IBM eServer p5 570
Model 9117-570
Using
Redhat Enterprise Linux AS 4 for IBM POWER
and
DB2 Universal Database 8.2

TPC Benchmark^{TM} C

Full Disclosure Report

IBM

First Edition

August 8, 2005

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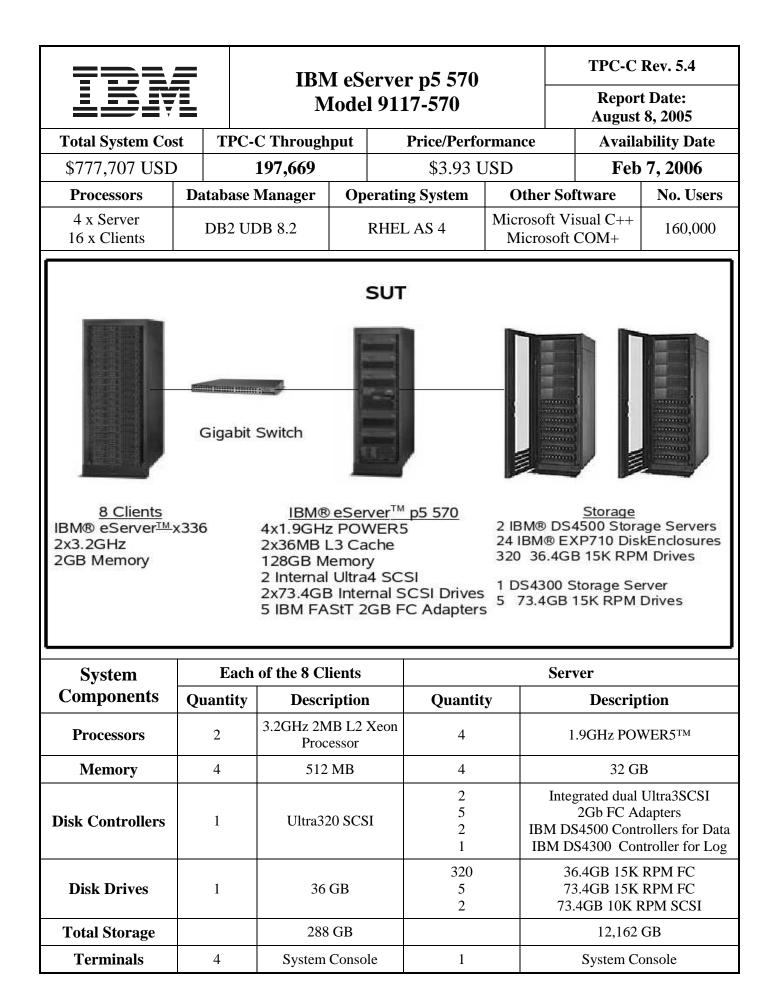
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IBM	IBM eServer p5 570 Model 9117-570	TPC-C Rev. 5.4
		Report Date: **August 8, 2005**

Total System Cost	TPC-C Throughput	Price/Performance	Availability Date
$777,707 USD	**197,669**	$3.93 USD	**Feb 7, 2006**

Processors	Database Manager	Operating System	Other Software	No. Users
4 x Server 16 x Clients	DB2 UDB 8.2	RHEL AS 4	Microsoft Visual C++ Microsoft COM+	160,000

SUT

Gigabit Switch

8 Clients
IBM® eServer™ x336
2x3.2GHz
2GB Memory

IBM® eServer™ p5 570
4x1.9GHz POWER5
2x36MB L3 Cache
128GB Memory
2 Internal Ultra4 SCSI
2x73.4GB Internal SCSI Drives
5 IBM FAStT 2GB FC Adapters

Storage
2 IBM® DS4500 Storage Servers
24 IBM® EXP710 DiskEnclosures
320 36.4GB 15K RPM Drives

1 DS4300 Storage Server
5   73.4GB 15K RPM Drives

System Components	Each of the 8 Clients		Server	
	Quantity	Description	Quantity	Description
Processors	2	3.2GHz 2MB L2 Xeon Processor	4	1.9GHz POWER5™
Memory	4	512 MB	4	32 GB
Disk Controllers	1	Ultra320 SCSI	2 5 2 1	Integrated dual Ultra3SCSI 2Gb FC Adapters IBM DS4500 Controllers for Data IBM DS4300 Controller for Log
Disk Drives	1	36 GB	320 5 2	36.4GB 15K RPM FC 73.4GB 15K RPM FC 73.4GB 10K RPM SCSI
Total Storage		288 GB		12,162 GB
Terminals	4	System Console	1	System Console

Description	Part No.	Source	Unit Price	Qty	Ext Price	Maint Price
Server Hardware						
IBM eServer p5 570 24x7x4 Warr/Mnt 3 Yr	9117-570	1	2,300	1	2,300	28,362
System Drawer Enclosure	7879	1	350	1	350	0
I/O Backplane	7866	1	4,100	1	4,100	0
System Midplane	7867	1	500	1	500	0
SCSI Disk Backplane	7868	1	1,200	1	1,200	0
Power Distribution Backplane	7870	1	200	1	200	0
Serial Port Riser Card	7878	1	100	1	100	0
AC Power Supply	7888	1	800	2	1,600	0
p5 570 1.9 Processor 0/2Way	7832	1	10,900	2	21,800	0
1-way Activation for 7832	7898	1	21,800	2	43,600	0
1-way Activation for 7832 - $0 Priced Value Pack	8454	1	0	2	0	0
Media Backplane Card	7869	1	140	1	140	0
CEC Backplane	7865	1	1,200	1	1,200	0
p5 570 CPU Power Regulator	7875	1	1,100	3	3,300	0
Service Processor Card (FSP)	7881	1	650	1	650	0
IDE Slimline DVD-ROM Drive	2640	1	378	1	378	0
32GB (4x8192MB)	4492	1	103,000	4	412,000	0
DASD 73.4GB 10K rpm	3274	1	750	2	1,500	0
Line Cords	6458	1	14	2	28	0
Rack Mount Drawer Rail Kit	7164	1	168	1	168	0
Op Panel	1846	1	150	1	150	0
2 Gigabit Fibre Channel PCI-X Adapter	5716	1	2,267	5	11,335	0
Hardware Management Console	7310-C04	1	1,830	1	1,830	0
HMC Power Cord	6458	1	14	2	28	0
T541H 15" TFT Color Monitor	3637	1	625	1	625	0
Quiet Touch Keyboard	8800	1	83	1	83	0
Ethernet Cord	7801	1	12	1	12	0
HMC Warranty/Mnt. 24x7x4 3 Yr	-	1	0	1	0	1,344
Mouse with Keyboard Attachment	8841	1	62	1	62	0
Rack Model T00, 6246, 6654 24x7x4 Warr/Mnt 3 Yr	7014-T00	1	3,318	1	3,318	768
			Subtotal		**512,557**	**30,474**
Storage						
Storage Server DS4300 24x7x4 Warr/Mnt 3 Yr	1722-60U	1	14,999	1	14,999	2,499
DS4000 EXP710 Storage Expansion 24x7x4 Warr/Mnt 3 Yr	1740-1RU	1	6,000	24	144,000	18,240
SHORT WAVE SFP GBIC	2210	1	499	102	50,898	0
2GB FC, 36.4GB / 15K Drive	5212	1	1,115	320	356,800	0
2GB FC, 73.4GB / 15K Disk Module	5213	1	2,099	5	10,495	0
Storage Server DS4500 24x7x4 Warr/Mnt 3 Yr	1742-90U	1	49,900	2	99,800	2,174
Fiber Cable 1m	5601	1	79	48	3,792	0

Fiber Cable 5m	5605	1	129	9	1,161	0
2GB Mini HUB	3507	1	899	4	3,596	0
Linux for POWER Host Kit	7114	1	4,000	1	4,000	0
			Subtotal		**689,541**	**22,913**
Software						
HMC Software Support 3 Yr. Support per Processor 0569	5773-RS3	1	675	1	0	675
HMC Software Support 24x7x4 3 Yr	570	1	236	1	0	236
DB2 UDB ESE 8.2 SW Lic & Mtce 12 MO		1	22,608	4	90,432	0
DB2 UDB ESE SW Mtce Renewal 2 YR		1	1,077	8	0	8,616
			Subtotal		**90,432**	**9,527**
Client Hardware and Software						
x336 3.2GHz 800MHz Xeon EM64T Express Model	8837E3U	1	4,035	8	32,280	3,600
Express IBM 36.4GB 15k U320 SCSI HS Option	30R5096	1	275	8	2,200	0
NetBay42 Standard Rack	9307-4SX	1	1,489	1	1,489	300
IBM Sleek 2-Button Mouse - (PS/2)	28L3673	1	15	1	15	0
Preferred Pro Full Size PS/2 Keyboard	31P7415	1	29	1	29	0
IBM C170 17" CRT Monitor	90P0726	1	185	1	185	90
			Subtotal		**36,198**	**3,990**
Third Party Hardware / Software						
Red Hat enterprise Linux AS 4 for POWER		3	1,499	3	4,497	0
Visual C++ Standard Edition	254-00170	2	109	1	109	0
D-Link 16 Port 10/100/1000Mbps Layer 2 Switch	674864	4	250	3	750	0
Microsoft Windows 2000 Server	C11-00821	2	738	8	5,904	0
Microsoft Problem Resolution Services		2	245	1	0	245
			Subtotal		**11,260**	**245**

Total	**1,339,988**	**67,149**
IBM Total System Discounts*		**(629,430)**
Three-Year Cost of Ownership		**777,707**
tpmC		**197,669**
$/tpmC		**3.93**

*Discounts are based on US list prices for IBM Package of similar quantities & configurations

Pricing Sources:

1 IBM Pricing Source see FDR Appendix E

2 Microsoft Corporation 3 redhat.com 4 CDW.com

Benchmark methodologies and results independently verified by Francois Raab of InfoSizing (www.sizing.com)

The System as configured for the test will be available February 7, 2006.

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. Thank you

Numerical Quantities Summary for the IBM eServer p5 570 Model 9117-570

MQTH, computed Maximum Qualified Throughput: 197,669 tpmC

Response Times (in seconds)	90th %	Average	Maximum
New Order	0.75	0.54	1.67
Payment	0.75	0.54	3.35
Order-Status	0.76	0.55	3.05
Delivery (interactive)	0.50	0.30	1.15
Delivery (deferred)	0.36	0.22	2.95
Stock-Level	0.75	0.54	1.50
Menu	0.47	0.29	1.17

Response time delay added for emulated components was 0.1 seconds

Transaction Mix, in percent of total transactions	Percent
New Order	44.91%
Payment	43.01%
Order-Status	4.02%
Delivery	4.02%
Stock-Level	4.02%

Keying/Think Times (in seconds)	Min.	Average	Max.
New Order	18.00/0.01	18.01/12.02	18.05/120.21
Payment	3.00/0.01	3.01/12.01	3.05/120.20
Order-Status	2.00/0.01	2.01/10.01	2.04/100.10
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	44 minutes
Measurement interval	2 hours 30 minutes
Transactions during measurement interval (all types)	66,016,094
Ramp-down time	20 minutes

Checkpoints

Number of checkpoints	N/A
Checkpoint interval	N/A