRIVER	Not Available
volume.inf	Not Available			Not Available	Not Available	Not Available
STORAGE\	VOLUME\1&30A96598&0&SIGNATURECFB27EC20	OFFSET7E00LENGTH3E430000		Not Available	Not Available	Not Available
AFD Networking Support Environment	Not Available			Not Available	ROOT\LEGACY_RASACD\0000	
LEGACYDRIVER	Not Available	Not Available		Not Available	LEGACYDRIVER	Not Available
Not Available	Not Available	Not Available		Not Available	Not Available	Not Available
ROOT\LEGACY_AFD\0000				Not Available	ROOT\LEGACY_RDPCDD\0000	
Beep	Not Available	LEGACYDRIVER	Not Available	Not Available	LEGACYDRIVER	Not Available
Not Available	Not Available	Not Available		Not Available	Not Available	Not Available
Not Available	Not Available	ROOT\LEGACY_BEEP\0000		Not Available	LEGACYDRIVER	Not Available
CRC Disk Filter Driver	Not Available	LEGACYDRIVER	Not Available	Not Available	LEGACYDRIVER	Not Available
Not Available	Not Available	Not Available		Not Available	Not Available	Not Available
Not Available	Not Available	Not Available		Not Available	Not Available	Not Available
ROOT\LEGACY_CRCDISK\0000				Not Available	LEGACYDRIVER	Not Available
dmboot	Not Available	LEGACYDRIVER	Not Available	Not Available	LEGACYDRIVER	Not Available
Not Available	Not Available	Not Available		Not Available	Not Available	Not Available
Not Available	Not Available	ROOT\LEGACY_DMBOOT\0000		Not Available	LEGACYDRIVER	Not Available
dmload	Not Available	LEGACYDRIVER	Not Available	Not Available	LEGACYDRIVER	Not Available
Not Available	Not Available	Not Available		Not Available	Not Available	Not Available
Not Available	Not Available	ROOT\LEGACY_DMLOAD\0000		Not Available	LEGACYDRIVER	Not Available
Fips	Not Available	LEGACYDRIVER	Not Available	Not Available	LEGACYDRIVER	Not Available
Not Available	Not Available	Not Available		Not Available	Not Available	Not Available
Not Available	Not Available	ROOT\LEGACY_FIPS\0000		Not Available	LEGACYDRIVER	Not Available
Generic Packet Classifier	Not Available	LEGACYDRIVER	Not Available	Not Available	LEGACYDRIVER	Not Available
Not Available	Not Available	Not Available		Not Available	Not Available	Not Available
Not Available	Not Available	Not Available		Not Available	LEGACYDRIVER	Not Available
ROOT\LEGACY_GPC\0000				Not Available	LEGACYDRIVER	Not Available
IPSEC driver	Not Available	LEGACYDRIVER	Not Available	Not Available	LEGACYDRIVER	Not Available
Available	Not Available	Not Available		Not Available	Not Available	Not Available
Not Available	Not Available	ROOT\LEGACY_IPSEC\0000		Not Available	LEGACYDRIVER	Not Available

```

Not Available Not Available
ROOT\LEGACY_WANARP\0000
Audio Codexes Yes MEDIA 5.2.3790.0 10/1/2002 (Standard
system devices) wave.inf Not Available
ROOT\MEDIA\MS_MMCI
Legacy Audio Drivers Yes MEDIA 5.2.3790.0 10/1/2002 (Standard
system devices) wave.inf Not Available
ROOT\MEDIA\MS_MMDRV
Media Control Devices Yes MEDIA 5.2.3790.0
10/1/2002 (Standard system devices) wave.inf Not
Available ROOT\MEDIA\MS_MMMCI
Legacy Video Capture Devices Yes MEDIA 5.2.3790.0
10/1/2002 (Standard system devices) wave.inf Not
Available ROOT\MEDIA\MS_MMVCD
Video Codexes Yes MEDIA 5.2.3790.0 10/1/2002 (Standard
system devices) wave.inf Not Available
ROOT\MEDIA\MS_MMVID
WAN Miniport (L2TP) Yes NET 5.2.3790.0
10/1/2002 Microsoft netrasa.inf Not Available
ROOT\MS_L2TPMINIPORT\0000
WAN Miniport (IP) Yes NET 5.2.3790.0 10/1/2002 Microsoft
netrasa.inf Not Available ROOT\MS_NDISWANIP\0000

WAN Miniport (PPPOE) Yes NET 5.2.3790.0
10/1/2002 Microsoft netrasa.inf Not Available
ROOT\MS_PPPOEMINIPORT\0000
WAN Miniport (PPTP) Yes NET 5.2.3790.0
10/1/2002 Microsoft netrasa.inf Not Available
ROOT\MS_PPTPMINIPORT\0000
Direct Parallel Yes NET 5.2.3790.0 10/1/2002 Microsoft
netrasa.inf Not Available
ROOT\MS_PTMINIPORT\0000
Terminal Server Device Redirector Yes SYSTEM
5.2.3790.0 10/1/2002 (Standard system devices)
machine.inf Not Available
ROOT\RDPDR\0000
Terminal Server Keyboard Driver Yes SYSTEM
5.2.3790.0 10/1/2002 (Standard system devices)
machine.inf Not Available
ROOT\RDP_KBD\0000
Terminal Server Mouse Driver Yes SYSTEM 5.2.3790.0
10/1/2002 (Standard system devices) machine.inf
Not Available ROOT\RDP_MOU\0000
Plug and Play Software Device Enumerator Yes SYSTEM
5.2.3790.0 10/1/2002 (Standard system devices)
machine.inf Not Available
ROOT\SYSTEM\0000
Microcode Update Device Yes SYSTEM 5.2.3790.0
10/1/2002 (Standard system devices) machine.inf
Not Available ROOT\SYSTEM\0001
Not Available Yes Not Available 2:5.0,2:5.1,2:5.2
Not Available Not Available Not Available
Not Available CCA15109 on ccprint02 (from DPOL) in
session 2
Not Available Yes Not Available 2:5.0,2:5.1,2:5.2
Not Available Not Available Not Available
Not Available Labprinter on inforb (from DPOL) in
session 2

[Environment Variables]

Variable Value User Name
ComSpec %SystemRoot%\system32\cmd.exe <SYSTEM>

Path
%SystemRoot%\system32;%SystemRoot%;%SystemRoot%\Syst
em32\Wbem;C:\Program Files\Microsoft SQL Server\80\Tools\BINN
<SYSTEM>
windir %SystemRoot% <SYSTEM>
OS Windows_NT <SYSTEM>

```

```

PROCESSOR_ARCHITECTURE x86 <SYSTEM>
PROCESSOR_LEVEL 15 <SYSTEM>
PROCESSOR_IDENTIFIER x86 Family 15 Model 2 Stepping 5,
GenuineIntel <SYSTEM>
PROCESSOR_REVISION 0205 <SYSTEM>
NUMBER_OF_PROCESSORS 16 <SYSTEM>
ClusterLogC:\WINDOWS\Cluster\cluster.log <SYSTEM>

```

```

PATHEXT
.COM;.EXE;.BAT;.CMD;.VBS;.VBE;.JS;.JSE;.WSF;.WSH
<SYSTEM>
TEMP %SystemRoot%\TEMP <SYSTEM>
TMP %SystemRoot%\TEMP <SYSTEM>
WV_GATEWAY_CFG <SYSTEM>
JSERV <SYSTEM>
TEMP %USERPROFILE%\Local Settings\Temp NT
AUTHORITY\SYSTEM
TMP %USERPROFILE%\Local Settings\Temp NT
AUTHORITY\SYSTEM
TEMP %USERPROFILE%\Local Settings\Temp NT
AUTHORITY\LOCAL SERVICE
TMP %USERPROFILE%\Local Settings\Temp NT
AUTHORITY\LOCAL SERVICE
TEMP %USERPROFILE%\Local Settings\Temp NT
AUTHORITY\NETWORK SERVICE
TMP %USERPROFILE%\Local Settings\Temp NT
AUTHORITY\NETWORK SERVICE
TEMP %USERPROFILE%\Local Settings\Temp
DB2BUSTER\Administrator
TMP %USERPROFILE%\Local Settings\Temp
DB2BUSTER\Administrator

```

[Print Jobs]

Document	Size	Owner	Notify	Status	Time Submitted
Start Time	Until Time	Elapsed Time	Pages Printed	Print Processor	
Job ID	Priority	Parameters	Driver		
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	Not Available	0	0	Not Available
Available	Not Available	Not Available	Not Available	Not Available	Not Available
system	Not Available	4	8	0	1413120
Not Available	Not Available	Not Available	Not Available	Not Available	Not Available
smss.exe	Not Available	476	11	204800	1413120
7/4/2003 12:37 PM	Not Available	Not Available	Not Available	Not Available	Not Available
Not Available	Not Available	524	13	Not Available	Not Available
csrss.exe	Not Available	7/4/2003 12:37 PM	Not Available	Not Available	Not Available
Not Available	Not Available	Not Available	Not Available	Not Available	Not Available
winlogon.exe	c:\windows\system32\winlogon.exe	13	204800	1413120	7/4/2003 12:37 PM
5.2.3790.0 (srv03_rtm.030324-2048)	536.50 KB (549,376	bytes)	3/25/2003 12:00 AM		
services.exe	c:\windows\system32\services.exe	9	204800	1413120	7/4/2003 12:37 PM
5.2.3790.0 (srv03_rtm.030324-2048)	102.00 KB (104,448	bytes)	3/25/2003 12:00 AM		

```

lsass.exe c:\windows\system32\lsass.exe 604 9 204800
1413120 7/4/2003 12:37 PM 5.2.3790.0 (srv03_rtm.030324-
2048) 13.00 KB (13,312 bytes) 3/25/2003 12:00 AM
svchost.exe c:\windows\system32\svchost.exe 752
8 204800 1413120 7/4/2003 12:37 PM
5.2.3790.0 (srv03_rtm.030324-2048) 13.00 KB (13,312
bytes) 3/25/2003 12:00 AM
svchost.exe c:\windows\system32\svchost.exe 804
8 204800 1413120 7/4/2003 12:37 PM
5.2.3790.0 (srv03_rtm.030324-2048) 13.00 KB (13,312
bytes) 3/25/2003 12:00 AM
svchost.exe Not Available 964 8 Not
Available Not Available 7/4/2003 12:37 PM Not Available
Not Available Not Available
svchost.exe Not Available 1032 8 Not
Available Not Available 7/4/2003 12:37 PM Not Available
Not Available Not Available
svchost.exe c:\windows\system32\svchost.exe 1044
8 204800 1413120 7/4/2003 12:37 PM
5.2.3790.0 (srv03_rtm.030324-2048) 13.00 KB (13,312
bytes) 3/25/2003 12:00 AM
spoolsv.exe c:\windows\system32\spoolsv.exe 1212
8 204800 1413120 7/4/2003 12:38 PM
5.2.3790.0 (srv03_rtm.030324-2048) 55.00 KB (56,320
bytes) 3/25/2003 12:00 AM
msdtc.exe Not Available 1240 8 Not Available
Not Available 7/4/2003 12:38 PM Not Available
Not Available Not Available
svchost.exe c:\windows\system32\svchost.exe 1576
8 204800 1413120 7/4/2003 12:38 PM
5.2.3790.0 (srv03_rtm.030324-2048) 13.00 KB (13,312
bytes) 3/25/2003 12:00 AM
svchost.exe Not Available 1612 8 Not
Available Not Available 7/4/2003 12:38 PM Not Available
Not Available Not Available
dfssvc.exe c:\windows\system32\dfssvc.exe 1928 8 204800
1413120 7/4/2003 12:38 PM 5.2.3790.0 (srv03_rtm.030324-
2048) 130.50 KB (133,632 bytes) 3/25/2003 12:00 AM
wmiprvse.exe Not Available 260 8 Not
Available Not Available 7/4/2003 12:39 PM Not Available
Not Available Not Available
explorer.exe c:\windows\explorer.exe 3944 8
204800 1413120 7/21/2003 9:43 AM 6.00.3790.0
(srv03_rtm.030324-2048) 1,008.50 KB (1,032,704 bytes)
3/25/2003 12:00 AM
cmd.exe c:\windows\system32\cmd.exe 2060 8 204800
1413120 8/6/2003 9:25 AM 5.2.3790.0 (srv03_rtm.030324-
2048) 374.00 KB (382,976 bytes) 3/25/2003 12:00 AM
sqlservr.exe c:\program files\microsoft sql
server\mssql\binn\sqlservr.exe 2412 13 204800 1413120
8/6/2003 9:26 AM 2000.080.0761.00 7.11 MB (7,450,664
bytes) 6/12/2003 2:25 PM
csrss.exe Not Available 708 13 Not Available
Not Available 8/13/2003 2:34 PM Not Available
Not Available Not Available
winlogon.exe c:\windows\system32\winlogon.exe 3448
13 204800 1413120 8/13/2003 2:34 PM
5.2.3790.0 (srv03_rtm.030324-2048) 536.50 KB (549,376
bytes) 3/25/2003 12:00 AM
rdpclip.exe c:\windows\system32\rdpclip.exe 3352 8 204800
1413120 8/13/2003 2:34 PM 5.2.3790.0 (srv03_rtm.030324-
2048) 53.00 KB (54,272 bytes) 4/23/2003 10:54 AM
explorer.exe c:\windows\explorer.exe 3804 8
204800 1413120 8/13/2003 2:34 PM 6.00.3790.0
(srv03_rtm.030324-2048) 1,008.50 KB (1,032,704 bytes)
3/25/2003 12:00 AM
cmd.exe c:\windows\system32\cmd.exe 3092 8 204800
1413120 8/13/2003 2:34 PM 5.2.3790.0 (srv03_rtm.030324-
2048) 374.00 KB (382,976 bytes) 3/25/2003 12:00 AM

```

```

msinfo32.exe c:\program files\common files\microsoft
shared\msinfo\msinfo32.exe 252 8 204800 1413120
8/13/2003 2:35 PM 5.2.3790.0 (srv03_rtm.030324-2048)
40.50 KB (41,472 bytes) 4/23/2003 10:58 AM
wmiprvse.exe Not Available 784 8 Not
Available Not Available 8/13/2003 2:35 PM Not Available
Not Available Not Available

```

[Loaded Modules]

Name	Version	Size	File Date	Manufacturer	Path
winlogon bytes)	5.2.3790.0 (srv03_rtm.030324-2048)	536.50 KB (549,376 bytes)	3/25/2003 12:00 AM	Microsoft Corporation	c:\windows\system32\winlogon.exe
ntdll bytes)	5.2.3790.0 (srv03_rtm.030324-2048)	722.50 KB (739,840 bytes)	3/25/2003 12:00 AM	Microsoft Corporation	c:\windows\system32\ntdll.dll
kernel32 bytes)	5.2.3790.0 (srv03_rtm.030324-2048)	965.00 KB (988,160 bytes)	3/25/2003 12:00 AM	Microsoft Corporation	c:\windows\system32\kernel32.dll
msvcrt bytes)	7.0.3790.0 (srv03_rtm.030324-2048)	319.50 KB (327,168 bytes)	3/25/2003 12:00 AM	Microsoft Corporation	c:\windows\system32\msvcrt.dll
advapi32 bytes)	5.2.3790.0 (srv03_rtm.030324-2048)	559.50 KB (572,928 bytes)	3/25/2003 12:00 AM	Microsoft Corporation	c:\windows\system32\advapi32.dll
rpcrt4 bytes)	5.2.3790.0 (srv03_rtm.030324-2048)	643.50 KB (658,944 bytes)	3/25/2003 12:00 AM	Microsoft Corporation	c:\windows\system32\rpcrt4.dll
user32 bytes)	5.2.3790.0 (srv03_rtm.030324-2048)	562.00 KB (575,488 bytes)	3/25/2003 12:00 AM	Microsoft Corporation	c:\windows\system32\user32.dll
gdi32 bytes)	5.2.3790.0 (srv03_rtm.030324-2048)	263.00 KB (269,312 bytes)	3/25/2003 12:00 AM	Microsoft Corporation	c:\windows\system32\gdi32.dll
userenv bytes)	5.2.3790.0 (srv03_rtm.030324-2048)	732.50 KB (750,080 bytes)	3/25/2003 12:00 AM	Microsoft Corporation	c:\windows\system32\userenv.dll
nddeapi bytes)	5.2.3790.0 (srv03_rtm.030324-2048)	16.00 KB (16,384 bytes)	3/25/2003 12:00 AM	Microsoft Corporation	c:\windows\system32\nddeapi.dll
crypt32 bytes)	5.131.3790.0 (srv03_rtm.030324-2048)	598.00 KB (612,352 bytes)	3/25/2003 12:00 AM	Microsoft Corporation	c:\windows\system32\crypt32.dll
msasn1 bytes)	5.2.3790.0 (srv03_rtm.030324-2048)	58.00 KB (59,392 bytes)	3/25/2003 12:00 AM	Microsoft Corporation	c:\windows\system32\msasn1.dll
secur32 bytes)	5.2.3790.0 (srv03_rtm.030324-2048)	63.00 KB (64,512 bytes)	3/25/2003 12:00 AM	Microsoft Corporation	c:\windows\system32\secur32.dll
winsta bytes)	5.2.3790.0 (srv03_rtm.030324-2048)	51.00 KB (52,224 bytes)	3/25/2003 12:00 AM	Microsoft Corporation	c:\windows\system32\winsta.dll
netapi32 bytes)	5.2.3790.0 (srv03_rtm.030324-2048)	317.00 KB (324,608 bytes)	3/25/2003 12:00 AM	Microsoft Corporation	c:\windows\system32\netapi32.dll
profimapi bytes)	5.2.3790.0 (srv03_rtm.030324-2048)	22.00 KB (22,528 bytes)	3/25/2003 12:00 AM	Microsoft Corporation	c:\windows\system32\profimapi.dll
regapi bytes)	5.2.3790.0 (srv03_rtm.030324-2048)	48.50 KB (49,664 bytes)	3/25/2003 12:00 AM	Microsoft Corporation	c:\windows\system32\regapi.dll
ws2_32 bytes)	5.2.3790.0 (srv03_rtm.030324-2048)	87.50 KB (89,600 bytes)	3/25/2003 12:00 AM	Microsoft Corporation	c:\windows\system32\ws2_32.dll
ws2help bytes)	5.2.3790.0 (srv03_rtm.030324-2048)	19.50 KB (19,968 bytes)	3/25/2003 12:00 AM	Microsoft Corporation	c:\windows\system32\ws2help.dll

psapi bytes)	5.2.3790.0 (srv03_rtm.030324-2048)	21.50 KB (22,016 bytes)	3/25/2003 12:00 AM	Microsoft Corporation	c:\windows\system32\psapi.dll
version bytes)	5.2.3790.0 (srv03_rtm.030324-2048)	17.00 KB (17,408 bytes)	3/25/2003 12:00 AM	Microsoft Corporation	c:\windows\system32\version.dll
setupapi (1,038,848 bytes)	5.2.3790.0 (srv03_rtm.030324-2048)	1,014.50 KB	3/25/2003 12:00 AM	Microsoft Corporation	c:\windows\system32\setupapi.dll
msgina bytes)	5.2.3790.0 (srv03_rtm.030324-2048)	1.14 MB (1,191,936 bytes)	3/25/2003 12:00 AM	Microsoft Corporation	c:\windows\system32\msgina.dll
shsvcs bytes)	6.00.3790.0 (srv03_rtm.030324-2048)	121.50 KB (124,416 bytes)	3/25/2003 12:00 AM	Microsoft Corporation	c:\windows\system32\shsvcs.dll
shlwapi bytes)	6.00.3790.0 (srv03_rtm.030324-2048)	281.00 KB (287,744 bytes)	3/25/2003 12:00 AM	Microsoft Corporation	c:\windows\system32\shlwapi.dll
sfc bytes)	5.2.3790.0 (srv03_rtm.030324-2048)	4.50 KB (4,608 bytes)	3/25/2003 12:00 AM	Microsoft Corporation	c:\windows\system32\sfc.dll
sfc_os bytes)	5.2.3790.0 (srv03_rtm.030324-2048)	133.00 KB (136,192 bytes)	3/25/2003 12:00 AM	Microsoft Corporation	c:\windows\system32\sfc_os.dll
wintrust bytes)	5.131.3790.0 (srv03_rtm.030324-2048)	161.50 KB (165,376 bytes)	3/25/2003 12:00 AM	Microsoft Corporation	c:\windows\system32\wintrust.dll
ole32 bytes)	5.2.3790.0 (srv03_rtm.030324-2048)	1.13 MB (1,187,328 bytes)	3/25/2003 12:00 AM	Microsoft Corporation	c:\windows\system32\ole32.dll
imagehlp bytes)	5.2.3790.0 (srv03_rtm.030324-2048)	142.50 KB (145,920 bytes)	3/25/2003 12:00 AM	Microsoft Corporation	c:\windows\system32\imagehlp.dll
comctl32 controls_6595b64144ccf1df_6.0.100.0_x-ww_8417450b\comctl32.dll	6.0 (srv03_rtm.030324-2048)	907.00 KB (928,768 bytes)	4/23/2003 5:32 AM	Microsoft Corporation	c:\windows\winsxs\x86_microsoft.windows.common-controls_6595b64144ccf1df_6.0.100.0_x-ww_8417450b\comctl32.dll
winscard bytes)	5.2.3790.0 (srv03_rtm.030324-2048)	98.50 KB (100,864 bytes)	3/25/2003 12:00 AM	Microsoft Corporation	c:\windows\system32\winscard.dll
wtsapi32 bytes)	5.2.3790.0 (srv03_rtm.030324-2048)	17.50 KB (17,920 bytes)	3/25/2003 12:00 AM	Microsoft Corporation	c:\windows\system32\wtsapi32.dll
winmm bytes)	5.2.3790.0 (srv03_rtm.030324-2048)	166.00 KB (169,984 bytes)	3/25/2003 12:00 AM	Microsoft Corporation	c:\windows\system32\winmm.dll
sxs bytes)	5.2.3790.0 (srv03_rtm.030324-2048)	733.00 KB (750,592 bytes)	3/25/2003 12:00 AM	Microsoft Corporation	c:\windows\system32\sxs.dll
shell32 bytes)	6.00.3790.0 (srv03_rtm.030324-2048)	7.79 MB (8,166,400 bytes)	3/25/2003 12:00 AM	Microsoft Corporation	c:\windows\system32\shell32.dll
wldap32 bytes)	5.2.3790.0 (srv03_rtm.030324-2048)	158.00 KB (161,792 bytes)	3/25/2003 12:00 AM	Microsoft Corporation	c:\windows\system32\wldap32.dll
csddl bytes)	5.2.3790.0 (srv03_rtm.030324-2048)	99.00 KB (101,376 bytes)	3/25/2003 12:00 AM	Microsoft Corporation	c:\windows\system32\csddl.dll
rsaenh bytes)	5.2.3790.0 (srv03_rtm.030324-2048)	176.83 KB (181,072 bytes)	3/25/2003 12:00 AM	Microsoft Corporation	c:\windows\system32\rsaenh.dll
wlnotify bytes)	5.2.3790.0 (srv03_rtm.030324-2048)	87.50 KB (89,600 bytes)	3/25/2003 12:00 AM	Microsoft Corporation	c:\windows\system32\wlnotify.dll
winspool bytes)	5.2.3790.0 (srv03_rtm.030324-2048)	140.00 KB (143,360 bytes)	3/25/2003 12:00 AM	Microsoft Corporation	c:\windows\system32\winspool.drv
mpr bytes)	5.2.3790.0 (srv03_rtm.030324-2048)	56.00 KB (57,344 bytes)	3/25/2003 12:00 AM	Microsoft Corporation	c:\windows\system32\mpr.dll
comctl32 controls_6595b64144ccf1df_5.82.0.0_x-ww_8a69ba05\comctl32.dll	5.82 (srv03_rtm.030324-2048)	561.00 KB (574,464 bytes)	4/23/2003 5:32 AM	Microsoft Corporation	c:\windows\winsxs\x86_microsoft.windows.common-controls_6595b64144ccf1df_5.82.0.0_x-ww_8a69ba05\comctl32.dll
uxtheme bytes)	6.00.3790.0 (srv03_rtm.030324-2048)	196.00 KB (200,704 bytes)	3/25/2003 12:00 AM	Microsoft Corporation	c:\windows\system32\uxtheme.dll
clbcatq bytes)	2001.12.4720.0 (srv03_rtm.030324-2048)	481.00 KB (492,544 bytes)	4/23/2003 10:54 AM	Microsoft Corporation	c:\windows\system32\clbcatq.dll
oleaut32 bytes)	5.2.3790.0 (srv03_rtm.030324-2048)	486.00 KB (497,664 bytes)	3/25/2003 12:00 AM	Microsoft Corporation	c:\windows\system32\oleaut32.dll
comres bytes)	2001.12.4720.0 (srv03_rtm.030324-2048)	778.00 KB (796,672 bytes)	3/25/2003 12:00 AM	Microsoft Corporation	c:\windows\system32\comres.dll
wbemprox bytes)	5.2.3790.0 (srv03_rtm.030324-2048)	17.50 KB (17,920 bytes)	4/23/2003 10:54 AM	Microsoft Corporation	c:\windows\system32\wbem\wbemprox.dll
wbemcomn KB (216,576 bytes)	5.2.3790.0 (srv03_rtm.030324-2048)	211.50 KB (216,576 bytes)	3/25/2003 12:00 AM	Microsoft Corporation	c:\windows\system32\wbem\wbemcomn.dll
wbemsvc bytes)	5.2.3790.0 (srv03_rtm.030324-2048)	42.50 KB (43,520 bytes)	4/23/2003 10:54 AM	Microsoft Corporation	c:\windows\system32\wbem\wbemsvc.dll
fastprox bytes)	5.2.3790.0 (srv03_rtm.030324-2048)	443.00 KB (453,632 bytes)	4/23/2003 10:54 AM	Microsoft Corporation	c:\windows\system32\wbem\fastprox.dll
msvcpp60 bytes)	6.05.2144.0 (srv03_rtm.030324-2048)	388.00 KB (397,312 bytes)	3/25/2003 12:00 AM	Microsoft Corporation	c:\windows\system32\msvcpp60.dll
ntdsapi bytes)	5.2.3790.0 (srv03_rtm.030324-2048)	76.00 KB (77,824 bytes)	3/25/2003 12:00 AM	Microsoft Corporation	c:\windows\system32\ntdsapi.dll
dnsapi bytes)	5.2.3790.0 (srv03_rtm.030324-2048)	147.50 KB (151,040 bytes)	3/25/2003 12:00 AM	Microsoft Corporation	c:\windows\system32\dnsapi.dll
samlib bytes)	5.2.3790.0 (srv03_rtm.030324-2048)	49.00 KB (50,176 bytes)	3/25/2003 12:00 AM	Microsoft Corporation	c:\windows\system32\samlib.dll
csoui bytes)	5.2.3790.0 (srv03_rtm.030324-2048)	305.00 KB (312,320 bytes)	3/25/2003 12:00 AM	Microsoft Corporation	c:\windows\system32\csoui.dll
es bytes)	2001.12.4720.0 (srv03_rtm.030324-2048)	221.50 KB (226,816 bytes)	3/25/2003 12:00 AM	Microsoft Corporation	c:\windows\system32\es.dll
ntmarta bytes)	5.2.3790.0 (srv03_rtm.030324-2048)	114.00 KB (116,736 bytes)	3/25/2003 12:00 AM	Microsoft Corporation	c:\windows\system32\ntmarta.dll
services bytes)	5.2.3790.0 (srv03_rtm.030324-2048)	102.00 KB (104,448 bytes)	3/25/2003 12:00 AM	Microsoft Corporation	c:\windows\system32\services.exe
scesrv bytes)	5.2.3790.0 (srv03_rtm.030324-2048)	316.50 KB (324,096 bytes)	3/25/2003 12:00 AM	Microsoft Corporation	c:\windows\system32\scesrv.dll
authz bytes)	5.2.3790.0 (srv03_rtm.030324-2048)	67.00 KB (68,608 bytes)	3/25/2003 12:00 AM	Microsoft Corporation	c:\windows\system32\authz.dll
umpnpmgr bytes)	5.2.3790.0 (srv03_rtm.030324-2048)	121.50 KB (124,416 bytes)	3/25/2003 12:00 AM	Microsoft Corporation	c:\windows\system32\umpnpmgr.dll
ncobjapi bytes)	5.2.3790.0 (srv03_rtm.030324-2048)	34.50 KB (35,328 bytes)	3/25/2003 12:00 AM	Microsoft Corporation	c:\windows\system32\ncobjapi.dll

eventlog bytes)	5.2.3790.0 (srv03_rtm.030324-2048)	60.50 KB (61,952)	winiipsec bytes)	5.2.3790.0 (srv03_rtm.030324-2048)	34.50 KB (35,328)
	3/25/2003 12:00 AM Microsoft Corporation			3/25/2003 12:00 AM Microsoft Corporation	
	c:\windows\system32\eventlog.dll			c:\windows\system32\winiipsec.dll	
lsass bytes)	5.2.3790.0 (srv03_rtm.030324-2048)	13.00 KB (13,312)	pstorsvc bytes)	5.2.3790.0 (srv03_rtm.030324-2048)	24.00 KB (24,576)
	3/25/2003 12:00 AM Microsoft Corporation			3/25/2003 12:00 AM Microsoft Corporation	
	c:\windows\system32\lsass.exe			c:\windows\system32\pstorsvc.dll	
lsasrv bytes)	5.2.3790.0 (srv03_rtm.030324-2048)	780.50 KB (799,232)	psbase bytes)	5.2.3790.0 (srv03_rtm.030324-2048)	81.00 KB (82,944)
	3/25/2003 12:00 AM Microsoft Corporation			3/25/2003 12:00 AM Microsoft Corporation	
	c:\windows\system32\lsasrv.dll			c:\windows\system32\psbase.dll	
samsrv bytes)	5.2.3790.0 (srv03_rtm.030324-2048)	452.00 KB (462,848)	dsenh bytes)	5.2.3790.0 (srv03_rtm.030324-2048)	131.33 KB (134,480)
	3/25/2003 12:00 AM Microsoft Corporation			3/25/2003 12:00 AM Microsoft Corporation	
	c:\windows\system32\samsrv.dll			c:\windows\system32\dsenh.dll	
cryptdll bytes)	5.2.3790.0 (srv03_rtm.030324-2048)	34.00 KB (34,816)	wlbsctrl bytes)	5.2.3790.0 (srv03_rtm.030324-2048)	78.00 KB (79,872)
	3/25/2003 12:00 AM Microsoft Corporation			3/25/2003 12:00 AM Microsoft Corporation	
	c:\windows\system32\cryptdll.dll			c:\windows\system32\wlbsctrl.dll	
msprivs bytes)	5.2.3790.0 (srv03_rtm.030324-2048)	46.50 KB (47,616)	svchost bytes)	5.2.3790.0 (srv03_rtm.030324-2048)	13.00 KB (13,312)
	3/25/2003 12:00 AM Microsoft Corporation			3/25/2003 12:00 AM Microsoft Corporation	
	c:\windows\system32\msprivs.dll			c:\windows\system32\svchost.exe	
kerberos bytes)	5.2.3790.0 (srv03_rtm.030324-2048)	332.50 KB (340,480)	rpcss bytes)	5.2.3790.0 (srv03_rtm.030324-2048)	276.50 KB (283,136)
	3/25/2003 12:00 AM Microsoft Corporation			3/25/2003 12:00 AM Microsoft Corporation	
	c:\windows\system32\kerberos.dll			c:\windows\system32\rpcss.dll	
msv1_0 bytes)	5.2.3790.0 (srv03_rtm.030324-2048)	127.00 KB (130,048)	termsrv bytes)	5.2.3790.0 (srv03_rtm.030324-2048)	216.50 KB (221,696)
	3/25/2003 12:00 AM Microsoft Corporation			4/23/2003 10:54 AM Microsoft Corporation	
	c:\windows\system32\msv1_0.dll			c:\windows\system32\termsrv.dll	
netlogon bytes)	5.2.3790.0 (srv03_rtm.030324-2048)	409.00 KB (418,816)	icaapi bytes)	5.2.3790.0 (srv03_rtm.030324-2048)	10.50 KB (10,752)
	3/25/2003 12:00 AM Microsoft Corporation			4/23/2003 10:54 AM Microsoft Corporation	
	c:\windows\system32\netlogon.dll			c:\windows\system32\icaapi.dll	
w32time bytes)	5.2.3790.0 (srv03_rtm.030324-2048)	216.00 KB (221,184)	mstlsapi bytes)	5.2.3790.0 (srv03_rtm.030324-2048)	104.50 KB (107,008)
	3/25/2003 12:00 AM Microsoft Corporation			3/25/2003 12:00 AM Microsoft Corporation	
	c:\windows\system32\w32time.dll			c:\windows\system32\mstlsapi.dll	
iphlpapi bytes)	5.2.3790.0 (srv03_rtm.030324-2048)	82.50 KB (84,480)	activeds bytes)	5.2.3790.0 (srv03_rtm.030324-2048)	189.00 KB (193,536)
	3/25/2003 12:00 AM Microsoft Corporation			3/25/2003 12:00 AM Microsoft Corporation	
	c:\windows\system32\iphlpapi.dll			c:\windows\system32\activeds.dll	
schannel bytes)	5.2.3790.0 (srv03_rtm.030324-2048)	149.50 KB (153,088)	adslrpc bytes)	5.2.3790.0 (srv03_rtm.030324-2048)	142.50 KB (145,920)
	3/25/2003 12:00 AM Microsoft Corporation			3/25/2003 12:00 AM Microsoft Corporation	
	c:\windows\system32\schannel.dll			c:\windows\system32\adslrpc.dll	
wdigest bytes)	5.2.3790.0 (srv03_rtm.030324-2048)	61.00 KB (62,464)	credui bytes)	5.2.3790.0 (srv03_rtm.030324-2048)	159.00 KB (162,816)
	3/25/2003 12:00 AM Microsoft Corporation			3/25/2003 12:00 AM Microsoft Corporation	
	c:\windows\system32\wdigest.dll			c:\windows\system32\credui.dll	
rassfm bytes)	5.2.3790.0 (srv03_rtm.030324-2048)	20.50 KB (20,992)	atl	3.05.2283 83.00 KB (84,992 bytes)	3/25/2003 12:00 AM Microsoft Corporation
	3/25/2003 12:00 AM Microsoft Corporation				c:\windows\system32\atl.dll
	c:\windows\system32\rassfm.dll				
kdcsvc bytes)	5.2.3790.0 (srv03_rtm.030324-2048)	221.00 KB (226,304)	rdpwsx bytes)	5.2.3790.0 (srv03_rtm.030324-2048)	80.13 KB (82,056)
	3/25/2003 12:00 AM Microsoft Corporation			4/23/2003 10:54 AM Microsoft Corporation	
	c:\windows\system32\kdcsvc.dll			c:\windows\system32\rdpwsx.dll	
ntdsa bytes)	5.2.3790.0 (srv03_rtm.030324-2048)	1.45 MB (1,520,640)	wzcsvc bytes)	5.2.3790.0 (srv03_rtm.030324-2048)	272.50 KB (279,040)
	3/25/2003 12:00 AM Microsoft Corporation			3/25/2003 6:15 AM Microsoft Corporation	
	c:\windows\system32\ntdsa.dll			c:\windows\system32\wzcsvc.dll	
ntdsatq bytes)	5.2.3790.0 (srv03_rtm.030324-2048)	32.00 KB (32,768)	rtutils bytes)	5.2.3790.0 (srv03_rtm.030324-2048)	32.00 KB (32,768)
	3/25/2003 12:00 AM Microsoft Corporation			3/25/2003 12:00 AM Microsoft Corporation	
	c:\windows\system32\ntdsatq.dll			c:\windows\system32\rtutils.dll	
mswsock bytes)	5.2.3790.0 (srv03_rtm.030324-2048)	254.00 KB (260,096)	wmi bytes)	5.2.3790.0 (srv03_rtm.030324-2048)	6.50 KB (6,656)
	3/25/2003 12:00 AM Microsoft Corporation			3/25/2003 12:00 AM Microsoft Corporation	
	c:\windows\system32\mswsock.dll			c:\windows\system32\wmi.dll	
esent bytes)	5.2.3790.0 (srv03_rtm.030324-2048)	1.01 MB (1,056,256)	dhcpcsvc bytes)	5.2.3790.0 (srv03_rtm.030324-2048)	101.50 KB (103,936)
	3/25/2003 12:00 AM Microsoft Corporation			3/25/2003 12:00 AM Microsoft Corporation	
	c:\windows\system32\esent.dll			c:\windows\system32\dhcpcsvc.dll	
scecli bytes)	5.2.3790.0 (srv03_rtm.030324-2048)	179.50 KB (183,808)	rastls bytes)	5.2.3790.0 (srv03_rtm.030324-2048)	155.00 KB (158,720)
	3/25/2003 12:00 AM Microsoft Corporation			3/25/2003 12:00 AM Microsoft Corporation	
	c:\windows\system32\scecli.dll			c:\windows\system32\rastls.dll	
wshtcpip bytes)	5.2.3790.0 (srv03_rtm.030324-2048)	18.00 KB (18,432)	cryptui bytes)	5.131.3790.0 (srv03_rtm.030324-2048)	473.50 KB (484,864)
	3/25/2003 12:00 AM Microsoft Corporation			3/25/2003 12:00 AM Microsoft Corporation	
	c:\windows\system32\wshtcpip.dll			c:\windows\system32\cryptui.dll	
ipsecsvc bytes)	5.2.3790.0 (srv03_rtm.030324-2048)	162.50 KB (166,400)	mprapi bytes)	5.2.3790.0 (srv03_rtm.030324-2048)	81.00 KB (82,944)
	3/25/2003 12:00 AM Microsoft Corporation			3/25/2003 12:00 AM Microsoft Corporation	
	c:\windows\system32\ipsecsvc.dll			c:\windows\system32\mprapi.dll	
oakley bytes)	5.2.3790.0 (srv03_rtm.030324-2048)	325.50 KB (333,312)	rasapi32 bytes)	5.2.3790.0 (srv03_rtm.030324-2048)	227.50 KB (232,960)
	3/25/2003 12:00 AM Microsoft Corporation			3/25/2003 12:00 AM Microsoft Corporation	
	c:\windows\system32\oakley.dll			c:\windows\system32\rasapi32.dll	

rasman bytes)	5.2.3790.0 (srv03_rtm.030324-2048)	56.50 KB (57,856	netrap bytes)	5.2.3790.0 (srv03_rtm.030324-2048)	11.50 KB (11,776
	3/25/2003 12:00 AM Microsoft Corporation			3/25/2003 12:00 AM Microsoft Corporation	
	c:\windows\system32\rasman.dll			c:\windows\system32\netrap.dll	
tapi32 bytes)	5.2.3790.0 (srv03_rtm.030324-2048)	175.00 KB (179,200	winhttp bytes)	5.2.3790.0 (srv03_rtm.030324-2048)	327.50 KB (335,360
	3/25/2003 12:00 AM Microsoft Corporation			4/23/2003 5:32 AM Microsoft Corporation	
	c:\windows\system32\tapi32.dll			c:\windows\winsxs\x86_microsoft.windows.winhttp_6595b64144	
raschap bytes)	5.2.3790.0 (srv03_rtm.030324-2048)	106.00 KB (108,544	ccf1df_5.1.0.0_x-ww_e0651936\winhttp.dll		
	3/25/2003 12:00 AM Microsoft Corporation		wbemcore	5.2.3790.0 (srv03_rtm.030324-2048)	457.00 KB (467,968
	c:\windows\system32\raschap.dll			4/23/2003 10:54 AM Microsoft Corporation	
schedsvcb bytes)	5.2.3790.0 (srv03_rtm.030324-2048)	176.00 KB (180,224		c:\windows\system32\wbem\wbemcore.dll	
	4/23/2003 10:58 AM Microsoft Corporation		esscli bytes)	5.2.3790.0 (srv03_rtm.030324-2048)	235.50 KB (241,152
	c:\windows\system32\schedsvcb.dll			4/23/2003 10:54 AM Microsoft Corporation	
msidle bytes)	6.00.3790.0 (srv03_rtm.030324-2048)	5.50 KB (5,632	wmiutils bytes)	5.2.3790.0 (srv03_rtm.030324-2048)	90.50 KB (92,672
	3/25/2003 12:00 AM Microsoft Corporation			4/23/2003 10:54 AM Microsoft Corporation	
	c:\windows\system32\msidle.dll		repdrvfs bytes)	5.2.3790.0 (srv03_rtm.030324-2048)	165.00 KB (168,960
wkssvc bytes)	5.2.3790.0 (srv03_rtm.030324-2048)	125.00 KB (128,000		4/23/2003 10:54 AM Microsoft Corporation	
	3/25/2003 12:00 AM Microsoft Corporation		wmiprvsd bytes)	5.2.3790.0 (srv03_rtm.030324-2048)	405.50 KB (415,232
	c:\windows\system32\wkssvc.dll			4/23/2003 10:54 AM Microsoft Corporation	
wiarpc bytes)	5.2.3790.0 (srv03_rtm.030324-2048)	30.00 KB (30,720	wbemess bytes)	5.2.3790.0 (srv03_rtm.030324-2048)	256.50 KB (262,656
	3/25/2003 12:00 AM Microsoft Corporation			4/23/2003 10:54 AM Microsoft Corporation	
	c:\windows\system32\wiarpc.dll		ncprov bytes)	5.2.3790.0 (srv03_rtm.030324-2048)	43.00 KB (44,032
cryptsvc bytes)	5.2.3790.0 (srv03_rtm.030324-2048)	51.00 KB (52,224		4/23/2003 10:54 AM Microsoft Corporation	
	3/25/2003 12:00 AM Microsoft Corporation		netman bytes)	c:\windows\system32\wbem\ncprov.dll	
	c:\windows\system32\cryptsvc.dll			3/25/2003 12:00 AM Microsoft Corporation	
certcli bytes)	5.2.3790.0 (srv03_rtm.030324-2048)	228.00 KB (233,472	wzcsapi bytes)	5.2.3790.0 (srv03_rtm.030324-2048)	24.50 KB (25,088
	3/25/2003 12:00 AM Microsoft Corporation			3/25/2003 6:15 AM Microsoft Corporation	
	c:\windows\system32\certcli.dll		netshell bytes)	5.2.3790.0 (srv03_rtm.030324-2048)	1.67 MB (1,747,456
vssapi bytes)	5.2.3790.0 (srv03_rtm.030324-2048)	528.00 KB (540,672		3/25/2003 12:00 AM Microsoft Corporation	
	3/25/2003 12:00 AM Microsoft Corporation		clusapi bytes)	5.2.3790.0 (srv03_rtm.030324-2048)	56.00 KB (57,344
	c:\windows\system32\vssapi.dll			3/25/2003 12:00 AM Microsoft Corporation	
dmserver bytes)	5.2.3790.0 (srv03_rtm.030324-2048)	24.00 KB (24,576	hnetcfg bytes)	5.2.3790.0 (srv03_rtm.030324-2048)	243.50 KB (249,344
	3/25/2003 12:00 AM Microsoft Corporation			3/25/2003 12:00 AM Microsoft Corporation	
	c:\windows\system32\dmserver.dll		rasdlg bytes)	5.2.3790.0 (srv03_rtm.030324-2048)	642.00 KB (657,408
pchsvc bytes)	5.2.3790.0 (srv03_rtm.030324-2048)	31.50 KB (32,256		3/25/2003 12:00 AM Microsoft Corporation	
	4/23/2003 10:58 AM Microsoft Corporation		rasadhlp bytes)	5.2.3790.0 (srv03_rtm.030324-2048)	6.50 KB (6,656
	c:\windows\pchealth\helpctr\binaries\pchsvc.dll			3/25/2003 12:00 AM Microsoft Corporation	
srvsvc bytes)	5.2.3790.0 (srv03_rtm.030324-2048)	89.00 KB (91,136	xactsrv bytes)	5.2.3790.0 (srv03_rtm.030324-2048)	86.50 KB (88,576
	3/25/2003 12:00 AM Microsoft Corporation			3/25/2003 12:00 AM Microsoft Corporation	
	c:\windows\system32\srvsvc.dll		ntlsapi bytes)	5.2.3790.0 (srv03_rtm.030324-2048)	8.00 KB (8,192
seclogon bytes)	5.2.3790.0 (srv03_rtm.030324-2048)	16.50 KB (16,896		3/25/2003 12:00 AM Microsoft Corporation	
	3/25/2003 12:00 AM Microsoft Corporation		actxprxy bytes)	6.00.3790.0 (srv03_rtm.030324-2048)	95.00 KB (97,280
	c:\windows\system32\seclogon.dll			3/25/2003 12:00 AM Microsoft Corporation	
trkwks bytes)	5.2.3790.0 (srv03_rtm.030324-2048)	85.00 KB (87,040	netcfgx bytes)	5.2.3790.0 (srv03_rtm.030324-2048)	726.00 KB (743,424
	3/25/2003 12:00 AM Microsoft Corporation			3/25/2003 12:00 AM Microsoft Corporation	
	c:\windows\system32\trkwks.dll		spoolsv bytes)	5.2.3790.0 (srv03_rtm.030324-2048)	55.00 KB (56,320
wmisvc bytes)	5.2.3790.0 (srv03_rtm.030324-2048)	131.00 KB (134,144		3/25/2003 12:00 AM Microsoft Corporation	
	4/23/2003 10:54 AM Microsoft Corporation		spoolss bytes)	5.2.3790.0 (srv03_rtm.030324-2048)	79.00 KB (80,896
	c:\windows\system32\wbem\wmisvc.dll			3/25/2003 12:00 AM Microsoft Corporation	
wuauerv bytes)	5.4.3790.0 (srv03_rtm.030324-2048)	10.50 KB (10,752	localspl bytes)	5.2.3790.0 (srv03_rtm.030324-2048)	304.50 KB (311,808
	4/23/2003 10:54 AM Microsoft Corporation			3/25/2003 12:00 AM Microsoft Corporation	
	c:\windows\system32\wuauerv.dll			c:\windows\system32\localspl.dll	
wuaueng bytes)	5.4.3790.0 (srv03_rtm.030324-2048)	188.50 KB (193,024			
	4/23/2003 10:54 AM Microsoft Corporation				
	c:\windows\system32\wuaueng.dll				
advpack bytes)	6.00.3790.0 (srv03_rtm.030324-2048)	93.50 KB (95,744			
	3/25/2003 12:00 AM Microsoft Corporation				
	c:\windows\system32\advpack.dll				
wininet bytes)	6.00.3790.0 (srv03_rtm.030324-2048)	609.00 KB (623,616			
	3/25/2003 12:00 AM Microsoft Corporation				
	c:\windows\system32\wininet.dll				
sens bytes)	5.2.3790.0 (srv03_rtm.030324-2048)	35.50 KB (36,352			
	3/25/2003 12:00 AM Microsoft Corporation				
	c:\windows\system32\sens.dll				
comsvcs bytes)	2001.12.4720.0 (srv03_rtm.030324-2048)	1.14 MB (1,199,616			
	4/23/2003 10:54 AM Microsoft Corporation				
	c:\windows\system32\comsvcs.dll				
browser bytes)	5.2.3790.0 (srv03_rtm.030324-2048)	70.50 KB (72,192			
	3/25/2003 12:00 AM Microsoft Corporation				
	c:\windows\system32\browser.dll				

cnbjmon	5.2.3680.0 (Lab03_dev\skatari).020509-1043)	45.50 KB	apphelp	5.2.3790.0 (srv03_rtm.030324-2048)	122.00 KB (124,928 bytes)
(46,592 bytes)	3/24/2003 7:48 PM Microsoft Corporation		bytes)	3/25/2003 12:00 AM Microsoft Corporation	
	c:\windows\system32\cnbjmon.dll			c:\windows\system32\apphelp.dll	
pjlmon	5.2.3790.0 (srv03_rtm.030324-2048)	15.00 KB (15,360 bytes)	themeui	6.00.3790.0 (srv03_rtm.030324-2048)	360.50 KB (369,152 bytes)
bytes)	3/24/2003 7:49 PM Microsoft Corporation		bytes)	3/25/2003 12:00 AM Microsoft Corporation	
	c:\windows\system32\pjlmon.dll			c:\windows\system32\themeui.dll	
tcpmon	5.2.3790.0 (srv03_rtm.030324-2048)	44.00 KB (45,056 bytes)	msimg32	5.2.3790.0 (srv03_rtm.030324-2048)	4.50 KB (4,608 bytes)
bytes)	3/25/2003 12:00 AM Microsoft Corporation		bytes)	3/25/2003 12:00 AM Microsoft Corporation	
	c:\windows\system32\tcpmon.dll			c:\windows\system32\msimg32.dll	
mgmtapi	5.2.3790.0 (srv03_rtm.030324-2048)	14.00 KB (14,336 bytes)	linkinfo	5.2.3790.0 (srv03_rtm.030324-2048)	16.50 KB (16,896 bytes)
bytes)	3/25/2003 12:00 AM Microsoft Corporation		bytes)	3/25/2003 12:00 AM Microsoft Corporation	
	c:\windows\system32\mgmtapi.dll			c:\windows\system32\linkinfo.dll	
snmpapi	5.2.3790.0 (srv03_rtm.030324-2048)	17.50 KB (17,920 bytes)	ntshrui	6.00.3790.0 (srv03_rtm.030324-2048)	136.00 KB (139,264 bytes)
bytes)	3/25/2003 12:00 AM Microsoft Corporation		bytes)	3/25/2003 12:00 AM Microsoft Corporation	
	c:\windows\system32\snmpapi.dll			c:\windows\system32\ntshrui.dll	
wsnmp32	5.2.3790.0 (srv03_rtm.030324-2048)	39.50 KB (40,448 bytes)	webcheck	6.00.3790.0 (srv03_rtm.030324-2048)	261.50 KB (267,776 bytes)
bytes)	3/25/2003 12:00 AM Microsoft Corporation		bytes)	3/25/2003 12:00 AM Microsoft Corporation	
	c:\windows\system32\wsnmp32.dll			c:\windows\system32\webcheck.dll	
usbmon	5.2.3790.0 (srv03_rtm.030324-2048)	17.00 KB (17,408 bytes)	stobject	5.2.3790.0 (srv03_rtm.030324-2048)	117.50 KB (120,320 bytes)
bytes)	3/25/2003 12:00 AM Microsoft Corporation		bytes)	3/25/2003 12:00 AM Microsoft Corporation	
	c:\windows\system32\usbmon.dll			c:\windows\system32\stobject.dll	
winnr	5.2.3790.0 (srv03_rtm.030324-2048)	15.00 KB (15,360 bytes)	batmeter	6.00.3790.0 (srv03_rtm.030324-2048)	28.50 KB (29,184 bytes)
bytes)	3/25/2003 12:00 AM Microsoft Corporation		bytes)	3/25/2003 12:00 AM Microsoft Corporation	
	c:\windows\system32\winnr.dll			c:\windows\system32\batmeter.dll	
wshqos	5.2.3790.0 (srv03_rtm.030324-2048)	23.00 KB (23,552 bytes)	powrprof	6.00.3790.0 (srv03_rtm.030324-2048)	14.50 KB (14,848 bytes)
bytes)	3/25/2003 12:00 AM Microsoft Corporation		bytes)	3/25/2003 12:00 AM Microsoft Corporation	
	c:\windows\system32\wshqos.dll			c:\windows\system32\powrprof.dll	
win32spl	5.2.3790.0 (srv03_rtm.030324-2048)	94.50 KB (96,768 bytes)	printui	5.2.3790.0 (srv03_rtm.030324-2048)	536.50 KB (549,376 bytes)
bytes)	3/25/2003 12:00 AM Microsoft Corporation		bytes)	3/25/2003 12:00 AM Microsoft Corporation	
	c:\windows\system32\win32spl.dll			c:\windows\system32\printui.dll	
inetpp	5.2.3790.0 (srv03_rtm.030324-2048)	71.50 KB (73,216 bytes)	cfgmgr32	5.2.3790.0 (srv03_rtm.030324-2048)	17.50 KB (17,920 bytes)
bytes)	3/25/2003 12:00 AM Microsoft Corporation		bytes)	3/25/2003 12:00 AM Microsoft Corporation	
	c:\windows\system32\inetpp.dll			c:\windows\system32\cfgmgr32.dll	
icmp	5.2.3790.0 (srv03_rtm.030324-2048)	4.50 KB (4,608 bytes)	drprov	5.2.3790.0 (srv03_rtm.030324-2048)	12.50 KB (12,800 bytes)
bytes)	3/25/2003 12:00 AM Microsoft Corporation		bytes)	3/25/2003 12:00 AM Microsoft Corporation	
	c:\windows\system32\icmp.dll			c:\windows\system32\drprov.dll	
cabinet	5.2.3790.0 (srv03_rtm.030324-2048)	61.00 KB (62,464 bytes)	ntlanman	5.2.3790.0 (srv03_rtm.030324-2048)	41.00 KB (41,984 bytes)
bytes)	3/25/2003 12:00 AM Microsoft Corporation		bytes)	3/25/2003 12:00 AM Microsoft Corporation	
	c:\windows\system32\cabinet.dll			c:\windows\system32\ntlanman.dll	
ps5ui	5.2.3790.0 (srv03_rtm.030324-2048)	129.50 KB (132,608 bytes)	netui0	5.2.3790.0 (srv03_rtm.030324-2048)	75.50 KB (77,312 bytes)
bytes)	8/13/2003 2:34 PM Microsoft Corporation		bytes)	3/25/2003 12:00 AM Microsoft Corporation	
	c:\windows\system32\spool\drivers\w32x86\3\ps5ui.dll			c:\windows\system32\netui0.dll	
unidrvui	5.2.3790.0 (srv03_rtm.030324-2048)	197.50 KB (202,240 bytes)	netui1	5.2.3790.0 (srv03_rtm.030324-2048)	184.00 KB (188,416 bytes)
bytes)	8/13/2003 2:34 PM Microsoft Corporation		bytes)	3/25/2003 12:00 AM Microsoft Corporation	
	c:\windows\system32\spool\drivers\w32x86\3\unidrvui.dll			c:\windows\system32\netui1.dll	
ersvc	5.2.3790.0 (srv03_rtm.030324-2048)	22.00 KB (22,528 bytes)	davclnt	5.2.3790.0 (srv03_rtm.030324-2048)	23.50 KB (24,064 bytes)
bytes)	3/25/2003 12:00 AM Microsoft Corporation		bytes)	3/25/2003 12:00 AM Microsoft Corporation	
	c:\windows\system32\ersvc.dll			c:\windows\system32\davclnt.dll	
dfssvc	5.2.3790.0 (srv03_rtm.030324-2048)	130.50 KB (133,632 bytes)	urlmon	6.00.3790.0 (srv03_rtm.030324-2048)	501.50 KB (513,536 bytes)
bytes)	3/25/2003 12:00 AM Microsoft Corporation		bytes)	3/25/2003 12:00 AM Microsoft Corporation	
	c:\windows\system32\dfssvc.exe			c:\windows\system32?urlmon.dll	
resutils	5.2.3790.0 (srv03_rtm.030324-2048)	59.00 KB (60,416 bytes)	browsecl	6.00.3790.0 (srv03_rtm.030324-2048)	62.00 KB (63,488 bytes)
bytes)	3/25/2003 12:00 AM Microsoft Corporation		bytes)	3/25/2003 12:00 AM Microsoft Corporation	
	c:\windows\system32\resutils.dll			c:\windows\system32\browsecl.dll	
mfc42u	6.05.3014.0	960.00 KB (983,040 bytes)	zipfldr	6.00.3790.0 (srv03_rtm.030324-2048)	316.00 KB (323,584 bytes)
	3/25/2003 12:00 AM Microsoft Corporation		bytes)	3/25/2003 12:00 AM Microsoft Corporation	
	c:\windows\system32\mfc42u.dll			c:\windows\system32\zipfldr.dll	
wsock32	5.2.3790.0 (srv03_rtm.030324-2048)	22.00 KB (22,528 bytes)	shdoclc	6.00.3790.0 (srv03_rtm.030324-2048)	588.50 KB (602,624 bytes)
bytes)	3/25/2003 12:00 AM Microsoft Corporation		bytes)	3/25/2003 12:00 AM Microsoft Corporation	
	c:\windows\system32\wsock32.dll			c:\windows\system32\shdoclc.dll	
explorer	6.00.3790.0 (srv03_rtm.030324-2048)	1,008.50 KB (1,032,704 bytes)	cmd	5.2.3790.0 (srv03_rtm.030324-2048)	374.00 KB (382,976 bytes)
bytes)	3/25/2003 12:00 AM Microsoft Corporation		bytes)	3/25/2003 12:00 AM Microsoft Corporation	
	c:\windows\explorer.exe			c:\windows\system32\cmd.exe	
browseui	6.00.3790.0 (srv03_rtm.030324-2048)	1.01 MB (1,057,280 bytes)	sqlservr	2000.080.0761.00	7.11 MB (7,450,664 bytes)
bytes)	3/25/2003 12:00 AM Microsoft Corporation			6/12/2003 2:25 PM Microsoft Corporation	
	c:\windows\system32\browseui.dll			c:\program files\microsoft sql server\mssql\bin\sqlservr.exe	
shdocvw	6.00.3790.0 (srv03_rtm.030324-2048)	1.33 MB (1,393,664 bytes)	opends60	2000.080.0194.00	24.06 KB (24,639 bytes)
bytes)	3/25/2003 12:00 AM Microsoft Corporation			6/12/2003 2:25 PM Microsoft Corporation	
	c:\windows\system32\shdocvw.dll				

	c:\program files\microsoft sql server\mssql\binn\opends60.dll	msg723	4.4.4000	116.00 KB (118,784 bytes)	4/23/2003 10:58 AM
ums	2000.080.0760.00 52.55 KB (53,808 bytes) 6/12/2003 2:25 PM Microsoft Corporation c:\program files\microsoft sql server\mssql\binn\ums.dll				
sqlsort	2000.080.0760.00 576.56 KB (590,396 bytes) 6/12/2003 2:25 PM Microsoft Corporation c:\program files\microsoft sql server\mssql\binn\sqlsort.dll				
msvcirt	7.0.3790.0 (srv03_rtm.030324-2048) 50.00 KB (51,200 bytes) 3/25/2003 12:00 AM Microsoft Corporation c:\windows\system32\msvcirt.dll	l3codeca	1, 9, 0, 0305	284.00 KB (290,816 bytes)	3/25/2003 12:00 AM Fraunhofer Institut Integrierte Schaltungen
sqllevn70	2000.080.0760.00 28.00 KB (28,672 bytes) 6/12/2003 2:25 PM Microsoft Corporation c:\program files\microsoft sql server\mssql\binn\resources\1033\sqllevn70.rll	IIS			
xolehlp	2001.12.4720.0 (srv03_rtm.030324-2048) 8.50 KB (8,704 bytes) 4/23/2003 10:54 AM Microsoft Corporation c:\windows\system32\xolehlp.dll	cryptnet	5.131.3790.0 (srv03_rtm.030324-2048)	59.50 KB (60,928 bytes)	3/25/2003 12:00 AM Microsoft Corporation c:\windows\system32\cryptnet.dll
msdtcprx	2001.12.4720.0 (srv03_rtm.030324-2048) 427.50 KB (437,760 bytes) 4/23/2003 10:54 AM Microsoft Corporation c:\windows\system32\msdtcprx.dll	sensapi	5.2.3790.0 (srv03_rtm.030324-2048)	6.00 KB (6,144 bytes)	3/25/2003 12:00 AM Microsoft Corporation c:\windows\system32\sensapi.dll
mtxclu	2001.12.4720.0 (srv03_rtm.030324-2048) 74.50 KB (76,288 bytes) 3/25/2003 12:00 AM Microsoft Corporation c:\windows\system32\mtxclu.dll	rdpclip	5.2.3790.0 (srv03_rtm.030324-2048)	53.00 KB (54,272 bytes)	4/23/2003 10:54 AM Microsoft Corporation c:\windows\system32\rdpclip.exe
ssnetlib	2000.080.0760.00 80.56 KB (82,492 bytes) 6/12/2003 2:25 PM Microsoft Corporation c:\program files\microsoft sql server\mssql\binn\ssnetlib.dll	msinfo32	5.2.3790.0 (srv03_rtm.030324-2048)	40.50 KB (41,472 bytes)	4/23/2003 10:58 AM Microsoft Corporation c:\program files\common files\microsoft shared\msinfo\msinfo32.exe
ssnmpn70	2000.080.0534.00 24.56 KB (25,148 bytes) 6/12/2003 2:25 PM Microsoft Corporation c:\program files\microsoft sql server\mssql\binn\ssnmpn70.dll	msinfo	5.2.3790.0 (srv03_rtm.030324-2048)	358.50 KB (367,104 bytes)	4/23/2003 10:58 AM Microsoft Corporation c:\windows\pchealth\helpctr\binaries\msinfo.dll
security	5.2.3790.0 (srv03_rtm.030324-2048) 5.50 KB (5,632 bytes) 3/25/2003 12:00 AM Microsoft Corporation c:\windows\system32\security.dll	comdlg32	6.00.3790.0 (srv03_rtm.030324-2048)	261.00 KB (267,264 bytes)	3/25/2003 12:00 AM Microsoft Corporation c:\windows\system32\comdlg32.dll
ssmslpcn	2000.080.0760.00 28.56 KB (29,244 bytes) 6/12/2003 2:25 PM Microsoft Corporation c:\program files\microsoft sql server\mssql\binn\ssmslpcn.dll	riched32	5.2.3790.0 (srv03_rtm.030324-2048)	3.50 KB (3,584 bytes)	3/25/2003 12:00 AM Microsoft Corporation c:\windows\system32\riched32.dll
rdpsnd	5.2.3790.0 (srv03_rtm.030324-2048) 18.00 KB (18,432 bytes) 3/25/2003 12:00 AM Microsoft Corporation c:\windows\system32\rdpsnd.dll	riched20	5.31.23.1218	406.00 KB (415,744 bytes)	3/25/2003 12:00 AM Microsoft Corporation c:\windows\system32\riched20.dll
scredir	5.2.3790.0 (srv03_rtm.030324-2048) 27.00 KB (27,648 bytes) 3/25/2003 12:00 AM Microsoft Corporation c:\windows\system32\scredir.dll	[Services]			
msacm32	5.2.3790.0 (srv03_rtm.030324-2048) 21.00 KB (21,504 bytes) 3/25/2003 12:00 AM Microsoft Corporation c:\windows\system32\msacm32.drv	Display Name	Name	State	Start ModeService Type
msacm32	5.2.3790.0 (srv03_rtm.030324-2048) 67.50 KB (69,120 bytes) 3/25/2003 12:00 AM Microsoft Corporation c:\windows\system32\msacm32.dll	Path	Error Control	Start Name	Tag ID
imaadp32	5.2.3790.0 (srv03_rtm.030324-2048) 15.50 KB (15,872 bytes) 3/25/2003 12:00 AM Microsoft Corporation c:\windows\system32\imaadp32.acm	Alerter	Alerter	Stopped	Disabled Share Process
msadp32	5.2.3790.0 (srv03_rtm.030324-2048) 14.50 KB (14,848 bytes) 3/25/2003 12:00 AM Microsoft Corporation c:\windows\system32\msadp32.acm	Application Layer Gateway Service	ALG	Stopped	Manual
msg711	5.2.3790.0 (srv03_rtm.030324-2048) 10.00 KB (10,240 bytes) 3/25/2003 12:00 AM Microsoft Corporation c:\windows\system32\msg711.acm	Own Process	c:\windows\system32\alg.exe	Normal	NT AUTHORITY\LocalService 0
msgsm32	5.2.3790.0 (srv03_rtm.030324-2048) 20.50 KB (20,992 bytes) 3/25/2003 12:00 AM Microsoft Corporation c:\windows\system32\msgsm32.acm	Application Management Process	AppMgmt	Stopped	Manual Share
tssoft32	1.01 9.50 KB (9,728 bytes) 3/25/2003 12:00 AM DSP GROUP, INC. c:\windows\system32\tssoft32.acm	Windows Audio	AudioSrv	Stopped	Disabled Share Process
tsd32	1.03 16.50 KB (16,896 bytes) 3/25/2003 12:00 AM DSP GROUP, INC. c:\windows\system32\tsd32.dll	LocalSystem	0	Normal	LocalSystem
		Background Intelligent Transfer Service	BITS	Stopped	Manual
		Share Process	c:\windows\system32\svchost.exe -k	Normal	LocalSystem 0
		netsh	Normal	LocalSystem	0
		Computer Browser	LocalSrv	Running	Auto Share Process
		LocalSystem	0	Normal	LocalSystem
		Indexing Service	CiSvc	Stopped	Disabled Share Process
		LocalSystem	0	Normal	LocalSystem
		ClipBook	ClipSrv	Stopped	Disabled Own Process
		LocalSystem	0	Normal	LocalSystem
		COM+ System Application	COMSysApp	Stopped	Manual
		Own Process	c:\windows\system32\dlhhost.exe		

/processid:{02d4b3f1-fd88-11d1-960d-00805fc79235}	Normal	LocalSystem	0							Windows Installer	MSIServer	Stopped	Manual	Share Process	
Cryptographic Services	CryptSvc	Running	Auto	Share						c:\windows\system32\msiexec.exe /v	LocalSystem	0		Normal	
Process	c:\windows\system32\svchost.exe -k netsvcs	Normal								MSSQLSERVER	MSSQLSERVER	Stopped	Manual	Own	
Distributed File System	Dfs	Running	Auto	Own						Process	c:\progra~1\microso~1\mssql\binn\sqlservr.exe	LocalSystem	0	Normal	
Process	c:\windows\system32\dfsrv.exe	Normal								MSSQLServerADHelper	MSSQLServerADHelper	Stopped			
DHCP Client	Dhcp	Running	Auto	Share Process						Manual	Own Process	c:\program files\microsoft sql server\80\tools\binn\sqladhlp.exe	Normal	LocalSystem	0
Logical Disk Manager	Administrative Service				dmadmin	Stopped				Network DDE	NetDDE	Stopped	Disabled	Share Process	
Manual	Share Process									c:\windows\system32\netdde.exe	Normal			LocalSystem	
Logical Disk Manager	dmsrvr	Running	Auto	Share Process						Network DDE	DSDMNetDDEdsdm	Stopped	Disabled	Share	
Process	c:\windows\system32\svchost.exe -k netsvcs	Normal								Process	c:\windows\system32\netdde.exe	Normal		LocalSystem	
DNS Client	Dnscache	Running	Auto	Share Process						Net Logon	Netlogon	Stopped	Manual	Share Process	
NT AUTHORITY\NetworkService										c:\windows\system32\lsass.exe	Normal			LocalSystem	
Error Reporting Service	ERSvc	Running	Auto	Share						Network Connections	Netman	Running	Manual	Share Process	
Process	c:\windows\system32\svchost.exe -k winerr	Ignore								c:\windows\system32\svchost.exe -k	LocalSystem	0		Normal	
Event Log	Eventlog	Running	Auto	Share Process						Network Location Awareness (NLA)	Nla	Running	Manual	Share Process	
Process	c:\windows\system32\services.exe	Normal								netsvcs	Normal	LocalSystem	0		
COM+ Event System	EventSystem	Running	Manual	Share						File Replication	NtFrs	Stopped	Manual	Own Process	
Process	c:\windows\system32\svchost.exe -k netsvcs	Normal								c:\windows\system32\ntfrs.exe	Ignore			LocalSystem	
Help and Support	helpsvc	Running	Auto	Share Process						NT LM Security Support Provider		NtLmSp	Stopped	Manual	
Human Interface Device Access	HidServ	Stopped	Disabled	Share						Share Process	c:\windows\system32\lsass.exe	Normal			
Process	c:\windows\system32\svchost.exe -k netsvcs	Normal								LocalSystem	0				
HTTP SSLHTTPFilter		Stopped	Manual	Share Process						Removable Storage	NtmsSvc	Stopped	Manual	Share Process	
Process	c:\windows\system32\lsass.exe	Normal								c:\windows\system32\svchost.exe -k	netsvcs	Normal	LocalSystem	0	
IMAPI CD-Burning COM Service	ImapiService	Stopped								LocalSystem	0				
Disabled	Own Process									Plug and Play	PlugPlay	Running	Auto	Share Process	
Normal	LocalSystem	0								c:\windows\system32\services.exe	Normal				
Intersite Messaging	IsmServ	Stopped	Disabled	Own Process						LocalSystem	0				
Process	c:\windows\system32\ismsserv.exe	Normal								IPSEC Services	PolicyAgent	Running	Auto	Share	
Kerberos Key Distribution Center	kdc	Stopped	Disabled	Share Process						Process	c:\windows\system32\lsass.exe	Normal		LocalSystem	
Process	c:\windows\system32\lsass.exe	Normal								Protected Storage	ProtectedStorage	Running	Auto	Share	
Server	lanmanserver	Running	Auto	Share Process						Process	c:\windows\system32\lsass.exe	Normal		LocalSystem	
Workstation	lanmanworkstation	Running	Auto	Share						0					
Process	c:\windows\system32\svchost.exe -k netsvcs	Normal								Remote Access Auto Connection Manager	RasAuto	Stopped	Manual		
License Logging	LicenseService	Stopped	Disabled	Own						Share Process	c:\windows\system32\svchost.exe -k	netsvcs	Normal	LocalSystem	0
Process	c:\windows\system32\llssrv.exe	Normal								Remote Access Connection Manager	RasMan	Stopped	Manual		
AUTHORITY\NetworkService										Share Process	c:\windows\system32\svchost.exe -k	netsvcs	Normal	LocalSystem	0
TCP/IP NetBIOS Helper	LmHosts	Running	Auto	Share						Remote Desktop Help Session Manager	RDSessMgr	Stopped			
Process	c:\windows\system32\svchost.exe -k localservice	Normal								Manual	Own Process	c:\windows\system32\sessmgr.exe	Normal		
Messenger	Messenger	Stopped	Disabled	Share Process						LocalSystem	0				
Process	c:\windows\system32\svchost.exe -k netsvcs	Normal								Routing and Remote Access	RemoteAccess	Stopped	Disabled		
NetMeeting	Remote Desktop Sharing	mnmsrv	Stopped	Disabled						Share Process	c:\windows\system32\svchost.exe -k	netsvcs	Normal	LocalSystem	0
Process	c:\windows\system32\mnmsrv.exe	Normal								Remote Registry	RemoteRegistry	Running	Auto	Share	
Distributed Transaction Coordinator	MSDTC	Running	Auto	Own Process						Process	c:\windows\system32\svchost.exe -k regsvc	Normal		NT	
Process	c:\windows\system32\msdtc.exe	Normal								AUTHORITY\LocalService	0				
NT AUTHORITY\NetworkService										Remote Procedure Call (RPC) Locator	RpcLocator	Stopped			
										Manual	Own Process	c:\windows\system32\locator.exe	Normal		
										AUTHORITY\NetworkService	0				
										Remote Procedure Call (RPC)	RpcSs	Running	Auto	Share	
										Process	c:\windows\system32\svchost -k rpsvc	Normal			
										LocalSystem	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		Virtual Disk Service	vds	Stopped	Manual	Own Process
Share Process	c:\windows\system32\svchost.exe -k				c:\windows\system32\vds.exe		Normal		LocalSystem
netsvcs	Normal	LocalSystem	0						
Security Accounts Manager	SamSs	Running	Auto	Share	Volume Shadow Copy	VSS	Stopped	Manual	Own
Process	c:\windows\system32\lsass.exe	Normal	LocalSystem		Process	c:\windows\system32\vssvc.exe	Normal		LocalSystem
0									
Smart Card	SCardSvr	Stopped	Manual	Share Process	Windows Time	W32Time	Running	Auto	Share Process
	c:\windows\system32\scardsvr.exe		Ignore	NT	c:\windows\system32\svchost.exe -k	netsvcs	Normal		
AUTHORITY\LocalService	0				LocalSystem	0			
Task Scheduler	Schedule	Running	Auto	Share Process	WebClient	WebClient	Stopped	Disabled	Share Process
	c:\windows\system32\svchost.exe -k	netsvcs	Normal		c:\windows\system32\svchost.exe -k	localservice			Normal
LocalSystem	0				NT AUTHORITY\LocalService	0			
Secondary Logon	seclogon	Running	Auto	Share Process	WinHTTP	Web Proxy Auto-Discovery Service			
	c:\windows\system32\svchost.exe -k	netsvcs	Ignore		WinHttpAutoProxySvc		Stopped	Manual	Share
LocalSystem	0				c:\windows\system32\svchost.exe -k	localservice			Normal
System Event Notification	SENS	Running	Auto	Share	Process	NT AUTHORITY\LocalService	0		
Process	c:\windows\system32\svchost.exe -k	netsvcs	Normal		Windows Management Instrumentation	winmgmt	Running	Auto	
LocalSystem	0				Share Process	c:\windows\system32\svchost.exe -k			
Internet Connection Firewall (ICF) / Internet Connection Sharing (ICS)	SharedAccess	Stopped	Disabled	Share Process	netsvcs	Ignore	LocalSystem	0	
	c:\windows\system32\svchost.exe -k	netsvcs	Normal		Portable Media Serial Number Service	WmdmPmSN			Stopped
LocalSystem	0				Manual	Share Process			
Shell Hardware Detection	ShellHWDetection	Running	Auto		c:\windows\system32\svchost.exe -k	netsvcs	Normal		
Share Process	c:\windows\system32\svchost.exe -k				LocalSystem	0			
netsvcs	Ignore	LocalSystem	0		Windows Management Instrumentation Driver Extensions				Wmi
Print Spooler	Spooler	Running	Auto	Own Process	Stopped	Manual	Share Process		
	c:\windows\system32\spoolsv.exe		Normal		c:\windows\system32\svchost.exe -k	netsvcs	Normal		
LocalSystem	0				LocalSystem	0			
SQLSERVERAGENT	SQLSERVERAGENT			Stopped	WMI Performance Adapter	WmiApSrv		Stopped	Manual
Manual	Own Process				Own Process	c:\windows\system32\wbem\wmiapsrv.exe			
c:\progra~1\micros~1\mssql\bin\sqlagent.exe				Normal	Normal	LocalSystem	0		
LocalSystem	0				Automatic Updates	wuauerv	Running	Auto	Share Process
Windows Image Acquisition (WIA)	stisvc	Stopped	Disabled		c:\windows\system32\svchost.exe -k	netsvcs	Normal		
Share Process	c:\windows\system32\svchost.exe -k				LocalSystem	0			
imgsvc	Normal	NT AUTHORITY\LocalService	0		Wireless Configuration	WZCSVC	Running	Auto	Share
Microsoft Software Shadow Copy Provider	swprv	Stopped	Manual		Process	c:\windows\system32\svchost.exe -k	netsvcs	Normal	
Own Process	c:\windows\system32\svchost.exe -k	swprv			LocalSystem	0			
Normal	LocalSystem	0			[Program Groups]				
Performance Logs and Alerts	SysmonLog			Stopped	Group Name	Name	User Name		
Own Process	c:\windows\system32\smlogsvc.exe			Manual	Accessories	Default User:Accessories	Default User		
Normal	NT Authority\NetworkService	0							
Telephony	TapiSrv	Stopped	Manual	Share Process	Accessories\Accessibility		Default User:Accessories\Accessibility		
	c:\windows\system32\svchost.exe -k	tapisrv	Normal		Default User				
LocalSystem	0				Accessories\Entertainment		Default User:Accessories\Entertainment		
Terminal Services	TermService			Running	Default User				
Process	c:\windows\system32\svchost.exe -k	termsvcs		Manual	Startup	Default User:Startup	Default User		
LocalSystem	0			Share	Accessories	All Users:Accessories	All Users		
Themes	Themes	Stopped	Disabled	Share Process	Accessories\Accessibility		All Users:Accessories\Accessibility		
	c:\windows\system32\svchost.exe -k	netsvcs	Normal		All Users				
LocalSystem	0				Accessories\Communications		All Users:Accessories\Communications		
Telnet	TlntSvr	Stopped	Disabled	Own Process	All Users				
	c:\windows\system32\tlntsvr.exe	Normal	NT		Accessories\Entertainment		All Users:Accessories\Entertainment		
AUTHORITY\LocalService	0				All Users				
Distributed Link Tracking Server	TrkSvr	Stopped	Disabled	Share	Accessories\System Tools		All Users:Accessories\System Tools		
Process	c:\windows\system32\svchost.exe -k	netsvcs	Normal		All Users				
LocalSystem	0				Administrative Tools	All Users:Administrative Tools	All Users		
Distributed Link Tracking Client	TrkWks	Running	Auto	Share	Microsoft SQL Server	All Users:Microsoft SQL Server	All Users		
Process	c:\windows\system32\svchost.exe -k	netsvcs	Normal		Startup	All Users:Startup	All Users		
LocalSystem	0				Accessories	NT AUTHORITY\SYSTEM:Accessories	NT		
Terminal Services Session Directory	Tssdis	Stopped	Disabled		AUTHORITY\SYSTEM				
Own Process	c:\windows\system32\tssdis.exe		Normal		Accessories\Accessibility	NT			
LocalSystem	0				AUTHORITY\SYSTEM:Accessories\Accessibility		NT		
Upload Manager	uploadmgr	Stopped	Manual	Share Process	AUTHORITY\SYSTEM				
	c:\windows\system32\svchost.exe -k	netsvcs	Normal		Accessories\Entertainment	NT			
LocalSystem	0				AUTHORITY\SYSTEM:Accessories\Entertainment		NT		
Uninterruptible Power Supply	UPS	Stopped	Manual	Own	AUTHORITY\SYSTEM				
Process	c:\windows\system32\ups.exe	Normal	NT		Startup	NT AUTHORITY\SYSTEM:Startup		NT	
AUTHORITY\LocalService	0				AUTHORITY\SYSTEM				

Accessories DB2BUSTER\Administrator:Accessories
 DB2BUSTER\Administrator
 Accessories\Accessibility
 DB2BUSTER\Administrator:Accessories\Accessibility
 DB2BUSTER\Administrator
 Accessories\Entertainment
 DB2BUSTER\Administrator:Accessories\Entertainment
 DB2BUSTER\Administrator
 Startup DB2BUSTER\Administrator:Startup
 DB2BUSTER\Administrator

[Startup Programs]

Program	Command	User Name	Location	Startup
desktop	desktop.ini	NT AUTHORITY\SYSTEM		Startup
desktop	desktop.ini	DB2BUSTER\Administrator		Startup
desktop	desktop.ini	.DEFAULT		Startup
desktop	desktop.ini	All Users	Common	Startup

[OLE Registration]

Object	Local Server	Location
Sound (OLE2)	sndrec32.exe	
Media Clip	mplay32.exe	
Video Clip	mplay32.exe /avi	
MIDI Sequence	mplay32.exe /mid	
Sound	Not Available	
Media Clip	Not Available	
WordPad Document	"%programfiles%\windows nt\accessories\wordpad.exe"	
Windows Media Services DRM Storage object		Not Available

Bitmap Image mspaint.exe

[Windows Error Reporting]

Time	Type	Details

[Internet Settings]

[Internet Explorer]

[Following are sub-categories of this main category]

[Summary]

Item	Value
Version	6.0.3790.0
Build	63790
Application Path	C:\Program Files\Internet Explorer
Language	English (United States)
Active Printer	CCA15109 on ccprint02 (from DPOL) in session 2, winspool, TS002
Cipher Strength	128-bit
Content Advisor	Disabled
IEAK Install	No

[File Versions]

File	Version	Size	Date	Path	Company
actxprxy.dll	6.0.3790.0	95 KB	3/25/2003	C:\WINDOWS\system32	Microsoft Corporation
advpack.dll	6.0.3790.0	94 KB	3/25/2003	C:\WINDOWS\system32	Microsoft Corporation

asctrls.ocx	6.0.3790.0	90 KB	3/25/2003	C:\WINDOWS\system32	1:00:00 AM Microsoft Corporation
browsecl.dll	6.0.3790.0	62 KB	3/25/2003	C:\WINDOWS\system32	1:00:00 AM Microsoft Corporation
browseui.dll	6.0.3790.0	1,033 KB	3/25/2003	C:\WINDOWS\system32	1:00:00 AM Microsoft Corporation
cdfview.dll	6.0.3790.0	144 KB	3/25/2003	C:\WINDOWS\system32	1:00:00 AM Microsoft Corporation
comctl32.dll	5.82.3790.0	561 KB	3/25/2003	C:\WINDOWS\system32	1:00:00 AM Microsoft Corporation
dxtrans.dll	6.3.3790.0	198 KB	3/25/2003	C:\WINDOWS\system32	1:00:00 AM Microsoft Corporation
dxtmsft.dll	6.3.3790.0	344 KB	3/25/2003	C:\WINDOWS\system32	1:00:00 AM Microsoft Corporation
iecont.dll	<File Missing>	Not Available			Not Available
iecontlc.dll	<File Missing>	Not Available			Not Available
iedkcs32.dll	16.0.3790.0	300 KB	3/25/2003	C:\WINDOWS\system32	1:00:00 AM Microsoft Corporation
iepeers.dll	6.0.3790.0	230 KB	3/25/2003	C:\WINDOWS\system32	1:00:00 AM Microsoft Corporation
iesetup.dll	6.0.3790.0	59 KB	3/25/2003	C:\WINDOWS\system32	1:00:00 AM Microsoft Corporation
ieuinit.inf	Not Available	20 KB	3/25/2003	C:\WINDOWS\system32	1:00:00 AM Not Available
ieexplore.exe	6.0.3790.0	90 KB	3/25/2003	C:\Program Files\Internet Explorer	1:00:00 AM Microsoft Corporation
imgutil.dll	5.2.3790.0	35 KB	3/25/2003	C:\WINDOWS\system32	1:00:00 AM Microsoft Corporation
inetctl.cpl	6.0.3790.0	303 KB	3/25/2003	C:\WINDOWS\system32	1:00:00 AM Microsoft Corporation
inetctl.dll	6.0.3790.0	109 KB	3/25/2003	C:\WINDOWS\system32	1:00:00 AM Microsoft Corporation
inseng.dll	6.0.3790.0	72 KB	3/25/2003	C:\WINDOWS\system32	1:00:00 AM Microsoft Corporation
mlang.dll	6.0.3790.0	570 KB	3/25/2003	C:\WINDOWS\system32	1:00:00 AM Microsoft Corporation
msencode.dll	2002.10.4.0	112 KB	3/25/2003	C:\WINDOWS\system32	1:00:00 AM Not Available
mshta.exe	6.0.3790.0	26 KB	3/25/2003	C:\WINDOWS\system32	1:00:00 AM Microsoft Corporation
mshtml.dll	6.0.3790.0	2,848 KB	3/25/2003	C:\WINDOWS\system32	1:00:00 AM Microsoft Corporation
mshtml.tlb	6.0.3790.0	1,319 KB	3/25/2003	C:\WINDOWS\system32	1:00:00 AM Microsoft Corporation
mshtmlmled.dll	6.0.3790.0	444 KB	3/25/2003	C:\WINDOWS\system32	1:00:00 AM Microsoft Corporation

```

mshtml.dll      6.0.3790.0 55 KB   3/25/2003 1:00:00 AM
                C:\WINDOWS\system32   Microsoft Corporation

msident.dll 6.0.3790.0 47 KB   3/25/2003 1:00:00 AM
                C:\WINDOWS\system32   Microsoft Corporation

msidentld.dll 6.0.3790.0 15 KB   3/25/2003 1:00:00 AM
                C:\WINDOWS\system32   Microsoft Corporation

msieftpl.dll 6.0.3790.0 230 KB  3/25/2003 1:00:00 AM
                C:\WINDOWS\system32   Microsoft Corporation

msrating.dll 6.0.3790.0 132 KB  3/25/2003 1:00:00 AM
                C:\WINDOWS\system32   Microsoft Corporation

mstime.dll 6.0.3790.0 491 KB  3/25/2003 1:00:00 AM
                C:\WINDOWS\system32   Microsoft Corporation

occache.dll 6.0.3790.0 89 KB   3/25/2003 1:00:00 AM
                C:\WINDOWS\system32   Microsoft Corporation

proctexe.ocx 6.3.3790.0 78 KB   3/25/2003 1:00:00 AM
                C:\WINDOWS\system32   Intel Corporation

sendmail.dll 6.0.3790.0 52 KB   3/25/2003 1:00:00 AM
                C:\WINDOWS\system32   Microsoft Corporation

shdoclc.dll 6.0.3790.0 589 KB  3/25/2003 1:00:00 AM
                C:\WINDOWS\system32   Microsoft Corporation

shdocvw.dll 6.0.3790.0 1,361 KB 3/25/2003 1:00:00 AM
                C:\WINDOWS\system32   Microsoft Corporation

shfolder.dll 6.0.3790.0 23 KB   3/25/2003 1:00:00 AM
                C:\WINDOWS\system32   Microsoft Corporation

shlwapi.dll 6.0.3790.0 281 KB  3/25/2003 1:00:00 AM
                C:\WINDOWS\system32   Microsoft Corporation

tdc.ocx 1.3.0.3130 58 KB  3/25/2003 1:00:00 AM
                C:\WINDOWS\system32   Microsoft Corporation

url.dll 6.0.3790.0 36 KB   3/25/2003 1:00:00 AM
                C:\WINDOWS\system32   Microsoft Corporation

urlmon.dll 6.0.3790.0 502 KB  3/25/2003 1:00:00 AM
                C:\WINDOWS\system32   Microsoft Corporation

webcheck.dll 6.0.3790.0 262 KB  3/25/2003 1:00:00 AM
                C:\WINDOWS\system32   Microsoft Corporation

wininet.dll 6.0.3790.0 609 KB  3/25/2003 1:00:00 AM
                C:\WINDOWS\system32   Microsoft Corporation

```

[Connectivity]

```

Item      Value
Connection Preference      Never dial

```

LAN Settings

```

AutoConfigProxy      Not Available
AutoProxyDetectMode  Disabled
AutoConfigURL
Proxy      Disabled
ProxyServer

```

ProxyOverride

[Cache]

[Following are sub-categories of this main category]
[Summary]

```

Item      Value
Page Refresh Type      Automatic
Temporary Internet Files Folder  C:\Documents and
Settings\NetworkService\Local Settings\Temporary Internet Files
Total Disk Space      Not Available
Available Disk Space  Not Available
Maximum Cache Size    Not Available
Available Cache Size  Not Available

```

[List of Objects]

```

Program File      Status      CodeBase
No cached object information available

```

[Content]

[Following are sub-categories of this main category]
[Summary]

```

Item      Value
Content Advisor      Disabled

```

[Personal Certificates]

```

Issued To  Issued By  Validity  Signature Algorithm
No personal certificate information available

```

[Other People Certificates]

```

Issued To  Issued By  Validity  Signature Algorithm
No other people certificate information available

```

[Publishers]

```

Name
No publisher information available

```

[Security]

```

Zone      Security Level
My Computer      Custom
Local intranet  Medium-low
Trusted sites    Medium
Internet High
Restricted sites  High

```

A.8 Server Registry Parameters

Windows Registry Editor Version 5.00

```

[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Control\Session
Manager\I/O System]
"CountOperations"=dword:00000000

```


Appendix B: Database Build Scripts

B.1 CreateDatabase.sql

```
-- CreateDatabase
-- for use with StepMaster
-- Uses FileGroups
```

```
Create Database tpch100g on
Primary (name=tpch100g,
filename='c:\dev\tpch100g.mdf',size=10mb,filegrowth=0),
FileGroup tpch100g
```

```
(name=tpch100g1,filename='c:\dev\tpch_1\',size=9950mb,filegrowth=0),
(name=tpch100g2,filename='c:\dev\tpch_2\',size=9950mb,filegrowth=0),
(name=tpch100g3,filename='c:\dev\tpch_3\',size=9950mb,filegrowth=0),
(name=tpch100g4,filename='c:\dev\tpch_4\',size=9950mb,filegrowth=0),
(name=tpch100g5,filename='c:\dev\tpch_5\',size=9950mb,filegrowth=0),
(name=tpch100g6,filename='c:\dev\tpch_6\',size=9950mb,filegrowth=0),
(name=tpch100g7,filename='c:\dev\tpch_7\',size=9950mb,filegrowth=0),
(name=tpch100g8,filename='c:\dev\tpch_8\',size=9950mb,filegrowth=0),
(name=tpch100g9,filename='c:\dev\tpch_9\',size=9950mb,filegrowth=0),
(name=tpch100g10,filename='c:\dev\tpch_10\',size=9950mb,filegrowth=0)
,
(name=tpch100g11,filename='c:\dev\tpch_11\',size=9950mb,filegrowth=0)
,
(name=tpch100g12,filename='c:\dev\tpch_12\',size=9950mb,filegrowth=0)
,
(name=tpch100g13,filename='c:\dev\tpch_13\',size=9950mb,filegrowth=0)
,
(name=tpch100g14,filename='c:\dev\tpch_14\',size=9950mb,filegrowth=0)
,
(name=tpch100g15,filename='c:\dev\tpch_15\',size=9950mb,filegrowth=0)
,
(name=tpch100g16,filename='c:\dev\tpch_16\',size=9950mb,filegrowth=0)
,
(name=tpch100g17,filename='c:\dev\tpch_17\',size=9950mb,filegrowth=0)
,
(name=tpch100g18,filename='c:\dev\tpch_18\',size=9950mb,filegrowth=0)
,
(name=tpch100g19,filename='c:\dev\tpch_19\',size=9950mb,filegrowth=0)
,
(name=tpch100g20,filename='c:\dev\tpch_20\',size=9950mb,filegrowth=0)
```

```
Log on
      (name=tpch100gLog,filename='c:\dev\tpchlog',size=11000mb,fi
ilegrowth=0)
```

```
Alter Database tpch100g Add FileGroup LoadFg
```

```
Alter Database tpch100g Add File
      (name=LoadFg1,
filename='c:\dev\load_1\load.ldf',size=8900mb,filegrowth=0),
      (name=LoadFg2,
filename='c:\dev\load_2\load.ldf',size=8900mb,filegrowth=0),
      (name=LoadFg3,
filename='c:\dev\load_3\load.ldf',size=8900mb,filegrowth=0),
      (name=LoadFg4,
filename='c:\dev\load_4\load.ldf',size=8900mb,filegrowth=0),
      (name=LoadFg5,
filename='c:\dev\load_5\load.ldf',size=8900mb,filegrowth=0),
      (name=LoadFg6,
filename='c:\dev\load_6\load.ldf',size=8900mb,filegrowth=0),
      (name=LoadFg7,
filename='c:\dev\load_7\load.ldf',size=8900mb,filegrowth=0),
```

```
      (name=LoadFg8,
filename='c:\dev\load_8\load.ldf',size=8900mb,filegrowth=0),
      (name=LoadFg9,
filename='c:\dev\load_9\load.ldf',size=8900mb,filegrowth=0),
      (name=LoadFg10,
filename='c:\dev\load_10\load.ldf',size=8900mb,filegrowth=0),
      (name=LoadFg11,
filename='c:\dev\load_11\load.ldf',size=8900mb,filegrowth=0),
      (name=LoadFg12,
filename='c:\dev\load_12\load.ldf',size=8900mb,filegrowth=0),
      (name=LoadFg13,
filename='c:\dev\load_13\load.ldf',size=8900mb,filegrowth=0),
      (name=LoadFg14,
filename='c:\dev\load_14\load.ldf',size=8900mb,filegrowth=0),
      (name=LoadFg15,
filename='c:\dev\load_15\load.ldf',size=8900mb,filegrowth=0),
      (name=LoadFg16,
filename='c:\dev\load_16\load.ldf',size=8900mb,filegrowth=0),
      (name=LoadFg17,
filename='c:\dev\load_17\load.ldf',size=8900mb,filegrowth=0),
      (name=LoadFg18,
filename='c:\dev\load_18\load.ldf',size=8900mb,filegrowth=0),
      (name=LoadFg19,
filename='c:\dev\load_19\load.ldf',size=8900mb,filegrowth=0),
      (name=LoadFg20,
filename='c:\dev\load_20\load.ldf',size=8900mb,filegrowth=0)
```

```
to FileGroup LoadFg
```

B.2 CreateTable.sql

```
-- CreateTable
-- Uses filegroups
```

```
--
-- BASE TABLES
--
```

```
create table PART
      (P_PARTKEY          int          not null,
      P_NAME              varchar(55) not null,
      P_MFGR              char(25)   not null,
      P_BRAND             char(10)   not null,
      P_TYPE              varchar(25) not null,
      P_SIZE              int          not null,
      P_CONTAINER         char(10)   not null,
      P_RETAILPRICE      money        not null,
      P_COMMENT           varchar(23)  not null)
on LoadFg
```

```
create table SUPPLIER
      (S_SUPPKEY          int          not null,
      S_NAME              char(25)   not null,
      S_ADDRESS           varchar(40) not null,
      S_NATIONKEY         int          not null,
      S_PHONE             char(15)   not null,
      S_ACCTBAL           money        not null,
      S_COMMENT           varchar(101) not null)
on LoadFg
```

```
create table PARTSUPP
      (PS_PARTKEY         int          not null,
      PS_SUPPKEY          int          not null,
      PS_AVAILQTY         int          not null,
```

```

        PS_SUPPLYCOST money          not null,
        PS_COMMENT    varchar(199)   not null)
on LoadFg

```

```

create table CUSTOMER
(C_CUSTKEY    int          not null,
 C_NAME      varchar(25)   not null,
 C_ADDRESS   varchar(40)   not null,
 C_NATIONKEY int          not null,
 C_PHONE     char(15)      not null,
 C_ACCTBAL   money        not null,
 C_MKTSEGMENT char(10)    not null,
 C_COMMENT   varchar(117)  not null)
on LoadFg

```

```

create table ORDERS
(O_ORDERKEY  int          not null,
 O_CUSTKEY   int          not null,
 O_ORDERSTATUS char(1)    not null,
 O_TOTALPRICE money       not null,
 O_ORDERDATE smalldatetime not null,
 O_ORDERPRIORITY char(15) not null,
 O_CLERK     char(15)     not null,
 O_SHIPPRIORITY int       not null,
 O_COMMENT   varchar(79)  not null)
on LoadFg

```

```

create table LINEITEM
(L_ORDERKEY  int          not null,
 L_PARTKEY   int          not null,
 L_SUPPKEY   int          not null,
 L_LINENUMBER int        not null,
 L_QUANTITY  money       not null,
 L_EXTENDEDPRICE money    not null,
 L_DISCOUNT money       not null,
 L_TAX       money       not null,
 L_RETURNFLAG char(1)    not null,
 L_LINESTATUS char(1)    not null,
 L_SHIPDATE  smalldatetime not null,
 L_COMMITDATE smalldatetime not null,
 L_RECEIPTDATE smalldatetime not null,
 L_SHIPINSTRUCT char(25) not null,
 L_SHIPMODE  char(10)    not null,
 L_COMMENT   varchar(44)  not null)
on LoadFg

```

```

create table NATION
(N_NATIONKEY int          not null,
 N_NAME      char(25)     not null,
 N_REGIONKEY int          not null,
 N_COMMENT   varchar(152) not null)
on LoadFg

```

```

create table REGION
(R_REGIONKEY int          not null,
 R_NAME      char(25)     not null,
 R_COMMENT   varchar(152) not null)
on LoadFg

```

B.3 CreateCUSTOMERIndexes.sql

```

create unique clustered index C_KEY_CLUIDX
on CUSTOMER(C_CUSTKEY)
with SORT_IN_TEMPDB
on tpch100g
create index C_NATION_KEYIDX
on CUSTOMER (C_NATIONKEY)

```

```

with SORT_IN_TEMPDB
on tpch100g

```

B.4 CreateLINEITEMIndexes.sql

```

create clustered index L_SHIPDATE_CLUIDX
on LINEITEM(L_SHIPDATE)
with fillfactor=95, SORT_IN_TEMPDB
on tpch100g

```

```

create index L_PARTKEY_SUPPKEY_IDX
on LINEITEM (L_PARTKEY,L_SUPPKEY)
with fillfactor=95, SORT_IN_TEMPDB
on tpch100g

```

```

create index L_ORDERKEY_IDX
on LINEITEM (L_ORDERKEY)
with fillfactor=95, SORT_IN_TEMPDB
on tpch100g

```

B.5 CreateNATIONIndexes.sql

```

create unique clustered index N_KEY_CLUIDX
on NATION(N_NATIONKEY)
on tpch100g
create index N_REGIONKEY_IDX
on NATION (N_REGIONKEY)
on tpch100g

```

B.6 CreateORDERSIndexes.sql

```

create clustered index O_ORDERDATE_CLUIDX
on ORDERS (O_ORDERDATE)
with fillfactor=95, SORT_IN_TEMPDB
on tpch100g

```

```

create index O_CUSTKEY_IDX
on ORDERS (O_CUSTKEY)
with fillfactor=95, SORT_IN_TEMPDB
on tpch100g

```

```

create unique index O_KEY_IDX
on ORDERS(O_ORDERKEY)
with fillfactor=95, SORT_IN_TEMPDB
on tpch100g

```

B.7 CreatePARTIndexes.sql

```

create unique clustered index P_KEY_CLUIDX
on PART(P_PARTKEY)
with SORT_IN_TEMPDB
on tpch100g

```

B.8 CreatePARTSUPPIndexes.sql

```

create unique clustered index PS_KEY_CLUIDX
on PARTSUPP(PS_PARTKEY,PS_SUPPKEY)
with SORT_IN_TEMPDB
on tpch100g
create index PS_SUPPKEY_IDX

```

```

on PARTSUPP (PS_SUPPKEY)
with SORT_IN_TEMPDB
on tpch100g

```

B.9 CreateREGIONIndexes.sql

```

create unique clustered index R_KEY_CLUIDX
on REGION(R_REGIONKEY)
on tpch100g

```

B.10 createSUPPLIERindexes.sql

```

create unique clustered index S_SUPPKEY_CLUIDX
on SUPPLIER (S_SUPPKEY)
with SORT_IN_TEMPDB
on tpch100g
create index S_NATION_KEYIDX
on SUPPLIER (S_NATIONKEY)
with SORT_IN_TEMPDB
on tpch100g

```

B.11 Backup.sql

```

backup database tpch100g to
disk='c:\dev\load_1\test.bak',
disk='c:\dev\load_2\test.bak',
disk='c:\dev\load_3\test.bak',
disk='c:\dev\load_4\test.bak',
disk='c:\dev\load_5\test.bak',
disk='c:\dev\load_6\test.bak',
disk='c:\dev\load_7\test.bak',
disk='c:\dev\load_8\test.bak',
disk='c:\dev\load_9\test.bak',
disk='c:\dev\load_10\test.bak',
disk='c:\dev\load_11\test.bak',
disk='c:\dev\load_12\test.bak',
disk='c:\dev\load_13\test.bak',
disk='c:\dev\load_14\test.bak',
disk='c:\dev\load_15\test.bak',
disk='c:\dev\load_16\test.bak',
disk='c:\dev\load_17\test.bak',
disk='c:\dev\load_18\test.bak',
disk='c:\dev\load_19\test.bak',
disk='c:\dev\load_20\test.bak'
with init,stats=10

```

B.12 Restore.sql

```

restore database tpch100g from
disk='c:\dev\load_1\test.bak',
disk='c:\dev\load_2\test.bak',
disk='c:\dev\load_3\test.bak',
disk='c:\dev\load_4\test.bak',
disk='c:\dev\load_5\test.bak',
disk='c:\dev\load_6\test.bak',
disk='c:\dev\load_7\test.bak',
disk='c:\dev\load_8\test.bak',
disk='c:\dev\load_9\test.bak',
disk='c:\dev\load_10\test.bak',
disk='c:\dev\load_11\test.bak',
disk='c:\dev\load_12\test.bak',
disk='c:\dev\load_13\test.bak',
disk='c:\dev\load_14\test.bak',
disk='c:\dev\load_15\test.bak',
disk='c:\dev\load_16\test.bak',

```

```

disk='c:\dev\load_17\test.bak',
disk='c:\dev\load_18\test.bak',
disk='c:\dev\load_19\test.bak',
disk='c:\dev\load_20\test.bak'
with stats=1, replace

```

B.13 MoveTemp.sql

```

alter database tempdb modify file
(name=tempdev,filename='c:\dev\tempdev',size=15MB)
alter database tempdb modify file
(name=templog,filename='c:\dev\templog',size=20MB)

```

B.14 AddTemp.sql

```

alter database tempdb modify file
(name=tempdev, filename='c:\dev\tempdev',size=4950mb,filegrowth=0)
alter database tempdb modify file
(name=templog, filename='c:\dev\templog',size=5556mb,filegrowth=0)
alter database tempdb add file
(name=tempdev2,
filename='c:\dev\tempdev_2',size=4950mb,filegrowth=0),
(name=tempdev3,
filename='c:\dev\tempdev_3',size=4950mb,filegrowth=0),
(name=tempdev4,
filename='c:\dev\tempdev_4',size=4950mb,filegrowth=0),
(name=tempdev5,
filename='c:\dev\tempdev_5',size=4950mb,filegrowth=0),
(name=tempdev6,
filename='c:\dev\tempdev_6',size=4950mb,filegrowth=0),
(name=tempdev7,
filename='c:\dev\tempdev_7',size=4950mb,filegrowth=0),
(name=tempdev8,
filename='c:\dev\tempdev_8',size=4950mb,filegrowth=0),
(name=tempdev9,
filename='c:\dev\tempdev_9',size=4950mb,filegrowth=0),
(name=tempdev10,
filename='c:\dev\tempdev_10',size=4950mb,filegrowth=0),
(name=tempdev11,
filename='c:\dev\tempdev_11',size=4950mb,filegrowth=0),
(name=tempdev12,
filename='c:\dev\tempdev_12',size=4950mb,filegrowth=0),
(name=tempdev13,
filename='c:\dev\tempdev_13',size=4950mb,filegrowth=0),
(name=tempdev14,
filename='c:\dev\tempdev_14',size=4950mb,filegrowth=0),
(name=tempdev15,
filename='c:\dev\tempdev_15',size=4950mb,filegrowth=0),
(name=tempdev16,
filename='c:\dev\tempdev_16',size=4950mb,filegrowth=0),
(name=tempdev17,
filename='c:\dev\tempdev_17',size=4950mb,filegrowth=0),
(name=tempdev18,
filename='c:\dev\tempdev_18',size=4950mb,filegrowth=0),
(name=tempdev19,
filename='c:\dev\tempdev_19',size=4950mb,filegrowth=0),
(name=tempdev20,
filename='c:\dev\tempdev_20',size=4950mb,filegrowth=0)

```

B.15 DelLoadFg.sql

```
alter database tpch100g remove file LoadFg1
alter database tpch100g remove file LoadFg2
alter database tpch100g remove file LoadFg3
alter database tpch100g remove file LoadFg4
alter database tpch100g remove file LoadFg5
alter database tpch100g remove file LoadFg6
alter database tpch100g remove file LoadFg7
alter database tpch100g remove file LoadFg8
alter database tpch100g remove file LoadFg9
alter database tpch100g remove file LoadFg10
alter database tpch100g remove file LoadFg11
alter database tpch100g remove file LoadFg12
alter database tpch100g remove file LoadFg13
alter database tpch100g remove file LoadFg14
alter database tpch100g remove file LoadFg15
alter database tpch100g remove file LoadFg16
alter database tpch100g remove file LoadFg17
alter database tpch100g remove file LoadFg18
alter database tpch100g remove file LoadFg19
alter database tpch100g remove file LoadFg20
alter database tpch100g remove filegroup LoadFg
```

Appendix C: Query Text and Output

C.1 Qualification Queries and Output

Qualification Query 1

```

SELECT
L_RETURNFLAG
,L_LINESTATUS
,SUM(L_QUANTITY) AS SUM_QTY
,SUM(L_EXTENDEDPRI) AS SUM_BASE_PRICE
,SUM(L_EXTENDEDPRI*(1-L_DISCOUNT)) AS SUM_DISC_PRICE
,SUM(L_EXTENDEDPRI*(1-L_DISCOUNT)*(1+L_TAX)) AS
SUM_CHARGE
,AVG(L_QUANTITY) AS AVG_QTY
,AVG(L_EXTENDEDPRI) AS AVG_PRICE
,AVG(L_DISCOUNT) AS AVG_DISC
,COUNT(*) AS COUNT_ORDER
FROM
LINEITEM
WHERE
L_SHIPDATE <= DATEADD(dd, -90, cast('1998/12/01' as smalldatetime))
GROUP BY
L_RETURNFLAG
,L_LINESTATUS
ORDER BY
L_RETURNFLAG
,L_LINESTATUS
L_RETURNFLAG L_LINESTATUS SUM_QTY
SUM_BASE_PRICE SUM_DISC_PRICE SUM_CHARGE
AVG_QTY AVG_PRICE AVG_DISC
COUNT_ORDER

```

```

-----
----
A      F      37734107.0000  56586554400.7300
53758257134.8700  55909065224.7041      25.5220
38273.1297      .0499  1478493
N      F      991417.0000    1487504710.3800
1413082168.0541  1469649223.2395      25.5164      38284.4677
.0500  38854
N      O      74476040.0000  111701729697.7400
106118230307.6056  110367043876.2372      25.5022
38249.1179      .0499  2920374
R      F      37719753.0000  56568041380.9000
53741292684.6040  55889619121.7027      25.5057
38250.8546      .0500  1478870

```

(4 rows affected)

Qualification Query 2

```

SELECT TOP 100
S_ACCTBAL
,S_NAME
,N_NAME
,P_PARTKEY
,P_MFGR
,S_ADDRESS
,S_PHONE
,S_COMMENT
FROM
PART

```

```

,SUPPLIER
,PARTSUPP
,NATION
,REGION
WHERE
P_PARTKEY = PS_PARTKEY
AND S_SUPPKEY = PS_SUPPKEY
AND P_SIZE = 15
AND P_TYPE LIKE '%BRASS'
AND S_NATIONKEY = N_NATIONKEY
AND N_REGIONKEY = R_REGIONKEY
AND R_NAME = 'EUROPE'
AND PS_SUPPLYCOST =
(
SELECT MIN(PS_SUPPLYCOST)
FROM
PARTSUPP
,SUPPLIER
,NATION
,REGION
WHERE P_PARTKEY = PS_PARTKEY
AND S_SUPPKEY = PS_SUPPKEY
AND S_NATIONKEY = N_NATIONKEY
AND N_REGIONKEY = R_REGIONKEY
AND R_NAME = 'EUROPE'
)
ORDER BY
S_ACCTBAL DESC
,N_NAME
,S_NAME
,P_PARTKEY
S_ACCTBAL S_NAME N_NAME
P_PARTKEY P_MFGR S_ADDRESS
S_PHONE S_COMMENT
-----
-----
9938.5300 Supplier#000005359 UNITED KINGDOM
185358 Manufacturer#4 QKuHYh,vZGiwu2FWEJoLDx04
33-429-790-6131 blithely silent pinto beans are furiously. slyly final deposits
acros
9937.8400 Supplier#000005969 ROMANIA
108438 Manufacturer#1
ANDENSOSmk,miq23Xfb5RWt6dvUcvt6Qa 29-520-692-3537
carefully slow deposits use furiously. slyly ironic platelets above the ironic
9936.2200 Supplier#000005250 UNITED KINGDOM
249 Manufacturer#4 B3rq0xbSEim4Mpy2RH J 33-320-
228-2957 blithely special packages are. stealthily express deposits across the
closely final instructi
9923.7700 Supplier#000002324 GERMANY
29821 Manufacturer#4 y3OD9UywSTok 17-779-
299-1839 quickly express packages breach quiet pinto beans. requ
9871.2200 Supplier#000006373 GERMANY
43868 Manufacturer#5 J8fcXWsTqM 17-813-485-
8637 never silent deposits integrate furiously blit
9870.7800 Supplier#000001286 GERMANY
81285 Manufacturer#2
YKA,E2fjiVd7eUrzp2Ef8j1QxGo2DFnosaTEH 17-516-924-4574 final
theodolites cajole slyly special,
9870.7800 Supplier#000001286 GERMANY
181285 Manufacturer#4
YKA,E2fjiVd7eUrzp2Ef8j1QxGo2DFnosaTEH 17-516-924-4574 final
theodolites cajole slyly special,
..... Additional rows deleted .....

```

29-250-925-9690 blithely bold ideas haggle quickly final, regular request
 7914.4500 Supplier#000001013 RUSSIA 125988
 Manufacturer#2 riRcntps4KEDtYScjpMIWeYF6mNnR 32-
 194-698-3365 final, ironic theodolites alongside of the ironic
 7912.9100 Supplier#000004211 GERMANY
 159180 Manufacturer#5 2wQRVovHrm3,v03IKzfTd,1PYsFXQFFOG
 17-266-947-7315 final requests integrate slyly above the silent, even
 7912.9100 Supplier#000004211 GERMANY
 184210 Manufacturer#4 2wQRVovHrm3,v03IKzfTd,1PYsFXQFFOG
 17-266-947-7315 final requests integrate slyly above the silent, even
 7894.5600 Supplier#000007981 GERMANY
 85472 Manufacturer#4 NSJ96vMROAbeXP 17-963-
 404-3760 regular, even theodolites integrate carefully. bold, special
 theodolites are slyly fluffily iron
 7887.0800 Supplier#000009792 GERMANY
 164759 Manufacturer#3 Y28ITVeYriT3kiGdV2K8fSZ
 V2UqT5H1Otz 17-988-938-4296 pending, ironic packages sleep among
 the carefully ironic accounts. quickly final accounts
 7871.5000 Supplier#000007206 RUSSIA 104695
 Manufacturer#1 3w fNcNrvmvJjE95sgWZzvW 32-432-
 452-7731 furiously dogged pinto beans cajole. bold, express notornis until
 the slyly pending
 7852.4500 Supplier#000005864 RUSSIA 8363
 Manufacturer#4 WCNfBPZeSXh3h,c 32-454-883-
 3821 blithely regular deposits
 7850.6600 Supplier#000001518 UNITED KINGDOM
 86501 Manufacturer#1 ONda3YJiHKJOC 33-730-
 383-3892 furiously final accounts wake carefully idle requests. even dolphins
 wake acc
 7843.5200 Supplier#000006683 FRANCE
 11680 Manufacturer#4 2Z0JGkiv01Y00oCFwUGfviIbhzCdy
 16-464-517-8943 carefully bold accounts doub

(100 rows affected)

Qualification Query 3

```

SELECT TOP 10
L_ORDERKEY
,SUM(L_EXTENDEDPRISE*(1-L_DISCOUNT)) AS REVENUE
,O_ORDERDATE
,O_SHIPRIORITY
FROM
CUSTOMER
,ORDERS
,LINEITEM
WHERE
C_MKTSEGMENT = 'BUILDING'
AND C_CUSTKEY = O_CUSTKEY
AND L_ORDERKEY = O_ORDERKEY
AND O_ORDERDATE < '1995-03-15'
AND L_SHIPDATE > '1995-03-15'
GROUP BY
L_ORDERKEY
,O_ORDERDATE
,O_SHIPRIORITY
ORDER BY
REVENUE DESC
,O_ORDERDATE
L_ORDERKEY REVENUE O_ORDERDATE
O_SHIPRIORITY
-----
2456423 406181.0111 1995-03-05 00:00:00.000 0
3459808 405838.6989 1995-03-04 00:00:00.000 0
492164 390324.0610 1995-02-19 00:00:00.000 0
1188320 384537.9359 1995-03-09 00:00:00.000 0
2435712 378673.0558 1995-02-26 00:00:00.000 0
4878020 378376.7952 1995-03-12 00:00:00.000 0
5521732 375153.9215 1995-03-13 00:00:00.000 0

```

```

2628192 373133.3094 1995-02-22 00:00:00.000 0
993600 371407.4595 1995-03-05 00:00:00.000 0
2300070 367371.1452 1995-03-13 00:00:00.000 0

```

(10 rows affected)

Qualification Query 4

```

SELECT
O_ORDERPRIORITY
,COUNT(*) AS ORDER_COUNT
FROM
ORDERS
WHERE O_ORDERDATE >= '1993-07-01'
AND O_ORDERDATE < DATEADD(mm, 3, cast('1993-07-01' as
smalldatetime))
AND EXISTS
(
SELECT *
FROM LINEITEM
WHERE L_ORDERKEY = O_ORDERKEY
AND L_COMMITDATE < L_RECEIPTDATE
)
GROUP BY
O_ORDERPRIORITY
ORDER BY
O_ORDERPRIORITY
O_ORDERPRIORITY ORDER_COUNT
-----
1-URGENT 10594
2-HIGH 10476
3-MEDIUM 10410
4-NOT SPECIFIED 10556
5-LOW 10487

```

(5 rows affected)

Qualification Query 5

```

SELECT
N_NAME
,SUM(L_EXTENDEDPRISE*(1-L_DISCOUNT)) AS REVENUE
FROM
CUSTOMER
,ORDERS
,LINEITEM
,SUPPLIER
,NATION
,REGION
WHERE
C_CUSTKEY = O_CUSTKEY
AND L_ORDERKEY = O_ORDERKEY
AND L_SUPPKEY = S_SUPPKEY
AND C_NATIONKEY = S_NATIONKEY
AND S_NATIONKEY = N_NATIONKEY
AND N_REGIONKEY = R_REGIONKEY
AND R_NAME = 'ASIA'
AND O_ORDERDATE >= '1994-01-01'
AND O_ORDERDATE < DATEADD(YY, 1, cast('1994-01-01' as
smalldatetime))
GROUP BY
N_NAME
ORDER BY
REVENUE DESC
N_NAME REVENUE
-----
INDONESIA 55502041.1697
VIETNAM 55295086.9967

```

CHINA	53724494.2566
INDIA	52035512.0002
JAPAN	45410175.6954

(5 rows affected)

Qualification Query 6

```

SELECT
SUM(L_EXTENDEDPRI* L_DISCOUNT) AS REVENUE
FROM
LINEITEM
WHERE
L_SHIPDATE >= '1994-01-01'
AND L_SHIPDATE < dateadd (yy, 1, cast('1994-01-01' as smalldatetime))
AND L_DISCOUNT BETWEEN .06 - 0.01 AND .06 + 0.01
AND L_QUANTITY < 24
REVENUE
-----
123141078.2283

```

(1 row affected)

Qualification Query 7

```

SELECT
SUPP_NATION
,CUST_NATION
,L_YEAR
,SUM(VOLUME) AS REVENUE
FROM
(
SELECT
N1.N_NAME AS SUPP_NATION
,N2.N_NAME AS CUST_NATION
,DATEPART(Y,Y,L_SHIPDATE) AS L_YEAR
,L_EXTENDEDPRI*(1-L_DISCOUNT) AS VOLUME
FROM
SUPPLIER
,LINEITEM
,ORDERS
,CUSTOMER
,NATION N1
,NATION N2
WHERE S_SUPPKEY = L_SUPPKEY
AND O_ORDERKEY = L_ORDERKEY
AND C_CUSTKEY = O_CUSTKEY
AND S_NATIONKEY = N1.N_NATIONKEY
AND C_NATIONKEY = N2.N_NATIONKEY
AND (
(N1.N_NAME = 'FRANCE' AND N2.N_NAME = 'GERMANY')
OR
(N1.N_NAME = 'GERMANY' AND N2.N_NAME = 'FRANCE')
)
AND L_SHIPDATE BETWEEN '1995-01-01' AND '1996-12-31'
)
AS SHIPPING
GROUP BY
SUPP_NATION
,CUST_NATION
,L_YEAR
ORDER BY
SUPP_NATION
,CUST_NATION
,L_YEAR
SUPP_NATION      CUST_NATION      L_YEAR
REVENUE
-----

```

FRANCE	GERMANY	1995
54639732.7336		
FRANCE	GERMANY	1996
54633083.3076		
GERMANY	FRANCE	1995
52531746.6697		
GERMANY	FRANCE	1996
52520549.0224		

(4 rows affected)

Qualification Query 8

```

SELECT
O_YEAR
,SUM(CASE WHEN NATION = 'BRAZIL'
THEN VOLUME
ELSE 0
END) / SUM(VOLUME) AS MKT_SHARE
FROM
(
SELECT
DATEPART(Y,Y,O_ORDERDATE) AS O_YEAR
,L_EXTENDEDPRI * (1-L_DISCOUNT) AS VOLUME
,N2.N_NAME AS NATION
FROM
PART
,SUPPLIER
,LINEITEM
,ORDERS
,CUSTOMER
,NATION N1
,NATION N2
,REGION
WHERE
P_PARTKEY = L_PARTKEY
AND S_SUPPKEY = L_SUPPKEY
AND L_ORDERKEY = O_ORDERKEY
AND O_CUSTKEY = C_CUSTKEY
AND C_NATIONKEY = N1.N_NATIONKEY
AND N1.N_REGIONKEY = R_REGIONKEY
AND R_NAME = 'AMERICA'
AND S_NATIONKEY = N2.N_NATIONKEY
AND O_ORDERDATE BETWEEN '1995-01-01' AND '1996-12-31'
AND P_TYPE = 'ECONOMY ANODIZED STEEL'
) AS ALL_NATIONS
GROUP BY
O_YEAR
ORDER BY
O_YEAR
O_YEAR      MKT_SHARE
-----
1995          .0344
1996          .0414

```

(2 rows affected)

Qualification Query 9

```

SELECT
NATION
,O_YEAR
,SUM(AMOUNT) AS SUM_PROFIT
FROM
(
SELECT
N_NAME AS NATION
,DATEPART(Y,Y,O_ORDERDATE) AS O_YEAR

```

```

.L_EXTENDEDPRISE*(1-L_DISCOUNT)-
PS_SUPPLYCOST*L_QUANTITY AS AMOUNT
FROM
PART
,SUPPLIER
,LINEITEM
,PARTSUPP
,ORDERS
,NATION
WHERE
S_SUPPKEY = L_SUPPKEY
AND PS_SUPPKEY = L_SUPPKEY
AND PS_PARTKEY = L_PARTKEY
AND P_PARTKEY = L_PARTKEY
AND O_ORDERKEY = L_ORDERKEY
AND S_NATIONKEY = N_NATIONKEY
AND P_NAME LIKE '%green%'
)

```

```

AS PROFIT
GROUP BY
NATION
,O_YEAR
ORDER BY
NATION
,O_YEAR DESC

```

NATION	O_YEAR	SUM_PROFIT
ALGERIA	1998	31342867.2345
ALGERIA	1997	57138193.0233
ALGERIA	1996	56140140.1330
ALGERIA	1995	53051469.6534
ALGERIA	1994	53867582.1286
ALGERIA	1993	54942718.1324
ALGERIA	1992	54628034.7127
ARGENTINA	1998	30211185.7081
ARGENTINA	1997	50805741.7523
ARGENTINA	1996	51923746.5755
ARGENTINA	1995	49298625.7666

..... Additional rows deleted

VIETNAM	1996	50488161.4100
VIETNAM	1995	49658284.6125
VIETNAM	1994	50596057.2607
VIETNAM	1993	50953919.1519
VIETNAM	1992	49613838.3151

(175 rows affected)

Qualification Query 10

```

SELECT TOP 20
C_CUSTKEY
,C_NAME
,SUM(L_EXTENDEDPRISE*(1-L_DISCOUNT)) AS REVENUE
,C_ACCTBAL
,N_NAME
,C_ADDRESS
,C_PHONE
,C_COMMENT
FROM
CUSTOMER
,ORDERS
,LINEITEM
,NATION
WHERE
C_CUSTKEY = O_CUSTKEY
AND L_ORDERKEY = O_ORDERKEY
AND O_ORDERDATE >= '1993-10-01'

```

```

AND O_ORDERDATE < DATEADD(MM, 3, cast('1993-10-01' as
smalldatetime))

```

```

AND L_RETURNFLAG = 'R'
AND C_NATIONKEY = N_NATIONKEY

```

```

GROUP BY
C_CUSTKEY
,C_NAME
,C_ACCTBAL
,C_PHONE
,N_NAME
,C_ADDRESS
,C_COMMENT
ORDER BY
REVENUE DESC
C_CUSTKEY C_NAME REVENUE C_ACCTBAL
N_NAME C_ADDRESS C_PHONE
C_COMMENT

```

```

-----
-----
---
57040 Customer#000057040 734235.2455 632.8700
JAPAN Eioyzzf4pp 22-895-641-3466
requests sleep blithely about the furiously i
143347 Customer#000143347 721002.6948 2557.4700
EGYPT IaReFYv,Kw4 14-742-935-3718
fluffily bold excuses haggle finally after the u
60838 Customer#000060838 679127.3077 2454.7700
BRAZIL 64EaJ5vMAHWJIBOxJklpNc2RjWE 12-913-
494-9813 furiously even pinto beans integrate under the ruthless foxes;
ironic, even dolphins across the slyl
101998 Customer#000101998 637029.5667 3790.8900
UNITED KINGDOM 01c9CILnNtfOQYmZj 33-593-
865-6378 accounts doze blithely! enticing, final deposits sleep blithely
special accounts. slyly express accounts pla
125341 Customer#000125341 633508.0860 4983.5100
GERMANY S29ODD6bceU8QSuueJznkNaK 17-582-
695-5962 quickly express requests wake quickly blithely
25501 Customer#000025501 620269.7849 7725.0400
ETHIOPIA W556MXuoiaYCCZamJL,Rn0B4ACUGdkQ8DZ
15-874-808-6793 quickly special requests sleep evenly among the special
deposits. special deposi
115831 Customer#000115831 596423.8672 5098.1000
FRANCE rFeBbEEyk dl ne7zV5fDrmiq1oK09wV7pxqCglc 16-
715-386-3788 carefully bold excuses sleep alongside of the thinly idle
84223 Customer#000084223 594998.0239 528.6500
UNITED KINGDOM nAVZCs6BaWap rrM27N 2qBnzc5WBauxbA
33-442-824-8191 pending, final ideas haggle final requests. unusual, regular
asymptotes affix according to the even foxes.
54289 Customer#000054289 585603.3918 5583.0200
IRAN vXCxoCsU0Bad5JQI ,oobkZ 20-834-292-
4707 express requests sublute blithely regular requests. regular, even ideas
solve.
39922 Customer#000039922 584878.1134 7321.1100
GERMANY Zgy4s50l2GKN4pLDPBU8m342gIw6R 17-
147-757-8036 even pinto beans haggle. slyly bold accounts inte
6226 Customer#000006226 576783.7606 2230.0900
UNITED KINGDOM 8gPu8,NPGkfyQQ0hcIYUGPIBWc,ybP5g,
33-657-701-3391 quickly final requests against the regular instructions wake
blithely final instructions. pa
922 Customer#000000922 576767.5333 3869.2500
GERMANY Az9RFaut7NkPnc5zSD2PwHgVvr4jRzq 17-
945-916-9648 boldly final requests cajole blith
147946 Customer#000147946 576455.1320 2030.1300
ALGERIA iANyZHjqhy7Ajah0pTrYyhJ 10-886-956-
3143 furiously even accounts are blithely above the furiousl
115640 Customer#000115640 569341.1933 6436.1000
ARGENTINA Vtgfia9ql 7EpHgecU1X 11-411-543-
4901 final instructions are slyly according to the

```



```

73606 Customer#000073606      568656.8578      1785.6700
JAPAN      xuR0TRo5yChDfOCrjkd2ol      22-437-653-
6966 furiously bold orbits about the furiously busy requests wake across the
furiously quiet theodolites. d
110246 Customer#000110246      566842.9815      7763.3500
VIETNAM      7KzflgX MDOq7sOkI      31-943-426-
9837 dolphins sleep blithely among the slyly final
142549 Customer#000142549      563537.2368      5085.9900
INDONESIA      ChqEoK43OysjdHbtKCp6dKqjNyyvi9      19-
955-562-2398 regular, unusual dependencies boost slyly; ironic attainments
nag fluffily into the unusual packages?
146149 Customer#000146149      557254.9865      1791.5500
ROMANIA      s87fvzFQpU      29-744-164-6487
silent, unusual requests detect quickly slyly regul
52528 Customer#000052528      556397.3509      551.7900
ARGENTINA      NFztyTOR10UOJ      11-208-192-
3205 unusual requests detect. slyly dogged theodolites use slyly. deposit
23431 Customer#000023431      554269.5360      3381.8600
ROMANIA      HgiV0phqhala9aydNoIlb      29-915-458-
2654 instructions nag quickly. furiously bold accounts cajol

```

(20 rows affected)

Qualification Query 11

```

SELECT
PS_PARTKEY
,SUM(PS_SUPPLYCOST*PS_AVAILQTY) AS VALUE
FROM
PARTSUPP
,SUPPLIER
,NATION
WHERE
PS_SUPPKEY = S_SUPPKEY
AND S_NATIONKEY = N_NATIONKEY
AND N_NAME = 'GERMANY'
GROUP BY
PS_PARTKEY
HAVING
SUM(PS_SUPPLYCOST*PS_AVAILQTY) >
(
SELECT
SUM(PS_SUPPLYCOST*PS_AVAILQTY) * 0.0001000000
FROM PARTSUPP
,SUPPLIER
,NATION
WHERE PS_SUPPKEY = S_SUPPKEY
AND S_NATIONKEY = N_NATIONKEY
AND N_NAME = 'GERMANY'
)
ORDER BY
VALUE DESC
PS_PARTKEY VALUE

```

```

-----
129760      17538456.8600
166726      16503353.9200
191287      16474801.9700
161758      16101755.5400
34452      15983844.7200
139035      15907078.3400
9403      15451755.6200
154358      15212937.8800
38823      15064802.8600
85606      15053957.1500
33354      14408297.4000

```

..... Additional rows deleted

```

128820      7892882.7200

```

```

25891      7890511.2000
122819      7888881.0200
154731      7888301.3300
101674      7879324.6000
51968      7879102.2100
72073      7877736.1100
5182      7874521.7300

```

(1048 rows affected)

Qualification Query 12

```

SELECT
L_SHIPMODE
,SUM(CASE
WHEN O_ORDERPRIORITY = '1-URGENT'
OR O_ORDERPRIORITY = '2-HIGH'
THEN 1
ELSE 0
END) AS HIGH_LINE_COUNT,
SUM(CASE
WHEN O_ORDERPRIORITY <> '1-URGENT'
AND O_ORDERPRIORITY <> '2-HIGH'
THEN 1
ELSE 0
END) AS LOW_LINE_COUNT
FROM
ORDERS
,LINEITEM
WHERE
O_ORDERKEY = L_ORDERKEY
AND L_SHIPMODE IN ('MAIL','SHIP')
AND L_COMMITDATE < L_RECEIPTDATE
AND L_SHIPDATE < L_COMMITDATE
AND L_RECEIPTDATE >= '1994-01-01'
AND L_RECEIPTDATE < dateadd(YY, 1, cast('1994-01-01' as
smalldatetime))
GROUP BY
L_SHIPMODE
ORDER BY
L_SHIPMODE
L_SHIPMODE HIGH_LINE_COUNT LOW_LINE_COUNT
-----
MAIL      6202      9324
SHIP      6200      9262

```

(2 rows affected)

Qualification Query 13

```

SELECT
C_COUNT
,COUNT(*) AS CUSTDIST
FROM
(
SELECT
C_CUSTKEY
,COUNT(O_ORDERKEY)
FROM
CUSTOMER LEFT OUTER JOIN ORDERS ON
C_CUSTKEY = O_CUSTKEY
AND O_COMMENT NOT LIKE '%special%requests%'
GROUP BY
C_CUSTKEY
) AS C_ORDERS (C_CUSTKEY, C_COUNT)
GROUP BY
C_COUNT
ORDER BY

```

CUSTDIST DESC
 ,C_COUNT DESC
 C_COUNT CUSTDIST

```

-----
0 50004
9 6641
10 6566
11 6058
8 5949
12 5553
13 4989
19 4748
7 4707
18 4625
15 4552
17 4530
14 4484
20 4461
16 4323
21 4217
22 3730
6 3334
23 3129
24 2622
25 2079
5 1972
26 1593
27 1185
4 1033
28 869
29 559
3 398
30 373
31 235
2 144
32 128
33 71
34 48
35 33
1 23
36 17
37 7
40 4
38 4
39 2
41 1

```

(42 rows affected)

Qualification Query 14

```

SELECT
100.00 * SUM (CASE
WHEN P_TYPE LIKE 'PROMO%' THEN L_EXTENDEDPRI*(1-
L_DISCOUNT)
ELSE 0 END
) / SUM(L_EXTENDEDPRI*(1-L_DISCOUNT)) AS
PROMO_REVENUE
FROM
LINEITEM
,PART
WHERE
L_PARTKEY = P_PARTKEY
AND L_SHIPDATE >= '1995-09-01'
AND L_SHIPDATE < DATEADD(MM, 1, cast('1995-09-01' as
smalldatetime))
PROMO_REVENUE

```

 16.380778626395540

(1 row affected)

Qualification Query 15

if exists (select * from sysindexes where name = 'REVENUE0')
 drop view REVENUE0

```

CREATE VIEW REVENUE0 (SUPPLIER_NO, TOTAL_REVENUE) AS
SELECT
L_SUPPKEY
,SUM(L_EXTENDEDPRI * (1 - L_DISCOUNT))
FROM
LINEITEM
WHERE
L_SHIPDATE >= '1996-01-01'
AND L_SHIPDATE < DATEADD(MM, 3, cast('1996-01-01' as
smalldatetime))
GROUP BY
L_SUPPKEY

```

```

SELECT
S_SUPPKEY
,S_NAME
,S_ADDRESS
,S_PHONE
,TOTAL_REVENUE
FROM
SUPPLIER
,REVENUE0
WHERE
S_SUPPKEY = SUPPLIER_NO
AND TOTAL_REVENUE = (
SELECT
MAX(TOTAL_REVENUE)
FROM
REVENUE0
)
ORDER BY
S_SUPPKEY

```

```

DROP VIEW REVENUE0
S_SUPPKEY S_NAME S_ADDRESS
S_PHONE TOTAL_REVENUE

```

 8449 Supplier#000008449 Wp34zim9qYFbVctdW
 20-469-856-8873 1772627.2087

(1 row affected)

Qualification Query 16

```

SELECT
P_BRAND
,P_TYPE
,P_SIZE
,COUNT(DISTINCT PS_SUPPKEY) AS SUPPLIER_CNT
FROM
PARTSUPP
,PART
WHERE
P_PARTKEY = PS_PARTKEY
AND P_BRAND <> 'Brand#45'
AND P_TYPE NOT LIKE 'MEDIUM POLISHED%'
AND P_SIZE IN (49, 14, 23 , 45, 19, 3, 36, 9)
AND PS_SUPPKEY NOT IN
(SELECT S_SUPPKEY

```

```
FROM SUPPLIER
WHERE S_COMMENT LIKE '%Customer%Complaints%'
)
```

```
GROUP BY
P_BRAND
,P_TYPE
,P_SIZE
ORDER BY
SUPPLIER_CNT DESC
,P_BRAND
,P_TYPE
,P_SIZE
```

P_BRAND	P_TYPE	P_SIZE	SUPPLIER_CNT
Brand#41	MEDIUM BRUSHED TIN	3	28
Brand#54	STANDARD BRUSHED COPPER	14	27
Brand#11	STANDARD BRUSHED TIN	23	24
Brand#11	STANDARD BURNISHED BRASS	36	24
Brand#15	MEDIUM ANODIZED NICKEL	3	24
Brand#15	SMALL ANODIZED BRASS	45	24
Brand#15	SMALL BURNISHED NICKEL	19	24
Brand#21	MEDIUM ANODIZED COPPER	3	24
Brand#22	SMALL BRUSHED NICKEL	3	24
Brand#22	SMALL BURNISHED BRASS	19	24
Brand#25	MEDIUM BURNISHED COPPER	36	24
Brand#31	PROMO POLISHED COPPER	36	24
Brand#33	LARGE POLISHED TIN	23	24

..... Additional rows deleted

Brand#35	MEDIUM ANODIZED TIN	19	3
Brand#51	SMALL PLATED BRASS	23	3
Brand#52	MEDIUM BRUSHED BRASS	45	3
Brand#53	MEDIUM BRUSHED TIN	45	3
Brand#54	ECONOMY POLISHED BRASS	9	3
Brand#55	PROMO PLATED BRASS	19	3
Brand#55	STANDARD PLATED TIN	49	3

(18314 rows affected)

Qualification Query 17

```
SELECT
SUM(L_EXTENDEDPRISE)/7.0 AS AVG_YEARLY
FROM
LINEITEM
,PART
WHERE
P_PARTKEY = L_PARTKEY
AND P_BRAND = 'Brand#23'
AND P_CONTAINER = 'MED BOX'
AND L_QUANTITY <
(
SELECT
0.2 * AVG(L_QUANTITY)
FROM LINEITEM
WHERE L_PARTKEY = P_PARTKEY
)
AVG_YEARLY
```

348406.0542857

(1 row affected)

Qualification Query 18

```
SELECT TOP 100
C_NAME
```

```
,C_CUSTKEY
,O_ORDERKEY
,O_ORDERDATE
,O_TOTALPRICE
,SUM(L_QUANTITY)
FROM
CUSTOMER
,ORDERS
,LINEITEM
WHERE
O_ORDERKEY IN
(
SELECT
L_ORDERKEY
FROM
LINEITEM
GROUP BY
L_ORDERKEY HAVING
SUM(L_QUANTITY) > 300
)
```

```
AND C_CUSTKEY = O_CUSTKEY
AND O_ORDERKEY = L_ORDERKEY
GROUP BY
C_NAME
,C_CUSTKEY
,O_ORDERKEY
,O_ORDERDATE
,O_TOTALPRICE
ORDER BY
O_TOTALPRICE DESC
,O_ORDERDATE
C_NAME C_CUSTKEY O_ORDERKEY O_ORDERDATE
O_TOTALPRICE
```

Customer#000128120	128120	4722021	1994-04-07 00:00:00.000
544089.0900	323.0000		
Customer#000144617	144617	3043270	1997-02-12 00:00:00.000
530604.4400	317.0000		
Customer#000013940	13940	2232932	1997-04-13 00:00:00.000
522720.6100	304.0000		
Customer#000066790	66790	2199712	1996-09-30 00:00:00.000
515531.8200	327.0000		
Customer#000046435	46435	4745607	1997-07-03 00:00:00.000
508047.9900	309.0000		
Customer#000015272	15272	3883783	1993-07-28 00:00:00.000
500241.3300	302.0000	418161.4900	305.0000

.... Additional rows deleted

Customer#000069904	69904	1742403	1996-10-19 00:00:00.000
408513.0000	305.0000		
Customer#000017746	17746	6882	1997-04-09 00:00:00.000
408446.9300	303.0000		
Customer#000013072	13072	1481925	1998-03-15 00:00:00.000
399195.4700	301.0000		
Customer#000082441	82441	857959	1994-02-07 00:00:00.000
382579.7400	305.0000		
Customer#000088703	88703	2995076	1994-01-30 00:00:00.000
363812.1200	302.0000		

(57 rows affected)

Qualification Query 19

```
SELECT
SUM(L_EXTENDEDPRISE* (1 - L_DISCOUNT)) AS REVENUE
FROM
```

```

LINEITEM
,PART
WHERE
(
P_PARTKEY = L_PARTKEY
AND P_BRAND = 'Brand#12'
AND P_CONTAINER IN ('SM CASE', 'SM BOX', 'SM PACK', 'SM PKG')
AND L_QUANTITY >= 1 AND L_QUANTITY <= 1 + 10
AND P_SIZE BETWEEN 1 AND 5
AND L_SHIPMODE IN ('AIR', 'AIR REG')
AND L_SHIPINSTRUCT = 'DELIVER IN PERSON'
)
OR
(
P_PARTKEY = L_PARTKEY
AND P_BRAND = 'Brand#23'
AND P_CONTAINER IN ('MED BAG', 'MED BOX', 'MED PKG', 'MED
PACK')
AND L_QUANTITY >= 10 AND L_QUANTITY <= 10 + 10
AND P_SIZE BETWEEN 1 AND 10
AND L_SHIPMODE IN ('AIR', 'AIR REG')
AND L_SHIPINSTRUCT = 'DELIVER IN PERSON'
)
OR
(
P_PARTKEY = L_PARTKEY
AND P_BRAND = 'Brand#34'
AND P_CONTAINER IN ('LG CASE', 'LG BOX', 'LG PACK', 'LG PKG')
AND L_QUANTITY >= 20 AND L_QUANTITY <= 20 + 10
AND P_SIZE BETWEEN 1 AND 15
AND L_SHIPMODE IN ('AIR', 'AIR REG')
AND L_SHIPINSTRUCT = 'DELIVER IN PERSON'
)
REVENUE
-----
3083843.0578

(1 row affected)

```

Qualification Query 20

```

SELECT
S_NAME
,S_ADDRESS
FROM
SUPPLIER
,NATION
WHERE
S_SUPPKEY IN
(
SELECT
PS_SUPPKEY
FROM
PARTSUPP
WHERE
PS_PARTKEY IN
(
SELECT
P_PARTKEY
FROM
PART
WHERE
P_NAME LIKE 'forest%'
)
AND PS_AVAILQTY >
(
SELECT
0.5 * SUM(L_QUANTITY)

```

```

FROM
LINEITEM
WHERE
L_PARTKEY = PS_PARTKEY
AND L_SUPPKEY = PS_SUPPKEY
AND L_SHIPDATE >= '1994-01-01'
AND L_SHIPDATE < DATEADD(YY,1,cast('1994-01-01' as
smalldatetime))
)
)
AND S_NATIONKEY = N_NATIONKEY
AND N_NAME = 'CANADA'
ORDER BY
S_NAME
S_NAME S_ADDRESS
-----
Supplier#000000020 iybAE,RmTymrZVYaFzva2SHj
Supplier#000000091
YV45D7TkfdQanOOZ7q9QxkyGUapU1oOWU6q3
Supplier#000000197 YC2Acon6kjY3zj3Fbxs2k4Vdf7X0cd2F
Supplier#000000226 83qOdU2EYRdPQAQhEtm GRZEd
Supplier#000000285 Br7e1nnt1yxrw6ImgpJ7YdhFDjuBf
Supplier#000000378 FfbhyCxWvcPrO8ltp9
Supplier#000000402 i9Sw4DoyMhzhKXCH9By,AYSgmD
Supplier#000000530 0qwCMwobKY OcmLyfRXlagA8ukENJv,
Supplier#000000688 D fw5ocppmZpYBBIPI718hCihLDZ5KhKX
Supplier#000000710 f19YPvOyb QoYwjKC,oPycpGfieBacwKJo
Supplier#000000736 16i2nMwVuovfKnuVgaSGK2rDy65DIAFLegil7
Supplier#000000761 zLSLeLQUj2XrvTTFnv7WAcyZGvvMTx882d4
Supplier#000000884 bmhEShejaS

.... Additional rows deleted ...

Supplier#000009812 APFRMy3lCbGfGa53n5t9DxzFPQPgnjrGt32
Supplier#000009862 rJzweWeN58
Supplier#000009868 ROjGgx5gvtkmUUoey7v
Supplier#000009869
ucLqxrzrBTRMewGSM29t0rNTM30g1Tu3Xgg3mKag
Supplier#000009899 7XdPAHrzr1t,UQFZE
Supplier#000009974 7wJ,J5DKcxSU4Kp1cQLpbcAvB5AsvKT

(204 rows affected)

```

Qualification Query 21

```

SELECT TOP 100
S_NAME
,COUNT(*) AS NUMWAIT
FROM
SUPPLIER
,LINEITEM L1
,ORDERS
,NATION
WHERE
S_SUPPKEY = L1.L_SUPPKEY
AND O_ORDERKEY = L1.L_ORDERKEY
AND O_ORDERSTATUS = 'F'
AND L1.L_RECEIPTDATE > L1.L_COMMITDATE
AND EXISTS
(
SELECT
*
FROM
LINEITEM L2
WHERE
L2.L_ORDERKEY = L1.L_ORDERKEY
AND L2.L_SUPPKEY <> L1.L_SUPPKEY
)

```

```

AND NOT EXISTS
(
SELECT
*
FROM
LINEITEM L3
WHERE
L3.L_ORDERKEY = L1.L_ORDERKEY
AND L3.L_SUPPKEY <> L1.L_SUPPKEY
AND L3.L_RECEIPTDATE > L3.L_COMMITDATE
)
AND S_NATIONKEY = N_NATIONKEY
AND N_NAME = 'SAUDI ARABIA'
GROUP BY
S_NAME
ORDER BY
NUMWAIT DESC
,S_NAME
S_NAME          NUMWAIT
-----
Supplier#000002829      20
Supplier#000005808      18
Supplier#000000262      17
Supplier#000000496      17
Supplier#0000002160     17
Supplier#000002301      17
Supplier#000002540      17
Supplier#000003063      17
Supplier#000005178      17

```

... Additional rows deleted

```

Supplier#000000673      12
Supplier#000000762      12
Supplier#000000811      12
Supplier#000000821      12
Supplier#000001337      12
Supplier#000001916      12
Supplier#000001925      12
Supplier#000002039      12
Supplier#000002357      12
Supplier#000002483      12

```

(100 rows affected)

Qualification Query 22

```

SELECT
CNTRYCODE
,COUNT(*) AS NUMCUST
,SUM(C_ACCTBAL) AS TOTACCTBAL
FROM
(
SELECT
SUBSTRING(C_PHONE,1,2) AS CNTRYCODE
,C_ACCTBAL
FROM
CUSTOMER
WHERE
SUBSTRING(C_PHONE,1,2) IN
('13', '31', '23', '29', '30', '18', '17')
AND C_ACCTBAL > (
SELECT
AVG(C_ACCTBAL)
FROM
CUSTOMER
WHERE
C_ACCTBAL > 0.00

```

```

AND SUBSTRING(C_PHONE,1,2) IN
('13', '31', '23', '29', '30', '18', '17')
)
AND NOT EXISTS (
SELECT
*
FROM
ORDERS
WHERE
O_CUSTKEY = C_CUSTKEY
)
) AS CUSTSALE
GROUP BY
CNTRYCODE
ORDER BY
CNTRYCODE
CNTRYCODE NUMCUST  TOTACCTBAL
-----
13          888    6737713.9900
17          861    6460573.7200
18          964    7236687.4000
23          892    6701457.9500
29          948    7158866.6300
30          909    6808436.1300
31          922    6806670.1800

```

(7 rows affected)

Appendix D: Seeds and Query Substitution Parameters

Stream0 Seed : 704102405

14	1997-02-01						
2	30	NICKEL	AFRICA				
9	wheat						
20	papaya	1995-01-01	CHINA				
6	1995-01-01	0.08	24				
17	Brand#35	SM DRUM					
18	315						
8	ARGENTINA	AMERICA	PROMO BRUSHED				
TIN							
21	IRAQ						
13	special	deposits					
3	MACHINERY	1995-03-06					
22	23	18	33	13	19	31	
	21						
16	Brand#33	ECONOMY BRUSHED		13	17		
	24	12	23	5	29	45	
4	1993-11-01						
11	ROMANIA	0.0000010000					
15	1993-05-01						
1	119						
10	1993-03-01						
19	Brand#14	Brand#34	Brand#44	6	18	20	
5	EUROPE	1995-01-01					
7	SAUDI ARABIA	ARGENTINA					
12	MAIL	AIR	1997-01-01				

Stream1 Seed : 704102406

14	1997-05-01						
2	18	COPPER	EUROPE				
9	steel						
20	blue	1993-01-01	GERMANY				
6	1995-01-01	0.05	25				
17	Brand#31	LG BAG					
18	312						
8	CHINA	ASIA	PROMO PLATED TIN				
21	CANADA						
13	special	deposits					
3	BUILDING	1995-03-22					
22	30	12	10	22	31	27	
	24						
16	Brand#13	SMALL ANODIZED	13	26	10		
	3	19	25	17	43		
4	1996-06-01						
11	GERMANY	0.0000010000					
15	1995-11-01						
1	66						
10	1994-01-01						
19	Brand#21	Brand#12	Brand#33	1	19	27	
5	MIDDLE EAST	1995-01-01					
7	JAPAN	CHINA					
12	TRUCK	AIR	1997-01-01				

Stream2 Seed : 704102407

14	1997-09-01						
2	5	STEEL	AMERICA				
9	sienna						
20	linen	1997-01-01	RUSSIA				
6	1995-01-01	0.03	24				
17	Brand#33	LG PKG					
18	314						
8	IRAN	MIDDLE EAST	PROMO ANODIZED TIN				
21	SAUDI ARABIA						
13	special	deposits					
3	MACHINERY	1995-03-08					
22	32	22	18	14	33	12	
	21						
16	Brand#43	LARGE PLATED	20	39	10		
	9	25	1	23	2		
4	1994-03-01						
11	SAUDI ARABIA	0.0000010000					
15	1993-08-01						
1	74						
10	1994-10-01						
19	Brand#23	Brand#55	Brand#32	7	20	23	
5	AFRICA	1995-01-01					
7	EGYPT	IRAN					
12	RAIL	AIR	1997-01-01				

Stream3 Seed : 704102408

14	1997-12-01						
2	43	BRASS	EUROPE				
9	rosy						
20	tan	1995-01-01	JAPAN				
6	1995-01-01	0.08	24				
17	Brand#35	LG DRUM					
18	315						
8	BRAZIL	AMERICA	ECONOMY POLISHED TIN				
21	JORDAN						
13	pending	deposits					
3	BUILDING	1995-03-24					
22	23	24	19	13	22	33	
	32						
16	Brand#33	PROMO POLISHED	17	36	18		
	25	43	10	8	47		
4	1996-10-01						
11	INDIA	0.0000010000					
15	1996-03-01						
1	82						
10	1993-07-01						
19	Brand#25	Brand#33	Brand#31	2	10	30	
5	AMERICA	1995-01-01					
7	VIETNAM	BRAZIL					
12	AIR	SHIP	1996-01-01				

Stream4 Seed : 704102409

14	1993-03-01						
2	31	NICKEL	AMERICA				
9	plum						
20	ghost	1994-01-01	BRAZIL				
6	1996-01-01	0.06	25				
17	Brand#32	MED BAG					
18	313						
8	ROMANIA	EUROPE	ECONOMY BURNISHED				
NICKEL							
21	ETHIOPIA						
13	pending	packages					
3	HOUSEHOLD	1995-03-10					
22	10	30	20	11	26	13	
	19						
16	Brand#13	MEDIUM ANODIZED		23	31		
	11	22	14	17	8	21	
4	1994-07-01						
11	VIETNAM	0.0000010000					
15	1993-12-01						
1	90						
10	1994-04-01						
19	Brand#32	Brand#21	Brand#21	7	11	27	
5	ASIA	1996-01-01					
7	JORDAN	ROMANIA					
12	SHIP	RAIL	1993-01-01				

Stream5 Seed : 704102410

14	1993-06-01						
2	19	TIN	MIDDLE EAST				
9	orchid						
20	red	1997-01-01	MOZAMBIQUE				
6	1996-01-01	0.03	24				
17	Brand#34	MED PKG					
18	314						
8	IRAQ	MIDDLE EAST	LARGE BRUSHED NICKEL				
21	RUSSIA						
13	pending	packages					
3	BUILDING	1995-03-26					
22	26	17	19	14	15	11	
	12						
16	Brand#43	ECONOMY BURNISHED		27	38		
	45	26	43	19	10	11	
4	1997-02-01						
11	INDONESIA	0.0000010000					
15	1996-06-01						
1	98						
10	1993-02-01						
19	Brand#34	Brand#54	Brand#25	2	12	23	
5	EUROPE	1996-01-01					
7	ETHIOPIA	IRAQ					
12	FOB	RAIL	1993-01-01				

Appendix E: Refresh Function Source Code

E.1 CreateRF1Proc.sql

```
-- CreateRF1Proc.sql

if exists (select name from sysobjects where name = 'RF1')
    drop procedure RF1
GO

--
-- Create a stored RefreshInsert procedure which will catch the deadlock
-- victim abort and restart the insert transaction.
--
CREATE PROCEDURE RF1
@flatfiledir CHAR(40), @updateset INTEGER, @segment INTEGER,
@scalefactor INTEGER
AS
BEGIN

DECLARE @min_orderkey INTEGER
DECLARE @max_orderkey INTEGER
DECLARE @range INTEGER
DECLARE @max_set INTEGER
DECLARE @SQLstring NVARCHAR(255)
DECLARE @insert_sets INTEGER

set @insert_sets= @scalefactor

--
-- Create the insert tables
--
create table #NEWORDERS (
    O_ORDERKEY int not null,
    O_CUSTKEY int not null,
    O_ORDERSTATUS char(1) not null,
    O_TOTALPRICE money not null,
    O_ORDERDATE smalldatetime not null,
    O_ORDERPRIORITY char(15) not null,
    O_CLERK char(15) not null,
    O_SHIPPRIORITY int not null,
    O_COMMENT varchar(79) not null
)
create table #NEWLINEITEM(
    L_ORDERKEY int not null,
    L_PARTKEY int not null,
    L_SUPPKEY int not null,
    L_LINENUMBER int not null,
    L_QUANTITY money not null,
    L_EXTENDEDPRICE money not null,
    L_DISCOUNT money not null,
    L_TAX money not null,
    L_RETURNFLAG char(1) not null,
    L_LINESTATUS char(1) not null,
    L_SHIPDATE smalldatetime not null,
    L_COMMITDATE smalldatetime not null,
    L_RECEIPTDATE smalldatetime not null,
    L_SHIPINSTRUCT char(25) not null,
    L_SHIPMODE char(10) not null,
    L_COMMENT varchar(44) not null
)

create unique clustered index NEWORDERS on #NEWORDERS
(O_ORDERKEY)
```

```
create clustered index NEWLINEITEM on #NEWLINEITEM
(L_ORDERKEY)

--
-- Generate an SQL statement inserting the current updateset value into
-- the command. Next execute the statement to bulk load the new lineitem
-- insert values.
--
SET @SQLstring="bulk insert #NEWLINEITEM from "
+ RTRIM(convert(CHAR,@flatfiledir)) + "\Lineitem.tbl.u"
+ RTRIM(Convert(char,@updateset)) + "."
+ RTRIM(convert(char,@segment))
+ "" with
(FieldTerminator='|',RowTerminator='\n',order(L_ORDERKEY),codepage='
RAW',TABLOCK)"
EXEC sp_executesql @SQLstring

--
-- Generate an SQL statement inserting the current updateset value into
-- the command. Next execute the statement to bulk load the new order
-- insert values.
--
SET @SQLstring="bulk insert #NEWORDERS from "
+ RTRIM(convert(CHAR,@flatfiledir)) + "\Orders.tbl.u"
+ RTRIM(Convert(char,@updateset)) + "."
+ RTRIM(convert(char,@segment))
+ "" with
(FieldTerminator='|',RowTerminator='\n',order(O_ORDERKEY),CODEPA
GE='RAW',TABLOCK)"

EXEC sp_executesql @SQLstring

--
-- Obtain minimum and maximum order key and compute the range of each
-- set to be inserted into the ORDERS and LINEITEM tables.
--
SELECT
@min_orderkey=MIN(O_ORDERKEY),@max_orderkey=MAX(O_ORDE
RKEY) FROM #NEWORDERS
SET @range = (@max_orderkey - @min_orderkey) / @insert_sets

--
-- This handles the case when the max-min/insert_sets is less than 1
--
IF @range = 0
-- BEGIN
    SET @range = (@max_orderkey - @min_orderkey) / 1
-- END

--
-- Loop through the order keys only inserting a sets into the
-- ORDERS and LINTeITEM tables
--
SET @max_set = @min_orderkey - 1
WHILE @max_set < @max_orderkey
BEGIN
--
-- Set the range from min_orderkey to max_set
--
SET @max_set = @min_orderkey + @range
if @max_set > @max_orderkey
    SET @max_set = @max_orderkey + 1

--
-- Insert into ORDERS and LINEITEM tables
--
```



```

INSERT_TRANS:
begin transaction
insert into ORDERS SELECT * FROM #NEWORDERS
WHERE O_ORDERKEY >= @min_orderkey AND
O_ORDERKEY < @max_set
insert into LINEITEM SELECT * FROM #NEWLINITEM
WHERE L_ORDERKEY >= @min_orderkey AND L_ORDERKEY
< @max_set
commit transaction

--
-- If deadlock victim abort then restart the transaction
--
if (@@error = 1205)
BEGIN
print 'Insert deadlock - restarting RF1 transaction'
rollback transaction
GOTO INSERT_TRANS
END

--
-- Move min_orderkey to start of next insert set
--
SET @min_orderkey = @max_set
END

END

GO

```

E.2 CreateRF2Proc.sql

```

-- CreateRF2Proc.sql

if exists (select name from sysobjects where name = 'RF2')
drop procedure RF2
GO

--
-- Create a stored Refresh Delete procedure which will catch the deadlock
-- victim abort and restart the delete transaction.
--
CREATE PROCEDURE RF2
@flatfiledir CHAR(40), @updateset INTEGER, @segment INTEGER,
@scalefactor INTEGER
AS
BEGIN

DECLARE @min_orderkey INTEGER
DECLARE @max_orderkey INTEGER
DECLARE @range INTEGER
DECLARE @max_set INTEGER
DECLARE @SQLstring NVARCHAR(255)
DECLARE @delete_sets INTEGER

set @delete_sets=@scalefactor

create table #OLDORDERS (O_ORDERKEY int)
create unique clustered index OLDORDERS
on #OLDORDERS (O_ORDERKEY)
with sorted_data

--
-- Generate an SQL statement inserting the current updateset value into
-- the command. Next execute the statement to bulk load the old order
-- delete values
--
SET @SQLstring="bulk insert #OLDORDERS from ""

```

```

+ RTRIM(convert(CHAR,@flatfiledir)) + "\Delete.u"
+ RTRIM(Convert(char,@updateset)) + "."
+ RTRIM(convert(char,@segment))
+ "" with (order(O_ORDERKEY),codepage='RAW',TABLOCK)"
EXEC sp_executesql @SQLstring

--
-- Obtain minimum and maximum order key and compute the
-- range of each delete set
--
SELECT
@min_orderkey=MIN(O_ORDERKEY),@max_orderkey=MAX(O_ORDE
RKEY) FROM #OLDORDERS
SET @range = (@max_orderkey - @min_orderkey) / @delete_sets

--
-- This handles the case when the max-min/delete_sets is less than 1
--
IF @range = 0
-- BEGIN
SET @range = (@max_orderkey - @min_orderkey) / 1
-- END

--
-- Loop through the order keys only deleting sets from orders
-- and lineitem tables
--
SET @max_set = @min_orderkey - 1
WHILE @max_set < @max_orderkey
BEGIN
--
-- Set the range from min_orderkey to max_set
--
SET @max_set = @min_orderkey + @range
if @max_set > @max_orderkey
SET @max_set = @max_orderkey + 1

--
-- Delete from ORDERS and LINEITEM table
--
DELETE_TRANS:
begin transaction
delete from ORDERS where O_ORDERKEY in
(select * from #OLDORDERS WHERE O_ORDERKEY >=
@min_orderkey AND O_ORDERKEY < @max_set)
delete from LINEITEM where L_ORDERKEY in
(select * from #OLDORDERS WHERE O_ORDERKEY >=
@min_orderkey AND O_ORDERKEY < @max_set)

commit transaction

--
-- If deadlock victim abort then restart the transaction
--
if (@@error = 1205)
BEGIN
print 'Delete deadlock - restarting RF2 transaction'
rollback transaction
GOTO DELETE_TRANS
END

--
-- Move min_orderkey to start of next delete set
--
SET @min_orderkey = @max_set

END
END

GO

```

Appendix F: Implementation Specific Layer and Source Code

F.1 Setup.cmd

```
echo off

rem
rem Modify the following parameters for your configuration
rem

set DB=tpch100g
rem
rem set sql's 'sa' user password here
rem
set PW=

set HOMEDRIVE=C:
set HOMEDIR=(HP_TPCH_KIT)Setup
set OUTPUTDRIVE=c:
set OUTPUTDIR=(HP_TPCH_KIT)Output
set SCALEFACTOR=100
set DBGEN_SEGMENTS=32
set DBGEN_PARALLELISM=16
set FLATFILEDRIVE=z:
set FLATFILEDIR=Flatfiles\
set FLATFILESUBDIR=
set RF1_PARALLELISM=128
set RF2_PARALLELISM=128
set UPDATEDRIVE=z:
set UPDATEDIR=(UF_Flatfiles
set UPDATE_SETS=18

set DoDBGEN=FALSE
set DoDBCREATE=TRUE
set DoBULKINSERT=TRUE
set DoCLEANUP=TRUE
set DoBACKUP=TRUE
set DoENDSTATS=TRUE

%HOMEDRIVE%
cd %HOMEDIR%

if '%1' == 'DBGEN' goto :DBGEN
if '%1' == 'BULKINSERTn' goto :BULKINSERTn

echo Checking for existence of HOMEDIR and OUTPUTDIR
if NOT EXIST %HOMEDRIVE%%HOMEDIR% goto :ERROR_EXIT
if NOT EXIST %OUTPUTDRIVE%%OUTPUTDIR% goto :ERROR_EXIT
if NOT EXIST %UPDATEDRIVE%%UPDATEDIR% goto :ERROR_EXIT

echo Finding next output directory in
%OUTPUTDRIVE%%OUTPUTDIR%
set OUTPUTNUMBER=1
:OUTPUTLOOP
if NOT EXIST
%HOMEDRIVE%%HOMEDIR%\%OUTPUTNUMBER% goto
:OUTPUTLOOPEND
set /a OUTPUTNUMBER=%OUTPUTNUMBER%+1
goto :OUTPUTLOOP
:OUTPUTLOOPEND

set
OUTPUTPATH=%OUTPUTDRIVE%%OUTPUTDIR%\OUTPUTNUMBER%
BER%
echo Output will be found at %OUTPUTPATH%
mkdir %OUTPUTPATH%

if NOT '%DoDBGEN%' == 'TRUE' goto :DBCREATE

rem
rem DBGEN invokes dbgen.exe in parallel
rem

echo Starting DBGEN of FlatFiles
for /l %%i in (1,1,%DBGEN_SEGMENTS%) do copy dists.dss
%FLATFILEDRIVE%\%FLATFILEDIR%\%i%\FLATFILESUBDIR%
Copy dists.dss %UPDATEDRIVE%%UPDATEDIR%
for /l %%i in (1,%DBGEN_PARALLELISM%,%DBGEN_SEGMENTS%)
do call :DBGEN_ITERATE %%i

echo Starting DBGEN of Update Files
%UPDATEDRIVE%
cd %UPDATEDIR%
%HOMEDRIVE%\%HOMEDIR%\dbgen -U %UPDATE_SETS% -s
%SCALEFACTOR% -qf -C %UPDATE_SETS% -i
%RF1_PARALLELISM% -d %RF2_PARALLELISM%
2>%OUTPUTPATH%\dbgen_Update.out
%HOMEDRIVE%
cd %HOMEDIR%
goto :DBCREATE

:DBGEN_ITERATE
set FIRST=%1
set /a LAST=%FIRST%+%DBGEN_PARALLELISM%-1
echo DBGening sets %FIRST% through %LAST%
for /l %%i in (%FIRST%,1,%LAST%) do start cmd /C Setup DBGEN %%i
semaphore -wait DBGEN -count %DBGEN_PARALLELISM%
goto :EOF

:DBGEN
%FLATFILEDRIVE%
cd \%FLATFILEDIR%\%FLATFILESUBDIR%
%HOMEDRIVE%\%HOMEDIR%\dbgen -qf -s%SCALEFACTOR% -
C%DBGEN_SEGMENTS% -S%2 2>%OUTPUTPATH%\dbgen_%2%.out
%HOMEDRIVE%
cd %HOMEDIR%
semaphore -release DBGEN
goto :EOF

:DBCREATE
if NOT '%DoDBCREATE%' == 'TRUE' goto :BULKINSERT
rem
rem DBCREATE invokes the file %DBNAME%\CreateDatabase.sql
rem
echo Starting database creation

osql -Usa -P%PW% -Q"if exists (select * from sysdatabases where
name='%DB%')drop database %DB%" -o
%OUTPUTPATH%\DropDatabase.out -b
if ERRORLEVEL 1 goto :ERROR_EXIT
osql -Usa -P%PW% -i %DB%\CreateDatabase.sql -o
%OUTPUTPATH%\CreateDatabase.out -b
if ERRORLEVEL 1 goto :ERROR_EXIT
```

```

osql -Usa -P%PW% -Q"sp_dboption %DB%, 'trunc', TRUE" -b
if ERRORLEVEL 1 goto :ERROR_EXIT
osql -Usa -P%PW% -Q"sp_dboption %DB%, 'select into', TRUE" -b
if ERRORLEVEL 1 goto :ERROR_EXIT
osql -Usa -P%PW% -Q"sp_dboption %DB%, 'torn', FALSE" -b
if ERRORLEVEL 1 goto :ERROR_EXIT

:BULKINSERT
if NOT '%DoBULKINSERT%' == 'TRUE' goto :CLEANUP
rem
rem BULKINSERT starts a process per %DBGEN_PARALLELISM%
rem Each process inserts one or more segments
rem

osql -Usa -P%PW% -Q"sp_dboption %DB%, 'trunc', TRUE" -b
if ERRORLEVEL 1 goto :ERROR_EXIT
osql -Usa -P%PW% -Q"sp_dboption %DB%, 'select into', TRUE" -b
if ERRORLEVEL 1 goto :ERROR_EXIT
osql -Usa -P%PW% -Q"sp_dboption %DB%, 'torn', FALSE" -b
if ERRORLEVEL 1 goto :ERROR_EXIT

echo Dropping and Re-Creating Tables
osql -Usa -P%PW% -d%DB% -Q"if EXISTS (select * from sysobjects where
name = 'LOADTIMES') drop table LOADTIMES" -b -o
%OUTPUTPATH%\Drop_Loadtimes.out
if ERRORLEVEL 1 goto :ERROR_EXIT
osql -Usa -P%PW% -d%DB% -Q"create table LOADTIMES(STEP
char(35),TIMESTAMP datetime)" -b
if ERRORLEVEL 1 goto :ERROR_EXIT
osql -Usa -P%PW% -d%DB% -Q"insert into LOADTIMES values ('LOAD
begin',getdate())" -b
if ERRORLEVEL 1 goto :ERROR_EXIT
osql -Usa -P%PW% -d%DB% -Q"insert into LOADTIMES values ('Create
Tables begin',getdate())" -l 300
if ERRORLEVEL 1 goto :ERROR_EXIT
for %i in (REGION NATION SUPPLIER PARTSUPP PART
CUSTOMER ORDERS LINEITEM) do osql -Usa -P%PW% -d%DB% -
Q"drop table %i" -o %OUTPUTPATH%\Drop_Table_%i.out
osql -Usa -P%PW% -d%DB% -i %DB%\CreateTables.sql -o
%OUTPUTPATH%\CreateTables.out -b
if ERRORLEVEL 1 goto :ERROR_EXIT
osql -Usa -P%PW% -d%DB% -Q"insert into LOADTIMES values ('Create
Tables end',getdate())" -l 300
if ERRORLEVEL 1 goto :ERROR_EXIT

echo Starting bulk inserts
for %i in (LINEITEM ORDERS CUSTOMER PART PARTSUPP
SUPPLIER) do call :BULKINSERT %i
echo for NATION and REGION
osql -Usa -P%PW% -d%DB% -Q"insert into LOADTIMES values
('Nation/Region insert begin',getdate())" -b
if ERRORLEVEL 1 goto :ERROR_EXIT
osql -Usa -P%PW% -d%DB% -Q"bulk insert NATION from
'%FLATFILEDRIVE%\%FLATFILEDIR%\%FLATFILESUBDIR%\Natio
n.tbl' with (FieldTerminator = '|', RowTerminator = '\n', tablock)" -o
%OUTPUTPATH%\BulkInsert_Nation.out -b -l 300
if ERRORLEVEL 1 goto :ERROR_EXIT
osql -Usa -P%PW% -d%DB% -i %DB%\CreateNATIONIndexes.sql -b
if ERRORLEVEL 1 goto :ERROR_EXIT
osql -Usa -P%PW% -d%DB% -Q"bulk insert REGION from
'%FLATFILEDRIVE%\%FLATFILEDIR%\%FLATFILESUBDIR%\Regio
n.tbl' with (FieldTerminator = '|', RowTerminator = '\n', tablock)" -o
%OUTPUTPATH%\BulkInsert_Region.out -b -l 300
if ERRORLEVEL 1 goto :ERROR_EXIT
osql -Usa -P%PW% -d%DB% -i %DB%\CreateREGIONIndexes.sql -b
if ERRORLEVEL 1 goto :ERROR_EXIT
osql -Usa -P%PW% -d%DB% -Q"insert into LOADTIMES values
('Nation/Region insert end',getdate())" -b -l 300
if ERRORLEVEL 1 goto :ERROR_EXIT

```

```

goto :CLEANUP

:BULKINSERTi
echo Starting bulk inserts for %i
osql -Usa -P%PW% -d%DB% -Q"insert into LOADTIMES values ('%i bulk
insert begin',getdate())" -l 300
for /l %j in (1,1,%DBGEN_PARALLELISM%) do start cmd /C Setup
BULKINSERTn %i %j
semaphore -wait %i -count %DBGEN_PARALLELISM%
echo Starting create indexes for %i
osql -Usa -P%PW% -d%DB% -Q"insert into LOADTIMES values ('%i
create index begin',getdate())" -b -l 300
if ERRORLEVEL 1 goto :ERROR_EXIT
osql -Usa -P%PW% -d%DB% -i %DB%\Create%IIndexes.sql -o
%OUTPUTPATH%\Create%IIndexes.out -b
if ERRORLEVEL 1 goto :ERROR_EXIT
osql -Usa -P%PW% -d%DB% -Q"insert into LOADTIMES values ('%i
end',getdate())" -b -l 300
if ERRORLEVEL 1 goto :ERROR_EXIT
goto :EOF

:BULKINSERTn
for /l %k in
(%3,%DBGEN_PARALLELISM%,%DBGEN_SEGMENTS%) do call
:BULKINSERTn2 BULKINSERTn2 %2 %k
semaphore -release %2
goto :EOF

:BULKINSERTn2
osql -Usa -P%PW% -d%DB% -Q"bulk insert %2 from
'%FLATFILEDRIVE%\%FLATFILEDIR%\%3%FLATFILESUBDIR%\%2.
tbl.%3' with (FieldTerminator = '|', RowTerminator = '\n', tablock)" -o
%OUTPUTPATH%\BulkInsert_%2.%3.out -b -l 300
goto :EOF

:CLEANUP
if NOT '%DoCLEANUP%' == 'TRUE' goto :BACKUP
rem
rem CLEANUP sets statistics and lock options
rem

echo Setting Cleanup Options

osql -Usa -P%PW% -d%DB% -Q"insert into LOADTIMES values ('Cleanup
start',getdate())" -b
if ERRORLEVEL 1 goto :ERROR_EXIT
osql -Usa -P%PW% -d%DB% -Q"sp_createstats" -o
%OUTPUTPATH%\CreateStats.out -b
if ERRORLEVEL 1 goto :ERROR_EXIT
osql -Usa -P%PW% -d%DB% -Q"sp_dboption '%DB%', 'auto create
statistics', 'OFF'" -o %OUTPUTPATH%\AutoCreateStats.out
if ERRORLEVEL 1 goto :ERROR_EXIT
osql -Usa -P%PW% -d%DB% -Q"sp_dboption '%DB%', 'auto update
statistics', 'OFF'" -o %OUTPUTPATH%\AutoUpdateStats.out
if ERRORLEVEL 1 goto :ERROR_EXIT
osql -Usa -P%PW% -d%DB% -Q"sp_indexoption 'LINEITEM',
'disallowpagelocks', 'FALSE'" -o
%OUTPUTPATH%\DisallowPageLocksLINEITEM.out -b
if ERRORLEVEL 1 goto :ERROR_EXIT
osql -Usa -P%PW% -d%DB% -Q"sp_indexoption 'ORDERS',
'disallowpagelocks', 'FALSE'" -o
%OUTPUTPATH%\DisallowPageLocksOrders.out -b
if ERRORLEVEL 1 goto :ERROR_EXIT
osql -Usa -P%PW% -d%DB% -i CreateRF1Proc.sql -o
%OUTPUTPATH%\CreateRF1Proc.out -b
if ERRORLEVEL 1 goto :ERROR_EXIT
osql -Usa -P%PW% -d%DB% -i CreateRF2Proc.sql -o
%OUTPUTPATH%\CreateRF2Proc.out -b
if ERRORLEVEL 1 goto :ERROR_EXIT

```

```

osql -Usa -P%PW% -d%DB% -Q"exec sp_tableoption
'NATION','pintable',1" -o %OUTPUTPATH%\pinNATION.out -b
if ERRORLEVEL 1 goto :ERROR_EXIT
osql -Usa -P%PW% -d%DB% -Q"exec sp_tableoption
'REGION','pintable',1" -o %OUTPUTPATH%\pinREGION.out -b
if ERRORLEVEL 1 goto :ERROR_EXIT
rem
rem osql -Usa -P%PW% -d%DB% -Q"exec sp_tableoption
'SUPPLIER','pintable',1" -o %OUTPUTPATH%\pinSUPPLIER.out -b
rem if ERRORLEVEL 1 goto :ERROR_EXIT
osql -Usa -P%PW% -Q"sp_dboption %DB%, 'torn', FALSE" -b
>%OUTPUTPATH%\dboptionTornOFF.out
if ERRORLEVEL 1 goto :ERROR_EXIT
osql -Usa -P%PW% -Q"sp_dboption %DB%, 'trunc', FALSE" -b
>%OUTPUTPATH%\dboptionTrunOFF.out
if ERRORLEVEL 1 goto :ERROR_EXIT
osql -Usa -P%PW% -Q"sp_dboption %DB%, 'select', FALSE" -b
>%OUTPUTPATH%\dboptionSelOFF.out
if ERRORLEVEL 1 goto :ERROR_EXIT

osql -Usa -P%PW% -d%DB% -Q"insert into LOADTIMES values ('Cleanup
end',getdate())" -b
if ERRORLEVEL 1 goto :ERROR_EXIT

:BACKUP
rem
rem BACKUP is the final step, using a script
rem

if NOT '%DoBACKUP%' == 'TRUE' goto :ENDSTATS

echo Starting Backup
osql -Usa -P%PW% -d%DB% -Q"insert into LOADTIMES values ('Backup
start',getdate())" -b
if ERRORLEVEL 1 goto :ERROR_EXIT
echo Deleting LoadFg filegroup
osql -Usa -P%PW% -d%DB% -i %DB%\DelLoadFG.sql -o
%OUTPUTPATH%\DelLoadFG.out -b
if ERRORLEVEL 1 goto :ERROR_EXIT
osql -Usa -P%PW% -d%DB% -i %DB%\Backup.sql -o
%OUTPUTPATH%\Backup.out -b
if ERRORLEVEL 1 goto :ERROR_EXIT
osql -Usa -P%PW% -d%DB% -Q"insert into LOADTIMES values ('Backup
end',getdate())" -b
if ERRORLEVEL 1 goto :ERROR_EXIT

:ENDSTATS

if NOT '%DoENDSTATS%' == 'TRUE' goto :EOF

osql -Usa -P%PW% -d%DB% -Q"insert into LOADTIMES values ('LOAD
end',getdate())"
osql -Usa -P%PW% -d%DB% -Q"select TIMESTAMP from LOADTIMES
where STEP='LOAD end'" -o %OUTPUTPATH%\LoadEND.out
bcp %DB%..LOADTIMES out %OUTPUTPATH%\LOADTIMES.bcp -Usa
-P%PW% -n
echo Last step is to run Francois' dbtables-ms.sql script
osql -Usa -P%PW% -d%DB% -i dbtables-ms.sql -o
%OUTPUTPATH%\dbtables-ms.out
osql -Usa -P%PW% -d%DB% -i SetupReport.sql -o
%OUTPUTPATH%\SetupReport.out
rem echo Optional step to check database validity
rem osql -Usa -P%PW% -dtpch300g -Q"dbcc checkdb('tpch300g') with
PHYSICAL_ONLY" -o %OUTPUTPATH%\CheckDb.out
rem echo Optional, and very expensive, step to check LINEITEM and
ORDERS validity
rem osql -Usa -P%PW% -dtpch300g -Q"dbcc checktable('LINEITEM')" -o
%OUTPUTPATH%\CheckLINEITEM.out
rem osql -Usa -P%PW% -dtpch300g -Q"dbcc checktable('ORDERS')" -o
%OUTPUTPATH%\CheckORDERS.out

```

```

echo Done! Check for output in %OUTPUTPATH%
goto :EOF

```

```

:ERROR_EXIT
echo Setup aborted due to errors
echo Check output in %OUTPUTPATH%
exit /B

```

F.2 Run.cmd

```

echo off

rem
rem Modify the following parameters for your configuration
rem
rem This version pulls the Update Files from
rem %UPDRIVE%\segment>%UPDIR%
rem

set DB=tpch100g
set HOMEDRIVE=C:
set HOMEDIR=\HP_TPC_H_KIT\Run
set OUTPUTDRIVE=C:
set OUTPUTDIR=\HP_TPC_H_KIT\Output
set UPDRIVE=Z:
set UPDIR=\UF_Flatfiles
set UPDATESET=7
set UPDATESEGMENTS=64
set SEED=704102405
set SCALEFACTOR=100
set STREAMS=5

set DoRESTORE=FALSE
set DoSETUP=TRUE
set DoPOWER=TRUE
set DoPOWERRefresh=TRUE
set DoPOWERStream0=TRUE
set DoTHROUGHPUT=TRUE

%HOMEDRIVE%
cd %HOMEDIR%

if '%1' == 'RF1' goto RF1
if '%1' == 'RF2' goto RF2
if '%1' == 'THROUGHPUT_STREAM' goto :THROUGHPUT_STREAM

echo Checking for existence of HOMEDIR and OUTPUTDIR
if NOT EXIST %HOMEDRIVE%\%HOMEDIR% goto :ERROR_EXIT
if NOT EXIST %OUTPUTDRIVE%\%OUTPUTDIR% goto :ERROR_EXIT

set OUTPUTNUMBER=1
:OUTPUTLOOP
if NOT EXIST
%OUTPUTDRIVE%\%OUTPUTDIR%\%OUTPUTNUMBER% goto
:OUTPUTLOOPEND
set /a OUTPUTNUMBER=%OUTPUTNUMBER%+1
goto :OUTPUTLOOP
:OUTPUTLOOPEND
set
OUTPUTPATH=%OUTPUTDRIVE%\%OUTPUTDIR%\%OUTPUTNUM
BER%
echo Output will be found at %OUTPUTPATH%
mkdir %OUTPUTPATH%
rem
rem Create the TIMES table
rem

```

```

osql -E -d%DB% -Q"if exists (select * from sysindexes where name =
'TIMES') drop table TIMES"
osql -E -d%DB% -Q"create table TIMES(QUERY char(5),STREAM
int,START datetime)"

if NOT '%DoRESTORE%' == 'TRUE' goto :SETUP

rem
rem Use the Restore.sql script in SETUP
rem

echo Starting Restore
osql -E -i ..\Setup\%DB%\Restore.sql -b
osql -E -d%DB% -i ..\Setup\CreateRF1Proc.sql
osql -E -d%DB% -i ..\Setup\CreateRF2Proc.sql
if ERRORLEVEL 1 goto :ERROR_EXIT

:SETUP
if NOT '%DoSETUP%' == 'TRUE' goto :POWER

rem
rem Create the Power and five Throughput Streams
rem

echo QGening the Power and Throughput Streams
pushd templates
for /l %%i in (0,1,%STREAMS%) do call :SETUP1 %%i
for /l %%i in (1,1,%STREAMS%) do echo insert into TIMES values
('QXX',%%i,getdate())>> %HOMEDIR%\Stream%%i.sql
for /l %%i in (1,1,%STREAMS%) do echo go>>
%HOMEDIR%\Stream%%i.sql
for /l %%i in (0,1,%STREAMS%) do copy %HOMEDIR%\Stream%%i.sql
%OUTPUTPATH%
popd
goto :SETUP2

:SETUP1
echo Qgening using seed %SEED%
%HOMEDIR%\qgen -s %SCALEFACTOR% -r %SEED% -p 1 >
%HOMEDIR%\Stream%1.sql
set /a SEED=%SEED% + 1
goto :EOF

:SETUP2

rem
rem Begin POWER run
rem

rem
rem Execute the RF1 Transaction set in parallel
rem

:POWER
if NOT '%DoPOWER%' == 'TRUE' goto :THROUGHPUT
osql -E -d%DB% -Q"truncate table TIMES"
echo Beginning Power Run
if NOT '%DoPOWERRefresh%' == 'TRUE' goto :STREAM0

echo Running the RF1s
set /a UPDATE_SEGMENT=%1+%UPDATESET%
osql -E -d%DB% -Q"insert into TIMES values ('RF1',0,getdate())"
for /l %%i in (1,1,%UPDATESEGMENTS%) do start /HIGH cmd /C Run
RF1 %UPDATE_SEGMENT% %%i
semaphore -wait RF1 -count %UPDATESEGMENTS%

rem
rem Execute the PowerRun Queries

```

```

rem

:STREAM0
if NOT '%DoPOWERStream0%' == 'TRUE' goto :STREAM0_DONE
echo Running Stream0
osql -E -d%DB% -iStream0.sql -o %OUTPUTPATH%\Stream0.out -b
if ERRORLEVEL 1 goto :ERROR_EXIT
:STREAM0_DONE

rem
rem Execute the RF2 Transaction set in Parallel
rem

if NOT '%DoPOWERRefresh%' == 'TRUE' goto :POWERDONE
echo Running the RF2s
osql -E -d%DB% -Q"insert into TIMES values ('RF2',0,getdate())"
for /l %%i in (1,1,%UPDATESEGMENTS%) do start /abovenormal cmd /C
Run RF2 %UPDATE_SEGMENT% %%i
semaphore -wait RF2 -count %UPDATESEGMENTS%

:POWERDONE
osql -E -d%DB% -Q"insert into TIMES values ('QXX',0,getdate())" -l300

rem
rem Execute the THROUGHPUT Run
rem

:THROUGHPUT
if NOT '%DoTHROUGHPUT%' == 'TRUE' goto :DONE
echo Running the Throughput Streams

for /l %%i in (1,1,%STREAMS%) do start /abovenormal cmd /C Run
THROUGHPUT_STREAM %%i
osql -E -d%DB% -Q"insert into TIMES values ('RF1',1,getdate())"
semaphore -wait THROUGHPUT_QUERIES -count %STREAMS%

for /l %%j in (1,1,%STREAMS%) do call :THROUGHPUT_REFRESH
%%j
goto :DONE

:THROUGHPUT_STREAM
osql -E -d%DB% -iStream%2.sql -o %OUTPUTPATH%\Stream%2.out
semaphore -release THROUGHPUT_QUERIES
goto :EOF

:THROUGHPUT_REFRESH
if %1 neq 1 osql -E -d%DB% -Q"insert into TIMES values
('RF1',%1,getdate())"
set /a UPDATE_SEGMENT=%1+%UPDATESET%
for /l %%i in (1,1,%UPDATESEGMENTS%) do start /abovenormal cmd /C
Run RF1 %UPDATE_SEGMENT% %%i
semaphore -wait RF1 -count %UPDATESEGMENTS%
osql -E -d%DB% -Q"insert into TIMES values ('RF2',%1,getdate())"
for /l %%i in (1,1,%UPDATESEGMENTS%) do start /abovenormal cmd /C
Run RF2 %UPDATE_SEGMENT% %%i
semaphore -wait RF2 -count %UPDATESEGMENTS%
osql -E -d%DB% -Q"insert into TIMES values ('RFX',%1,getdate())"
goto :EOF

rem
rem Final Step -- Write out completion to Log
rem

:DONE
osql -E -d%DB% -iReport.sql -o%OUTPUTPATH%\Report.out -w120
bcp %DB%..TIMES out %OUTPUTPATH%\TIMES.bcp -Usa -P -n
rem ----- Get SQL Configuration
osql -E -Q"sp_configure 'show advanced',1"
osql -E -Q"reconfigure with override"
osql -E -n -s, -w300 -Q"sp_configure" -o%OUTPUTPATH%\configure.out

```

```

rem ----- Get SQL Version
osql -E -n -w300 -e -Q"select @@version" -
o%OUTPUTPATH%\sqlversion.out
osql -E -n -w300 -e -Q"sp_helpdb %DB%" -o%OUTPUTPATH%\db.out
osql -E -n -w300 -e -Q"sp_dboption %DB%" -
o%OUTPUTPATH%\dboption.out
osql -E -n -w300 -e -Q"sp_helpsort" -o%OUTPUTPATH%\sort.out
osql -E -n -w300 -e -d%DB% -locking.sql -
o%OUTPUTPATH%\locking.out
rem ----- Get query plans
@echo set showplan_all on >%OUTPUTPATH%\stream.sql
@echo go >>%OUTPUTPATH%\stream.sql
type stream0.sql >>%OUTPUTPATH%\stream.sql
osql -E -d%DB% -n -w3000 -i%OUTPUTPATH%\stream.sql -
o%OUTPUTPATH%\plans.out

rem ----- Get Boot.ini
TYPE c:\boot.ini >%OUTPUTPATH%\boot.ini
reg query "HKLM\SYSTEM\CurrentControlSet\Control\Session
Manager\I/O System" /s >%OUTPUTPATH%\session.reg
reg query
"HKLM\SYSTEM\CurrentControlSet\Services\hpqcissb\Parameters" /s
>%OUTPUTPATH%\array.reg
reg query "HKLM\SYSTEM\CurrentControlSet\Control\PriorityControl" /s
>%OUTPUTPATH%\priority.reg

echo Done! Output can be found at %OUTPUTPATH%
goto :EOF

rem
rem Subroutine for Executing RF1s
rem called from RF1 and THROUGHPUT_RF1
rem

:RF1
rem osql -E -l 120 -d%DB% -Q"exec RF1
'%UPDATEDRIVE%% UPDATEDIR%',%2,%3,%SCALEFACTOR%" -o
%OUTPUTPATH%\RF1_%2_%3.out
osql -E -l 120 -d%DB% -Q"exec RF1
'%UPDATEDRIVE%% UPDATEDIR%',%2,%3,100" -o
%OUTPUTPATH%\RF1_%2_%3.out
semaphore -release RF1
goto :EOF

rem
rem Subroutine for Executing RF2s
rem called from RF2 and THROUGHPUT_RF2
rem

:RF2
rem osql -E -l 120 -d%DB% -Q"exec RF2
'%UPDATEDRIVE%% UPDATEDIR%',%2,%3,%SCALEFACTOR%" -o
%OUTPUTPATH%\RF2_%2_%3.out
osql -E -l 120 -d%DB% -Q"exec RF2
'%UPDATEDRIVE%% UPDATEDIR%',%2,%3,100" -o
%OUTPUTPATH%\RF2_%2_%3.out
semaphore -release RF2
goto :EOF

:ERROR_EXIT
echo Run aborted due to error
echo Check output in %OUTPUTPATH%
exit /B

```

F.3 Semaphore.cpp

```

#define _WIN32_WINNT 0x0400
#include <windows.h>
#include <string.h>
#include <iostream.h>
#include <stdlib.h>
#include <stdio.h>
#include <assert.h>
void main(int argc, char **argv)
{
typedef enum { eUnknown, eWait, eSignal, eRelease, eWaitList,
eWaitGroup } OPERATION;
OPERATION eOP = eUnknown;
int iCount;
int i;
HANDLE hSemaphore;
HANDLE *pHandles;
SYSTEMTIME Time;
if (argc < 3)
goto usage;
if (_stricmp(argv[1], "-wait") == 0)
eOP = eWait;
else if (_stricmp(argv[1], "-signal") == 0)
eOP = eSignal;
else if (_stricmp(argv[1], "-release") == 0)
eOP = eRelease;
else if (_stricmp(argv[1], "-waitlist") == 0)
eOP = eWaitList;
else if (_stricmp(argv[1], "-waitgroup") == 0)
eOP = eWaitGroup;
else goto usage;
if ((eOP == eWait) || (eOP == eRelease))
{
// argv[2] is the semaphore name
// if -count option specified, then there must be exactly 5 args
if ((argc == 5) && (_stricmp(argv[3], "-count") == 0))
{
iCount = atoi(argv[4]);
if (iCount < 1)
goto usage;
}
// check that
else if (argc != 3)
goto usage;
else
iCount = 1;
}
else if (eOP == eWaitGroup)
{
if ((argc != 5) || (_stricmp(argv[3], "-count") != 0))
goto usage;
iCount = atoi(argv[4]);
if (iCount < 1)
goto usage;
}
else
// eWaitList or eSignal
iCount = argc - 2;
if (eOP == eWait)
{
printf("semaphore name = %s\n", argv[2]);
printf("semaphore count = %d\n", iCount);
hSemaphore = CreateSemaphore( NULL, 0, 2000000000,
argv[2] );
if (hSemaphore == NULL)
{
DWORD dwError = GetLastError();
cout << "**ERROR* CreateSemaphore returned "

```

```

<< dwError << endl;
exit(EXIT_FAILURE);
}
for (i=0; i<iCount; i++)
{
WaitForSingleObject( hSemaphore, INFINITE );
GetLocalTime( &Time );
printf( "%4.4d-%2.2d-%2.2d %2.2d:%2.2d:%2.2d
- released \n",
Time.wYear, Time.wMonth,
Time.wDay, Time.wHour, Time.wMinute, Time.wSecond );
}
CloseHandle( hSemaphore );
}
else if ((eOP == eWaitGroup) || (eOP == eWaitList))
{
char **szEventNames;
szEventNames = new char*[iCount];
char szTmp[128];
printf( "event-list = " );
for (i=0; i<iCount; i++)
{
if (eOP == eWaitGroup)
{
wsprintf( szTmp, "%s.%d", argv[2],
i+1 );
szEventNames[i] = new
char[strlen(szTmp)+1];
strcpy( szEventNames[i], szTmp );
}
else
{
szEventNames[i] = new
char[strlen(argv[i+2])+1];
strcpy( szEventNames[i], argv[i+2] );
}
printf( " %s", szEventNames[i] );
}
printf( "\n" );
pHandles = new HANDLE[iCount-1];
for (i=0; i<iCount; i++)
{
pHandles[i] = CreateEvent( NULL, TRUE /*
manual reset */, FALSE /* initially non-signaled */, szEventNames[i] );
if (pHandles[i] == NULL)
{
DWORD dwError = GetLastError();
cout << "ERROR* CreateEvent
returned " << dwError << endl;
exit(EXIT_FAILURE);
}
}
for (i=iCount; i>0;i--)
{
int idx = WaitForMultipleObjects( i, pHandles,
FALSE /* wait for all */, INFINITE ) - WAIT_OBJECT_0;
GetLocalTime( &Time );
printf( "%4.4d-%2.2d-%2.2d %2.2d:%2.2d:%2.2d
- signaled: %s \n",
Time.wYear, Time.wMonth,
Time.wDay, Time.wHour, Time.wMinute, Time.wSecond, szEventNames[idx] );
HANDLE hTmp = pHandles[idx];
pHandles[idx] = pHandles[i-1];
pHandles[i-1] = hTmp;
char* szTmp = szEventNames[idx];
szEventNames[idx] = szEventNames[i-1];
szEventNames[i-1] = szTmp;
}
for (i=0; i<iCount; i++)
CloseHandle( pHandles[i] );

```

```

}
else if (eOP == eRelease)
{
hSemaphore = OpenSemaphore(
SEMAPHORE_MODIFY_STATE, FALSE, argv[2] );
if (hSemaphore == NULL)
{
DWORD dwError = GetLastError();
cout << "ERROR* OpenSemaphore returned "
<< dwError << endl;
exit(EXIT_FAILURE);
}
}
if (!ReleaseSemaphore( hSemaphore, iCount, NULL ))
{
DWORD dwError = GetLastError();
cout << "ERROR* ReleaseSemaphore returned
" << dwError << endl;
exit(EXIT_FAILURE);
}
CloseHandle( hSemaphore );
}
else if (eOP == eSignal)
{
for (i=0; i<iCount; i++)
{
HANDLE hHandle = OpenEvent(
EVENT_MODIFY_STATE, FALSE, argv[i+2] );
if (hHandle == NULL)
{
DWORD dwError = GetLastError();
cout << "ERROR* OpenEvent
returned " << dwError << endl;
exit(EXIT_FAILURE);
}
SetEvent( hHandle );
CloseHandle( hHandle );
}
}
exit(EXIT_SUCCESS);
// syntax was bad; show usage and quit
usage:
printf(
"Semaphore Utility - Ver. 1.2 - 26-Jul-99 \n"
"Copyright (C) Microsoft Corp 1999. All rights reserved.\n\n"
"usage: \n"
" semaphore { -wait | -release } <semaphore-name> [ -count
<count> ] \n"
" semaphore { -waitlist | -signal } <event-list> \n"
" semaphore -waitgroup <event-prefix> -count <count> \n"
"\n"
"<semaphore-name> == alpha-numeric identifier \n"
"<count> == integer > 0; default value = 1 \n"
"<event-list> == { <event-name> ... } \n"
"<event-name> == alpha-numeric identifier \n"
"<event-prefix> == alpha-numeric identifier \n"
"\n"
"There are two modes to choose from: a semaphore or a list
of events. \n"
"\n"
"Semaphore mode: \n"
"A semaphore is a single identifier with an associated count.
Each time \n"
"the semaphore is released, the count is decremented by one
(or the amount \n"
"specified). When the count reaches zero, the waiter
completes. If there \n"
"are multiple waiters on the same semaphore, each release
releases only \n"
"the number of waiters specified in count.\n"
"\n"

```

"List of Events: \n"
"A list of events (alpha-numeric tags) is specified for the waiter. The \n"
"waiter doesn't complete until all of the events have been signaled. A \n"
"given event may be signaled more than once. There are two ways to define \n"
"the list of events, either explicitly (-waitlist) by naming all of them or \n"
"implicitly (-waitgroup) with a prefix and a count. Using the -waitgroup
}

```
\n"  
"option, you provide an alpha-numeric tag which is used as  
the prefix for a \n"  
"group of events. The event names are generated by  
concatenating the prefix \n"  
"with \".<n>\", where <n> is 1 to the specified count. \n"  
);  
exit(EXIT_FAILURE);  
}
```


Appendix G: Price Quotations

August 8, 2003

Hewlett-Packard
Company
Daniel Pol
20555 SH 249
Houston, TX 77070

Mr. Pol:

Here is the information you requested regarding pricing for several Microsoft products to be used in conjunction with your TPC-H benchmark testing.

All pricing shown is in US Dollars (\$).

Part Number	Description	Unit Price	Quantity	Price
810-00652	SQL Server 2000 Enterprise Edition <i>Server license only - No CALs</i> <i>Discount Schedule: Open Program - No Level</i> <i>Unit Price reflects a 26% discount from the retail unit price of \$7,499.</i>	\$5,549	1	\$5,549
359-00532	SQL Server 2000 Client License <i>Discount Schedule: Open Program - No Level</i> <i>Unit Price reflects a 18% discount from the retail unit price of \$179.</i>	\$146	50	\$7,300
P72-00264	Windows Server 2003, Enterprise Edition <i>Server license only - No CALs</i> <i>Discount Schedule: Open Program - No Level</i> <i>Unit Price reflects a 40% discount from the retail unit price of \$3,999.</i>	\$2,399	1	\$2,399
254-00170	Visual C++ Standard <i>No discounts applied</i>	\$109	1	\$109
PRO-PRORS-16U-01	Database Server Support Package <i>1 Year Term</i>	\$1,950	3	\$5,850

All products are currently orderable through Microsoft's normal distribution channels.

This quote is valid for the next 90 days.

If we can be of any further assistance, please contact Jamie Reding at (425) 703-0510 or jamiere@microsoft.com.