

TPC Benchmark™ C

Full Disclosure Report for



PRIMERGY H250

**Using Microsoft SQL Server 2000
Enterprise Edition SP2**

**and Microsoft Windows 2000
Advanced Server SP2**

July 26, 2002

First Edition



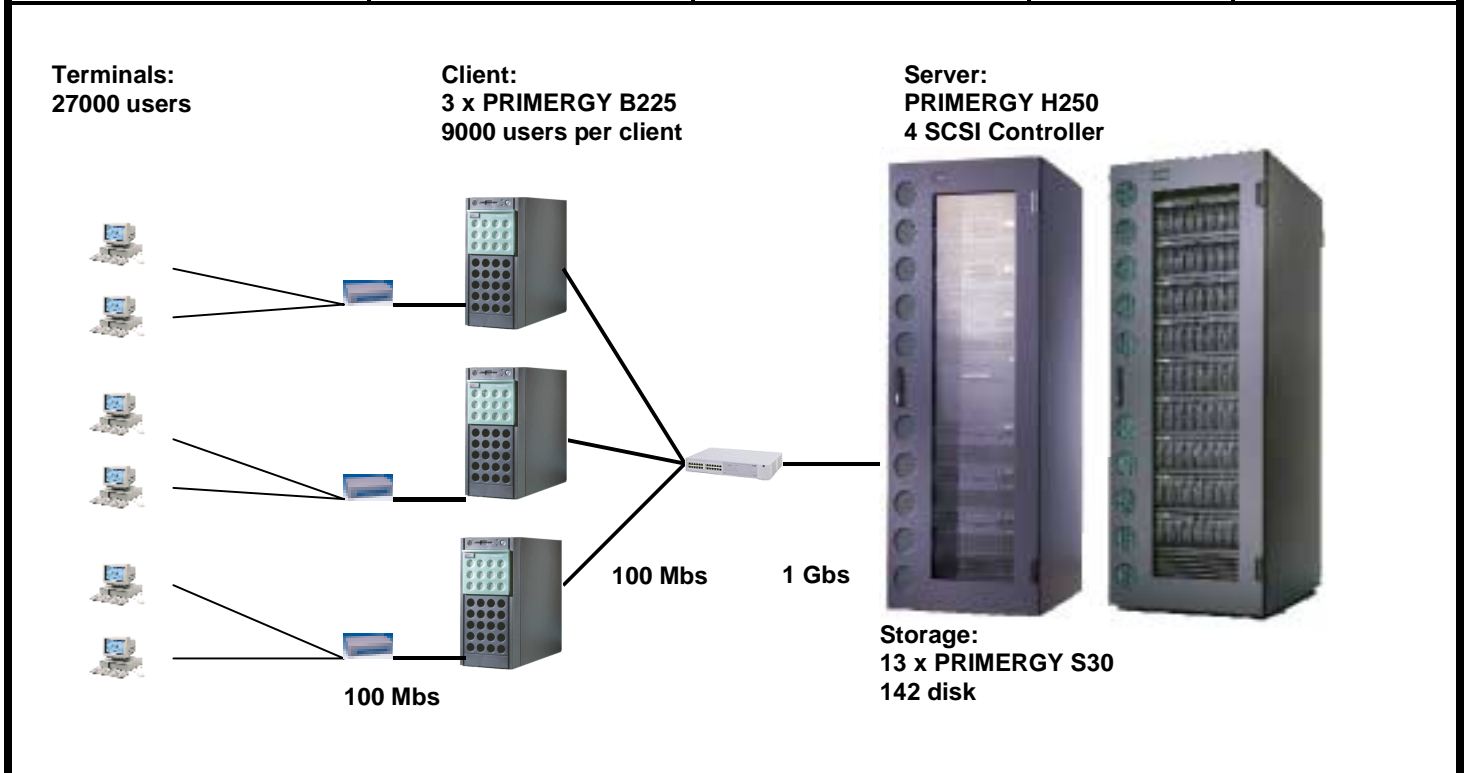
PRIMERGY H250

C/S with 3 PRIMERGY B225

TPC-C REV 5.0
EXECUTIVE SUMMARY

Report Date: July 26, 2002

Total System Cost	TPC-C Throughput	Price/Performance	Availability Date	
Yen 38,298,800	33,768.41 tpmC	Yen 1,134.16/tpmC	August 1, 2002	
Processors	Database Manager	Operating System	Other Software	Number of Users
Server 2 Intel Xeon™ 2.20 GHz with 512 KB SLC Client 3 x 1 Intel Pentium® III 933 MHz with 256 KB SLC	Microsoft SQL Server 2000 Enterprise Edition SP2	Microsoft Windows 2000 Advanced Server SP2	Windows 2000 Server, IIS 5.0 and COM+	27000



System Components	Qty/Srv.	1 PRIMERGY H250	Qty/Client	3 PRIMERGY B225
Processors	2	Intel Xeon™ 2.20 GHz with 512 KB SLC	1	Intel Pentium® III 933 MHz with 256 KB SLC
Memory	8	GB	512	MB
Disk Controller	4	Mylex eXtremeRAID 2000	1	SCSI Controller
Disk Drives	143	18 GB	1	18 GB
Total GB of Storage	1	2,253 GB		
Tape Drive	1	20 GB DAT		



PRIMERGY H250

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C/S with 3 PRIMERGY B225

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Description	Part Number	Third Party Brand Pricing	Unit Price	Qty.	Extended Price	3yr Maint. Price
PRIMERGY H250, Xeon 2.2GHz/512KB	PGH2BW1A	1	630,000 Yen	1	630,000 Yen	
Rackmount Conversion Kit	PGBR1CK9	1	35,000 Yen	1	35,000 Yen	
Processor Xeon 2.2 GHz / 512KB	PG-FG106	1	140,000 Yen	1	140,000 Yen	
Memory 2 GB(1GBx2) PC1600 DDR RAM	PG-RM2N	1	532,000 Yen	3	1,596,000 Yen	
Memory 512MB->2GB PC1600 DDR RAM						
Conversion Kit	PGBRU2N	1	420,000 Yen	1	420,000 Yen	
Tape DAT DDS4 20GB	PG-DT401	1	126,000 Yen	1	126,000 Yen	
Disk 18GB, 10K, U160, hot plug, 1"	PG-HDH81B2	1	56,000 Yen	1	56,000 Yen	
PCI Gigabit Ethernet Controller	PG-1891	1	35,000 Yen	1	35,000 Yen	
Mylex eXtremeRAID 2000 4x U160 SCSI, BBU	PG-144B	1	294,000 Yen	4	1,176,000 Yen	
Keyboard	GP5-R1KB1	1	14,000 Yen	1	14,000 Yen	
Monitor 15"	FMV-DP849	1	18,900 Yen	1	18,900 Yen	
PRIMERGY S30 GE RH 2-Channel U160 SCSI	PG-R1DC6	1	238,000 Yen	1	238,000 Yen	
SCSI Cable UHD68(S)	PG-CBLS004	1	21,000 Yen	2	42,000 Yen	
3 Year Maintenance Server, 7x24, 4hr Resp.						928,910 Yen
Server Hardware Subtotal					4,526,900 Yen	
DataCenter Rack 38 HU	PG-R3RC1	1	238,000 Yen	2	476,000 Yen	
APC-USV 3000VA Rack	GP5-R1UP3	1	271,600 Yen	2	543,200 Yen	
18GB, 15k, U160, Hot plug, 1"	PG-HDH85B2	1	105,000 Yen	142	14,910,000 Yen	
PRIMERGY S30 GE RH 1-Channel U160 SCSI	PG-R1DC6	1	238,000 Yen	12	2,856,000 Yen	
SCSI Cable UHD68(S) incl. spare	PG-CBLS004	1	21,000 Yen	12	252,000 Yen	
3 Year Maintenance Rack, 7x24, 4hr Resp.						3,906,430 Yen
Storage Subtotal					19,037,200 Yen	
Maint. Server + Storage						4,835,340 Yen
PRIMERGY B225, PIII933MHz/256KB	PGC2AE1A	1	189,000 Yen	3	567,000 Yen	
Memory 256MB(128MBx2) SDRAM PC133 ECC	PG-RM25D	1	49,000 Yen	3	147,000 Yen	
Disk 18GB, U160, hot plug, 1"	PG-HDH81C	1	56,000 Yen	3	168,000 Yen	
Fast Ether-Express-Pro/100+ Server (PCI)	PG-185	1	10,400 Yen	3	31,200 Yen	
Monitor 15"	FMV-DP849	1	18,900 Yen	3	56,700 Yen	
3 Year Maintenance, 7x24, 4hr Resp.						199,020 Yen
Client Hardware Subtotal					969,900 Yen	199,020 Yen
Windows Advanced Svr 2000 (open program no level)	B511C02F	1	567,200 Yen	1	567,200 Yen	
MS SQL-Server 2000 Ent.Edit. Per Proc Lic. (open program level B)	B293C80Y0	1	2,791,700 Yen	2	5,583,400 Yen	
Server Software Subtotal					6,150,600 Yen	
Windows Svr 2000 (open program no level)	B511C02A1	1	142,000 Yen	3	426,000 Yen	
VC++ Pro 6.0 Win32	B298C2033	1	84,600 Yen	1	84,600 Yen	
Client Software Subtotal					510,600 Yen	
Software Support (all above)						1,708,590 Yen
24x10/0100Mbit Switch	SH4124	1	193,700 Yen	1	193,700 Yen	
Gigabit Uplink	SH41GT1	1	87,100 Yen	1	87,100 Yen	
3 Year Maintenance, 7x24, 4hr Resp.						79,850 Yen
User Connectivity Subtotal					280,800 Yen	
Total					31,476,000 Yen	6,822,800 Yen

1=Fujitsu

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 section 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.

Five-Year Cost of Ownership: Yen 38,298,800
tpmC Rating: 33,768.41
Yen / tpmC: 1,134.16

Note: The benchmark results and test methodology were audited by Bradley Askins of InfoSizing

Numerical Quantities Summary

MQTh, computed Maximum Qualified Throughput		33,768.41 tpmC	
Response Times (in seconds)	90th percentile	Average	Maximum
- New-Order	0.75	0.42	6.01
- Payment	0.67	0.35	5.72
- Order-Status	0.70	0.38	5.36
- Delivery (interactive portion)	0.12	0.11	1.03
- Delivery (deferred portion)	0.35	0.21	1.63
- Stock-Level	1.66	1.08	6.05
- Menu	0.12	0.11	1.04
Transaction Mix, in percent of total transactions			
- New-Order			44.91 %
- Payment			43.03 %
- Order-Status			4.01 %
- Delivery			4.03 %
- Stock-Level			4.02 %
Emulation Delay (in seconds)		Response Time	Menu
- New-Order		0.1	0.1
- Payment		0.1	0.1
- Order-Status		0.1	0.1
- Delivery (interactive)		0.1	0.1
- Stock-Level		0.1	0.1
Keying/Think Times (in seconds)	Minimum	Average	Maximum
- New-Order	18.00/0.000	18.01/12.05	18.05/120.51
- Payment	3.00/0.000	3.01/12.04	3.05/120.51
- Order-Status	2.00/0.000	2.01/10.01	2.04/100.50
- Delivery (interactive)	2.00/0.000	2.01/ 5.06	2.04/ 50.50
- Stock-Level	2.00/0.000	2.01/ 5.05	2.04/ 50.51
Test Duration and Checkpointing			
- Ramp-up time		37 minutes	
- Measurement interval		120 minutes	
- Number of checkpoints		4	
- Checkpoint interval		30 minutes	
- Transactions during measurement interval (all types)		9,386,961	