



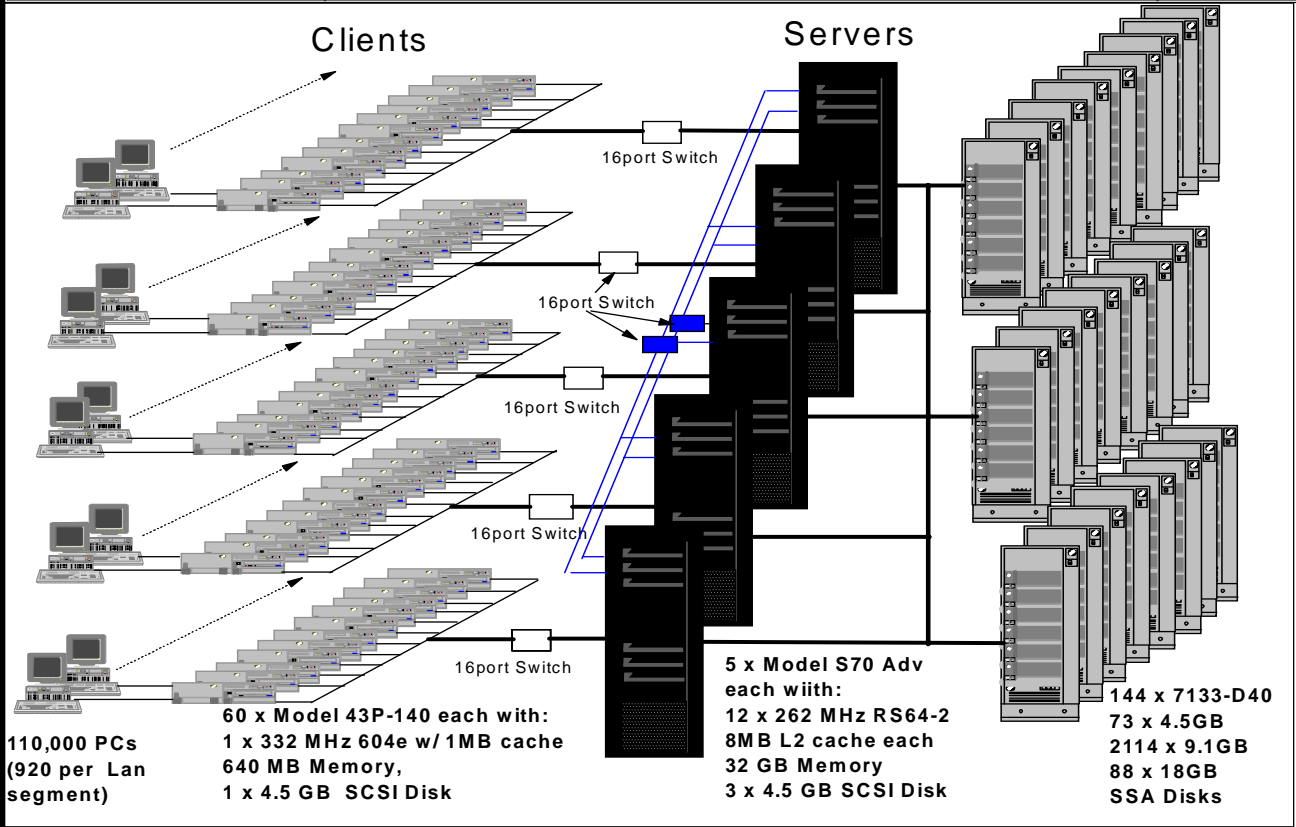
IBM RS/6000 Enterprise Server S70 Adv Cluster

TPC-C Rev. 3.4



Report Date:
June 30, 1999

Total System Cost	TPC-C Throughput	Price/Performance	Availability Date	
\$13,521,883	110,434.1 tpmC	\$122.44/tpmC	NOW	
Processors	Database Manager	Operating System	Other Software	No. Users
60 x IBM RS64-II	Oracle Version 8.0.5	AIX 4.3.2	TXSeries 4.2 for AIX	110,000



System Components	Clients		Server	
	Quantity	Description	Quantity	Description
Processor	60	332 MHz PowerPC 604e w/ 1MB L2 cache each	5 x 12	262 MHz IBM RS64-II w/ 8MB L2 cache each
Memory		60 x 640 MB		5 x 32 GB
Disk Controllers	60	SCSI-2 Adapters	5 x 3 5 x 26	SCSI-2 Adapters SSA Adapters
Disk Drives	61	4.5 GB SCSI	2,114 73 88 5 x 3	9.1 GB SSA Disks 4.5 GB SSA Disks 18 GB SSA Disks 4.5 GB SCSI Disks
Total Storage		4.5 GB each client		19,764.69 GB
Terminals	60	System Console	1	System Console
Term. Connect	15,180	CentreCOM 8-Port Ethernet Hubs + 10% spares		



ORACLE

IBM RS/6000

Enterprise Server S7A c/s

TPC-C Rev. 3.4

Report Date: June 30, 1999

Description	Part Number	Source	Unit Price	Qty	Extended Price	5 yr. Maint Price
Server Hardware						
RS/6000 Server Model S7A	7017-S7A	1	15,036	5	75,180	244,800
3 SCSI Adapters, Rack, CD-ROM, SCSI Hot Swap 6-pack						
4.5 GB 1" Ultra SCSI Hot Swap	2913	1	1,400	15	21,000	0
Async/Terminal Cable	2934	1	45	5	225	0
10/100 Mbs Ethernet PCI Adapter	2968	1	275	20	5,500	0
4 x 2048 MB R1 Memory	4179	1	98,304	20	1,966,080	0
4way RS64 II 262 Mhz Proc, 8MB L2	5312	1	75,000	10	750,000	806,400
4way RS64 II 262 Mhz Proc, 8MB L2	5313	1	75,000	5	375,000	201,600
Advanced SerialRAID Adapter	6225	1	3,000	130	390,000	0
I/O Drawer	6320	1	23,766	20	475,320	0
Primary I/O Drawer Group	6321	1	600	5	3,000	0
Support Processor Group	6322	1	2,700	15	40,500	0
Secondary I/O Drawer Group	6323	1	734	15	11,010	0
I/O Drawer Rack-Rack, Drawer Cabl	3126	1	3,175	5	15,875	0
I/O Rack	7000	1	3,500	10	35,000	0
System Rack Model R00	7015-R00	1	3,110	25	77,750	37,200
Additional Power Distribution Unit	6171	1	1,000	25	25,000	0
SSA Disk Subsystem, Black Cover	7133-D40	1	13,000	144	1,872,000	1,382,400
50/60 Hz AC, 300 VDC Power Supply	8022	1	2,000	144	288,000	0
4.5 GB Disk Drive Modules	8204	1	1,900	73	138,700	0
9.1 GB Disk Drive Modules	8209	1	2,760	2,114	5,834,640	0
18 GB Disk Drive Modules	8218	1	4,500	88	396,000	0
SSA Cables	8801	1	95	576	54,720	0
Subtotal					12,850,500	2,672,400
Server Software						
AIX 4.3 for S7A	5765-C34	1	300	5	1,500	0
AIX C compiler	5765-C64	1	1,578	1	1,578	0
Performance Toolbox	5765-654	1	1,300	1	1,300	0
HACMP Conc Resource Mgr	5765-A86	1	20,000	5	100,000	0
Oracle Version 8.0.5 OPS		2	1,850,480	1	1,850,480	1,850,480
Subtotal					1,954,858	1,850,480
Client Hardware						
RS/6000 Model 43P-140, 332 MHz	7043-140	1	7,295	60	437,700	201,600
4.5gb Disk, Intg SCSI-2 FW, Intg Enet, 1MB L2 cache						
4.5 GB SCSI Internal Disk	2900	1	1,300	1	1,300	0
128MB DIMM Memory	4102	1	448	60	26,880	0
128MB DIMM Memory Expansion	4115	1	896	240	215,040	0
Async Terminal/Printer Cable	2934	1	45	60	2,700	0
10/100 Mbps Ethernet Adapter, PCI	2986	1	275	180	49,500	0
IBM ASCII Terminal, Keyboard	3153-BG3	1	577	65	37,505	0
Subtotal					770,625	201,600
Client Software						
AIX 4.3.2 Unlimited Users	5756-C34	1	4,750	60	285,000	0
AIX C compiler	5765-C64	1	1,578	1	1,578	0
IBM TXSeries 4.2 for AIX	5697-D17	1	3,353	60	201,156	70,500
Subtotal					487,734	70,500
User Connectivity						
16port Ethernet Switch w/40% disc	Nbase	4	1,560	9	14,040	2,808
Ethernet Hub (8port) + 10% Spares	DEH2924	3	36.00	15180	546,480	0
Subtotal					560,520	2,808
Discounts					(7,006,041)	(894,101)
Total					9,618,197	3,903,687

Notes:
Pricing Sources: 1=Keylink, 2=Oracle, 3=Data Comm Warehouse, 4=Nbase/Xyplex
Audited by: Francois Raab, Info Sizing

Five-Year Cost of Ownership:
 tpm C 13,521,883
 \$/tpm C 110,434.10
 122.44

Prices used in TPC benchmarks reflect the actual prices a customer would pay for a one-time purchase of the stated component. 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 pricing@tpc.org. Thank you

Numerical Quantities Summary for the IBM RS/6000 S70 Advanced

MQTH, computed Maximum Qualified Throughput: 110,434.1 tpmC

Repeatability Run: 109,768.0 tpmC 0.61% difference

<u>Response Times (in seconds)</u>	<u>90th %</u>	<u>Average</u>	<u>Maximum</u>
New Order	4.40	2.58	315.41
Payment	3.95	2.30	364.41
Order-Status	3.95	2.31	276.22
Delivery (interactive portion)	0.19	0.11	3.69
Delivery (deferred portion)	14.84	23.83	6215.33
Stock-Level	11.7	5.63	1346.82
Menu	0.01	0.01	2.23

Transaction Mix, in percent of total transactions

	<u>Percent</u>
New Order	44.77%
Payment	43.07%
Order-Status	4.05%
Delivery	4.04%
Stock-Level	4.05%

<u>Keying/Think Times (in seconds)</u>	<u>Min.</u>	<u>Average</u>	<u>Max.</u>
New Order	18.00/0.01	18.01/15.31	18.14/153.20
Payment	3.00/0.01	3.01/15.32	3.15/153.20
Order-Status	2.00/0.01	2.01/13.32	2.14/133.20
Delivery	2.00/0.01	2.01/8.32	2.14/83.20
Stock-Level	2.00/0.01	2.01/8.33	2.14/83.20

Test Duration

Ramp-up Time	1 hr. 16 min. 0 secs
Measurement interval	2 hrs. 5 min
Transactions during measurement interval (all types)	30,831,969
Ramp-down time	20 minutes

Checkpointing

Number of checkpoints	Greater than 4 per node
Checkpoint interval	25 minutes
