

NEC	NEC Express5800/1320Xf (32 SMP)		TPC-E 140 TPC Pricing 1.3.0
			Report Date February 27, 2008
TPC-E Throughput 1126.49 tpsE	Price/Performance \$2,771.79 USD per tpsE	Availability Date August 30, 2008	Total System Cost \$3,122,387 USD

Database Server Configuration

Operating System Microsoft[®] Windows Server[®] 2008 for Itanium-based Systems	Database Manager Microsoft[®] SQL Server[®] 2008 Enterprise Edition for Itanium-based Systems	Processors/Cores/ Threads 32 / 64 / 64	Memory 512GB
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Tier B: Server

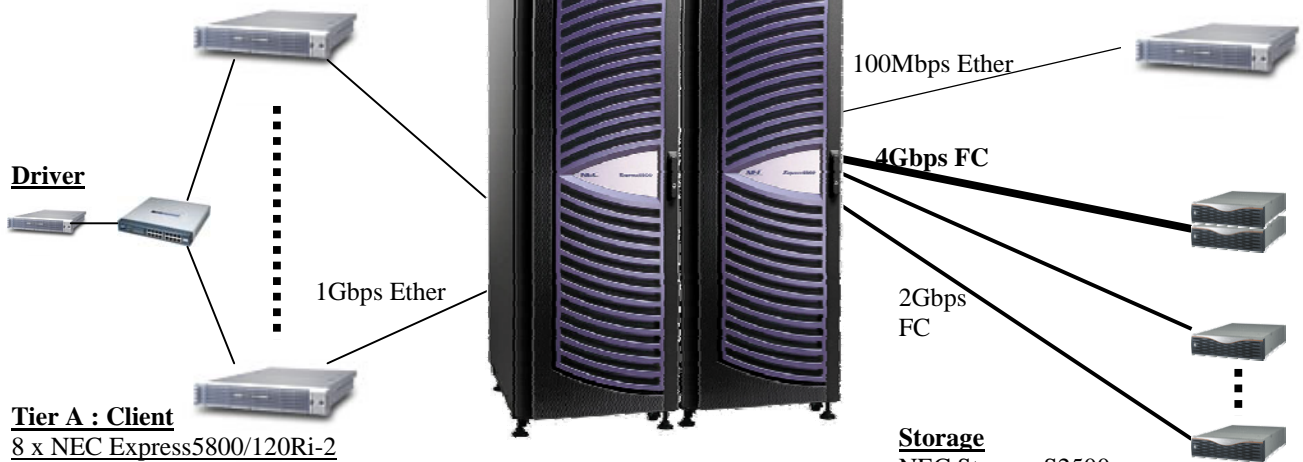
NEC Express5800/1320Xf

32 x Dual-Core Intel[®] Itanium[®] processor 9150N 1.6GHz,
24MB L3 cache
512GB Memory, 2 x 73GB Disk
8 x 2-port 2Gbps FC HBA, 1 x 1-port 4Gbps FC HBA
1 x SCSI RAID Controller
8 x 1Gbps Ether NIC

Tier B : System Console

1 x NEC Express5800/120Ri-2

2x Dual-Core Intel[®] Xeon[®] processor
5160 3.0GHz. 4MB L2 cache, 4
processor cores, 4 threads
4GB of Memory
1x 36GB SAS drive
2x Onboard 1Gbps Ether Controllers
1x Dual-Port 1Gb Ether NIC



Tier A : Client

8 x NEC Express5800/120Ri-2

2x Dual-Core Intel[®] Xeon[®] processor 5160 3.0GHz.
4MB L2 cache, 4 processor cores, 4 threads
4GB of Memory
1x 36GB SAS drive
2x Onboard 1Gbps Ether Controllers
1x Dual-Port 1Gb Ether NIC

Storage

NEC Storage S2500

16x NEC Storage S2500 Controllers
46x NEC Storage S2500 FC Disk
Expansion Box
860x 73GB 15k RPM FC drives

Initial Database Size 4,413 GB	Redundancy Level : 1 RAID50 : LOG / RAID10 : Data	Storage 860 x 73GB 15K
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Description	Part Number	Third Party Brand	Pricing	Unit Price	Qty	Extended Price	3-yr Mnt. Price
Server Hardware							
NEC Express5800/1320Xf system	850203702	NEC	1	1,931,114	1	1,931,114 (included)	
Cabinet w/8cells&1IO					1		
4 Itanium 9150N (1.6G/24M) for 1320Xf					8		
1320Xf Memory 8GB (4x2GB DIMM) memory kit					64		
Memory Slot Expansion Module Option					8		
IO Expansion Cabinet					1		
IO Enclosure					3		
1320Xf IO partition (Core)					1		
1320Xf IO partition (Non-core)					7		
73GB Ultra SCSI HDD 10k RPM					2		
RAID controller (Windows)					1		
1port 10/100/1000 base-T LAN card					8		
2-port 2Gbps FC HBA					8		
1-port 4Gbps FC HBA					1		
Installation					1		
Microsoft Windows Server 2008 32procs					32		
3Year 4h 24x7 maintenance					1		
NEC Express5800/120Ri-2 (for System Console)	850190702	NEC	1	6,695	1	6,695 (included)	
120Ri-2.XD2/3.0G/2G N8100-1248F 1 EA					1		
CPU Kit (XD2/G(4)) 1 EA					1		
Additional 2G Memory Board 1 EA					1		
1000Base-T NIC Dual Channel 1 EA					1		
Additional 36.3 GB HDD 1 EA					1		
3Year 4h 24x7 maintenance					1		
NEC AccuSync LCD52V 15"LCD Display (+2 spare)	704053	NEC	3	190	4	760	-
					Subtotal	1,938,569	0
Disk Subsystem							
NEC Storage S2500 Base Model	850183001	NEC	1	31,000	16	496,000	
S2500 FC Disk Expansion Box	062-02942-000	NEC	1	6,200	46	285,200	
Fibre channel disk drive (15k rpm/73GB) (+10% spares) S*	062-02959-000	NEC	1	1,220	946	1,154,120	
UPS 3kVA	050-02424-000	NEC	1	1,799	2	3,598	
4hr onsite maintenance service	OS2X-SD4HR-YYY	NEC	1	193,892	1		193,892
42U Rackframe	050-02378-001	NEC	1	1,799	5	8,995	-
FC Cable 10M LC-LC (+10% spares)	BR-FC5PVLCLC-10	NEC	1	50	18	900	-
					Subtotal	1,948,813	193,892
Server Software							
Microsoft SQL Server 2008 Enterprise Edition for Itanium-based systems		Microsoft	2	24,999	32	799,968	245
6% discount from the retail unit price		Microsoft	2	-1,567	32	-50,144	
					Subtotal	749,824	245

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Client Hardware

NEC Express5800/120Ri-2	850190702	NEC	1	6,695	8	53,560 (included)
120Ri-2, XD2/3.0G/2G N8100-1248F 1 EA					1	
CPU Kit (XD2/G(4)) 1 EA					1	
Additional 2G Memory Board 1 EA					1	
1000Base-T NIC Dual Channel 1 EA					1	
Additional 36.3 GB HDD 1 EA					1	
3Year 4h 24x7 maintenance					1	
NEC AccuSync LCD52V 15"LCD Display (+2 spares)	704053	NEC	3	190	10	1,900
42U Rackframe	050-02378-001	NEC	1	1,799	1	1,799
External USB Floppy Disk Drive (+2 spares)	494301	Verbatim	3	30	3	90
Floppy Disk (10 Pack)	39031	Verbatim	3	5	1	5
Ether Cable 25' RJ45-RJ45 (+10% spares)	324516	Tripp Lite	3	7	28	196
Ether Cable 10' RJ45-RJ45 (+10% spares)	324527	Tripp Lite	3	6	11	66
					Subtotal	57,615 0

Client Software

Windows Server 2003 R2 Standard Edition**	P73-01972	Microsoft	2	999	9	8,991 (Included)
28% discount from the retail unit price		Microsoft	2	-280	9	-2,520
					Subtotal	6,471 0

Infrastructure

24-Port 10/100/1000 Gigabit Switch (+2 spares)	1012601	Linksys	3	283	3	849 -
					Subtotal	849 0

TOTAL 4,702,141 194,137

NEC Large Volume Discount***

-45%

-1,773,891

Notes:

Pricing: 1-NEC 2-Microsoft 3-CDW

S* means one or more components of the measured configuration have been substituted in the Priced Configuration. See the FDR for details.

** Qty of Windows Server 2003 R2 Standard Edition includes the license of the DB server's maintenance Console

***45% 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 vary based on the components in quotation

Results and methodology audited by Francois Raab 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. Thank you.

3-Yr. Cost of Ownership: **\$3,122,387**

tpsE Throughput: **1126.49**

\$ / tpsE \$2,771.79



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Numerical Quantities Summary

Reported Throughput : 1126.49 tpsE **Configured Customers : 570,000**

Response Times (in seconds)	Minimum	Average	90 th %tile	Maximum
Broker Volume	0.01	0.13	0.22	3.45
Customer Position	0.00	0.04	0.08	3.25
Market Feed	0.00	0.06	0.10	3.27
Market Watch	0.00	0.07	0.15	3.40
Security Detail	0.00	0.02	0.04	3.32
Trade Lookup	0.00	0.57	0.85	6.20
Trade Order	0.00	0.12	0.18	3.45
Trade Result	0.00	0.13	0.21	3.36
Trade Status	0.00	0.04	0.07	3.26
Trade Update	0.02	0.67	0.91	6.16
Data Maintenance	0.01	0.16		1.61

Transaction Mix	Transaction Count	Mix %
Broker Volume	3,974,314	4.900%
Customer Position	10,543,586	13.000%
Market Feed	811,080	1.000%
Market Watch	14,598,618	18.000%
Security Detail	11,354,567	14.000%
Trade Lookup	6,487,787	7.999%
Trade Order	8,191,514	10.100%
Trade Result	8,110,752	10.000%
Trade Status	15,409,630	19.000%
Trade Update	1,622,048	2.000%
Data Maintenance	120	

Test Duration and Timings

Ramp-up Time	0:36:54
Measurement Interval	2:00:00
Business Recovery Time	3:11:25
Total Number of Transactions Completed in Measurement Interval	81,103,896