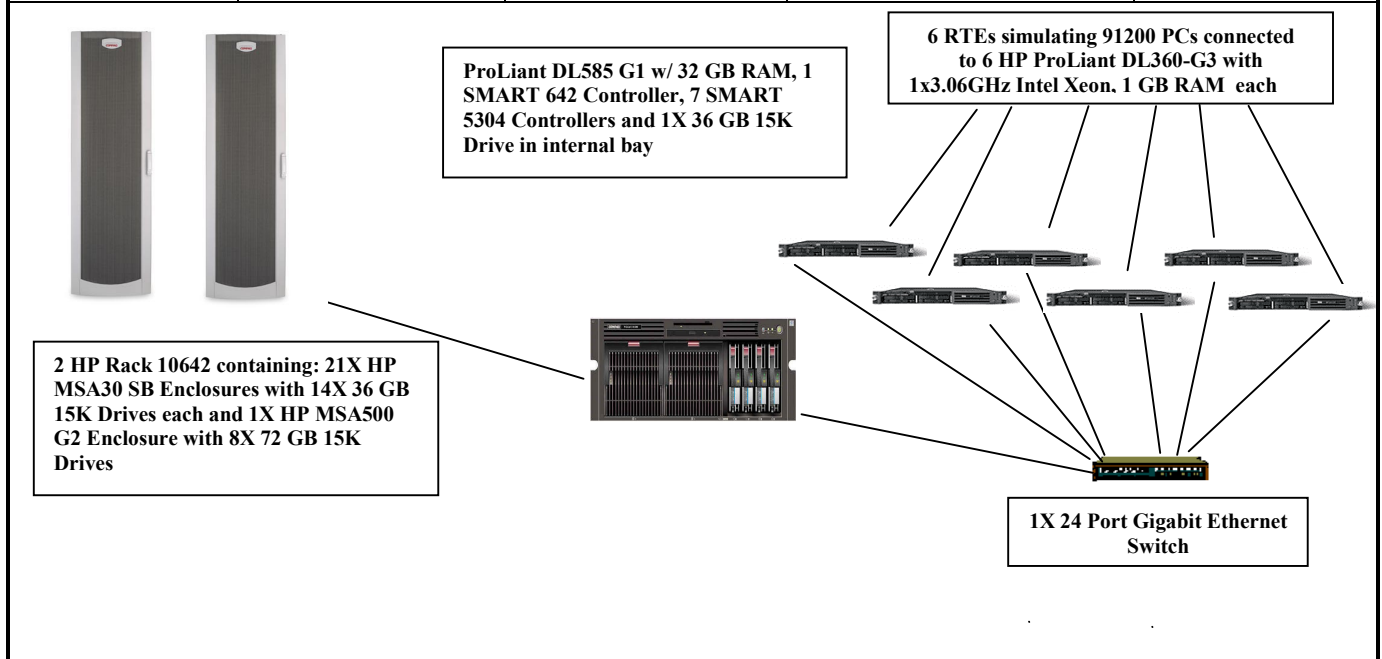


Hewlett-Packard Company	HP ProLiant DL585-G1 32GB/2.4GHz/4P	TPC-C Rev. 5.3
	C/S with 6 HP ProLiant DL360R	Report Date: Oct. 15, 2004

Total System Cost	TPC-C Throughput	Price/Performance	Availability Date
\$301,430 USD	115,110	\$2.62 USD	Oct. 15, 2004

Processors	Database Manager	Operating System	Other Software	Number of Users
4 AMD Opteron 2.4 GHz – Server 6 Intel Xeon 3.06 GHz – Clients	Microsoft SQL Server 2000 Enterprise Edition SP3	Windows Server 2003, Enterprise Edition	Microsoft Visual C++ Microsoft COM+	91200



	Server		Each Client	
System Components	Quantity	Description	Quantity	Description
Processor	4	2.4 GHz AMD Opteron w/ 1M Cache	1	3.06 GHz Intel Xeon w/ 512K cache
Memory	16	2 GB DDR	2	512MB
Disk Controllers	1	HP Integrated 5i Smart Controller	1	Integrated SMART 5i Array Controller
	7	HP SMART 5304 Array Controllers		
	1	HP SMART 642 Array Controller		
Disk Drives	8	72 GB SCSI Drive	1	36.4 GB SCSI Drive
	295	36 GB SCSI Drive		
Total Storage		11320.4 GB		36.4 GB

Hewlett-Packard	P ProLiant DL585 2.4GHz/32GB/4P		TPC-C Rev. 5.3			
Company	Client/Server		Report Date:		15-Oct-04	
Description	Part Number	Third Party	Unit Price	Qty	Extended Price	3 yr. Maint. Price
Server Hardware						
ProLiant DL585 O850 2.4GHz (1 MB) x 2	365504-001	Brand Pricing	12,699	1	12,699	
- 2 GB PC2100 DDR, Integrated Smart Array Controller 5i,						
- Dual Port NC7782 embedded NIC						
AMD O850 2.4GHz/800 1MB DL585 Processor	359708-B21	1	3,699	2	7,398	
4GB PC2700 DDR SDRAM DIMM 2x2048 WW	371049-B21	1	3,199	8	25,592	
MSA30 SB storage enclosure	302989-B21	1	2,978	21	62,538	
HP Modular Smart Array 500 G2 Storage	335880-B21	1	4,499	1	4,499	
- 1 MSA500 G2 controller w/ 256 MB cache, 2 SA642 controllers						
HP Modular Smart Array 500 G2 Controller	335881-B21	1	2,499	1	2,499	
Smart Array 5304/256 Controller	283551-B21	1	2,247	7	15,729	
15" S5500 CRT Monitor	P9006A#ABA	1	129	1	129	
HP PS/2 Scroll Mouse carbonite	DG169AV	1	5	1	5	
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	299	294	87,906	
36GB 15K U320 Pluggable Hard Drive (10% Spares external drives)	286776-B22	1	299	30		8,970
36GB 15K U320 Pluggable Hard Drive (OS)	286776-B22	1	299	1	299	
72GB 15K U320 Pluggable Hard Drive	286776-B22	1	579	8	4,632	
72GB 15K U320 Pluggable Hard Drive (2 spares)	286776-B22	1	579	2		1,158
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	21		3,297
HP CP 3Y 4H 24x7 MSA500	U6456A/E	1	1,950	1		1,950
					Subtotal	227,519
						17,170
Server Software						
Microsoft SQL Server 2000 Enterprise Edition(per processor)	810-00846	Microsoft	16,541	4	66,164	Incl Below
Microsoft Visual C++ Standard	254-00170	Microsoft	109	1	109	Incl Below
Microsoft Windows 2003 Server, Enterprise Edition	P72-00264	Microsoft	2,399	1	2,399	Incl Below
Microsoft Professional Support - 1 incident		Microsoft	245	1		245
					Subtotal	68,672
						245
Client Hardware						
DL360 G3 X3.06GHz 512KB 1GB 1P RCK US	322470-001	1	2,349	6	14,094	
5i						
15" S5500 CRT Monitor	P9006A#ABA	1	129	6	774	
HP PS/2 Scroll Mouse carbonite	DG169AV	1	5	6	30	
HP Enhanced Keyboard	DG170AV#ABA	1	10	6	60	
36GB 15K U320 Pluggable Hard Drive	286776-B22	1	299	6	1,794	
FM-EL724-36 3YR 24X7 4HR ENTRY 300 SVR	162675-002	1	599	6		3,594
					Subtotal	16,752
						3,594
Client Software						
Microsoft Windows 2000 Server	C11-00821	Microsoft	738	6	4,428	Incl. Above
					Subtotal	4,428
						0
User Connectivity						
HP ProCurve 4104gl switch	J4887A	1	1499	1	1,499	
HP ProCurve switch GL 100/1000-T 6 port module	J4863A	1	999	2	1,998	
HP ProCurve switch GL 100/1000-T 6 port module (spares)	J4863A	1	999	2		1,998
Hewlett Packard ProCurve 4104 3Yr/4 Hour/24x7	U2856A/E	1	1000	1		1,000
					Subtotal	3,497
						2,998
Large Purchase and Cash discount (See Note 1)	16.0%	1			(\$39,643)	(\$3,802)
					Total	\$281,225
						\$20,205
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 301,430
				tpmC Rating:		115,110
				\$/ tpmC:		USD 2.62
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

115,110 tpmC

Response Times (in seconds)	Average	90%	Maximum
New-Order	0.22	0.32	4.99
Payment	0.18	0.27	4.46
Order-Status	0.20	0.30	4.98
Delivery (interactive portion)	0.10	0.11	0.12
Delivery (deferred portion)	0.13	0.21	0.75
Stock-Level	0.73	0.95	3.78
Menu	0.10	0.11	0.45

Transaction Mix, in percent of total transaction

New-Order	44.93%
Payment	43.04%
Order-Status	4.00%
Delivery	4.02%
Stock-Level	4.01%

Emulation Delay (in seconds)

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

Keying/Think Times (in seconds)

	Min.	Average	Max.
New-Order	18.02/0.00	18.03/12.03	18.19/120.32
Payment	3.00/0.00	3.02/12.05	3.18/120.51
Order-Status	2.00/0.00	2.02/10.03	2.17/100.32
Delivery (interactive)	2.00/0.00	2.02/5.03	2.17/50.21
Stock-Level	2.00/0.00	2.02/5.02	2.17/50.21

Test Duration

Ramp-up time	47 minutes
Measurement interval	120 minutes
Transactions (all types) completed during measurement interval	31,837,201
Ramp down time	21 minutes

Checkpointing

Number of checkpoints	4
Checkpoint interval	30 minutes