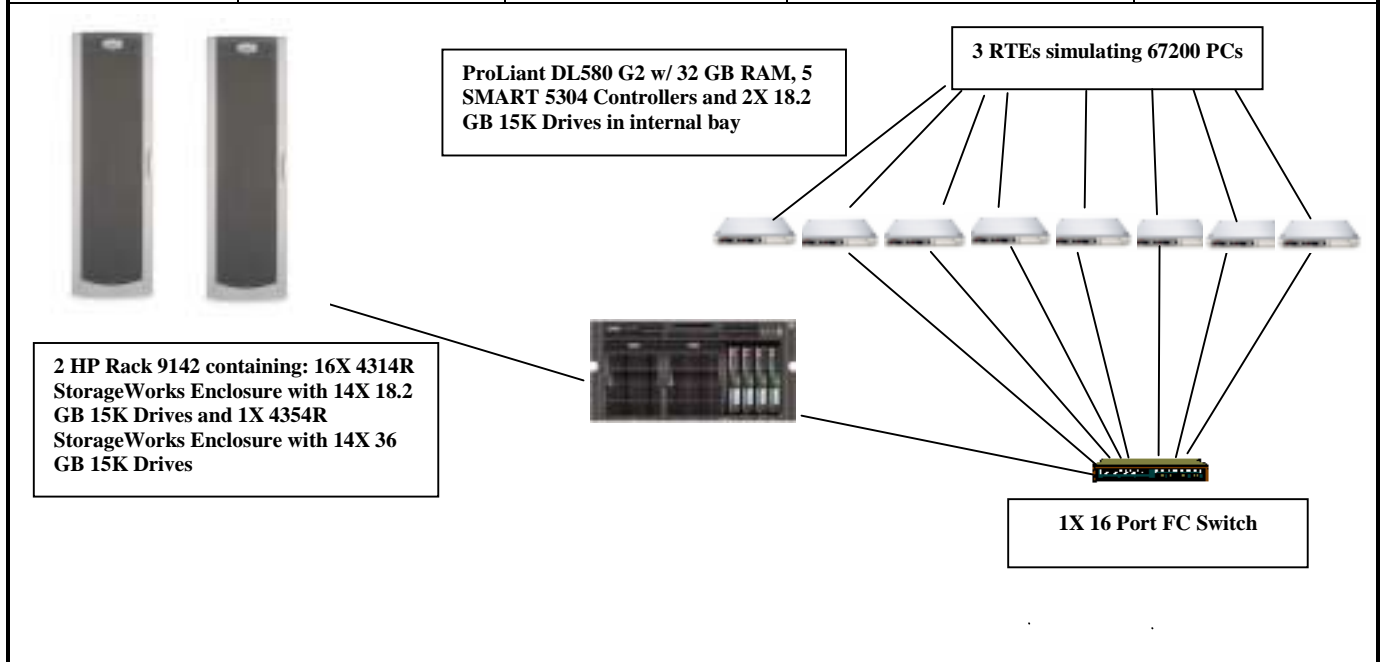


<b>Hewlett-Packard Company</b>	ProLiant DL580-G2/2.8GHz	TPC-C Rev. 5.1
	C/S with 8 ProLiant DL360R	Report Date: Sept 8, 2003

Total System Cost	TPC-C Throughput	Price/Performance	Availability Date
<b>\$324,423</b>	<b>84,712.94</b>	<b>\$3.83</b>	<b>Sept 26, 2003</b>

Processors	Database Manager	Operating System	Other Software	Number of Users
4 Intel Xeon MP 2.8 GHz – Server 16 Pentium III 1.4 GHz – Clients	Microsoft SQL Server 2000 Enterprise Edition SP3	Windows Server 2003, Enterprise Edition	Microsoft Visual C++ Microsoft COM+	<b>67200</b>



	Server		Each Client	
System Components	Quantity	Description	Quantity	Description
Processor	4	2.8 GHz Intel Xeon MP w/ 2M Cache	2	1.4GHz Pentium III w/ 512K cache
Memory	16	2 GB DDR	4	256MB (5 clients)
Disk Controllers	1	HP Integrated 5i Smart Controller	2	256MB (3 clients)
	5	HP SMART 5304 Array Controller	1	Integrated SMART 5i Array Controller
Disk Drives	14	36 GB SCSI Drive	1	18.2 GB SCSI Drive
	225	18.2 GB SCSI Drive		
Total Storage		4305.44 GB		18.2 GB
Tape Drives	1	12/24 GB DAT		

Hewlett-Packard		HP ProLiant DL580 G2/2.8GHz-4P			TPC-C Rev. 5.1		
Company		Client/Server			Report Date:	8-Sep-03	
Description	Part Number	Third Party	Unit Price	Qty	Extended Price	3 yr. Maint. Price	
<b>Server Hardware</b>		<b>Brand Pricing</b>					
ProLiant DL580 X2800 2P X2GB, Integrated Smart Array Controller 5	325134-001		16,899	1	16,899		
2.8 GHz 2M processor	325254-B21		5,899	2	11,798		
8GB (4x2GB) DDR ECC 200MHz Memory	202173-B21		8,599	4	34,396		
StorageWorks Enclosure Model 4314R	190209-001		2,955	16	47,280		
StorageWorks Enclosure Model 4354	190211-001		3,523	1	3,523		
Smart Array 5304/256 Controller	283551-B21		2,247	5	11,235		
V570 Color Monitor - 15 inch CRT - Opal	228113-001		169	1	169		
PS/2 scroll mse HP carbonite	DK725AV		10	1	10		
HP Enhanced Keyboard	DG170AV#ABA		10	1	10		
TR5 10/20-Gigabyte Tape Drive - Carbon	294243-B22		299	1	299		
HP Rack Model 9142 (42U - Opal) - Flat Pallet	120663-B21		1,321	2	2,642		
UPS R1500 XR Low Voltage US	204404-001		866	1	866		
18GB 15K U320 Pluggable Hard Drive	286775-B22		299	226	67,574		
18GB 15K U320 Pluggable Hard Drive (10% Spares external drives)	286775-B22		299	23			6,877
36GB 15K U320 Pluggable Hard Drive	286776-B22		519	14	7,266		
36GB 15K U320 Pluggable Hard Drive (2 spares)	286776-B22		519	2			1,038
FM-MI724-36 3YR 24X7 4HR 500 SERIES SVR	401782-002		1,795	1			1,795
FM-4E724-36 3YR 24X7/4HR EMPTY DISK ENCL	171242-002		157	17			2,669
QLogic QLA-2350 Fibre-Channel VI Adapter	QLA2350-CK	Qlogic	1,512	1	1,512		
<b>Subtotal</b>					<b>205,479</b>	<b>12,379</b>	
<b>Server Software</b>							
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
Database Server Support Package 1-year term	PRO-PRORS-16U-01	Microsoft	1,950	3			5,850
<b>Subtotal</b>					<b>68,672</b>	<b>5,850</b>	
<b>Client Hardware</b>							
ProLiant DL360R01 P1.4GHz 512KB 128MB	233271-001		1,759	8	14,072		
Dual Integrated Gigabit NIC, Integrated Smart Array Controller 5i							
1.40GHz PIII Processor Option Kit (DL360 G2)	201099-B21		717	8	5,736		
256 MB 133 DIMM	128278-B21		149	26	3,874		
18GB 15K U320 Pluggable Hard Drive	286775-B22		299	8	2,392		
FM-EL724-36 3YR 24X7 4HR ENTRY 300 SVR	162675-002		599	8			4,792
2GB Small Form Pluggable Adapter Kit	221470-B21		369	11	4,059		
5M LC to LC Cable Kit	221692-B22		82	11	902		
QLogic QLA-2350 Fibre-Channel VI Adapter + 2 Spares	QLA2350-CK	QLogic	1,512	10	15,120		
<b>Subtotal</b>					<b>46,155</b>	<b>4,792</b>	
<b>Client Software</b>							
Microsoft Windows 2000 Server	C11-00821	Microsoft	738	8	5,904		Incl. Above
<b>Subtotal</b>					<b>5,904</b>	<b>0</b>	
<b>User Connectivity</b>							
SAN Switch 2/16	287055-B21		18500	1	18,500		
<b>Subtotal</b>					<b>18,500</b>	<b>0</b>	
Large Purchase and Cash discount (See Note 1)	16.0%						
<b>Total</b>					<b>\$304,150</b>	<b>\$20,274</b>	
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.					<b>Three-Year Cost of Ownership: \$324,423</b>		
					<b>tpmC Rating: 84712.94</b>		
					<b>\$ / tpmC: \$3.83</b>		
Pricing: 1=HP Direct 2= Microsoft 3=SanDirect.com							
Note 1 = Discount based on HP Direct guidance and large cash purchase level.							
Note:The benchmark results and test methodology were audited by Lorna Livingtree of Performance Metrics, Inc.							

## Numerical Quantities Summary

**MQTH, Computed Maximum Qualified Throughput**

**84712.94 tpmC**

<b>Response Times (in seconds)</b>	<b>Average</b>	<b>90%</b>	<b>Maximum</b>
New-Order	0.25	0.37	14.68
Payment	0.19	0.30	16.90
Order-Status	0.22	0.33	10.75
Delivery (interactive portion)	0.10	0.11	4.01
Delivery (deferred portion)	0.15	0.19	3.94
Stock-Level	0.72	1.03	12.22
Menu	0.10	0.11	4.06

### **Transaction Mix, in percent of total transaction**

New-Order	44.93%
Payment	43.01%
Order-Status	4.01%
Delivery	4.03%
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	18.02/12.05	18.07/120.51
Payment	3.00/0.00	3.02/12.05	3.06/120.51
Order-Status	2.00/0.00	2.02/10.05	2.06/100.51
Delivery (interactive)	2.00/0.00	2.02/5.06	2.06/50.51
Stock-Level	2.00/0.00	2.02/5.04	2.06/50.51

### **Test Duration**

Ramp-up time	49 minutes
Measurement interval	120 minutes
Transactions (all types) completed during measurement interval	23,431,521
Ramp down time	5 minutes

### **Checkpointing**

Number of checkpoints	4
Checkpoint interval	30 minutes