
		PRIMERGY RX500 S7			TPC-E 1.12.0 TPC Pricing 1.7.0 TPC-Energy 1.4.2
					Report Date November 5, 2012
TPC-E Throughput 2,651.27 tpsE	Price/Performance \$ 161.95 USD per tpsE	Availability Date November 1, 2012	Total System Cost \$ 429,360 USD	TPC-Energy Metric 0.68 Watts/tpsE	
Database Server Configuration					
Operating System Microsoft Windows Server 2008 R2 Enterprise Edition SP1		Database Manager Microsoft SQL Server 2012 Enterprise Edition		Processors/Cores/Threads 4/32/64	Memory 512 GB
SUT					
			Tier A PRIMERGY RX200 S7 2x Intel Xeon E5-2660 2.20 GHz 32 GB Memory 1x 250 GB 7.2k rpm SATA Drive 2x onboard LAN 1 Gb/s 1x Dual Port LAN 1 Gb/s		
			Tier B PRIMERGY RX500 S7 4x Intel Xeon E5-4650 2.70 GHz 512 GB Memory 2x 146 GB 15k rpm SAS Drives 6x 300 GB 15k rpm SAS Drives 2x onboard LAN 1 Gb/s 6x SAS RAID Controller		
Storage 1x PRIMECENTER Rack 5x ETERNUS JX40 90x 200 GB SSD Drives					
Initial Database Size 10,904 GB		Redundancy Level 1 RAID-5 data and RAID-10 log		Storage 90 x 200 GB SSD 6 x 300 GB 15k rpm HDD	



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Description	Part Number	Price Source	Unit Price	Qty	Extended Price	3-yr. Maint. Price
Database Server (Tier B) Hardware						
PRIMERGY RX500S7						
PY RX500S7			50,345.00	1	50,345.00	
Modular PSU 800W platinum hp new rev	S26361-K1425-V200			1		
Cable pow ercord rack, 4m, grey	S26113-F574-E11			2		
CPU Mezzanine Board RX500S7	T26139-Y1968-E100			2		
Intel Xeon E5-4650 8C/16T 2.70 GHz 20MB	S26361-F4570-E100			1		
16GB(1x16GB)2Rx4 L DDR3- 1600 R ECC	S26361-F4570-E650			4		
Performance Mode Installation	S26361-F3697-E516			32		
DVD-RW supermulti slimline SATA	S26361-F3694-E2			4		
HD SAS 6G 146GB 15K HOT PL 2.5" EP	S26361-F3269-E2			1		
HD SAS 6G 300GB 15K HOT PL 2.5" EP	S26361-F4482-E514			2		
RAID Ctrl SAS 6G 1GB (D3116)	S26361-F4482-E530			6		
RAID Ctrl SAS 6G 8Port ex 1GB FH/LPLSI	S26361-F3669-E1			1		
Rack-Mount Kit F2-C S7 LV	S26361-F3713-E1			5		
Rack Cable Arm 2U	S26361-F2735-E285			1		
Mounting in symmetrical Racks	S26361-F2735-E82			1		
Power Supply Dummy	S26361-F4530-E10			1		
Region kit APAC/America/EMEA/Indien	S26113-F574-E99			2		
PRIMERGY RX500S7 Installation, normal business hours	S26361-F1452-E100			1		
PYRX500 Series Warranty Uplift, 36 Months, Enhanced Plus Level, 24x7 4hr Onsite, Prepaid billing (PYR500-U004361-0NA)	PYR500-N038005-0NA		350.00	1		350.00
	PYR500-U004361-0NA		1,309.00	1		1,309.00
					Subtotal (*)	50,345.00
						1,659.00
Storage						
PRIMECENTER RACK						
PRIMECENTER M1 Rack 724S 24U-1050x700			2,400.00	1	2,400.00	
Dummy panel, plastics, 1U + assembly	S26361-K827-V220			1		
Dummy panel, plastics, 2U + assembly	S26361-F4530-L131			3		
Socket strip 3phase 3x 8 sockets	S26361-F4530-L132			6		
PYPRIMECENTER during normal business hours, PRIMERGY Installation, Racks, One Time billing	S26361-F2262-L31		210.00	1	210.00	
PYPRIMECENTER Warranty Uplift, 36 Months, Enhanced Plus Level, 24x7 4hr Onsite, Prepaid billing (PYPCTR-U004361-0NA)	PYPCTR-N076005-0NA		280.00	1		280.00
	PYPCTR-U004361-0NA		720.00	1		720.00
ETERNUS JX40						
ETERNUS JX40			3,500.00	5	17,500.00	
SSD SAS 6G 200GB MLC HOT PL 2.5" EP PERF	FTS:ETJXS11BG					
SAS CABLE 1X SFF 8088-1X SFF 8088 2M	S26361-F4581-L200		2,150.00	90	193,500.00	
PYJX40 Warranty Uplift, 12 Months, Enhanced Plus Level, 24x7x365 Phone Support (Sev1 - Live Transfer), 24x7x365 Onsite and Parts (Sev1 Resp. Time - 4 Hours), Incl. Holidays, Prepaid billing	D:KBSAS1S-1S-2M		70.00	5	350.00	
PYJX40 Post Warranty, 24 Months, Enhanced Plus Level, 24x7x365 Phone Support (Sev1 - Live Transfer), 24x7x365 Onsite and Parts (Sev1 Resp. Time - 4 Hours), Incl. Holidays, Prepaid billing	PYJX40-U004121-0NA		639.00	5		3,195.00
PYJX40 during normal business hours, Primergy storage installation, One Time billing	PYJX40-P004241-0NA		1,218.00	5		6,090.00
	PYJX40-N043005-0NA		450.00	5		2,250.00
					Subtotal(*)	213,960.00
						12,535.00



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Database Server (Tier B) Software						
SQL Server 2012 Enterprise Edition 2Core License	7JQ-00256	2	13,472.50	16	215,560.00	
Windows Server 2008 R2 Enterprise Edition	P72-04217	2	2,280.00	1	2,280.00	
Microsoft Problem Resolution Services	n/a	2	259.00	1		259.00
				Subtotal	217,840.00	259.00
Application Server (Tier A) Hardware						
Primergy RX200 S7						
PY RX200 S7, 4x2.5	S26361-K1386-V101	1	6,454.00	1	6,454.00	
Modulare SV 450W platin hp	S26113-F575-E10	1		1		
Power Supply Dummy	S26113-F574-E99	1		1		
Intel Xeon E5-2660 8C/16T 2.20 GHz 20MB	S26361-F3691-E220	1		2		
Fan upgrade kit 2nd CPU	S26361-F1386-E120			1		
4GB (1x4GB) 2Rx8 L DDR3-1600 U ECC	S26361-F3694-E514	1		8		
Performance Mode Installation	S26361-F3694-E2	1		2		
DVD-RW supermulti slimline SATA	S26361-F3269-E2	1		1		
HD SATA 6G 250GB 7.2K HOT PL 2.5" BC	S26361-F3708-E250	1		1		
Eth Ctrl 2x1Gbit PCIe x4 D2735-2 Cu Ip	S26361-F3610-E202	1		1		
Rack Mount Kit F1-C S7 LV	S26361-F2735-E175	1		1		
Rack Cable Arm 1U	S26361-F2735-E81	1		1		
Cable powercord rack, 4m, grey	T26139-Y1968-E100	1		1		
Mounting in symmetrical Racks	S26361-F4530-E10	1		1		
region kit APAC/America/EMEA/Indien	S26361-F1452-E100	1		1		
PRIMERGY RX200S7 Installation, normal business hours	PYR200-N038005-0NA	1	200.00	1		200.00
PYRX200 Series Warranty Uplift, 36 Months, Enhanced Plus Level, 24x7 4hr Onsite, Prepaid billing (PYR200-U004361-0NA)	PYR200-U004361-0NA	1	750.00	1		750.00
				Subtotal(*)	6,454.00	950.00
Application Server (Tier A) Software						
Windows Server 2008 R2 Standard x64 Edition	P73-04980	2	711.00	1	711.00	
				Subtotal	711.00	
Miscellaneous						
DISPLAY B20T-6 LED (incl 2spares)	S26361-K1416-V140	1	187.20	3	561.60	
Infrastructure or Connectivity						
KB400 USB grey INT USA (incl 2 spares)	S26381-K550-E102	1	14.00	3	42.00	
Mouse M480 grey (incl 2 spares)	S26381-K431-E101	1	8.00	3	24.00	
LAN-CAT 5 Enhanced, l=3m	T26139-Y2425-M3	1	5.00	2	10.00	
				Subtotal(*)	637.60	0.00
				Total	489,947.60	15,403.00
Dollar Volume Discount (see Notes)		28%	1		75,991.05	
					413,956.55	

Notes: Price Source: 1=Fujitsu, 2=Microsoft Corporation Discount applies to all subtotal marked with (*). Pricing is for these or similar quantities. Discounts for similar sized configurations will be similar to what is quoted here, but may vary based on the specific components priced.	Three-Year Cost of Ownership USD	\$429,360
	TPC-E Throughput	2651.27
	\$ USD/tpsE	\$161.95

The benchmark results and test methodology were audited by Francois Raab for InfoSizing Inc. (www.sizing.com)

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.



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Numerical Quantities Summary

Reported Throughput:	2,651.27 tpsE	Configured Customers:	1,330,000	
Response Times (in seconds)	Minimum	Average	90th%tile	Maximum
Broker Volume	0.00	0.02	0.03	0.82
Customer Position	0.00	0.01	0.02	0.92
Market Feed	0.00	0.01	0.04	0.98
Market Watch	0.00	0.01	0.02	0.95
Security Detail	0.00	0.01	0.01	0.90
Trade Lookup	0.00	0.08	0.12	1.12
Trade Order	0.00	0.03	0.04	0.92
Trade Result	0.00	0.03	0.05	2.34
Trade Status	0.00	0.01	0.02	0.91
Trade Update	0.01	0.09	0.13	1.10
Data Maintenance	0.00	0.02	N/A	0.12
Transaction Mix	Transaction Count		Mix %	
Broker Volume	9,353,458		4.900%	
Customer Position	24,815,426		13.000%	
Market Feed	1,908,922		1.000%	
Market Watch	34,359,736		18.000%	
Security Detail	26,724,354		14.000%	
Trade Lookup	15,270,911		8.000%	
Trade Order	19,279,763		10.100%	
Trade Result	19,089,191		10.000%	
Trade Status	36,268,354		19.000%	
Trade Update	3,817,719		2.000%	
Data Maintenance	120		N/A	
Test Duration and Timings				
Ramp-up Time (hh:mm:ss)	00:20:15			
Measurement Interval (hh:mm:ss)	02:00:00			
Business Recovery Time (hh:mm:ss)	00:15:14			
Total Number of Transactions Completed	190,887,834			

PRIMERGY RX500 S7		Energy Summary		TPC-E 1.12.0 TPC Pricing 1.7.0 TPC-Energy 1.4.2	
				Report Date November 5, 2012	
				Availability Date November 1, 2012	
TPC-E Throughput 2,651.27 tpsE	Price/Performance \$ 161.95 USD per tpsE	Availability Date November 1, 2012	Total System Cost \$ 429,360 USD	TPC-Energy Metric 0.68 Watts/tpsE	

Numerical Quantities For Reported Energy Configuration:

REC Idle Power: 1,131.54 Watts
Average Power of REC : 1,802.33 Watts

Subsystem Reporting:

	Secondary Metrics	Additional Numerical Quantities			
	watts/tpsE	Full Load Avg Watts	Full Load % of REC	Idle Avg Watts	Idle % of REC
Database Server *)	0.31	832.75	46.20%	285.35	25.22%
Storage *)	0.30	796.20	44.18%	765.14	67.62%
Application Server *)	0.06	156.37	8.68%	80.65	7.13%
Miscellaneous *)	0.01	17.00	0.94%	0.40	0.04%
Total REC	0.68	1,802.33	100.00%	1,131.54	100.00%

*) see pricing for list of components

Lowest ambient temperature at air inlet: 21.31 Degrees Celsius

**Items in Priced Configuration not in the Reported Energy Configuration
None**

**Items in the Reported Energy Configuration not in the Measured Energy Configuration
Fujitsu Display B20T-6 LED**