	HP ProLiant DL380p Gen8 Intel Xeon CPU E5-2690 C/S with 1 Proliant DL360 G7	TPC-E Rev 1.12.0
		TPC Pricing 1.7.0
		Report Date Nov. 21, 2012

TPC-E Throughput	Price/Performance	Availability Date	Total System Cost
1881.76 tpsE	$173 USD/tpsE	Nov. 21, 2012	$325,268 USD

Database Server Configuration

Operating System	Database Manager	Processor/Cores/Thread	Memory
Microsoft Windows Server 2012 Standard Edition	Microsoft SQL Server 2012 Enterprise Edition SP1	2/16/32 Intel Xeon CPU E5-2690 2.9 GHz 20 MB L3	256 Gbyte

Tier B: Server
HP ProLiant DL380p Gen8

2 x Intel Xeon Processor E5-2690 2.90 GHZ
256 GB Memory
2 x HP 146GB SAS 15K SFF DP ENT HDD
6 x HP 300GB SAS 15K SFF DP ENT HDD (Database Log)

HP ProCurve 2910al-24G

1Gbps Ethernet   10 Gbps Ethernet   4X

Tier A: Client

1 x ProLiant DL360 G7
2x Quad-Core Intel Xeon X5670 Processor 2.93Ghz
3 x 4GB PC3-10600 Memory
2 x 300GB 6G SAS 10K SFF DP
4 x Onboard 1Gbps Ethernet

Storage

4 x HP Smart Array P421/1GB
4 x HP StorageWorks D2700 Disk Enclosure
32 X HP 400GB 6G SAS SLC SFF (2.5-inch) SSD

Priced Only
2 x 500GB 6G SAS 15K SFF DP ENT HDD 60 Day Space

Initial Database Size	Redundancy Level: 1	Storage
7,792 GB	RAID10:Log/RAID5:Data	32x 400GB SSD (data), 6x300GB HDD (log), 2x500GB HDD(60Day)

			TPC-E	1.12.0
HP ProLiant DL380p Gen8			TPC-Pricing	1.7.0
			Report date	21-Nov-12
			Availability Date	21-Nov-12

Description	Part Number	Brand	Unit Price	Qty.	Extended Price	3 Yr Maint Price
Server Hardware (Tier B)						
HP ProLiant DL380p Gen8 8 SFF CTO Chassis	653200-B21	1	2,668	1	2,668	
HP DL380p Gen8 Intel® Xeon® E5-2690 (2.9GHz/8-core/20MB/135W) Processor	662226-B21	1	2,849	2	5,698	
HP 16GB (1x16GB) Dual Rank x4 PC3-12800R (DDR3-1600) Memory Kit	672631-B21	1	439	16	7,024	
HP 146GB 6G SAS 15K rpm SFF (2.5-inch) SC Enterprise	652605-B21	1	389	2	778	
HP 300GB 6G SAS 15K rpm SFF (2.5-inch) SC Enterprise (Log)	652611-B21	1	699	6	4,194	
HP Ethernet 10Gb 2-port 560SFP+ Adapter	665249-B21	1	699	1	699	
HP Smart Array P421/2GB FBWC 6Gb 2-ports Ext SAS Controller	631674-B21	1	899	4	3,596	
HP 3 year 4 hour 24x7 ProLiant DL38x(p) Hardware Support	U4545E	1	1,061	1		$1,061
			Subtotal		**$24,657**	**$1,061**
Server Software						
SQL Server 2012 Enterprise Edition SP1, 2 Core License	7JQ-00256	2	13,473	8	107,780	
Windows Server 2012 Standard Edition	P73-05761	2	735	1	735	
Microsoft Problem Resolution Services	N/A	2	259	1		259
			Subtotal		**$108,515**	**259**
Storage						
HP D2700 Disk Enclosure	AJ941A	1	3,399	4	13,596	
HP 3 year 4 hour 24x7 D2000 Enclosure Hardware Support	UQ540E	1	1,980	4		7,920
HP 400GB 6G SAS SLC SFF (2.5-inch) 3yr Warranty Solid State Drive	632494-B21	1	7,399	32	236,768	
HP 500GB 6G SAS 7.2K rpm SFF DP Midline Hard Drive (60 Day)	507610-B21	1	349	2	698	
			Subtotal		**251,062**	**7,920**
Client Hardware (Tier A)						
HP ProLiant DL360 G7 CTO Server	579237-B21	1	2,098	1	2,098	
HP DL380 G7 Intel® Xeon® X5670 (2.93GHz/6-core/12MB/95W) Processor	587493-B21	1	2,099	2	4,198	
HP 2GB (1x2GB) Dual Rank x8 PC3-10600 Memory Kit	500656-B21	1	110	6	660	
HP 300GB 6G SAS 10K rpm SFF (2.5-inch) Enterprise 3yr Warranty Hard Drive	507127-B21	1	309	2	618	
HP 3y 4h 24x7 ProLiant DL36x HW Support ,ProLiant DL36x	U4497E	1	828	1		828
			Subtotal		**7,574**	**828**
Client Software						
Microsoft Windows Server 2008 R2 Enterprise Edition	P72-04217	2	2,280	1	2,280	
			Subtotal		**2,280**	**0**
Infrastructure						
HP 1.2m/4ft CAT5 RJ45 M/M Ethernet Cable	C7533A	1	4	4	15	
HP Networking 2910al-24G Switch	J9145A	1	2,113	1	2,113	
3-year, 4-hour onsite, 24x7 coverage for hardware	U2856E	1	998	1		998
HP X242 SFP+ SFp+ 1 m Direct Attach Cable	J9281B	1	157	2	314	
HP V142 1075mm deep Pallet 100 series Rack	AF046S	1	789	1	789	
HP LE1901wm 19-inch Widescreen LCD Monitor	NP446A8#ABA	1	149	1	149	
HP PS/2 Keyboard And Mouse Bundle	RC464AA#ABA	1	39	1	39	
			Subtotal		**3,419**	**998**

	Total Extended Price	$397,507	$11,066
Large Purchase and Net 30 discount (See Note 1) 28.0%	**Total Discounts**	$80,279	$3,026
	Grand Total	$317,228	$8,040

Pricing: 1=HP Direct 800-203-6748 2= Microsoft. Note 1: Discount based on HP Direct guidance applies to all lines where pricing = 1. Note 2: All the hardware are available to order. Note 3: The benchmark results were audited by Lorna Livingtree of Performance Metrics, www.perfmetrics.com.

Three-year Cost of Ownership: USD	**$325,268**
tpsE	**1,881.76**
$ USD/tpsE	**$173**

<table>
<tr><td colspan="2">HP ProLiant DL380p Gen8
Intel Xeon CPU E5-2690
C/S with 1 DL360 G7</td><td>TPC-E Rev 1.12.0
TPC Pricing 1.7.0

Report Date
Nov. 21, 2012

Availability Date
Nov. 21, 2012</td></tr>
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Numerical Quantities Summary

Reported Throughput	1881.76 tpsE	Configured Customers:		950,000
Response Times (in seconds)		Minimum	Average	90th %tile	Maximum

Response Times (in seconds)	Minimum	Average	90th %tile	Maximum
Broker Volume	0.00	0.01	0.03	0.61
Customer Position	0.00	0.01	0.02	1.05
Market Feed	0.00	0.02	0.04	1.01
Market Watch	0.00	0.01	0.02	0.95
Security Detail	0.00	0.01	0.01	0.35
Trade Lookup	0.00	0.08	0.11	1.00
Trade Order	0.00	0.03	0.05	1.14
Trade Result	0.00	0.03	0.05	1.64
Trade Status	0.00	0.01	0.02	0.47
Trade Update	0.01	0.09	0.12	0.55
Data Maintenance	0.01	0.02		0.07

Transaction Mix	Transaction Count	Mix %
Broker Volume	6,639,298	4.900%
Customer Position	17,614,001	13.000%
Market Feed	1,354,873	1.000%
Market Watch	24,389,010	18.000%
Security Detail	18,969,036	14.000%
Trade Lookup	10,839,347	8.000%
Trade Order	13,684,799	10.100%
Trade Result	13,548,699	10.000%
Trade Status	25,743,564	19.000%
Trade Update	2,709,818	2.000%
Data Maintenance	120	
Ramp-up Time	0:15:00	
Measurement Interval	2:00:00	
Business Recovery Time	0:41:30	
Total Number of Transactions Completed in Measurement Interval	135,492,445	