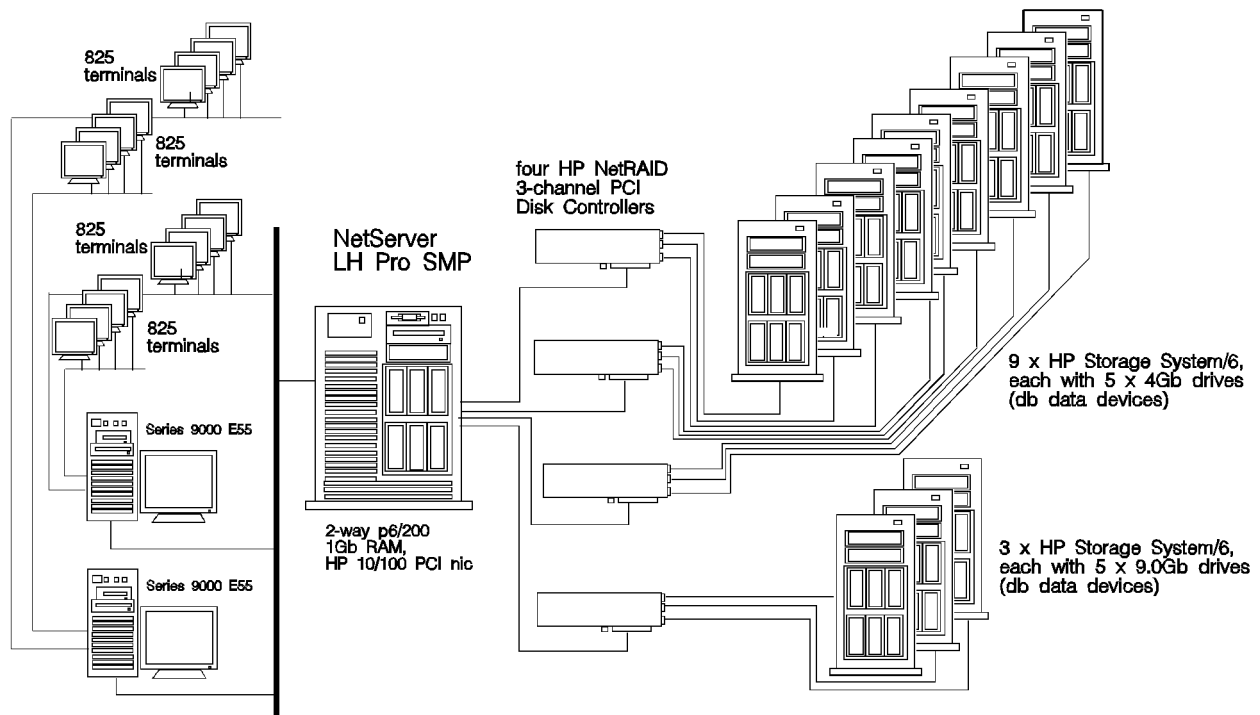


Hewlett Packard	NetServer LH Pro Client/Server Configuration		TPC-C Rev 3.2	
			Report Date: 12/16/96	
Total System Cost	TPC-C Throughput	Price/Performance	Availability Date	
\$430,835	3904.00 tpmC	\$110 per tpmC	HW: Feb. 1, 1997 SW: Feb. 28, 1997	
Processors	Database Manager	Operating System(s)	Other Software	# Users
2 Intel Pentium Pro ^R 200MHz	Microsoft SQL Server v. 6.5.SP3	Microsoft NT Server 4.0, HPUX 10.01	Microsoft C++ compiler, Visigenic ODBC Library (HPUX) TUXEDO TP Monitor	3300



System Components

Serve

- > 1 HP NetServer LH Pro 6/200 SMP model M1, which includes 2 Intel Pentium Pro^R 200MHz processors each with 256KB of 2nd level cache, 64Mb of ECC memory, 2 integrated Fast/Wide PCI SCSI-2 disk controllers, and one CDROM drive
- > 4 256Mbyte NetServer Memory Modules (Simms)
- > 4 HP NetRAID 3-ch PCI disk array controllers
- > 49 HP 4.2GB Hot Swap disk drives (database and log)
- > 15 HP 9GB Hot Swap disk drive (database)
- > 1 HP 2GB Hot Swap disk drives (OS)
- > 12 HP Storage System/6 external disk drive enclosures

Clients

- > 2 100 MHz HP series 9000 model E55, each including one 1GB SCSI disk drive with HPUX v10.01, a MUX Personality card, 2 LAN/9000 Link, and 650Mb CDROM drive
- > 4 128Mb Series 9000 Memory Modules (2/client)
- > 2 Series 9000 System Consoles (1/client)

Server Hardware											
HP NetServer LH Pro 6/200 SMP Array M1	D4843A	HP	1	\$10,640	1	\$10,640	68	1	\$1,632		
3 year, on-site, next day warranty	incl										
1 200MHz Pentium Pro processors	incl										
128 Mb memory	incl										
6-disk Hot swap disk subsystem	incl										
CD-ROM drive	incl										
Integrated dual PCI F/W SCSI-2 cntrlrs	incl										
Integrated IDE controller	incl										
3.5-inch, 1.44MB floppy drive	incl										
1 parallel, 2 serial ports	incl										
keyboard	incl										
HP NetServer Navigator	incl										
HP NetServer Assistant	incl										
256Mbyte DIMM Module Memory Upgrade	D4926A	HP	1	\$9,900	4	\$39,600			\$0		
Support Pack for NetServer (upg wnty to same day, 4	H5518A	HP	1					1	\$1,295		
15" VGA Monitor	D2808A	HP	1	\$385	1	\$385	7	1	\$168		
HP 10/100 PCI Network Adaptor	J3171A	HP	1	\$135	1	\$135			\$0		
Storage											
HP 3-Channel NetRAID PCI Array cntrl + 10% spare	D4943A	HP	3	\$2,249	6	\$13,494					
Internal SCSI cable (int 68-pin to ext 68pin conn) + 10	5182-6740	HP	3	\$65	6	\$390					
External SCSI cable (ext 68pin conn to Storage Syste	5182-6737	HP	3	\$100	15	\$1,500					
HP Storage System/6 + 10% spare	D3604A	HP	1	\$1,050	15	\$15,750	0	0	\$0		
HP 4.2 GB SCSI-2 hot swap drive + 10% spares	D3583A	HP	1	\$1,395	57	\$79,515			\$0		
HP 9GB SCSI-2 hot swap drive + 10% spares	D4289A	HP	1	\$2,450	17	\$41,650			\$0		
HP 2 GB SCSI-2 hot swap drive	D3582B	HP	1	\$970	1	\$970	16	1	\$384		
HP SureStore Tape 6000i 8Gb Internal DAT	C1528F	HP	1	\$1,100	1	\$1,100	20	1	\$480		
Server Software											
Microsoft Windows NT Server 4.0		Microsoft	4	\$809	1	\$809					
Microsoft SQL Server 6.5, unlimited license		Microsoft	4	\$24,999	1	\$24,999		1	\$10,475		
Communications											
Allied Telysn 24-port 10BaseT Hub + 10% spare	DEH1487	Allied Telysn	5	\$335	153	\$51,224					
HP/C ANSI Compiler, LTU	B2412A opt AHO	HP	2	\$1,285	1	\$1,285	1,175	1	\$1,175		
Client Hardware											
HP series 9000 model E55 (with 2-User HPUX LTU b	A3194AW	HP	2	\$9,250	2	\$18,500	32	3	\$4,608		
MUX Personality card for base system I/O	A2442A opt 001	HP	2	\$200	2	\$400			\$0		
1 GB SE SCSI2 disk drive with HPUX v10.01	A3349A opt OD1	HP	2	\$650	2	\$1,300	21	3	\$3,024		
650Mb CDROM	A3184A opt ODZ	HP	2	\$590	2	\$1,180	11	3	\$1,584		
Lan/9000 Link for HP-PB based servers	J2146A opt ODM	HP	2	\$995	2	\$1,990			\$0		
System Console	C1064WX	HP	2	\$498	2	\$996	7	3	\$1,008		
128Mb memory module	A3131A opt ODZ	HP	2	\$8,100	4	\$32,400			\$0		
Client Software											
Visigenic ODBC MS SQL Server Driver		Visigenic	6	\$7,980	2	\$15,960	15,960	1	\$15,960		
Visigenic ODBC SDK		Visigenic	6	\$995	1	\$995					
Tuxedo 4.10		BEA Sys	7	\$7,500	2	\$15,000			\$16,875		
Subtotals											
Subtotals						\$372,167			\$58,668		
Net purchase/support prices											
5 Yr C-O-O											
tpmC											
\$/tpmC											
						430,835					
						3904.00					
						110					

NOTES:

- * Support pack H5518A upgrades std NetServer 3yr Warranty to same day, 4-hr response, includes monitor and all internal components
- * NetServer support for yrs 4-5 via HP contract support (order opt 02A for 24 months), includes all HP components
- * Disk drives have external storage system warranty for yrs. 1-3, user opt 02L for yrs 4-5
- * Series 9000 model E55 standard warranty is 1yr, next day, opt 0S3 upgrades to next day. Use service contract 02A for yrs 2-5. Includes all component
- * Pricing key: 1=MicroAge, 2=Core Technology, 3=HP Corporate Price List, 4=Microsoft, 5=Micro Warehouse, 6=Visigenic Software, 7=BEA Systems.

Numerical Quantities Summary for HP NetServer LH Pro 6/200

MQTH Computed Maximum Qualified Throughput: 3904.00 tpmC®

Response Times (in seconds)	90th %-ile	Maximum	Average
New-Order	2.2	174.07	1.67
Payment	1.96	157.2	1.31
Order-Status	2.73	146.17	2.01
Delivery (interactive portion)	0.21	0.29	0.12
Delivery (deferred portion)	2.18	131.79	1.65
Stock-Level	5.26	130.56	3.83
Menu	-	0.13	0.01

Transaction Mix, in percent of total transactions

New-Order	44.88%
Payment	43.00%
Order-Status	4.04%
Delivery	4.06%
Stock-Level	4.02%

	Keying Time			Think Time		
	Min.	Avg.	Max.	Min.	Avg.	Max.
New-Order	18.01	18.02	18.08	0.01	12.17	133.68
Payment	3.01	3.02	3.07	0.01	12.21	141.12
Order-Status	2.01	2.02	2.08	0.01	10.34	83.3
Delivery	2.01	2.02	2.07	0.01	5.15	59.67
Stock-Level	2.01	2.02	2.08	0.01	5.17	49.04

Test Duration

Ramp-up time	36.50 minutes
Measurement interval	30 minutes
Transactions during measurement interval	260989
Ramp down time	28.4 minutes

Checkpointing

Number of checkpoints in measurement interval	1
Checkpoint interval	30 minutes

Reproducibility Run 3902.60 tpmC® -0.04%