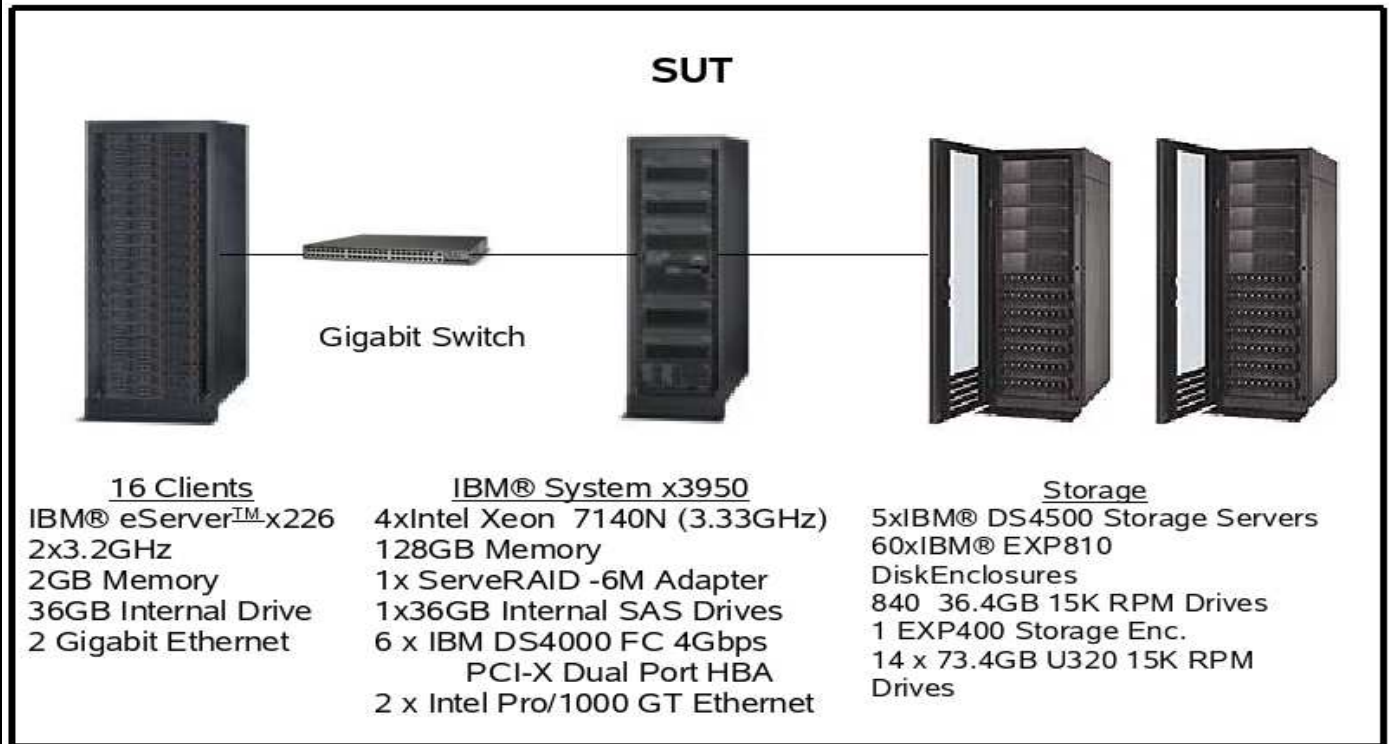


**IBM System x3950  
DB2® 9**

TPC-C Rev. 5.7

**Report Date:  
September 19, 2006**

<b>Total System Cost</b>	<b>TPC-C Throughput</b>	<b>Price/Performance</b>	<b>Availability Date</b>	
\$1,493,396 USD	<b>314,468</b>	\$4.75 USD	<b>Nov 30, 2006</b>	
<b>Database Processors/Cores/Threads</b>	<b>Database Manager</b>	<b>Operating System</b>	<b>Other Software</b>	<b>No. Users</b>
4/8/16 3.33 GHz Intel Xeon 7140N	DB2 9	SLES 10	Microsoft Visual C++ Microsoft COM+	250,000



System Components	Each of the 16 Clients		Server	
	Quantity	Description	Quantity	Description
<b>Processors/Cores/Threads</b>	2/2/4	3.2GHz 2MB L2 Xeon	4/8/16	3.33 GHz Intel Xeon 7140N
<b>Memory</b>	4	512 MB	32	4 GB
<b>Disk Controllers</b>	1	SCSI	2 6 5 1	Integrated SAS 4Gb dual-port FC Adapters IBM DS4500 Controllers for Data IBM ServRaid 6M for Log
<b>Disk Drives</b>	1	36 GB	840 1 14	36.4GB 15K RPM FC 36GB 10K RPM SAS 73.4GB 15K RPM SCSI
<b>Total Storage</b>		640 GB		31,125GB
<b>Terminals</b>	1	System Console	1	System Console

IBM Corporation	IBM System x3950 c/s			TPC-C Revision 5.7			
	DB2 9			Report Date: Sept. 19, 2006			
Description	Part Number	Third Party Brand	Pricing	Unit Price	Quantity	Extended Price	3-Yr. Maint. Price
<b>Server Hardware</b>							
IBM System x3950 ( 2 x Intel Xeon Processor 7140N 3.33GHz 667MHz, 2 x 1 MB L2 Cache and 16MB L3 Cache)	8878-4RU	IBM	1	19,199	1	19,199	
Intel Xeon Processor 7140N 3.33GHz/2x1MB L2, 16MB L3 x3950 E (0 Processors, 0 Memory, 2 Memory Cards)	40K1262	IBM	1	3,999	2	7,998	
Scalability Cable 2.3.M	8879-1RU	IBM	1	6,999	1	6,999	
8GB (2x4GB) PC2-3200 CL3 2RX4 ECC DDR2 SDRAM RDIMM	13M7414	IBM	1	299	2	598	
Active Memory 4-Slot Memory Expansion Card	30R5145	IBM	1	5,569	16	89,104	
IBM 36.4GB 10K 2.5 inch SAS Drive	41Y5000	IBM	1	499	2	998	
ServeRAID-6M Ultra320 SCSI Adapter	40K1051	IBM	1	419	1	419	
Intel Pro/1000 GT Single Port Server Adapter	39R8815	IBM	1	879	1	879	
Display	39Y6105	IBM	1	139	2	278	
IBM Preferred Pro USB Keyboard	49387NU	IBM	1	149	1	149	
ScrollPoint 800 DPI Optical Mouse - USB & PS/2	40K9584	IBM	1	29	1	29	
ServicePac for 3-Year 24x7x4 Support (x3950)	90P0742	IBM	1	25	1	25	
ServicePac for 3-Year 24x7x4 Support (x3950 E)	96P2688	IBM	1	3,390	1		3,390
ServicePac for 3-Year 24x7x4 Support (Display)	10N3059	IBM	1	1,695	1		1,695
	30L9183	IBM	1	90	1		90
					<b>Subtotal</b>	<b>126,675</b>	<b>5,175</b>
<b>Server Storage</b>							
IBM DS4000 FC 4Gbps - PCI-X Dual Port HBA	39M5895	IBM	1	2,485	6	14,910	
IBM TotalStorage DS4500 Midrange Disk Subsystem	174290G	IBM	1	49,900	5	249,500	
IBM DS4000 Mini Hub	19K1269	IBM	1	899	10	8,990	
IBM Short Wave SFP Module (4 Pack)	22R0483	IBM	1	550	63	34,650	
IBM 1m LC-LC Fibre Channel Cable	39M5696	IBM	1	79	110	8,690	
IBM 5m LC-LC Fibre Channel Cable	39M5697	IBM	1	129	20	2,580	
IBM TotalStorage DS4000 EXP810 Storage Exp. Unit	1812-81A	IBM	1	6,000	60	360,000	
2Gbps FC 36.4GB 15K Hot-Swap HDD	06P5772	IBM	1	1,115	840	936,600	
IBM EXP400 Rack Storage Exp. Enclosure	17331RU	IBM	1	3,099	1	3,099	
ESM for EXP400	59P5018	IBM	1	699	1	699	
73.4GB 15K Ultra320 SCSI Hot-Swap HDD	40K1027	IBM	1	399	14	5,586	
2M SCSI cable	03K9310	IBM	1	75	2	150	
IBM UPS 750TLV	2130R1X	IBM	1	299	1	299	
IBM S2 42U Standard Rack	93074RX	IBM	1	1,489	6	8,934	
ServicePac for 3-Year 24x7x4 Support (EXP810)	41L2768	IBM	1	760	60		45,600
ServicePac for 3-Year 24x7x4 Support (DS4500)	96P2062	IBM	1	1,087	5		5,435
ServicePac for 3-Year 24x7x4 Support (EXP400)	41L2768	IBM	1	760	1		760
ServicePac for 3-Year 24x7x4 Support (Rack)	41L2760	IBM	1	300	6		1,800
					<b>Subtotal</b>	<b>1,634,687</b>	<b>53,595</b>
<b>Server Software</b>							
DB2 ESE 9		IBM	2	26,265	4	105,060	
Extended Systems - SW License and Maintenance 12 Months							
SW Maintenance Renewal - 1 Year		IBM	2	1,251	8		10,008
SUSE Linux Enterprise Server 10 for x86, AMD64, and Intel EM64T with Priority Support for 3 Years	4584142100	SUSE	3	3,748	1	3,748	
					<b>Subtotal</b>	<b>108,808</b>	<b>10,008</b>
<b>Client Hardware</b>							
Linksys ProConnect KVM Switch - 2 ports (2 spares)	430446		6	35	3	105	
x226 with 3.2GHz/2MB Xeon, 512GB Memory	8648-5AU	IBM	1	1,259	16	20,144	
3.2GHz/2MB Xeon Processor Upgrade	40K2516	IBM	1	549	16	8,784	
1GB (2x512MB) PC-3200 DDR2 ECC SDRAM RDIMM	39M5818	IBM	1	275	16	4,400	
512MB PC-3200 DDR2 ECC SDRAM RDIMM	39M5858	IBM	1	135	16	2,160	
36.4GB 15K Ultra320 SCSI Drive	40K1026	IBM	1	249	16	3,984	
ServicePac for 3-Year 24x7x4 Support (x226)	96P2250	IBM	1	586	16		9,376
					<b>Subtotal</b>	<b>39,577</b>	<b>9,376</b>
<b>Client Software</b>							
Microsoft Windows Server 2000 with COM+	C11-00821	Microsoft	4a	738	16	11,808	
Microsoft Visual C++ Professional 6.0	254-00170	Microsoft	4	109	1	109	
Microsoft Problem Resolution Services		Microsoft	4	245	1		245
					<b>Subtotal</b>	<b>11,917</b>	<b>245</b>
<b>Network Components</b>							
D-LINK DGS-1024D 24-Port 10/100/1000 Switch (2 spares)	DGS1024D		5	215	3	645	
Ethernet Cable (2 spares)	CC5E-B14B		5	3	20	60	
					<b>Subtotal</b>	<b>705</b>	
					<b>Total</b>	<b>1,922,369</b>	<b>78,399</b>
Large Purchase Discount (See Note 1.)	27.15%		1			507,372	
Pricing: 1 - IBM - 1-888-SHOP-IBM, ext. 5821; 2 - IBM; 3 - Novell; 4 - Microsoft, 4a = 8% discount; 5 - compuplus.com; 6 - CDW.com				<b>Three-Year Cost of Ownership USD:</b>		\$1,493,396	
Note 1: Discount based on IBM Direct guidance applies to all line items where Pricing=1. Pricing is for this system or one of similar size.				<b>tpmC:</b>		314,468	
Audited by Francois Raab, InfoSizing, Inc., www.sizing.com				<b>\$ USD/tpmC:</b>		\$4.75	
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 stated prices are not available according to these terms, please inform the TPC at pricing @ tpc.org.							

## Numerical Quantities Summary for the IBM System x3950

MQTH, computed Maximum Qualified Throughput: 314,468 tpmC

<u>Response Times (in seconds)</u>	<u>90<sup>th</sup> %</u>	<u>Average</u>	<u>Maximum</u>
New Order	0.81	0.26	2.55
Payment	0.80	0.25	3.85
Order-Status	0.80	0.26	2.00
Delivery (interactive)	0.45	0.20	1.45
Delivery (deferred)	0.41	0.25	1.22
Stock-Level	0.85	0.35	2.30
Menu	0.44	0.17	1.50

Response time delay added for emulated components was 0.1 seconds

<u>Transaction Mix, in percent of total transactions</u>	<u>Percent</u>
New Order	44.92%
Payment	43.02%
Order-Status	4.01%
Delivery	4.01%
Stock-Level	4.02%

<u>Keying/Think Times (in seconds)</u>	<u>Min.</u>	<u>Average</u>	<u>Max.</u>
New Order	18.00/0.01	18.01/12.02	18.03/120.20
Payment	3.00/0.01	3.01/12.02	3.03/120.20
Order-Status	2.00/0.01	2.01/10.01	2.03/100.10
Delivery	2.00/0.01	2.01/5.01	2.02/50.20
Stock-Level	2.00/0.01	2.01/5.02	2.03/50.20

### Test Duration

Ramp-up Time	39 minutes
Measurement interval	2 hours 30 minutes
Transactions during measurement interval (all types)	105,004,937
Ramp-down time	17 minutes

### Checkpoints

Number of checkpoints	N/A
Checkpoint interval	N/A