



HP ProLiant ML350 G5
2.66 GHz
C/S with 2 ProLiant ML110G4

TPC-C Version 5.9

Report Date
September 12, 2007

Total System Cost		TPC-C Throughput	Price/Performance	Availability Date
\$74,556 USD		102454 tpmC	\$0.73 USD/ tpmC	December 31, 2007
Processors	Database Manager	Operating System	Other Software	Number of Users
1/4/4 Intel X5355 2.66 GHz QC	Oracle Database 11g Standard Edition One	Windows 2003 Standard x64 Edition SP 1 R2	Microsoft COM+	81,000



HP ProLiant ML350 G5 w/ 2.66 GHz processor and 24GB RAM, 2 SMART Array P800 SAS RAID Controllers, 1 SMART Array E200i SAS RAID Controller, 2 X 36GB 10K SFF SAS Drives, and 4 X 146GB 10K SFF SAS Drives in internal bay



**4 RTEs
simulating
81,000 PCs**

1 HP 5642 Rack containing: 4 X MSA 70 StorageWorks Enclosure with 25X 36 GB 15K SFF SAS Drives

2 HP ProLiant ML110 G4 NC110T

	Server		Each Client	
System Components	Quantity	Description	Quantity	Description
Processor	1/4/4	Intel X5355 QC 2.66 GHz 8 MB cache	1	3.0GHz Xeon w/ 256K cache
Memory	24 GB	4x4GB and 4x2GB		1.5GB
Disk Controllers	2	Smart P800 Controller	1	Integrated IDE Controller
	1	Smart E200i Controller		
Disk Drives	4	146 GB 10K SFF SAS drives (log)	1	80 GB ATA Drive
	100	36 GB 15K SFF SAS drives (data)		
	1	36 GB 10K SFF SAS drives (OS)		
Total Storage	3960.6 GB			

Hewlett-Packard Company	HP ProLiant ML350G5		TPC-C Rev. 5.9			
			Report Date	12-Sep-07		
Description	Part Number	Pricing	Unit Price	Qty	Extended Price	3 yr. Maint. Price
Server Hardware						
HP ProLiant ML350G5 SFF SAS/SATA Tower CTO Chassis	395570-B21	1	1,013	1	1,013	
HP X5355 ML350G5 FIO Kit	436015-L21	1	1,399	1	1,399	
HP SA E200 64MB Cache FIO Kit	405102-B21	1	99	1	99	
8 GB FBD PC2-5300 2 x 4 GB Kit	397415-B21	1	2,399	1	2,399	
HP 48X CD-ROM ALL (no screws)	384758-B21	1	79	1	79	
8 GB FBD PC2-5300 2 x 4 GB Kit	397415-B21	1	2,399	1	2,399	
4 GB FBD PC2-5300 2 x 2 GB Kit	397413-B21	1	749	2	1,498	
HP Smart Array P800 Controller	381513-B21	1	1,099	2	2,198	
HP NC7170 PCI-X Dp Gigabit Svr Adapter	313881-B21	1	269	1	269	
HP s7540 17in. CRT Monitor	PF997AA#ABA	1	139	1	139	
HP 5642 Pallet Unassembled Rack	358254-B21	1	865	1	865	
T1000 UPS	AF403A	1	395	1	395	
36GB 15Krpm SFF SAS HDD	431933-B21	1	369	100	36,900	
146GB 10K SAS 2.5 HP HDD	431958-B21	1	409	4	1,636	
HP 36GB 10K SAS 2.5 Hot Plug Hard Drive	375859-B21	1	269	1	269	
HP StorageWorks MSA-70 Storage	418800-B21	1	3,199	4	12,796	
HP 3y 4h 24x7 MSA60/70 HW Support	UF303E	1	2,198	4		8,792
HP 3y 4h 24x7 ProLiant ML350 HW Support	U4513E	1	449	1		449
				Subtotal	64,353	9,241
Server Software						
Windows Server 2003, Standard Edition RC 2	P73-02509	3	999	1	999	
Microsoft Problem Resolution Services	N/A	3	245	1		245
Oracle Database 11g Standard Edition One, Unlimited Users , 3 years		2	2,498	1	2,498	
Oracle Premium Support for 3 years		2	1,099	3		3,297
				Subtotal	3,497	3,542
Client Hardware						
HP ML110G4 P915 NHP-SATA US Svr,512MB, NHP 160GB SATA, single port nic,(417248-001	1	799	2	1,598	
HP 512MB UB PC2-5300 1x512MB Kit	432803-B21	1	69	2	138	
HP NC110T PCIe Gigabit Server Adapter	434905-B21	1	99	2	198	
HP 3y 4h 24x7 ProLiant ML110 HW Support	U4435E	1	366	2		732
				Subtotal	1,934	732
Client Software						
Windows Server 2003, Standard Edition RC 2	P73-02509	3	999	2	1,998	Incl.
Microsoft Visual Studio Standard 2005	127-00012	3	250	1	250	
				Subtotal	2,248	245
User Connectivity						
4 port KVM switch (plus spares)	NW0099	5	66	3	198	
3 foot Cat5E Non Booted Network Patch Cables (plus spares)	415-5003	4	1	4	5	
				Subtotal	203	0
Large Purchase and Net 30 discount (See Note 1)	15.0%	1			(\$9,943)	(\$1,496)
				Total	\$62,292	\$12,264
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	\$74,556
					tpmC Rating:	102,454
					\$/ tpmC: USD	\$0.73
Pricing: 1=HP Direct 800-203-6748 2=Oracle 3= Microsoft 4= http://store.graycables.com 5= www.serversdirect.com						
Note 1 = Discount based on HP Direct guidance applies to all lines where pricing = 1						
The benchmark results were audited by Loma Livingtree of Performance Metrics						

Numerical Quantities Summary

MQTH, Computed Maximum Qualified Throughput

102454 tpmC

Response Times (in seconds)	Average	90%	Maximum
New-Order	0.202	0.259	1.562
Payment	0.161	0.207	1.907
Order-Status	0.206	0.276	1.859
Delivery (interactive portion)	0.106	0.102	1.557
Delivery (deferred portion)	0.112	0.249	3.240
Stock-Level	0.871	1.208	3.240
Menu	0.106	0.102	1.562

Transaction Mix, in percent of total transaction

New-Order	44.915%
Payment	43.020%
Order-Status	4.020%
Delivery	4.025%
Stock-Level	4.020%

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	18.005/0.00	18.005/12.010	18.013/120.037
Payment	3.010/0.00	3.010/12.011	3.018/120.096
Order-Status	2.010/0.00	2.010/10.011	2.017/100.013
Delivery (interactive)	2.010/0.00	2.010/5.020	2.014/50.153
Stock-Level	2.010/0.00	2.010/5.011	2.016/49.995

Test Duration

Ramp-up time	70 Min. 17 Sec.
Measurement interval	127 minutes
Transactions (all types) completed during measurement interval	28,969,542
Ramp down time	63 Min 43 Sec.

Checkpointing

Number of checkpoints	4
Checkpoint interval	29:04