

<b>DELL</b>		<b>PowerEdge 6450</b> Client/Server w/3 PE1400 Front Ends		TPC-C Rev 5.0 Report Date Feb 08, 2002	
Total System Cost		TPC-C Throughput		Price/Performance	
<b>\$179,906</b>		<b>29,860.12 tpmC</b>		<b>\$6.03/ tpmC</b>	
Processors		Database Manager		OS	
4 x Pentium® III Xeon™ Processors 700 MHz 2MB L2 Cache		Microsoft SQL Server 2000 Enterprise Edition		Microsoft Windows 2000 Advanced Server	
				Other Software	
				Windows 2000 Server w/ COM+ Internet Information Server 5.0 Microsoft Visual C++	
				Number of Users	
				<b>24,000</b>	
<p><b>PE6400</b> w/ 4 700 MHz Pentium® III Xeon™ CPUs w/ 2MB L2 cache, 8GB RAM, 3 Mylex Extreme2000 RAID Controllers, 1 Mylex AcceleRAID 352 RAID Controller, 1 10/100 BT NIC</p> <p>13 PV210S Disk Pods 154 18GB 10K RPM U160M SCSI Disks</p> <p>10/100 BT Switch</p> <p>10/100 BT</p> <p>3 PE1400 Clients Each: 1 Pentium® III @ 1GHz w/ 256 KB L2 512 MB RAM 1 9 GB Disk 2 Intel Pro100+ Ethernet NICs</p>					
<b>System Component</b>		<b>Server</b>		<b>Each Client</b>	
Processors	4	Pentium® III Xeon™ @ 700MHz	1	Pentium® III w/ 256 KB L2	3 clients @ 1 GHz
Cache		2MB			
Memory		8192 MB		512 MB	
Disk Controllers	3	Mylex ExtremeRAID 2000	1	Adaptec On-Board	
	1	Mylex AcceleRAID 352			
	1	Adaptec On-Board			
Disk Drives	154	18 GB SCSI	1	9 GB	
	1	9 GB SCSI			
Total Storage		2,588 GB		9 GB	
Other	1	10/100 BT NIC	2		
	1	CD-ROM	1		
	1	DAT			

<b>Dell</b>	<b>PowerEdge 6450</b>	<b>TPC-C REV 5.0 EXECUTIVE SUMMARY PAGE 2 OF 2</b>
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	<b>Client/Server</b>	<b>Report Date: 08-Feb-02</b>
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Description	Part Number	Third Party		Unit Price	Qty	Extended Price	3 yr. Maint. Price
		Brand	Pricing				
<b>Server Hardware</b>							
Dell PowerEdge 6450	220-0663			4,346	1	4,346	1,299
Pentium III Xeon 700 MHz / 2MB L2 - 4 processors	311-0834			7,845	1	7,845	-
8 GB RAM, 16 x 512MB DIMMS	311-4118			7,184	1	7,184	-
9 GB U160M SCSI 10K RPM Hard Drive	340-8088			249	1	249	-
DDS4 External TBU	340-1970			999	1	999	-
Dell 15" Monitor	320-0960			149	1	149	-
Extreme RAID 2000 PCI SCSI 4 channel RAID controller***	08P3834	Mylex	3	1,299	5	6,495	-
AcceleRAID 352 PCI SCSI 2 Channel RAID controller	08P2420	Mylex	3	595	1	595	-
					<b>Subtotal</b>	<b>27,862</b>	<b>1,299</b>
<b>PowerVault Disk Subsystem</b>							
PV210S, U3 SCSI, PS, Rack mount	220-4099, etc.		1	2,299	13	29,887	9,100
SCSI Cables	310-0313		1	49	13	637	-
18 GB SCSI 10K RPM Hard Drive *	340-2769		1	249	154	38,346	-
42U Rack	220-4492		1	1,169	1	1,169	-
					<b>Subtotal</b>	<b>70,039</b>	<b>9,100</b>
<b>Server Software</b>							
SQL Server 2000 Ent Edition, Per processor licensing **		Microsoft	2	16,541	4	66,164	6,285
Windows 2000 Advanced Server, 25 Client Licenses **		Microsoft	2	2,399	1	2,399	-
					<b>Subtotal</b>	<b>68,563</b>	<b>6,285</b>
<b>Client Hardware</b>							
Dell PowerEdge 1400SC, 1GHz Pentium III w/ 256KB L2	220-4482		1	510	3	1,530	1,197
512MB RAM, 4 DIMMs	311-1194		1	408	3	1,224	-
9GB LVD SCSI Hard Drive,	340-1963		1	249	3	747	-
Ether Express PRO 100+ Ethernet Adapter	430-1970	Intel	1	59	6	354	-
Dell 15" Monitor	320-0960		1	149	3	447	-
					<b>Subtotal</b>	<b>4,302</b>	<b>1,197</b>
<b>Client Software</b>							
Windows 2000 Server, 5 Client Licenses **		Microsoft	2	738	3	2,214	-
Visual C++ Professional 6.0 Win32 **		Microsoft	2	549	1	549	-
					<b>Subtotal</b>	<b>2,763</b>	<b>-</b>
<b>User Connectivity</b>							
16 Port Ethernet Switch	220-1499	Dell	1	129	1	129	105
					<b>Subtotal</b>	<b>129</b>	<b>105</b>
					<b>Other Discounts</b>	<b>(11,738)</b>	<b>-</b>
					<b>Total</b>	<b>161,920</b>	<b>17,986</b>

Notes: * Maint. included in PowerVault 210S disk pod or PV650F/630F fibre channel disk pod ** All Microsoft maintenance is covered by the maintenance costs of Microsoft SQL Server *** 10% or minimum 2 spares are added in place of onsite service (products have a five year return-to-vendor warranty) Pricing: 1 - Dell 2 - Microsoft 3 - Computer Giants	<b>Three-Year Cost of Ownership:</b>	<b>\$179,906</b>
	<b>tpmC Rating:</b>	<b>29860.12</b>
	<b>\$/tpmC:</b>	<b>6.03</b>

**Audited by Lorna Livingtree, 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 items, please inform the TPC at pricing@tpc.org.*

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**MQTh**, computed Maximum Qualified Throughput

29860.12  
tpmC

**Response Times** (in seconds)

	Average	90th	Max
- Neworder	0.48	0.82	5.15
- Payment	0.32	0.63	2.40
- Order Status	0.36	0.67	5.13
- Delivery (interactive portion)	0.14	0.25	1.08
- Delivery (deferred portion)	0.35	0.58	1.39
- Stock-Level	1.96	2.80	7.36
- Menu	0.14	0.25	1.39

Response time delay added for emulated components

Menu 0.1  
Resp 0.1

**Transaction Mix**, in percent of total transactions

- New-Order	44.85%
- Payment	43.05 %
- Order-Status	4.02 %
- Delivery	4.03 %
- Stock-Level	4.04 %

**Keying/Think Times** (in seconds),

	Min		Average		Max	
- New-Order	18.01	0.0	18.03	12.04	18.09	120.42
- Payment	3.01	0.0	3.03	12.04	3.08	120.42
- Order-Status	2.01	0.0	2.03	10.05	2.08	100.42
- Delivery	2.01	0.0	2.03	5.07	2.08	50.42
- Stock-Level	2.01	0.0	2.03	5.05	2.08	50.42

**Test Duration**

- Ramp-up time	5 minutes
- Measurement interval	120 minutes
- Number of checkpoints	4
- Checkpoint interval	30 minutes
- Number of transactions (all types) completed in measurement interval	8,311,011