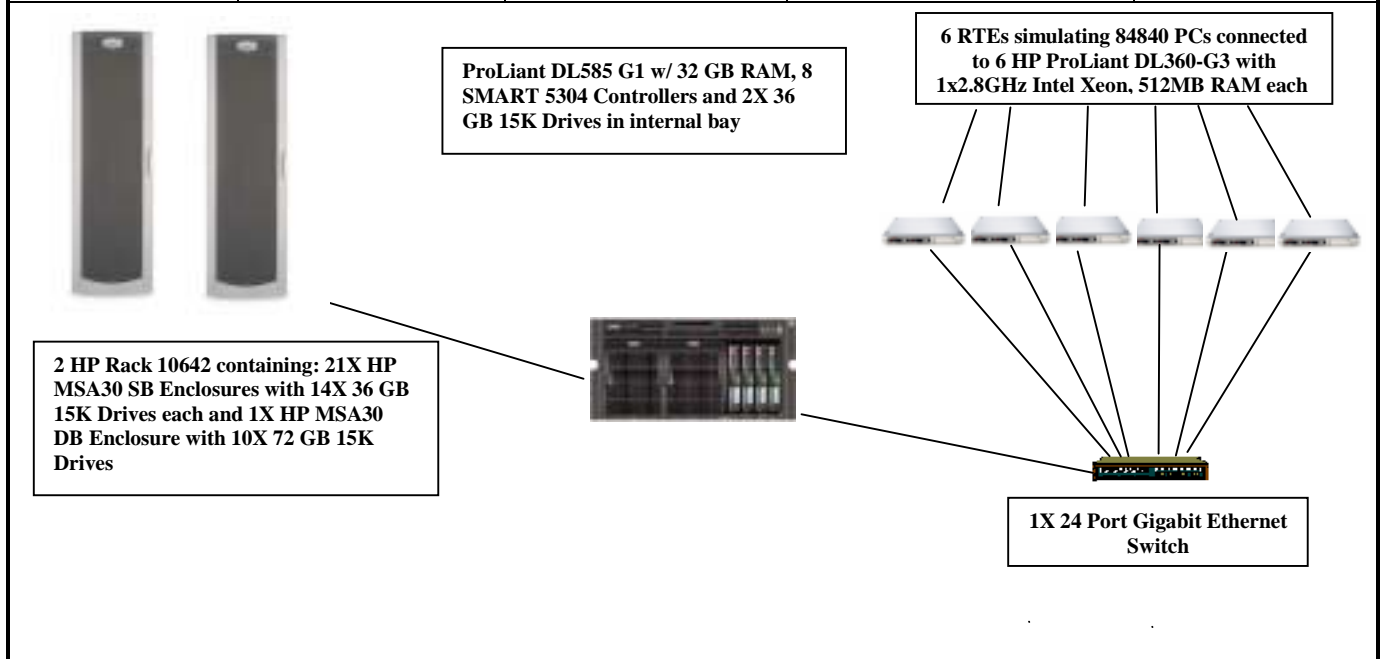


Hewlett-Packard Company	HP ProLiant DL585-G1 32GB/2.2GHz/4P	TPC-C Rev. 5.3
	C/S with 6 HP ProLiant DL360R	Report Date: May 3, 2004

Total System Cost	TPC-C Throughput	Price/Performance	Availability Date
\$341,155 USD	105,687	\$3.23 USD	May 3, 2004

Processors	Database Manager	Operating System	Other Software	Number of Users
4 AMD Opteron 2.2 GHz – Server 6 Intel Xeon 2.8 GHz – Clients	Microsoft SQL Server 2000 Enterprise Edition SP3	Windows Server 2003, Enterprise Edition	Microsoft Visual C++ Microsoft COM+	84840



	Server		Each Client	
System Components	Quantity	Description	Quantity	Description
Processor	4	2.2 GHz AMD Opteron w/ 1M Cache	1	2.8GHz Intel Xeon w/ 512K cache
Memory	16	2 GB DDR	2	256MB
Disk Controllers	1	HP Integrated 5i Smart Controller	1	Integrated SMART 5i Array Controller
	8	HP SMART 5304 Array Controllers		
Disk Drives	10	72 GB SCSI Drive	1	18.2 GB SCSI Drive
	296	36 GB SCSI Drive		
Total Storage		8310.38 GB		18.2 GB

Hewlett-Packard		HP ProLiant DL585 2.2GHz/32GB/4P			TPC-C Rev. 5.3		
Company		Client/Server			Report Date:	3-May-04	
Description	Part Number	Third Party	Unit Price	Qty	Extended Price	3 yr. Maint. Price	
Server Hardware							
		Brand	Pricing				
ProLiant DL585 O2200 2P X2GB, Integrated Smart Array Controller	356820-B21	1	11,999	1	11,999		
2.2GHz 1M processor option kit	359708-B21	1	3,699	2	7,398		
4GB PC2100 DDR SDRAM DIMM 2x2048 WW	300682-B21	1	3,499	8	27,992		
MSA30 SB storage enclosure	302969-B21	1	2,978	21	62,538		
MSA30 DB storage enclosure	302970-B21	1	3,209	1	3,209		
Smart Array 5304/256 Controller	283551-B21	1	2,247	8	17,976		
Compaq S7500 17" Carbon/Silver	261606-169	1	145	1	145		
PS/2 scroll mouse HP carbonite	DK725AV	1	10	1	10		
HP Enhanced Keyboard	DG170AV#ABA	1	10	1	10		
Rack 10642 (42U) Standard Pallet WW	245161-B21	1	1,359	2	2,718		
UPS R1500 XR Low Voltage US	204404-001	1	866	1	866		
36GB 15K U320 Pluggable Hard Drive	286776-B22	1	429	296	126,984		
36GB 15K U320 Pluggable Hard Drive (10% Spares external drives)	286776-B22	1	429	30			12,870
72GB 15K U320 Pluggable Hard Drive	286778-B22	1	659	10	6,590		
72GB 15K U320 Pluggable Hard Drive (2 spares)	286778-B22	1	659	2			1,318
FM-MI724-36 3YR 24X7 4HR 500 SERIES SVR	401782-002	1	1,795	1			1,795
FM-4E724-36 3YR 24X7/4HR EMPTY DISK ENCL	171242-002	1	157	22			3,454
				Subtotal	268,435		19,437
Server Software							
Microsoft SQL Server 2000 Enterprise Edition(per processor)	810-00846	Microsoft	2	16,541	4	66,164	Incl Below
Microsoft Visual C++ Standard	254-00170	Microsoft	2	109	1	109	Incl Below
Microsoft Windows 2003 Server, Enterprise Edition	P72-00264	Microsoft	2	2,399	1	2,399	Incl Below
Database Server Support Package 1-year term	PRO-PRORS-16U-01	Microsoft	2	1,950	3		5,850
				Subtotal	68,672		5,850
Client Hardware							
DL360 G3 X2.80GHz 512KB 512MB 1P RCK US	292889-001	1	2,199	6	13,194		
Dual Integrated Gigabit NIC, Integrated Smart Array Controller 5i							
18GB 15K U320 Pluggable Hard Drive	286775-B22	1	269	6	1,614		
FM-EL724-36 3YR 24X7 4HR ENTRY 300 SVR	162675-002	1	599	6			3,594
				Subtotal	14,808		3,594
Client Software							
Microsoft Windows 2000 Server	C11-00821	Microsoft	2	738	6	4,428	Incl. Above
				Subtotal	4,428		0
User Connectivity							
HP Procurve 4104gl switch	J4887A	1	1219	1	1,219		
Hewlett Packard ProCurve switch GL 100/1000-T module (plus 2 spa	J4863A	1	894	4	3,576		
Hewlett Packard ProCurve 4104 3Yr/4 Hour/24x7	U2856A/E	1	1080	1			1,080
				Subtotal	4,795		1,080
Large Purchase and Cash discount (See Note 1)	16.0%	1				(\$46,086)	(\$3,858)
				Total	\$315,052		\$26,103
Prices used in TPC benchmarks reflect the actual prices a customer would pay for a one-time purchase of the stated components. Individually negotiated discounts are not permitted. Special prices based on assumptions about past or future purchases are not permitted. All discounts reflect standard pricing policies for the listed components. For complete details, see the pricing sections of the TPC benchmark pricing specifications. If you find that the stated prices are not available according to these terms, please inform the TPC at pricing@tpc.org. Thank you.				Three-Year Cost of Ownership: USD 341,155 tpmC Rating: 105,687 \$ / tpmC: USD 3.23			
Pricing: 1=HP Direct 2= Microsoft							
Note 1 = Discount based on HP Direct guidance and large cash purchase level.							
Note: The benchmark results and test methodology were audited by Tom Sawyer of Performance Metrics, Inc.							

Numerical Quantities Summary

MQTH, Computed Maximum Qualified Throughput

105,687 tpmC

Response Times (in seconds)	Average	90%	Maximum
New-Order	0.40	0.64	7.28
Payment	0.34	0.58	6.41
Order-Status	0.36	0.59	10.08
Delivery (interactive portion)	0.10	0.11	4.33
Delivery (deferred portion)	0.13	0.18	2.94
Stock-Level	0.89	1.20	6.00
Menu	0.10	0.11	4.49

Transaction Mix, in percent of total transaction

New-Order	44.93%
Payment	43.03%
Order-Status	4.00%
Delivery	4.01%
Stock-Level	4.03%

Emulation Delay (in seconds)

Resp.Time Menu

New-Order	0.10	0.10
Payment	0.10	0.10
Order-Status	0.10	0.10
Delivery (interactive)	0.10	0.10
Stock-Level	0.10	0.10

Keying/Think Times (in seconds)

Min. Average Max.

New-Order	18.00/0.00	18.02/12.17	18.06/121.71
Payment	3.00/0.00	3.02/12.17	3.04/121.71
Order-Status	2.00/0.00	2.02/10.15	2.04/101.50
Delivery (interactive)	2.00/0.00	2.02/5.11	2.03/51.00
Stock-Level	2.00/0.00	2.02/5.10	2.05/51.00

Test Duration

Ramp-up time	49 minutes
Measurement interval	120 minutes
Transactions (all types) completed during measurement interval	29,229,271
Ramp down time	13 minutes

Checkpointing

Number of checkpoints	4
Checkpoint interval	30 minutes