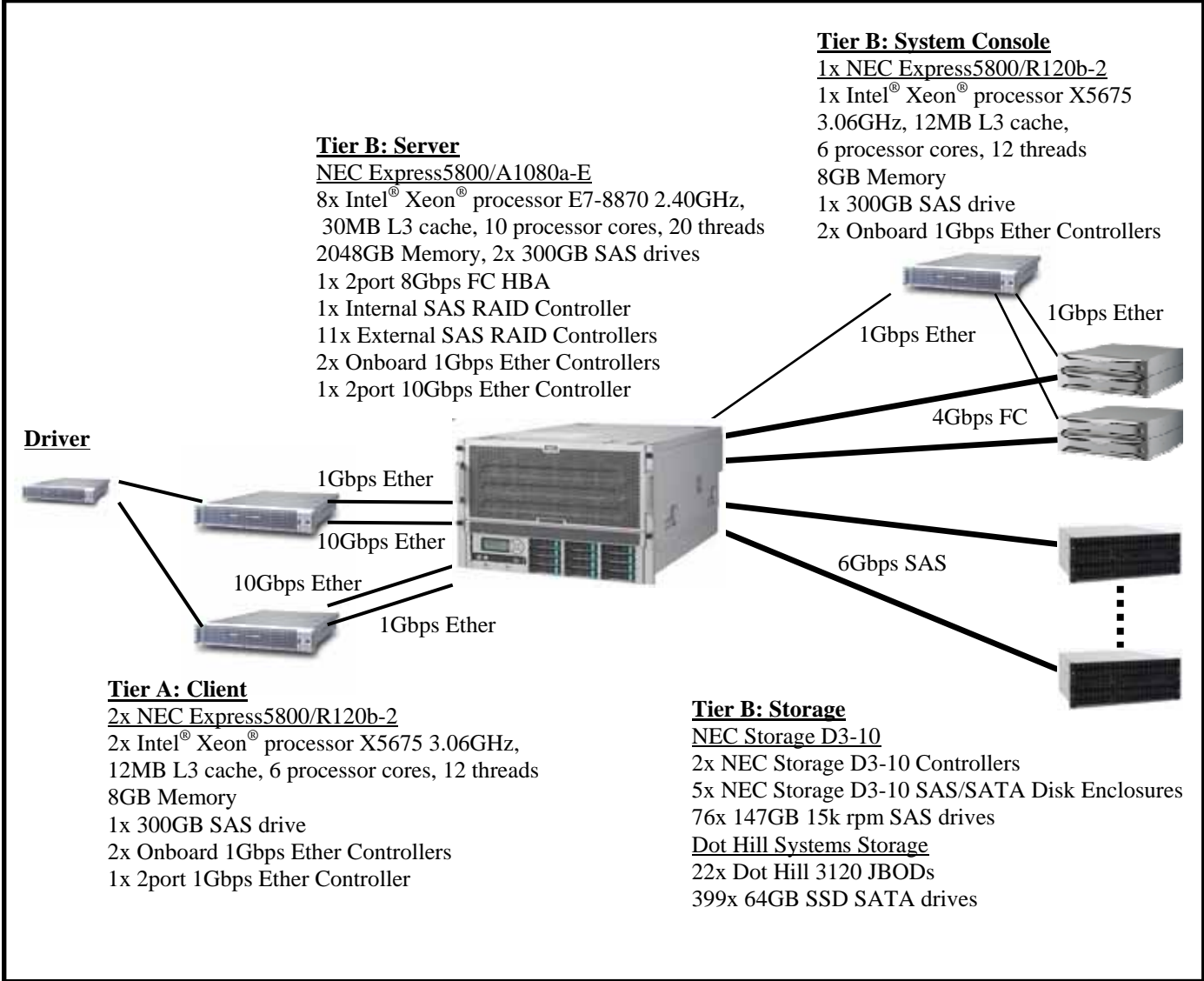


<b>NEC</b>	<b>NEC Express5800/A1080a-E</b>		<b>TPC-E 1.12.0</b> <b>TPC Pricing 1.6.0</b>
			Report Date : 28-Apr-2011 Revised Date : 29-Jun-2011
TPC-E Throughput <b>4200.61 tpsE</b>	Price/Performance <b>\$287.42</b> <b>USD per tpsE</b>	Availability Date <b>31-August-2011</b>	Total System Cost <b>\$1,207,318USD</b>

**Database Server Configuration**

Operating System <b>Microsoft® Windows Server® 2008 R2 Enterprise Edition with Service Pack 1</b>	Database Manager <b>Microsoft® SQL Server® 2008 R2 Enterprise Edition</b>	Processors/Cores/Threads <b>8 / 80 / 160</b>	Memory <b>2048GB</b>
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Initial Database Size <b>19,267 GB</b>	Redundancy Level : 1 <b>RAID10 : Log / RAID5 : Data</b>	Storage <b>76 x 147GB 15K HDD</b> <b>399 x 64GB SSD</b>
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## NEC Express5800/A1080a-E

### TPC-E 1.12.0 TPC Pricing 1.6.0

Report Date : 28-Apr-2011  
Revised Date : 29-Jun-2011

Available Date  
31-August-2011

Description	Part Number	Third Party		Unit	Qty	Extended Price	3-yr Mnt. Price
		Brand	Pricing	Price			
<b>Server Hardware</b>							
NEC Express5800/A1080a-E							
A1080a-E Base Unit (1x MGM card, 2x power module included)	NE3100-101H	NEC	1	12,499	1	12,499	
Processor Memory Module (PMM) Xeon E7-8870 All Cores Activated	NE3102-011	NEC	1	9,499	8	75,992	
32GB Memory (1067MHz 16GB DIMM x 2)	NE3103-014	NEC	1	2,599	64	166,336	
6Gbps SAS RAID Controller for Embedded HDD/SSD	NE3104-001	NEC	1	499	1	499	
300GB 10krpm 6Gbps SAS HDD	NE3105-104	NEC	1	399	2	798	
2Port 8G FC HBA	NE3108-104	NEC	1	2,499	1	2,499	
MegaRAID SAS 9280-8e	Q24-FR000000001948	NEC	1	795	11	8,745	
LSI MegaRAID FastPath software	Q24-FR000000002102	NEC	1	150	11	1,650	
2port 10GBASE	NE3108-004	NEC	1	999	1	999	
Optical Module for 10G SR	NE3108-005	NEC	1	159	2	318	
Embedded DVD-ROM	NE3100-201	NEC	1	99	1	99	
Power Module	NE3100-301	NEC	1	799	2	1,598	
Power Cable for 200V	NE3107-001	NEC	1	69	4	276	
PDU L6-30P	NE3107-101	NEC	1	599	2	1,198	
Installation	SP-GX00-STIN001	NEC	1	5,000	1	5,000	
Microsoft Windows Server 2008 R2 Enterprise Edition w/25 user CAL	062-03622-000	NEC	1	3,999	1	3,999	
Platinum Warranty (Yr 1,2 & 3)	UPPLT-A1080a8-3Y	NEC	1	6,799	1		6,799
NEC Express5800/R120b-2 (for System Maintenance)							
Model R120b-2 (1x X5675, MEM less, ODD/HDD less)	N8100-1712F	NEC	1	4,850	1	4,850	
CPU kit (X5675)	N8101-487F	NEC	1	2,720	1	2,720	
Additional 4GB Memory Module	N8102-373F	NEC	1	195	2	390	
RAID Controller (256MB, RAID0/1)	N8103-129	NEC	1	410	1	410	
300GB HDD (SAS 10k rpm, 2.5")	N8150-301	NEC	1	365	1	365	
External DVD-ROM (USB)	N8160-85	NEC	1	215	1	215	
3 Years of Upgraded Platinum Warranty for the Express 5800/100 Series	UPPLT-GP100-2U-3Y	NEC	1	840	1		840
NEC AccuSync AS171-BK 17" LCD (+2 spares)	AS171-BK	NEC	3	128	4	512	
						<b>Subtotal</b>	<b>291,967</b>
							<b>7,639</b>
<b>Disk Subsystem</b>							
NEC Storage D3-10							
NEC Storage D3-10 Base Model	850193310	NEC	1	6,834	2	13,668	
3 Years of Platinum Warranty Upgrade for D3-10 Base Model	UPPT850193310	NEC	1	1,025	2		2,050
SAS/SATA Disk Enclosure w/NEC logo	NF5021-SE60E-000	NEC	1	2,749	5	13,745	
3 Years of Platinum Warranty Upgrade for 3Gbps Disk Enclosure	UPPTNF5021SE60E	NEC	1	412	5		2,060
SAS disk drive (15k rpm/147GB) (+10% spares)	NF5021-SM624E	NEC	1	311	84	26,124	
3 Years Platinum Warranty Upgrade SAS Disk Drive(15krpm/147GB/3Gbps)	UPPTNF5021SM624E	NEC	1	51	84		4,284
1 yr of Platinum SW Maintenance for Base SW	UFSD0M-310000AMAS	NEC	1	520	6		3,120
Dot Hill Systems Storage							
3120,2RM,NO DRIVES,AC	D3120X000000DA	DotHill	4	3,467	22	76,274	
DRIVE, 64GB, SLC, SATA, SFF - FRU (+10% spares)	PFRUKF43-01	DotHill	4	1,194	439	524,166	
DD,AMS SFF BLANK, 48 BULK PACK	PFRUKF31-48	DotHill	4	864	2	1,728	
DD,AMS SFF BLANK,FRU,PKG	PFRUKF31-01	DotHill	4	18	33	594	
RACK MOUNT KIT	FHDW018-02	DotHill	4	120	22	2,640	
3120 JBOD, 7x24x4 Onsite	DS3120XPA4D1SW0	DotHill	4	2,046	22		45,012
HP Serial Attached SCSI (SAS) external cable - 6.6 ft (+10% spares)	407339-B21	HP	3	148	13	1,924	
UPS 3kVA	050-02424-000	NEC	1	1,799	24	43,176	
42U Rackframe	050-02378-001	NEC	1	1,799	3	5,397	
10 meter Multimode LC/LC Duplex Fiber Optic cable (+10% spares)	F2F202LL-10M	Belkin	3	39	4	156	
						<b>Subtotal</b>	<b>709,592</b>
							<b>56,526</b>
<b>Server Software</b>							
Microsoft SQL Server 2008 R2 Enterprise Edition	810-08527	Microsoft	2	19,188	8	153,504	259
						<b>Subtotal</b>	<b>153,504</b>
							<b>259</b>

*continued on the next page*



## NEC Express5800/A1080a-E

### TPC-E 1.12.0 TPC Pricing 1.6.0

Report Date : 28-Apr-2011  
Revised Date : 29-Jun-2011

Available Date  
31-August-2011

#### Client Hardware

<b>NEC Express5800/R120b-2</b>							
Model R120b-2 (1x X5675, MEM less, ODD/HDD less)	N8100-1712F	NEC	1	4,850	2	9,700	
CPU kit (X5675)	N8101-487F	NEC	1	2,720	2	5,440	
Additional 4GB Memory Module	N8102-373F	NEC	1	195	4	780	
300GB HDD (SAS 10k rpm, 2.5")	N8150-301	NEC	1	365	2	730	
RAID Controller (256MB, RAID0/1)	N8103-129	NEC	1	410	2	820	
10GBASE Adapter (SFP+/2ch)	N8104-128	NEC	1	710	2	1,420	
SFP+ Module (10G-SR)	N8104-129	NEC	1	155	2	310	
3 Years of Upgraded Platinum Warranty for the Express 5800/100 Series	UPPLT-GP100-2U-3Y	NEC	1	840	2		1,680
NEC AccuSync AS171-BK 17" LCD (+2 spares)	AS171-BK	NEC	3	128	4	512	
42U Rackframe	050-02378-001	NEC	1	1,799	1	1,799	
Cat5e RJ45 UTP Patch Cable 25ft (+10% spares) for NEC Storage Manager	N001-025-BL	Tripp Lite	3	7	5	35	
Cat5e Crossover Cable 7ft (+2 spares)	N010-007-GY	Tripp Lite	3	5	7	35	
						<b>Subtotal</b>	<b>21,581      1,680</b>

#### Client Software

Windows Server 2008 Standard Edition (x86)*	P73-04165	Microsoft	2	711	3	2,133 (Included)	
						<b>Subtotal</b>	<b>2,133      0</b>

#### Infrastructure

3m Multimode Duplex Fiber Cable (+10% spares)	LCLC50G-03M-CDW	Belkin	3	40	4	160	
5-Port 10/100/1000 Gigabit Switch (+2 spares) for NEC Storage Manager	SD2005	Cisco	3	55	3	165	
						<b>Subtotal</b>	<b>325      0</b>

<b>NEC Large Volume Discount**</b>	-10%		<b>TOTAL</b>	1,179,101	66,104
				-41,456	3,569

#### Notes:

Pricing: 1-NEC Contact: 1-866-632-3226, 2-Microsoft, 3-CDW, 4-Promark TECHNOLOGY

\* Qty of Windpws Server 2008 Standard Edition includes the license of the DB server's maintenance Console

\*\*10% discount was based on the overall value of the specific components from NEC in this single

quotation except 3-yr Mnt. Price for Disk Subsystem

Discount for similarly sized configurations will be similar to those quoted here but may be vary

based on the components in quotation

**Results and methodology audited by Doug Johnson of 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 reflects 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 terms, please inform the TPC at [pricing@tpc.org](mailto:pricing@tpc.org). Thank you.

3-Yr. Cost of Ownership: **\$1,207,318**

tpsE Throughput: **4200.61**

**\$ / tpsE    \$287.42**



NEC Express5800/A1080a-E

TPC-E 1.12.0  
TPC Pricing 1.6.0

Report Date : 28-Apr-2011  
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31-August-2011

### Numerical Quantities Summary

**Reported Throughput : 4200.61 tpsE**      **Configured Customers : 2,400,000**

Response Times (in seconds)	Minimum	Average	90 <sup>th</sup> %tile	Maximum
Broker Volume	0.00	0.04	0.08	2.47
Customer Position	0.00	0.03	0.06	2.66
Market Feed	0.00	0.02	0.05	7.69
Market Watch	0.00	0.04	0.09	2.67
Security Detail	0.00	0.01	0.03	2.63
Trade Lookup	0.00	0.11	0.19	14.42
Trade Order	0.00	0.06	0.13	2.70
Trade Result	0.00	0.07	0.16	2.82
Trade Status	0.00	0.02	0.04	2.63
Trade Update	0.01	0.12	0.20	14.42
Data Maintenance	0.00	0.02		0.26

Transaction Mix	Transaction Count	Mix %
Broker Volume	14,819,500	4.900%
Customer Position	39,316,948	13.000%
Market Feed	3,024,472	1.000%
Market Watch	54,438,677	18.000%
Security Detail	42,341,596	14.000%
Trade Lookup	24,194,374	8.000%
Trade Order	30,545,932	10.100%
Trade Result	30,244,395	10.000%
Trade Status	57,463,560	19.000%
Trade Update	6,048,548	2.000%
Data Maintenance	120	

Test Duration and Timings	
Ramp-up Time	1:10:00
Measurement Interval	2:00:00
Business Recovery Time	2:47:24
Total Number of Transactions Completed in Measurement Interval	302,438,002