

**PRIMERGY R450**  
**C/S with 3 PRIMERGY C200**

Report Date: November 4, 2002

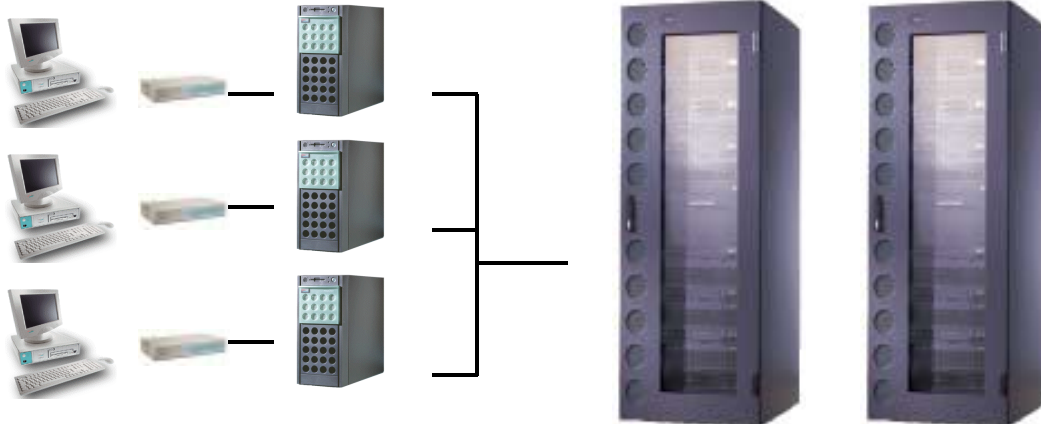
Total System Cost	TPC-C Throughput	Price/Performance	Availability Date	
<b>€434,063</b>	<b>68,264.47 tpmC</b>	<b>€6.36/tpmC</b>	<b>May 3, 2003</b>	
Processors	Database Manager	Operating System	Other Software	Number of Users
Server 4 Intel Xeon™ MP 2.00 GHz with 2M iL3 Cache Client 3 x 2 Intel Pentium® III 1400 MHz with 512 KB SLC	Microsoft SQL Server 2000 Enterprise Edition SP3	Microsoft Windows .NET Server 2003 Enterprise Edition	Windows 2000 Server, IIS 5.0 and COM+	55000

Terminals:  
55000 User

Client:  
2 x PRIMERGY C200  
18300 users per client  
1 x PRIMERGY C200  
18400 users per client

Server:  
PRIMERGY R450  
7 SCSI Controller

Storage:  
25 x PRIMERGY S30  
288 disk 18GB  
10 disks 36 GB



System Components	Qty/Srv.	1 PRIMERGY R450	Qty/Client	3 PRIMERGY C200
Processors	4	Intel Xeon™ MP 2.00 GHz with 2M iL3 Cache	2	Intel Pentium® III 1400 MHz with 512 KB SLC
Memory	16	GB	768	MB
Disk Controller	7	Mylex eXtremeRAID 2000	1	SCSI Controller
Disk Drives	289	18 GB	1	18 GB
	10	36 GB		
Total GB of Storage	1	4,865 GB		
Tape Drive	1	20 GB DAT		



# PRIMERGY R450

TPC-C REV 5.0  
EXECUTIVE SUMMARY

C/S with 3 PRIMERGY C200

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Description	Part Number	Third Party	Unit Price	Qty.	Extended Price	3yr Maint. Price
		Brand Pricing				
PRIMERGY R450 RH XEON 2.0GHz/2MB	S26361-K845-V202	1	11,400 Euro	1	11,400 Euro	
Xeon MP Processor 2.0 GHz/2MB	S26361-F2817-E202	1	7,140 Euro	3	21,420 Euro	
Mountingkit 19" Racks f. Server	SNP:SY-F1647E301-P	1	120 Euro	1	120 Euro	
Memory 4GB DDR-RAM PC1600 ECC	S26361-F2550-E545	1	4,140 Euro	4	16,560 Euro	
Tape DAT DDS4 20GB	S26361- F2233- E3	1	784 Euro	1	784 Euro	
18GB, 15k, U160, Hot plug, 1"	S26361-F2336-E518	1	440 Euro	1	440 Euro	
Mylex eXtremeRAID 2000 4x U160 SCSI, BBU	S26361- F2190- E128	1	2,544 Euro	7	17,808 Euro	
Keyboard KBPC S	S26381-K252-L120	1	18 Euro	1	18 Euro	
Monitor 151E	S26361- K819- V150	1	159 Euro	1	159 Euro	
3 Year Maintenance Server, 7x24, 4hr Resp.	FSP:G3SP94HUFPSRH	1	7,200 Euro			7,200 Euro
<b>Server Hardware Subtotal</b>					<b>68,709 Euro</b>	
DataCenter Rack 46 HU	SNP: SY- K614V104- P	1	1,920 Euro	2	3,840 Euro	
3 Year Maintenance Rack, 7x24, 4hr Resp.	FSP:G3SP94HUFPSRI		160 Euro			160 Euro
APC-USV 3000VA Rack	SNP: PS- E421E1- P	1	1,740 Euro	2	3,480 Euro	
36GB, 15k, U160, Hot plug, 1" (spared)	S26361-F2336-E536	1	744 Euro	12	8,928 Euro	
PRIMERGY S30 GE RH 2-Channel U160 SCSI	SNP: SY- K638V210- P	1	2,900 Euro	1	2,900 Euro	
18GB, 15k, U160, Hot plug, 1" (spared)	S26361-F2336-E518	1	440 Euro	317	139,480 Euro	
PRIMERGY S30 GE RH 1-Ch	SNP:SY-K638V230-P	1	2,900 Euro	24	69,600 Euro	
Mountingkit 19" Racks f. S30 / S60	S26361-F2734-E20	1	140 Euro	25	3,500 Euro	
SCSI Cable UHD68 (S)	SNP: SY- F2365L20- P	1	104 Euro	26	2,704 Euro	
3 Year Maintenance Storage, 7x24, 4hr Resp.	FSP:G3SP94HUFPSAS	1	4,448 Euro			4,448 Euro
<b>Storage Subtotal</b>					<b>234,432 Euro</b>	
<b>Maint. Server + Storage</b>						<b>11,648 Euro</b>
PRIMERGY C200 GE FS PIII 1.4GHz/512KB	S26361-K836-V134	1	1,180 Euro	3	3,540 Euro	
Pentium III Processor 1.4GHz 512kB	S26361-F2599-E140	1	700 Euro	3	2,100 Euro	
Memory 512MB SDRAM PC133 ECC	S26361-F2306-E523	1	460 Euro	3	1,380 Euro	
Memory 256MB SDRAM PC133 ECC	S26361-F2306-E522	1	220 Euro	3	660 Euro	
Hard Disk 18GB, 10k, U160, hot plug, 1"	SNP:SY-F2336E118-P	1	328 Euro	3	984 Euro	
CD- ROM, ATAPI	SNP:SY-F2240E1-A	1	40 Euro	3	120 Euro	
Monitor 151E	S26361- K819- V150	1	159 Euro	3	478 Euro	
Tastatur KBPC S	S26381-K252-L120	1	18 Euro	3	53 Euro	
3 Year Maintenance, 7x24, 4hr Resp.	FSP:G3SP94HUFPSFS	1	2,128 Euro	3		6,384 Euro
<b>Client Hardware Subtotal</b>					<b>9,314 Euro</b>	<b>6,384 Euro</b>
Windows .NET Enterprise Server 2003 (open program no level)	N/A	1	2,998 Euro	1	2,998 Euro	
MS SQL-Server 2000 Ent.Edit. Per Proc Lic. (open program level C)	MSO:810-00846	1	16,381 Euro	4	65,522 Euro	
<b>Server Software Subtotal</b>					<b>68,520 Euro</b>	
Windows Svr 2000 (open program no level)	MSO:C11-00821	1	672 Euro	3	2,016 Euro	
VC++ Pro 6.0 Win32	MSO:048-00426	1	368 Euro	1	368 Euro	
<b>Client Software Subtotal</b>					<b>2,384 Euro</b>	
Microsoft Software Support (all above)	SNP:10901600012					10,353 Euro
FC Switch 8 Port, 2GBit	D:FCSW-8P2GB01	1	6,672 Euro	1	6,672 Euro	
FC GBIC SFP Multi Mode 2 GB	D:FCGBIG-MM2G-01	1	358 Euro	4	1,430 Euro	
FC Kabel MMF 10m, Connector DLC-DLC	D:FCKAB-MM-C10L	1	107 Euro	4	426 Euro	
3 Year Maintenance FC, 7x24, 4hr Resp.	FSP:G3SP94HUFPPBG2		2,720 Euro			2,720 Euro
Qlogic 2350 (spared)		2	1,845 Euro	6	11,070 Euro	
<b>User Connectivity Subtotal</b>					<b>19,599 Euro</b>	
<b>Total</b>					<b>402,958 Euro</b>	<b>31,105 Euro</b>

1=Fujitsu-Siemens, 2=Atlantik Elektronik

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](mailto:pricing@tpc.org). Thank you.

3 -Year Cost of Ownership: €434,063  
 tpmC Rating: 68,264.47  
 €/ tpmC: 6.36

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

# Numerical Quantities Summary

MQTh, computed Maximum Qualified Throughput		68,264.47 tpmC	
<b>Response Times (in seconds)</b>	<b>90th percentile</b>	<b>Average</b>	<b>Maximum</b>
- New-Order	0.95	0.58	5.61
- Payment	0.88	0.52	5.47
- Order-Status	0.89	0.53	6.00
- Delivery (interactive portion)	0.12	0.11	0.59
- Delivery (deferred portion)	0.55	0.31	1.77
- Stock-Level	1.78	1.29	5.50
- Menu	0.12	0.11	1.20
<b>Transaction Mix, in percent of total transactions</b>			
- New-Order			44.91 %
- Payment			43.03 %
- Order-Status			4.02 %
- Delivery			4.02 %
- Stock-Level			4.02 %
<b>Emulation Delay (in seconds)</b>		<b>Response Time</b>	<b>Menu</b>
- 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
<b>Keying/Think Times (in seconds)</b>	<b>Minimum</b>	<b>Average</b>	<b>Maximum</b>
- New-Order	18.00/0.000	18.02/12.05	18.04/120.51
- Payment	3.00/0.000	3.02/12.04	3.04/120.51
- Order-Status	2.00/0.000	2.02/10.02	2.04/100.50
- Delivery (interactive)	2.00/0.000	2.02/ 5.05	2.03/ 50.50
- Stock-Level	2.00/0.000	2.02/ 5.06	2.04/ 50.50
<b>Test Duration and Checkpointing</b>			
- Ramp-up time		46 minutes	
- Measurement interval		120 minutes	
- Number of checkpoints		4	
- Checkpoint interval		30 minutes	
- Transactions during measurement interval (all types)		18,971,511	