



hp server rx5670 Client/Server

TPC-C Revision
5.0

Total System Cost	TPC Throughput	Price/Performance	Report Date	Availability Date
\$441,022	87741.45 tpmC	\$5.03 per tpmC	December 16, 2002	February 12, 2003
Processors	Database Manager	Operating System	Other Software	Number of Users
4 Intel Itanium 2 CPUs at 1 GHz 3 MB iL3 Cache	Microsoft SQL Server 2000 Enterprise Edition 64-bit	Microsoft Windows .NET Enterprise Server 2003	Microsoft Visual C++ Microsoft COM+ Transaction Monitor	70,000

5 x hp Proliant DL360

2x Intel Pentium III at 1.4GHz
1024 MB RAM



Qlogic SANbox 2-16



2Gbps

hp server rx5670

4 x Itanium 2 CPUs @ 1GHz/3MB
48 GB RAM
6 x hp SmartArray 5304 DACs



2Gbps


21 X StorageWorks Model 4314R

280 18GB 15kRPM disk drives
14 36GB 15kRPM disk drives



10 RTEs simulating
70000 PCs

System Components	Server		Each Client	
	Qty	Type	Qty	Type
Processors	4	Intel Itanium 2 CPUs at 1 GHz	2	1.4GHz Pentium III
Cache Memory		3 MB iL3 cache		512kbyte L2 Cache
Memory	48	1 Gbyte	4	256 Mbyte
Disk Controllers	6	HP SmartArray 5304	1	HP SCSI-2 Controller
Disk Drives	280	HP Hot-swap 18GB 15KRPM SCSI	1	18 Gbyte disk
	1	HP Hot-swap 36GB U320		
Total Storage		5002.4 Gbyte		16.8 Gbyte
Tape Drives	1	HP Surestore DAT40e		
Terminals	1	Console Terminal	1	Console Terminal

 Hewlett Packard Company		hp server rx5670 client/server			TPC-C Rev. 5.0 Report Date: 16 December, 2002	
Description	Price Key	Part Numbr	Unit Price	Qty	Extended Price	3 Yr Maint Price
1GHz Itanium 2 w/ 3MB iL3 cache, 0 MB RAM, 0 disk	1	A6838A	\$26,494	1	\$26,494	
CPU upgrade Itanium 2, 1GHz w/3MB iL3 cache	1	A6836A	\$8,250	3	\$24,750	
4GB PC2100 DDR-SDRAM (4x1GB DIMMs)	1	A6834A	\$8,000	12	\$96,000	
Memory Carrier Board	1	A6747A	\$1,981	2	\$3,962	
HP 36GB, 15krpm Ultra320 hot-swap disk	1	A7049A	\$996	2	\$1,992	
HP Rackmount Kit Factory	1	A5580A	\$134	1	\$134	
DVD Rom drive	1	A5557B	\$450	1	\$450	
Graphics USB Card	1	A6869A	\$349	1	\$349	
HP USB keyboard and mouse	1	A7861A	\$32	1	\$32	
HP Smart Array Controller 5304	2	283551-B21	\$2,247	6	\$13,482	
Qlogic QLA-2350 Fibre-Channel VI Adapter	3	QLA2350-BK	\$2,095	1	\$2,095	
5m LC to LC Cable Kit	2	221692-B22	\$82	1	\$82	
2GB SFP Adapter Kit	2	221470-B21	\$369	1	\$369	
S5500 15 carbon / silver monitor	2	261602-001	\$139	1	\$139	
HP Rack Model 9142 (42U - Opal) - Flat Pallet	2	120663-B21	\$1,352	2	\$2,704	
HP Power Distribution Unit 120-240V	1	E7671A	\$146	3	\$438	
UPS R1500 XR	2	204404-001	\$886	1	\$886	
HP Hardware Support 3 yr, 24x7, 4 hr rx5670	1	H4405Y#6BO	\$7,052	1		\$7,052
HP Hardware Support 3 yr, 24x7, 4 hr add'l CPU	1	H4405Y#6BP	\$1,153	3		\$3,459
20/40 GB DAT Drive, External	1	C5687B	\$1,300	1	\$1,300	
Storageworks enclosure 4314R	2	190209-001	\$2,955	20	\$59,100	
18GB, 15krpm Ultra3 Wide disk	2	188122-B22	\$390	280	\$109,200	
18GB, 15krpm Ultra3 Wide disk (10% spares)	2	188122-B22	\$390	28	\$10,920	
Storageworks enclosure 4354R	2	190211-001	\$3,523	1	\$3,523	
36GB, 15krpm Ultra3 Wide disk	2	232916-B22	\$605	14	\$8,470	
36GB, 15krpm Ultra3 Wide disk (2 spares)	2	232916-B22	\$605	2	\$1,210	
Hardware Support 3 yr, 24x7, 4hr empty enclosure	2	171242-002	\$157	21		\$3,297
Server Subtotal					\$368,081	\$13,808
Microsoft Windows .NET Enterprise Server 2003	4	N/A	\$5,399	1	\$5,399	
Microsoft SQL Server 2000 Enterprise Edition 64 bit	4	810-00560	\$16,541	4	\$66,164	
HP Support for Windows Advanced Server 3 yr 24x7	1	H4405Y#6BR	\$7,302	1		\$7,302
MS Software Support (3 yrs)	4	N/A	\$5,850	1		\$5,850
Server Software Subtotal					\$71,563	\$13,152
HP ProLiant DL360R01 P1.4GHz 512KB 128MB	2	233271-001	\$2,229	5	\$11,145	
1.40GHz PIII Processor Option Kit (DL360 G2)	2	233273-B21	\$734	5	\$3,670	
1G PC133-MHz option Kit	2	201694-B21	\$425	5	\$2,125	
HP Mouse	2	261602-001	\$5	5	\$25	
HP Enhanced Keyboard	2	265977-001	\$12	5	\$60	
S5500 15 carbon / silver monitor	2	261602-001	\$139	5	\$695	
18GB, 15krpm Ultra3 Wide disk	2	188122-B22	\$390	5	\$1,950	
Qlogic QLA-2350 Fibre-Channel VI Adapter	3	QLA2350-BK	\$2,095	5	\$10,475	
5M LC to LC Cable Kit	2	221692-B22	\$82	5	\$410	
2GB Small Form Pluggable Adapter Kit	2	221470-B21	\$369	5	\$1,845	
FM-EL724-36 3YR 24X7 4HR 300 SERIES SVR	2	162657-002	\$1,450	5		\$7,250
Client Subtotal					\$32,400	\$7,250
Microsoft Windows 2000 Server	4	C11-00821	\$738	5	\$3,690	
Microsoft Visual C++ .NET Standard	4	254-00170	\$109	1	\$109	
Client Software Subtotal					\$3,799	
Qlogic SANBox2-8 8-Port Switch	3	SANBOX 2-8	\$7,995	1	\$7,995	
Connectivity Subtotal					\$7,995	
HP's Large Configuration Discount *	* Discounts:				-\$71,420	-\$5,606
Total:					\$412,418	\$28,604
Price Key: 1-HP at 22% discount, 2-HP at 16% discount, 3-Qlogic, 4-Microsoft		3 year cost of ownership:			\$441,022	
		tpmC:			87741	
* All discounts are based on US list prices and for similar quantities and configurations		\$/tpmC:			\$5.03	
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 the TPC at pricing@tpc.org. Thank you.						
Results independently audited by Francois Raab of InfoSizing, Inc. (www.sizing.com)						

Numerical Quantities Summary for hp server rx5670

MQTH, Computed Maximum Qualified Throughput

87741.45 tpmC

Response Times (in seconds)

	90th %-ile	Maximum	Average
New-Order	0.67s	11.54s	0.39s
Payment	0.62s	12.09s	0.34s
Order-Status	0.64s	9.20s	0.35s
Delivery (interactive portion)	0.11s	0.13s	0.10s
Delivery (deferred portion)	0.16s	1.64s	0.12s
Stock-Level	0.99s	9.72s	0.62s
Menu	0.11s	0.59s	0.10s

Response time delay added for emulated components 0.1 seconds

Transaction Mix, in percent of total transactions

New-Order	44.95%
Payment	43.02%
Delivery	4.01%
Stock-Level	4.01%
Order-Status	4.01%

Keying/Think Times

	Keying Time			Think Time		
	Min	Avg	Max	Min	Avg	Max
New-Order	18s	18.02s	18.03s	0s	12.05s	120.51s
Payment	3s	3.02s	3.03s	0s	12.05s	120.51s
Order-Status	2s	2.02s	2.02s	0s	10.04s	100.5s
Delivery (interactive)	2s	2.02s	2.02s	0s	5.06s	50.5s
Stock-Level	2s	2.02s	2.02s	0s	5.04s	50.5s

Test Duration

Ramp up time	28 minutes
Measurement interval	120 minutes
Transactions during measurement interval	24363926
Ramp down time	9 minutes

Checkpointing

Number of checkpoints in measurement interval	4
Checkpoint Interval	30 minutes