



PowerEdge™ R905 Server

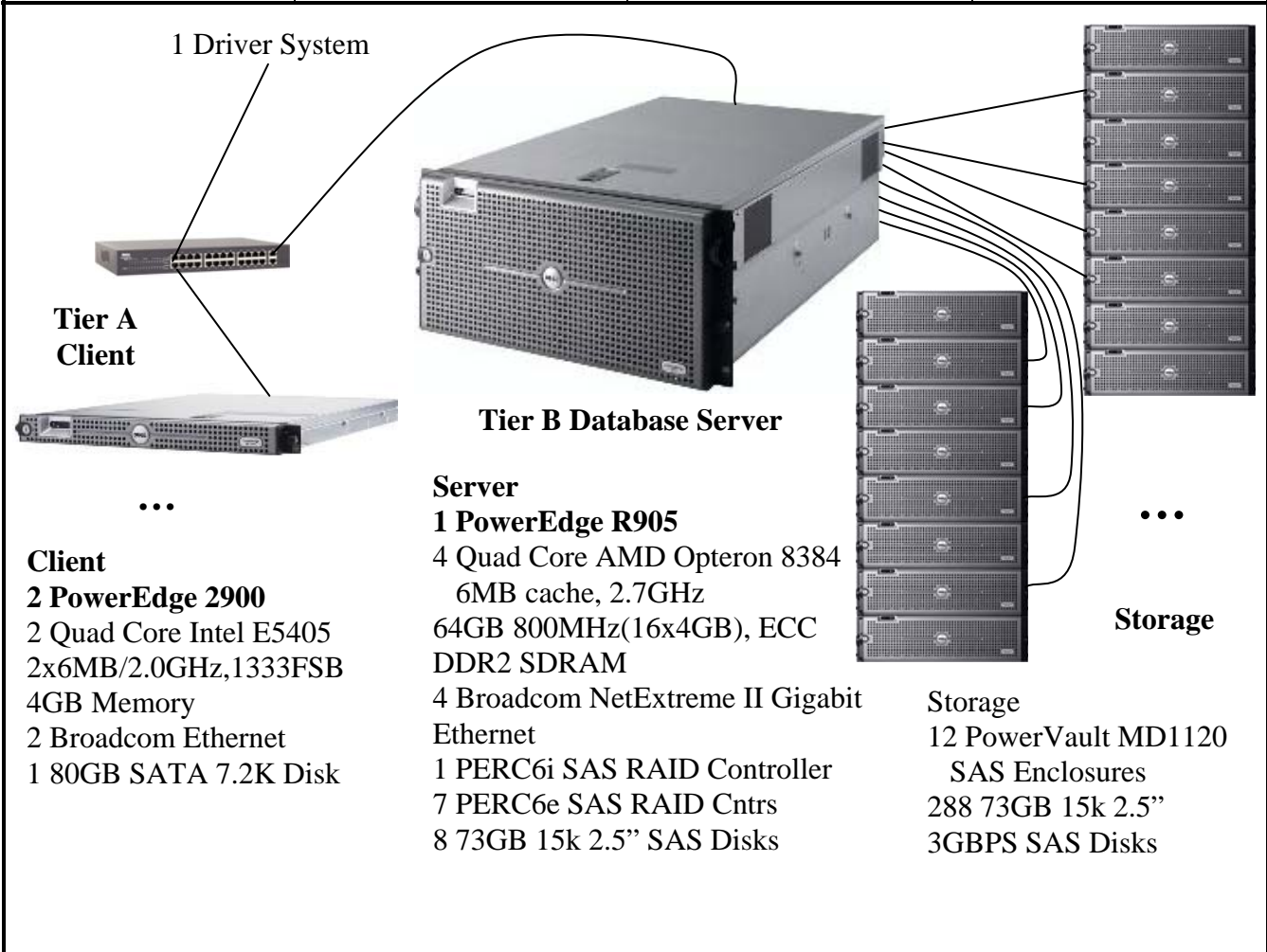
**TPC-E 1.7.0
TPC Pricing 1.3**

Report Date:
February 19, 2009

TPC-E Throughput	Price/Performance	Availability Date	Total System Cost
635.43 tpsE	\$403.87 USD per tpsE	February 19, 2009	\$256,625 USD

Database Server Configuration

Operating System	Database Manager	Processors/Cores/ Threads	Memory
Microsoft Windows Server 2008 Enterprise x64 Edition™	SQL Server 2008 Enterprise x64 Edition™	4/16/16	64GB



Client
2 PowerEdge 2900
 2 Quad Core Intel E5405
 2x6MB/2.0GHz,1333FSB
 4GB Memory
 2 Broadcom Ethernet
 1 80GB SATA 7.2K Disk

Server
1 PowerEdge R905
 4 Quad Core AMD Opteron 8384
 6MB cache, 2.7GHz
 64GB 800MHz(16x4GB), ECC
 DDR2 SDRAM
 4 Broadcom NetExtreme II Gigabit
 Ethernet
 1 PERC6i SAS RAID Controller
 7 PERC6e SAS RAID Cntrs
 8 73GB 15k 2.5" SAS Disks

Storage
 12 PowerVault MD1120
 SAS Enclosures
 288 73GB 15k 2.5"
 3GBPS SAS Disks

Initial Database Size 2,471.58GB	Redundancy Level: 1 RAID10 Log + RAID5 Data	Storage 8 x 73GB, 288 x 73GB
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Description	Part Number	Price Source	Unit Price	Qty	Extended Price	3 yr. Maint. Price
Server Hardware						
PER905, 2x QuadCore Opteron 8384 2.7Gz & 2 Broadcom NICs	224-3101	1	\$7,943.00	1	\$7,943.00	\$540.00
Upgrade to Quad Opteron 8384 2.7Gz	311-9170	1	\$4,999.00	1	\$4,999.00	
64GB,800MHZ, 16X4GB	311-9834	1	\$4,200.00	1	\$4,200.00	
PERC6i SAS RAID, Internal, Bat	341-5699	1	\$299.00	1	\$299.00	
PERC6E SAS RAID, 2X4 EXT 256	341-5842	1	\$799.00	7	\$5,593.00	
73GB,SAS,2.5-inch,15K RPM HD	341-4727	1	\$339.00	8	\$2,712.00	
DELL E157FP,15 IN,15.0 VIS	320-5090	1	\$189.00	1	\$189.00	
				Subtotal	\$25,935.00	\$540.00
Server Storage						
PV MD1120,RACK,2U,24 BAY,LBZL	223-6716	1	\$3,043.00	12	\$36,516.00	\$19,896.00
Enclosure Management Modules, PowerVault MD1120	341-6492	1	\$0.00	12	\$0.00	
73GB,SAS,2.5-inch,15K RPM HD	341-4727	1	\$339.00	288	\$97,632.00	
RACK-42U, CUST	340-4896	1	\$239.99	1	\$239.99	
				Subtotal	\$134,387.99	\$19,896.00
Server Software						
SQL Server 2008 Enterprise x64 Edition **	810-07507	2	\$23,432.00	4	\$93,728.00	
Windows Server 2008 Enterprise Edition (x64) **	P72-03168	2	\$2,310.00	1	\$2,310.00	
Professional Support (1 Incident)	N/A		\$245.00	1		\$245.00
				Subtotal	\$96,038.00	\$245.00
Client Hardware						
Dell PowerEdge 2900, E5405,2x6MB/2.0GHz,1333FSB	223-4719	1S	\$553.00	2	\$1,106.00	\$492.00
Additional processor, E5405,2X6MB/2.0GHz,1333FSB	311-8025	1S	\$369.00	2	\$738.00	
4GB,667MHz,(2X2GB),2R,FBD	311-7168	1	\$448.00	2	\$896.00	
80G 7K SATA2,3G,3.5,HP	341-3034	1	\$99.00	2	\$198.00	
DUAL,OnBoard,Broadcom,GB,ENET NICs	430-1764	1	\$0.00	2	\$0.00	
				Subtotal	\$2,938.00	\$984.00
Client Software						
Windows Server 2008 Standard Edition (x64) **	P73-04165	2	\$711.00	2	\$1,422.00	
				Subtotal	\$1,422.00	\$0.00
Infrastructure						
PowerConnect 2216, 16port Switch	222-2259	1	\$69.00	1	\$69.00	
1M SAS Cable, MD1000	310-7082	1	\$30.00	12	\$360.00	
				Subtotal	\$429.00	\$0.00
				Other Discounts*	(\$26,190.40)	
				Total	\$234,959.59	\$21,665.00

Notes:
 One or more components of the measured configuration have been substituted in the Priced Configuration. See the FDR for details.
 *All hardware from Dell(1) is discounted 16% based on total dollar volume of this config.
 ** All Microsoft maintenance is covered by the maint. costs of Microsoft SQL Server
 Price Source: 1=Dell, 2=Microsoft, NIO = Not Immediately Orderable
 Pricing may be verified by calling 1-800-BUY-DELL and referencing quote # 475057394 as a complex quote.
Audited by Lorna Livingtree, Performance Metrics Inc.

Three-Year Cost of Ownership:	\$256,625	USD
TPC-E Throughput:	635.43	tpsE
Price/Performance:	\$403.87	tpsE/USD

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 sections of the TPC benchmark specifications. If you find that the stated prices are not available according to these items, please inform the TPC at pricing@tpc.org.

Numerical Quantities Summary				
Reported Throughput: 635.43 tpsE		Configured Customers: 320,000		
Response Times (in seconds)	Minimum	Average	90th%tile	Maximum
Broker-Volume	0.00	0.05	0.09	0.65
Customer-Position	0.00	0.06	0.12	4.20
Market-Feed	0.00	0.09	0.21	4.18
Market-Watch	0.00	0.04	0.08	3.05
Security-Detail	0.00	0.03	0.06	0.89
Trade-Lookup	0.01	0.87	1.12	2.06
Trade-Order	0.00	0.17	0.27	2.12
Trade-Result	0.00	0.19	0.30	3.46
Trade-Status	0.00	0.06	0.11	1.13
Trade-Update	0.02	1.03	1.21	1.98
Data-Maintenance	0.02	0.20		1.90
Transaction Mix		Transaction Count		Mix %
Broker-Volume		2,241,285		4.900%
Customer-Position		5,946,533		13.000%
Market-Feed		457,526		1.000%
Market-Watch		8,233,819		18.000%
Security-Detail		6,403,629		13.999%
Trade-Lookup		3,659,003		7.999%
Trade-Order		4,619,924		10.100%
Trade-Result		4,575,164		10.002%
Trade-Status		8,690,861		19.000%
Trade-Update		914,756		2.000%
Data-Maintenance		120		
Test Duration and Timings				
Ramp-up Time (hh:mm:ss)			00:11:00	
Measurement Interval (hh:mm:ss)			02:00:00	
Business Recovery Time (hh:mm:ss)			00:52:26	
Total number of Transactions Completed in Measurement Interval			45,742,500	