

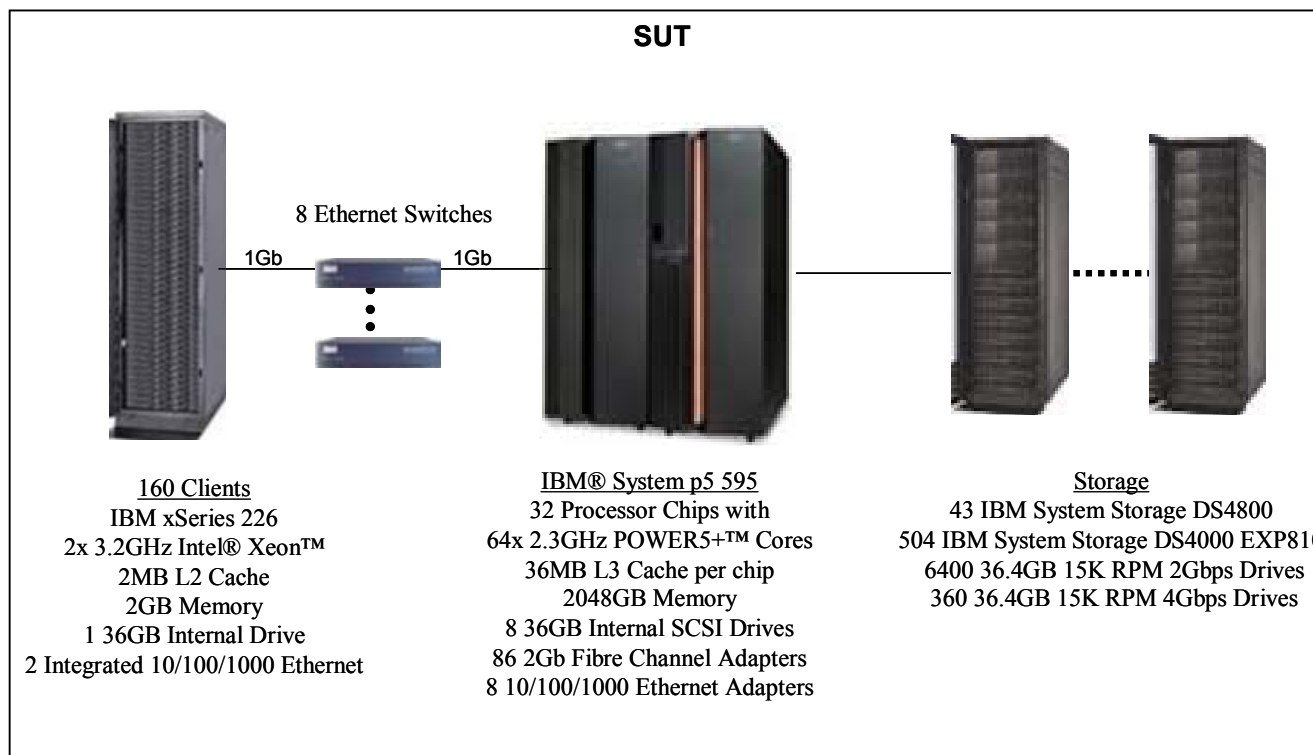


**IBM System p5 595  
Model 9119-595**

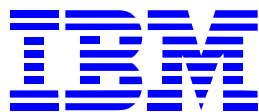
TPC-C Rev. 5.7

Report Date: January 22, 2007

<b>Total System Cost</b>	<b>TPC-C Throughput</b>	<b>Price/Performance</b>	<b>Availability Date</b>	
\$11,980,244 USD	<b>4,033,378</b>	\$2.97 USD	<b>January 22, 2007</b>	
<b>Database Server Processor Chip/Core/Thread</b>	<b>Database Manager</b>	<b>Operating System</b>	<b>Other Software</b>	<b>No. Users</b>
32/64/128 POWER5+ 2.3GHz	DB2 9	AIX 5L V5.3	Microsoft Visual C++ Microsoft COM+	3,200,000



System Components	Server		Each of the 160 Clients	
	Quantity	Description	Quantity	Description
<b>Processors Chips /Cores/Threads</b>	32/64/128	2.3GHz POWER5+™	2/2/4	3.2GHz 1MB L3 Xeon Processor
<b>Memory</b>	64	32GB	4	512MB
<b>Disk Controllers</b>	2 86 43	Integrated dual Ultra3SCSI 2Gb FC Adapters IBM System Storage DS4800	1	Ultra320 SCSI
<b>Disk Drives</b>	6760 8	36.4GB 15K RPM 36.4GB 15K RPM SCSI	1	36GB
<b>Total Storage</b>		220.4TB		5,760 GB
<b>Terminals</b>	1	System Console	1	System Console

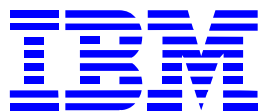


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Description	Part No.	Source	Unit Price	Qty	Ext Price	Maint Price
<b>Server Hardware</b>						
Server 1:9119 Model 595	9119-595	1	93,372	1	93,372	63,000
SCSI Cable, B&C TO Media Drawer, 1.5M, Mini-68P TO 68	2137	1	275	1	275	
RIO-2 (Remote I/O-2) Cable, 3.5M	3147	1	728	8	5,824	
RIO-2(Remote I/O-2)Cbl, 8.0M	3170	1	800	24	19,200	
36.4 GB 15,000 RPM Ultra320 SCSI Disk Drive Assembly	3277	1	599	8	4,792	
IBM 10/100/1000 Base-TX Ethernet PCI-X Adapter	5701	1	699	8	5,592	
2 Gigabit Fibre Channel PCI-X Adapter	5716	1	1,999	90	179,910	
PCI-X Dual Channel Ultra320 SCSI Adapter	5736	1	777	1	777	
4.7 GB SCSI DVD-RAM Drive	5752	1	660	1	660	
Expansion Rack, Powered	5792	1	60,000	1	60,000	3,960
I/O Drawer, 20 Slots, 8 Disk Bays	5794	1	30,000	8	240,000	32,640
Media Drawer, Rack Mounted	5795	1	1,700	1	1,700	
I/O Drw.Cbl.Grp, Prim.Rck/5U	6122	1	400	1	400	
I/O Drw.Cbl.Grp, Prim.Rck/1U	6123	1	400	1	400	
Power Cable, I/O Drawer to Media Drawer	6179	1	300	1	300	
Bulk Power Regulator	6186	1	4,000	10	40,000	
Slim Line Doors	6251	1	6,000	2	12,000	
Ethernet Cable, 15M, Hardware Management	7802	1	34	2	68	
Bulk Power Controller Assembly	7803	1	4,000	4	16,000	
Cooling Group, 2-4 Processor Books	7807	1	4,000	1	4,000	
DC Power Converter, Processor Book	7809	1	6,000	12	72,000	
Processor Clock Card, Programmable	7810	1	575	2	1,150	
System Service Processor	7811	1	3,500	2	7,000	
Multiplexer Card	7812	1	2,200	4	8,800	
Processor Activation, #7668 2.3 Turbo	7668	1	31,800	64	2,035,200	506,880
Remote I/O-2 (RIO-2) Loop Adapter, Two Port	7818	1	3,400	16	54,400	
Pwr.Cbl.Grp, CEC Primary Fans	7821	1	650	1	650	
Pwr.Cbl.Grp, 1st CEC Book	7822	1	650	1	650	
Pwr.Cbl.Grp, 2nd CEC Book	7823	1	650	1	650	
Pwr.Cbl.Grp, 3rd CEC Book	7824	1	650	1	650	
Pwr.Cbl.Grp, 4th CEC Book	7825	1	650	1	650	
Pwr.Cbl.Grp, 7807 Cooling Grp.	7826	1	650	1	650	
Bulk Power Distribution Assembly	7837	1	2,500	6	15,000	
Power Cables, 4x, 01U	7853	1	650	1	650	
Power Cables, 4x, 05U	7854	1	650	1	650	
Power Cables, 4x, 09U	7855	1	650	1	650	
Power Cables, 4x, 19U	7857	1	400	1	400	
Power Cables, 4x, 23U	7858	1	400	1	400	
Power Cables, 4x, 27U	7859	1	400	1	400	
512GB DDR2 Memory (16 X 32GB Cards)	8200	1	172,462	4	689,848	
256GB Bundle DDR2 Activations	8493	1	480,000	8	3,840,000	
Line Cord, 6AWG/Type W, 14ft, IEC309 60A Plug	8688	1	2,000	4	8,000	
16-Way POWER5 Turbo CUoD Processor Book, 0-Way Ar	8968	1	127,200	4	508,800	68,640
HMC 1:7310-C05 Desktop Hardw.Mgmt.Console	7310-C05	1	1,830	1	1,830	1,344
IBM T541H /L150p 15 inch TFT Color Monitor	3637	1	508	1	508	
Power Cord (6-foot), To Wall (125V, 15A), Plug Type #4	6470	1	18	2	36	
Ethernet Cable, 6M, Hardware Management	7801	1	15	1	15	
Quiet Touch Keyboard - USB, Business Black,	8800	1	104	1	104	
Mouse - Business Black with Keyboard Attachment	8841	1	78	1	78	
<b>Subtotal</b>					<b>7,935,089</b>	<b>676,464</b>
<b>Storage</b>						
DS4800 Disk System Model 82 (4 GB Cache)	1815-82A	1	53,995	43	2,321,785	
DS4800 8-Storage Partitions	8870	1	10,000	43	430,000	
(22R4255) DS4800 AIX Host Kit	7711	1	7,000	43	301,000	
DS4000 EXP810 Enclosure	1812-81A	1	6,000	504	3,024,000	
36.4GB/15K Drive 2Gb FC disks	5231	1	1,115	6,400	7,136,000	



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36.4GB/15K Drive 4Gb FC disks	5412	1	1,115	360	401,400	
Short Wave SFP	2410	1	998	375	374,250	
Fiber Cable 25m	5625	1	189	86	16,254	
Fiber Cable 1m	5601	1	79	1,008	79,632	
3 Year Warranty Service Upgrade 1812-81A 24x7x4		1	960	504		483,840
3 Year Warranty Service Upgrade 1815-82A 24x7x4		1	3,200	43		137,600
			<b>Subtotal</b>		<b>14,084,321</b>	<b>621,440</b>
<b>Server Software</b>						
AIX 5.3 (media only)	5692-A5L	1	50	1	50	
AIX Software per Processor	5765-G03	1	2,495	64	159,680	
AIX Software Maintenance (3Y)	5773-SM3-474	1	2,836	64		181,504
AIX Software Maintenance 24x7 Upgrade (3Y)	5773-SM3-476	1	732	64		46,848
PLM Software Maintenance 24x7 upgrade (3Y)	5773-PL3-779	1	35	64		2,240
PLM Software Maintenance (3Y)	5773-PL3-780	1	14	64		896
VIO Software Maintenance (3Y)	5773-VI3-781	1	155	64		9,920
VIO Software Maintenance 24x7 upgrade (3Y)	5773-VI3-782	1	64	64		4,096
HMC Software SUB (3Y)	5773-0570	1	236	1		236
HMC Software Support (3Y)	5773-0569	1	675	1		675
C for AIX user Lic+SW maint 12 MO	D5A1DLL	1	515	1	515	
C for AIX user annual SW maint renewal	E1A1FLL	1	103	2		206
DB2 9 Enterprise Edition Proc Lic/1 yr Maint.		1	26,265	64	1,680,960	
DB2 9 Enterprise Edition Proc Maint Renew		1	1,251	128		160,128
			<b>Subtotal</b>		<b>1,841,205</b>	<b>406,749</b>
<b>Client Hardware and Software</b>						
xSeries 226	864850U	1	1,299	160	207,840	93,760
3.2 GHz 800 MHz 2MB L2 Cache	40K2516	1	549	160	87,840	
512MB (1x512MB DIMM) PC2-3200	39M5858	1	126	480	60,480	
36GB (Gen 3) Hot-Swap 3.5" 15K RPM Ultra 320	40K1026	1	269	160	43,040	
NetBay42 Standard Rack	93074RX	1	1,489	43	64,027	
Optical 3-Button Mouse - USB	40K9201	1	19	1	19	
Preferred Pro Full Size PS/2 Keyboard	40K9584	1	29	1	29	
IBM C117 17" CRT Monitor	49387NU	1	149	1	149	
			<b>Subtotal</b>		<b>463,424</b>	<b>93,760</b>
<b>Third Party Hardware/Software</b>						
Visual C++ Standard Edition	254-00170	2	109	1	109	
Microsoft Windows 2000 Server	C11-00821	2	738	160	118,080	
Microsoft Problem Resolution Services		2	245	1	245	245
Cisco Catalyst 2970 24 10/100/1000 BASE-T ports	511987	3	2,809	10	28,094	
			<b>Subtotal</b>		<b>146,528</b>	<b>245</b>
			<b>Total</b>		<b>24,470,567</b>	<b>1,798,658</b>
					<b>Total IBM Discounts*</b>	<b>-14,288,981</b>

**Three-Year Cost of Ownership 11,980,244**

**Notes:**

For pricing details and contact information please see appendix E

Pricing Sources: 1) IBM 2) Microsoft 3) CDW

tpmC 4,033,378  
\$/tpmC 2.97

\*Discounts are based on US list prices for similar quantities & configurations including pre-payment for maintenance. The discount of 54.7% applies to the totality of all items with price source of "1".

Audited by: Francois Raab, Info Sizing ([www.infosizing.com](http://www.infosizing.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 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 terms, please inform the TPC at [pricing@tpc.org](mailto:pricing@tpc.org). Thank you

# Numerical Quantities Summary for the IBM System p5 595 Model 9119-595

MQTH, computed Maximum Qualified Throughput: 4,033,378 tpmC

<u>Response Times (in seconds)</u>	<u>90<sup>th</sup> %</u>	<u>Average</u>	<u>Maximum</u>
New Order	0.42	0.26	27.24
Payment	0.44	0.26	26.77
Order-Status	0.44	0.26	25.69
Delivery (interactive)	0.15	0.15	27.27
Delivery (deferred)	0.16	0.12	0.53
Stock-Level	0.50	0.30	25.82
Menu	0.15	0.13	27.02

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	44.90%
Payment	43.02%
Order-Status	4.02%
Delivery	4.02%
Stock-Level	4.01%

<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	18.04/120.21
Payment	3.00/0.01	3.01/12.02	3.04/120.21
Order-Status	2.00/0.01	2.01/10.01	2.04/100.11
Delivery	2.00/0.01	2.01/5.02	2.04/50.20
Stock-Level	2.00/0.01	2.01/5.02	2.04/50.20

## Test Duration

Ramp-up Time	34 minutes
Measurement interval	2 hours 30 minutes
Transactions during measurement interval (all types)	1,347,169,118
Ramp-down time	20 minutes

## Checkpoints

Number of checkpoints	N/A
Checkpoint interval	N/A