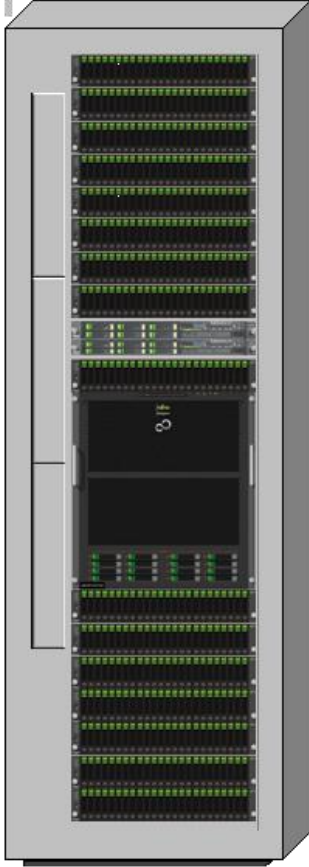
		<b>PRIMQUEST 1800E2</b>			<b>TPC-E 1.12.0</b> <b>TPC Pricing 1.6.0</b> <b>TPC-Energy 1.2.1</b>
					Report Date July 27, 2011
TPC-E Throughput <b>4,414.79 tpsE</b>	Price/Performance <b>\$ 226.19 USD per tpsE</b>	Availability Date <b>July 1, 2011</b>	Total System Cost <b>\$ 998,573</b>	TPC-Energy Metric <b>1.09 Watts/tpsE</b>	
<b>Database Server Configuration</b>					
Operating System <b>Microsoft Windows Server 2008 R2 Enterprise Edition SP1</b>		Database Manager <b>Microsoft SQL Server 2008 R2 Enterprise Edition</b>		Processors/Cores/Threads <b>8/80/160</b>	Memory <b>2048 GB</b>
<div style="display: flex; align-items: center;"> <div style="margin-right: 20px;"> <p><b>SUT</b></p>  </div> <div style="border: 1px solid black; padding: 10px;"> <p><b>Tier A (2x)</b>            PRIMERGY RX200 S6            2x Intel Xeon E5647 2.93 GHz            12 GB Memory            1x 73 GB 15k rpm SAS Drive            2x onboard LAN 1 Gb/s            2x Dual Port LAN 1 Gb/s</p> <p><b>Tier B</b>            PRIMEQUEST 1800E2            8x Intel Xeon E7-8870 2.40 GHz            2048 GB Memory            2x 146 GB 15krpm SAS Drives            8x onboard LAN 1 Gb/s            16x SAS RAID Controller</p> <p><b>Storage</b>            1x PRIMECENTER Rack            16x ETERNUS JX40            360x 64 GB SSD Drives            6x 450GB 10krpm SAS Drives            9x 1 TB 7.2k rpm SATA Drives</p> </div> </div>					
Initial Database Size <b>18,464 GB</b>		Redundancy Level 1 <b>RAID-5 data and RAID-10 log</b>		Storage <b>360 x 64 GB SSD</b> <b>9 x 1 TB 7.2k rpm HDD</b> <b>6 x 450 GB 10k rpm HDD</b>	



# PRIMEQUEST 1800E2

**TPC-E 1.12.0**  
**TPC Pricing 1.6.0**  
**TPC-Energy 1.2.1**

Report Date  
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Description	Part Number	Price Source	Unit Price	Qty	Extended Price	3-yr. Maint. Price
<b>Database Server (Tier B) Hardware</b>						
<b>PRIMEQUEST 1800E2</b>						
		1	366,120.00	1	366,120.00	
PRIMEQUEST 1800E2 Base Cabinet	MCE3AC111U			1		
System Board	MC-3HSB31			4		
CPU Module (2.4GHz/30M, 10core)	MC-3BBA11			8		
64GB Memory (16GB DIMM x 4)	MC-3CA711			32		
146GB Hard Disk Drive (15,000rpm)	MC-5DS621			2		
I/O Unit	MC-3HUX21			2		
SAS Disk Unit	MC-5HSC11			1		
SAS RAID Controller Card	MC-0JSR11			16		
PQ1800E Installation, normal business hours, no PCI Box	PQ1800-N046005-000	1	2,800.00	1		2,800.00
PQ1800E Warranty Uplift, 36 Months, Enhanced Plus Level, 24x7x365 Phone Support (Sev1 - Live Transfer), 24x7x365 Onsite and Parts (Sev1 Resp. Time - 4 Hours), Incl. Holidays, Prepaid billing	PQ1800-U003361-004	1	12,240.00	1		12,240.00
				<b>Subtotal</b>	<b>366,120.00</b>	<b>15,040.00</b>
<b>Storage</b>						
<b>PRIMECENTER RACK</b>						
		1	2,584.00	1	2,584.00	
PRIMECENTER Rack 46U, 1100mm deep	S26361-K826-V214			1		
Dummy panel, plastics, 2U + assembly	S26361-F2735-E131			3		
Socket strip 3phase 3x 8 sockets	S26361-F2262-L31	1	157.25	1	157.25	
PYPCTR Warranty Uplift, 36 Months, Enhanced Plus Level, 24x7x365 Phone Support (Sev1 - Live Transfer), 24x7x365 Onsite and Parts (Sev1 Resp. Time - 4 Hours), Incl. Holidays, Prepaid billing	PYPCTR-U004361-0NA	1	720.00	1		720.00
		1	2,219.52	16	35,512.32	
ETERNUS JX40	FTS:ETJXS11BG			16		
PRIMERGY Rackinstallation SX/DX ex works	D:FCSX-INPSR			16		
SSD SATA 3G 64GB SLC HOT PLUG 2.5" EP	S26361-F3298-L64	1	1,013.88	360	364,996.80	
SAS CABLE 1X SFF 8088-1X SFF 8088 2M	D:KBSAS1S-1S-2M	1	66.30	16	1,060.80	
HD SAS 6G 450GB 10K HOT PLUG 2.5" EP	S26361-F4482-L145	1	620.00	6	3,720.00	
HD SATA 1000 GB 2.5"	S26361-F3601-L100	1	407.00	9	3,663.00	
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	PYJX40-U004121-0NA	1	609.00	16		9,744.00
		1	1,218.00	16		19,488.00
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-P004241-0NA	1	1,218.00	16		19,488.00
		1	450.00	16		7,200.00
PYJX40 during normal business hours, Primergy storage installation, One Time billing	PYJX40-N043005-0NA	1	450.00	16		7,200.00
				<b>Subtotal</b>	<b>411,694.17</b>	<b>37,152.00</b>



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**TPC Pricing 1.6.0**  
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Database Server (Tier B) Software						
SQL Server 2008 R2 Enterprise Edition Per Processor License	810-08527	2	19,188.00	8	153,504.00	
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
				<b>Subtotal</b>	<b>155,784.00</b>	<b>259.00</b>
Application Server (Tier A ) Hardware						
<b>PRIMERGY RX200 S6</b>						
PY RX200 S6, 6HD-bays 2.5"	S26361-K1342-V101	1	4,414.90	2	8,829.80	
Intel Xeon E56474C/8T 2.93 GHz 12 MB	S26361-F4489-E293			4		
Performance Mode Installation	S26361-F3284-E2			4		
SP 6GB 3x2 DDR3 1333 MHz PC3-10600 rg s	S26361-F3604-E533			4		
CD-RW/DVD slimline SATA	S26361-F3269-E2			2		
HD SAS 6G 73GB 15K HOT PLUG 2.5" EP	S26361-F4006-E573			2		
RAID 0/1 SAS based on LSI MegaRAID 4Port	S26361-F3257-E4			2		
Eth Ctrl 2x1Gbit PCIe x4 D2735 Cu lp	S26361-F3610-E201			4		
RMK-P_1-2U servers (new)	S26361-F2735-E110			2		
Power Supply Module 450W gold hp	S26113-F570-E1					
PYRX200 S6 Warranty Uplift, 36 Months, Enhanced Plus Level, 24x7x365 Phone Support (Sev1 - Live Transfer), 24x7x365 Onsite and Parts (Sev1 Resp. Time - 4 Hours), Incl. Holidays, Prepaid billing	PYR2S6-U004361-0NA	1	550.00	2		1,100.00
PYRX200 S6 during normal business hours, Primergy installation, Low-end Server, w/o OS, One Time billing	PYR2S6-N039005-0NA	1	200.00	2		400.00
				<b>Subtotal</b>	<b>8,829.80</b>	<b>1,500.00</b>
Application Server (Tier A ) Software						
Windows Server 2008 R2 Standard x64 Edition	P73-04980	2	711.00	2	1,422.00	
Miscellaneous						
DISPLAY A19-5 ECO (incl. 2 spares)	S26361-K1339-V140	1	176.80	3	530.40	
Infrastructure or Connectivity						
KB SLIM MF USA (incl. 2 spares)	S26381-K370-V510	1	20.40	3	61.20	
Mini Optical Mouse (incl. 2 spares)	S26381-K452-L100	1	10.20	3	30.60	
LAN-CAT 5 Enhanced, l=3m	S26361-F3417-L3	1	18.70	8	149.60	
				<b>Subtotal</b>	<b>2,193.80</b>	<b>0.00</b>
				<b>Total</b>	<b>944,621.77</b>	<b>53,951.00</b>
Notes:			<b>Three-Year Cost of Ownership USD</b>		<b>\$998,573</b>	
Price Source: 1=Fujitsu, 2=Microsoft Corporation			<b>TPC-E Throughput</b>		<b>4,414.79</b>	
			<b>\$ USD/tpsE</b>		<b>\$226.19</b>	

The benchmark results and test methodology were audited by Francois Raab for InfoSizing Inc. ([www.sizing.com](http://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](mailto:pricing@tpc.org). Thank you.



# PRIMEQUEST 1800E2

**TPC-E 1.12.0**  
**TPC Pricing 1.6.0**  
**TPC-Energy 1.2.1**

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 July 1, 2011

## Numerical Quantities Summary

Reported Throughput:	4414.79 tpsE	Configured Customers:	2,300,000	
Response Times (in seconds)	Minimum	Average	90th%tile	Maximum
Broker Volume	0.00	0.05	0.09	10.87
Customer Position	0.00	0.03	0.08	2.85
Market Feed	0.00	0.02	0.05	6.74
Market Watch	0.00	0.04	0.08	32.61
Security Detail	0.00	0.02	0.04	1.90
Trade Lookup	0.00	0.13	0.23	6.09
Trade Order	0.00	0.07	0.15	12.44
Trade Result	0.00	0.06	0.18	3.34
Trade Status	0.00	0.02	0.05	3.44
Trade Update	0.01	0.15	0.25	7.01
Data Maintenance	0.00	0.04	N/A	0.55
Transaction Mix	Transaction Count			Mix %
Broker Volume	15,577,104			4.900%
Customer Position	41,327,850			13.000%
Market Feed	3,178,672			1.000%
Market Watch	57,223,110			18.000%
Security Detail	44,506,673			14.000%
Trade Lookup	25,432,165			8.000%
Trade Order	32,108,502			10.100%
Trade Result	31,786,548			9.999%
Trade Status	60,401,614			19.000%
Trade Update	6,358,118			2.000%
Data Maintenance	120			N/A
Test Duration and Timings				
Ramp-up Time (hh:mm:ss)	00:22:29			
Measurement Interval (hh:mm:ss)	02:00:00			
Business Recovery Time (hh:mm:ss)	03:24:40			
Total Number of Transactions Completed	317,900,356			

<b>PRIMEQUEST 1800E2</b>		<b>Energy Summary</b>		<b>TPC-E 1.12.0 TPC Pricing 1.6.0 TPC-Energy 1.2.1</b>	
				Report Date July 27, 2011	
				Availability Date July 1, 2011	
TPC-E Throughput <b>4,414.79 tpsE</b>	Price/Performance <b>\$ 226.19 USD per tpsE</b>	Availability Date <b>July 1, 2011</b>	Total System Cost <b>\$ 998,573</b>	TPC-Energy Metric <b>1.09 Watts/tpsE</b>	

**Numerical Quantities For Reported Energy Configuration:**

**REC Idle Power: 3494.10 Watts**  
**Average Power of REC : 4817.42 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 *)	0.61	2,709.20	56.24%	1,713.35	49.04%
Storage *)	0.37	1,628.01	33.79%	1,563.64	44.75%
Application Server *)	0.10	461.21	9.57%	216.61	6.20%
Miscellaneous *)	0.00	19.00	0.39%	0.50	0.01%
<b>Total REC</b>	<b>1.09</b>	<b>4,817.42</b>	<b>100.00%</b>	<b>3,494.10</b>	<b>100.00%</b>

**Lowest ambient temperature at air inlet: 20.81 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 A19-5 ECO**