

TPC Benchmark™ C

Full Disclosure Report for



PRIMERGY H250

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

**and Microsoft Windows 2000
Advanced Server SP2**

February 25, 2002

First Edition



PRIMERGY H250

C/S with 3 PRIMERGY B210

TPC-C REV 5.0
EXECUTIVE SUMMARY

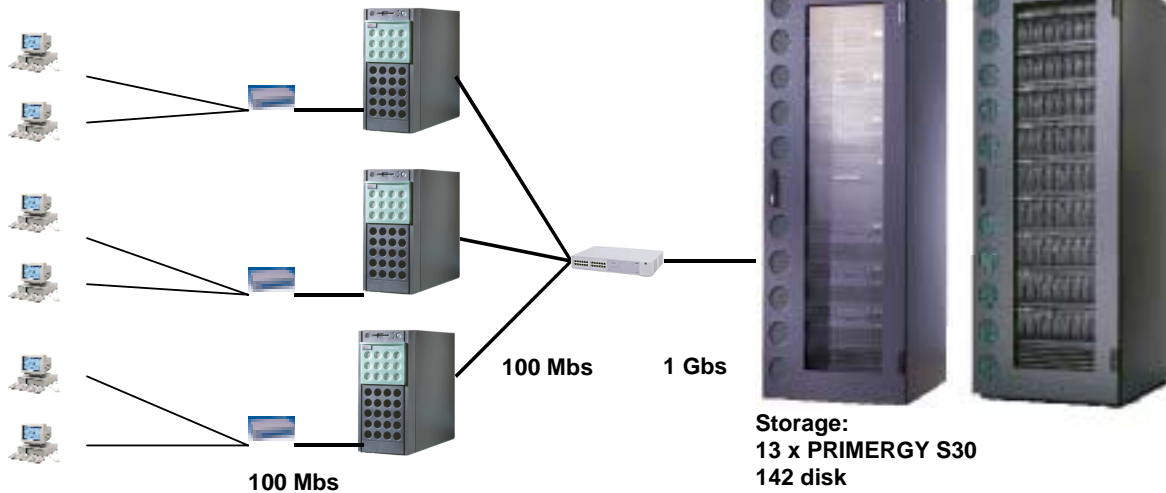
Report Date: February 25, 2002

Total System Cost	TPC-C Throughput	Price/Performance	Availability Date	
€269,106	33,768.41 tpmC	€7.97/tpmC	March 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

Terminals:
27000 users

Client:
3 x PRIMERGY B210
9000 users per client

Server:
PRIMERGY H250
4 SCSI Controller



System Components	Qty/Srv.	1 PRIMERGY H250	Qty/Client	3 PRIMERGY B210
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 B210

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Description	Part Number	Third Party Brand	Pricing	Unit Price	Qty.	Extended Price	3yr Maint. Price
PRIMERGY H250 GE RS Xeon 2.2 GHz / 512kB	S26361- K642- V404		1	5,464 Euro	1	5,464 Euro	
Processor Xeon 2.2 GHz / 512kB	S26361- F2549- E220		1	2,044 Euro	1	2,044 Euro	
Memory 2 GB PC1600 DDR RAM	S26361- F2550- E525		1	3,456 Euro	4	13,824 Euro	
Tape DAT DDS4 20GB	S26361- F2233- E3		1	1,020 Euro	1	1,020 Euro	
Disk 18GB, 10k, U160, hot plug, 1"	SNP: SY- F2336E118- P		1	420 Euro	1	420 Euro	
PCI Gigabit Ethernet Controller	D:RM6T5-CL18		1	3,068 Euro	2	6,136 Euro	
Mylex eXtremeRAID 2000 4x U160 SCSI, BBU	S26361- F2190- E128		1	2,700 Euro	4	10,800 Euro	
CD- ROM, ATAPI	SNP: SY- F2240E1- A		1	68 Euro	1	68 Euro	
Keyboard KBPC S2 D	S26381- K297- E120		1	13 Euro	1	13 Euro	
Monitor 151E	S26361- K819- V150		1	160 Euro	1	160 Euro	
PRIMERGY S30 GE RH 2-Channel U160 SCSI	SNP: SY- K638V210- P		1	2,791 Euro	1	2,791 Euro	
PRIMERGY S30 Rack Kit	SNP: SY- F2261E8- P		1	120 Euro	1	120 Euro	
SCSI Cable UHD68(S)	SNP: SY- F2365L20- P		1	104 Euro	2	208 Euro	
3 Year Maintenance Server, 7x24, 4hr Resp.	FSP: G3S0400AAASFM		1				1,250 Euro
Server Hardware Subtotal						43,068 Euro	
DataCenter Rack 38 HU	SNP: SY- K614V101- P		1	1,560 Euro	2	3,120 Euro	
APC-USV 3000VA Rack	SNP: PS- E421E1- P		1	1,740 Euro	2	3,480 Euro	
18GB, 15k, U160, Hot plug, 1"	S26361-F2336-E518		1	674 Euro	142	95,708 Euro	
18GB, 15k, U160, Hot plug, 1", 10%spare	S26361-F2336-E518		1	674 Euro	15	10,110 Euro	
PRIMERGY S30 GE RH 1-Ch incl. Spare	SNP: SY-K638V230-P		1	2,791 Euro	14	39,074 Euro	
PRIMERGY S30 Rack Kit incl. spare	SNP: SY- F2261E8- P		1	120 Euro	14	1,680 Euro	
SCSI Cable UHD68(S) incl. spare	SNP: SY- F2365L20- P		1	104 Euro	14	1,456 Euro	
3 Year Maintenance Rack, 7x24, 4hr Resp.	FSP: GX3S0400AAASR		1				1,250 Euro
Storage Subtotal						154,628 Euro	
Maint. Server + Storage							2,500 Euro
PRIMERGY B210 GE FS 933	S26361-K649-V131		1	1,340 Euro	3	4,020 Euro	
Terminator second CPU	SNP: SY- F2369E999-A		1	24 Euro	3	72 Euro	
Memory 128MB SDRAM PC133 ECC	SNP: SY- F2306E512-A		1	100 Euro	12	1,200 Euro	
Disk 18GB, U160, hot plug, 1"	SNP: SY- F2266E118-A		1	460 Euro	3	1,380 Euro	
CD- ROM, ATAPI	SNP: SY- F2240E1- A		1	68 Euro	3	204 Euro	
Fast Ether-Express-Pro/100+ Server (PCI)	SNP: SY- F2071E1- A		1	100 Euro	3	300 Euro	
Monitor 151E	S26361- K819- V150		1	160 Euro	3	480 Euro	
Tastatur KBPC S2 D	S26381- K297- E120		1	13 Euro	3	38 Euro	
3 Year Maintenance, 7x24, 4hr Resp.	FSP: G3S0400AAASFS		1	665 Euro	3		1,995 Euro
Client Hardware Subtotal						7,694 Euro	1,995 Euro
Windows Advanced Svr 2000 (open program no level)	MSO:C10-00475		1	2,570 Euro	1	2,570 Euro	
MS SQL-Server 2000 Ent.Edit. Per Proc Lic. (open program level B)	MSO:810-00845		1	19,665 Euro	2	39,330 Euro	
Server Software Subtotal						41,899 Euro	
Windows Svr 2000 (open program no level)	MSO:C11-00821		1	791 Euro	3	2,372 Euro	
VC++ Pro 6.0 Win32	MSO:048-00426		1	434 Euro	1	434 Euro	
Client Software Subtotal						2,805 Euro	
Microsoft Software Support (all above)	SNP:10901600012						10,353 Euro
24x10/0100Mbit Switch (+10% spare)	DES-3225G		2	856 Euro	3	2,568 Euro	
Gigabit Uplink (+10% spare)	DES-3251G		2	532 Euro	3	1,596 Euro	
User Connectivity Subtotal						4,164 Euro	
Total						254,258 Euro	14,848 Euro

1=Fujiitsu-Siemens, 2=Buerotechnik Sachsen GmbH

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: €269,106
tpmC Rating: 33,768.41
€/ tpmC: 7.97

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	