

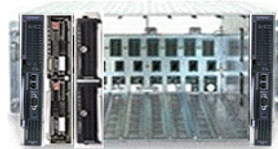
Hewlett-Packard Company	HP ProLiant BL20p - 2P	TPC-C Rev. 5.4
	C/S with 2 HP ProLiant BL35p	Report Date: Aug. 29, 2005

Total System Cost	TPC-C Throughput	Price/Performance	Availability Date
\$192,841 USD	52,742	\$3.66 USD	Aug. 29, 2005

Processors	Database Manager	Operating System	Other Software	Number of Users
2 Intel Xeon 3.6 GHz/2 MB - Server 4 AMD Opteron 2.4 GHz – Clients	Microsoft SQL Server 2000 Enterprise Edition SP3	Windows Server 2003, Enterprise Edition SP1	Microsoft Visual C++ Microsoft COM+	42060



1X HP BLp Enhanced Enclosure containing:
1X HP ProLiant BL20p
2X HP ProLiant BL35p
1X HP BLp-Class C-GbE2 Interconnect
Switch



2 HP Rack 5642 containing: 4X HP
MSA1000 Enclosures with 14X 36 GB
15K Drives each, 1X HP MSA1000
Enclosure with 4X 146 GB 10K Drives,
and 8X HP MSA30 SB Enclosures with
14X 36 GB 15K Drives each

3 RTEs simulating 42060 PCs connected
to 2 HP ProLiant BL35p with
2x2.4GHz AMD Opteron, 2 GB RAM each

	Server		Each Client	
System Components	Quantity	Description	Quantity	Description
Processor	2	Intel Xeon 3.6 GHz w/ 2MB Cache	2	2.4 GHz AMD Opteron w/ 1MB cache
Memory	4	2 GB DDR	4	512 MB
Disk Controllers	1	Integrated SMART 6i Array Controller	1	Integrated IDE Controller
	1	QLogic Fibre Channel Host Adapter (Dual Port)		
Disk Drives	4	146.8 GB SCSI Drive	2	60 GB IDE Drive
	170	36.4 GB SCSI Drive		
Total Storage		6775.2 GB		120 GB

Hewlett-Packard	HP Proliant BL20p 3.6GHz/2M			TPC-C Rev. 5.4		
Company	Client/Server			Report Date:	29-Aug-05	
Description	Part Number	Third Party	Unit Price	Qty	Extended Price	3 yr. Maint. Price
Server Hardware						
		Brand Pricing				
HP BL20pG3 X3.6GHz/800 2MB 2P 2GB Blade	380636-B21	1	4,869	1	4,869	
- 4 embedded NC7781 Gigabit NICs, Smart Array 6i controller						
HP 4GB (2 x 2GB) PC2-3200 2 Rank DDR SDRAM Memory	375004-B21	1	2,269	2	4,538	
HP Storageworks MSA 30 SB Storage	302969-B21	1	2,829	8	22,632	
Modular SAN Array 1000	201723-B22	1	6,995	5	34,975	
MSA SAN Switch 2/8	288247-B21	1	4,149	2	8,298	
HP 5642 Unassembled Rack	358254-B21	1	689	2	1,378	
HP BL20pG3 Dual Port Fibre Channel Adapter Card	361426-B21	1	599	1	599	
UPS R1500 XR Low Voltage US	204404-001	1	866	1	866	
HP BLp Enhanced Enclosure w/8 RDP Licenses	281404-B22	1	2,039	1	2,039	
HP BLp-Class C-GbE2 Interconnect Switch	283192-B21	1	4,399	1	4,399	
HP BLp 1U Pwr Encl w/6 Pwr Spplly Kit	378284-B21	1	2,299	1	2,299	
36GB 15Krpm U320 UNI HDD	286776-B22	1	299	170	50,830	
HP 146GB 10K U320 Pluggable Hard Drive	286716-B22	1	499	4	1,996	
Blade Carepaq 3yr 4hr 24x7	UA205E	1	424	1		424
MSA1000 Carepaq 3yr 4hr 24x7	402164-002	1	3,538	5		17,690
MSA30 Carepaq 3yr 4hr 24x7	U8130E	1	1,827	8		14,616
Storage Works LC/LC 15m Fibre Cable	221692-B23	1	103	5	515	
Storage Works LC/LC 15m Fibre Cable (10% spares)	221692-B23	1	103	2		206
HP CAT5 KVM USB 1 Pack Interface Adapter	336047-B21	1	99	1	99	
HP s7540 17in. CRT Monitor	PF997AA#ABA	1	149	1	149	
USB Optical Mouse cbt/slvr USB 2-Button Optical Scroll Mouse	PT951AV	1	5	1	5	
Standard Keyboard USB	DX752AV#ABA	1	12	1	12	
				Subtotal	140,498	32,936
Server Software						
Microsoft SQL Server 2000 Enterprise Edition(per processor)	810-00845	Microsoft	2	17,279	2	34,558
Visual C++ .Net Standard	254-00170	Microsoft	2	109	1	109
Microsoft Windows 2003, Enterprise Edition	P72-00264	Microsoft	2	2,334	1	2,334
Microsoft Problem Resolution Services (1 incident)		Microsoft	2	245	1	245
				Subtotal	37,001	245
Client Hardware						
HP BL35p O2.4GHz 1M 2P Blade	374212-B21	1	3,899	2	7,798	
- 2 GB PC3200 DDR SDRAM, 2 embedded NC7781 Gigabit NIC						
HP BL35p Blade Sleeve Server	354101-B21	1	199	1	199	
HP BL35p 60GB ATA Hard Drive	354052-B21	1	299	4	1,196	
Blade Carepaq 3yr 4hr 24x7	UA205E	1	424	2		848
				Subtotal	9,193	848
Client Software						
Microsoft Windows 2000 Server	C11-00821	Microsoft	2	738	2	1,476
				Subtotal	1,476	0
Large Purchase and Net 30 discount (See Note 1)	16.0%	1			(\$23,951)	(\$5,405)
				Total	\$164,217	\$28,624
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: \$192,841 USD		
Pricing: 1=HP 2=Microsoft				tpmC Rating: 52,742		
Note 1 = Discount based on HP Direct guidance with large purchase and Net 30 discount.				\$ / tpmC: \$3.66 USD		
Note:The benchmark results and test methodology were audited by Lorna Livingtree of Performance Metrics, Inc.						

Numerical Quantities Summary

MQTH, Computed Maximum Qualified Throughput

52,742 tpmC

Response Times (in seconds)	Average	90 %	Maximum
New-Order	0.33	0.50	6.44
Payment	0.25	0.40	5.45
Order-Status	0.25	0.41	9.37
Delivery (interactive portion)	0.10	0.11	0.13
Delivery (deferred portion)	0.21	0.32	0.86
Stock-Level	1.44	1.87	5.10
Menu	0.10	0.11	0.73

Transaction Mix, in percent of total transaction

New-Order	44.89%
Payment	43.05%
Order-Status	4.03%
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	18.00/0.00	18.02/12.06	18.06/120.62
Payment	3.00/0.00	3.02/12.06	3.06/120.62
Order-Status	2.00/0.00	2.02/10.07	2.03/100.61
Delivery (interactive)	2.00/0.00	2.02/5.06	2.03/50.61
Stock-Level	2.00/0.00	2.02/5.06	2.03/50.61

Test Duration

Ramp-up time	63 minutes
Measurement interval	120 minutes
Transactions (all types) completed during measurement interval	14,601,401
Ramp down time	21 minutes

Checkpointing

Number of checkpoints	4
Checkpoint interval	30 minutes