
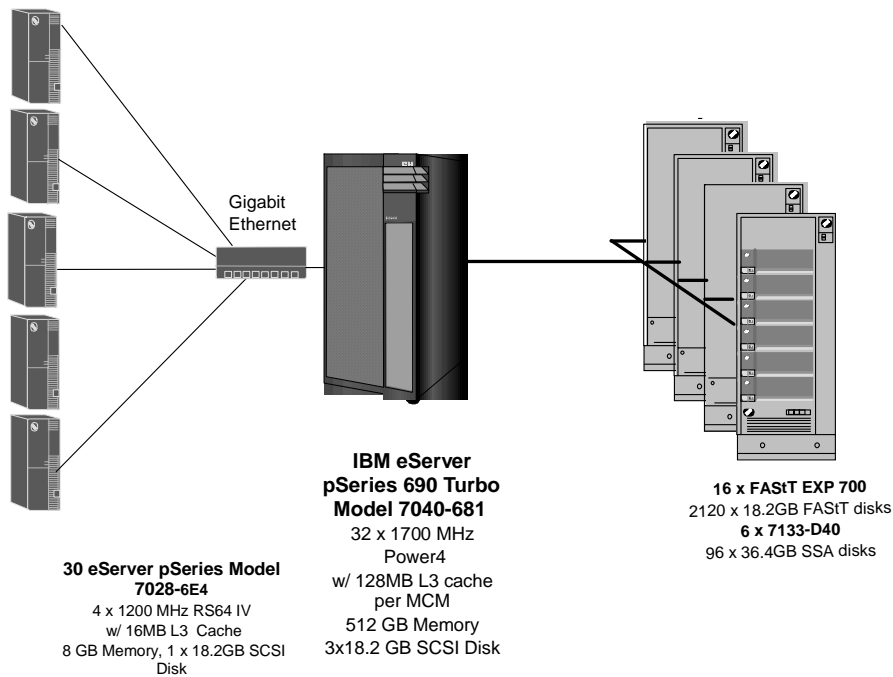
	IBM eServer pSeries 690 Turbo Model 7040-681		TPC-C Rev. 5.1	
			Report Date Sept 12, 2003	
Total System Cost	TPC-C Throughput	Price/Performance	Availability Date	
\$6,574,014	768,839.40tpmC	8.55\$/tpmC	February 29, 2004	
Processors	Database Manager	Operating System	Other Software	No. Users
32 x database 120 x clients	Oracle Database 10g Enterprise Edition	AIX 5L V5.2	IBM TXSeries Developer for AIX V5	607,680



System Components	Clients		Server	
	Quantity	Description	Quantity	Description
Processor	30	4 x1200 MHz POWER4 W/16MB L3 cache each	1	32 x 1700 MHz POWER4 w/ 128 MB L3 cache per MCM, 4 MCM in the SUT
Memory		8 GB		512 GB
Disk Controllers	1	SCSI-2 (Integrated)	1 6 66	SCSI-2 (Integrated) SSA Adapters Fibre Channel Adapters
Disk Drives	1	18.2 GB SCSI each client	2,120 96 3	18.2 GB FAST disk 36.4 GB SSA disk 18.2 GB SCSI disk
Total Storage		16.93 GB each client		37,325.49
Terminals	1	System Console	1	System Console



IBM eServer pSeries 690

TPC-C Rev. 5.1



Turbo Model 7040-681

Report Date: Sept 12, 2003

Description	Part No.	Source	Unit Price	Qty	Ext Price	Maint Price
Server Hardware						
IBM eServer pSeries 690 (CD, cables, clock card)	7040-681	1	13,394	1	13,394	20,760
128MB (4x32) L3 Cache, 1700MHz 8w MCM	4199	1	375,000	4	1,500,000	372,000
64GB H-Memory (inward and outward 4488,4489)	4488	1	344,000	4	1,376,000	
Std CEC Fan Pwr r cblgrp, service proc, 6161, 6162	6161	1	600	1	600	
Standard CEC DC/DC Converter Assembly	6170	1	4,700	2	9,400	
Power Cable Group, 1 thru 4 proc. module	6181	1	720	1	720	
Additional DC/DC Converter Assembly, (DCA)	6189	1	4,200	3	12,600	
Capacitor book (for 2 MCMs)	6198	1	1,800	2	3,600	
Service Processor + DualRio Loop (GX), I/O loop adapter	6418	1	15,000	1	15,000	
Backplane, Central Electronics Complex	6565	1	50,000	1	50,000	
Attachment Cable, Hardware Management Console	8121	1	75	1	75	
Media Drawer, 1U, Op Pnl/Dskt/4 SCSI Media Bays	8692	1	1,700	1	1,700	
I/O Drawer	7040-61D	1	3,980	8	31,840	32,640
Converter Cable, VHDCI to P, 0.3M	2118	1	60	8	480	
SCSI cable - B&C to Media Drawer	2122	1	275	1	275	
RIO-G Cable, 500Hz, 0.5m, 2*2m (3145, 3149)	3145	1	1,010	8	8,080	
36.4 GB 10,000 RPM Ultra3 SCSI Disk Drive	3158	1	1,283	3	3,849	
IBM Gigabit Ethernet-SX PCI-X Adapter	5700	1	1,700	1	1,700	
Cable Grp, 4xUPIC/2xRIO, BPM(IO#1 thru 4) (6121-6129)	6121	1	3,200	1	3,200	
I/O Drawer DC/DC Converter assembly, (DCA)	6172	1	4,000	16	64,000	
Power Cable, B&C to Media Drawer 6179, SCSI adapter 6201	6179	1	695	1	695	
Advanced Serial RAID Adapter, 32MB Cache (6230, 6235)	6230	1	3,575	6	21,450	
2 Gigabit Fibre Channel PCI-X Adapter	6239	1	2,582	66	170,412	
Ultra3 SCSI 4-Pack	6564	1	500	3	1,500	
B&C Planar, 10 PCISlots, 2x integrated SCSI	6571	1	8,000	16	128,000	
Rack, Front doors, Back doors	7040-61R	1	10,550	1	10,550	3,960
Bulk Power Regulator (BPR)	6186	1	4,000	4	16,000	
Bulk Power Controller (BPC), 4 Fans + 3 DCAs	6187	1	1,900	2	3,800	
Bulk Power Distribution (BPD), 10 DCAs	6188	1	3,500	4	14,000	
Line Cord, 60A, 14', IEC309 Plug, Chargeable	8678	1	1,000	2	2,000	
Regatta-H Bulk Power Module (2x BPA, EPO PNL)	8690	1	5,000	1	5,000	
Expansion Rack 24", 42 EIA	8691	1	8,000	1	8,000	
System Console, serial attach, cable 6M	7316	1	4,400	1	4,400	
IBM T541H 15 inches TFT Color Monitor, keyboard, graphics	3637	1	974	1	974	
			Subtotal		3,483,294	429,360
Storage						
System Rack Model T42 (6081,6098)	7014-T42	1	4,270	1	4,270	888
Additional Power Distribution Unit	6171	1	1,000	1	1,000	
			Subtotal		5,270	888
SSA Disk Subsystem, 50/60 Hz AC, power supply, cover, cable	7133-D40	1	15,125	6	90,750	26,496
Advanced 10K rpm/36.4 GB Disk Module	8536	1	5,900	96	566,400	
			Subtotal		657,150	26,496
Racked FASiT Storage Solution	2101-200	1	4,850	16	77,600	
FASiT EXP 700	1740-1RU	1	6,000	160	960,000	230,400
Short Wave SFP	2210	1	499	320	159,680	
18.2 GB 15K drive	5211	1	681	2,120	1,443,720	
FASiT700 Storage Server	1742-1RU	1	46,499	32	1,487,968	46,080
Short Wave SFP GBIC	2210	1	499	128	63,872	
			Subtotal		4,192,840	288,768
Server Software						
AIX 5L v5.2 (media only)	5765-E61	1	50	1	50	
AIX SWMA Subscription	5771-SUB	1	247	96	23,712	
AIX SWMA Support	5771-SPT	1	697	96	0	66,912
IBM C for AIX V5	D5A1ELL	1	559	1	559	104
Oracle Database 10g Enterprise Edition, Per Processor, Unlimited Users, for 3 years		2	20,000	32	640,000	
Oracle Database Server Support Package for 3 years		2				6,000
			Subtotal		664,321	73,016
Client Hardware and Software						
pSeries 630-6E4, CD-ROM, 18.2 GB Disk, Power Supply	7028-6E4	1	3,941	30	118,230	90,000
FC IExp Config (420C/420E) AIX	8037	1	23,317	30	699,510	
T541H 15" TFT Color Monitor, Captured Cable, keyboard	3637	1	562	1	562	
POWER GXT135P Graphics Accelerator -Digital support	2849	1	412	1	412	
SCSI Connector Cable + 4-Pack How Swap Back Plane	4254	1	354	30	10,620	
2048MB (4x512MB) SDRAM DIMM Memory, Express	8080	1	0	120	0	
4-port 10/100 Mbps Ethernet adapter	4961	1	1,250	90	112,500	
2-way 1.2 GHz POWER4 processor card, Express	8107	1	0	60	0	
AIX SWMA Subscription	5773-SUB	1	157	240	37,680	
AIX SWMA Support	5773-SPT	1	427	240	0	102,480
AIX 5L version 5	5692-A5L	1	50	30	1,500	
TX Series Developer for AIX V5, per proc, w / 3 yrs maint.		1	2,599	120	311,904	
			Subtotal		1,292,918	192,480
Third Party Hardware						
WideBand Series Fast Ethernet/Gigabit Switch	WB24T2EML3	3	1,449	4	5,796	
			Subtotal		5,796	
Oracle Mandatory E-Business Discount on License and Support		2	(129,200)	1	(129,200)	
			Discounts		(4,211,211)	(398,172)
			Total		5,961,178	612,836
Audited by: Francois Raab, InfoSizing (www.infosizing.com)						
Pricing Sources:						
1=IBM: Bill Casey, eServer pSeries Offering Manager, wrcasey@us.ibm.com, 512-838-1422					Three-Year Cost of Ownership	
2=Oracle: MaryBeth Pierantoni, mary.beth.pierantoni@oracle.com, 650-506-2118					tpm C	
3=WideBand Corp.					\$/tpm C	
					\$6,574,014	
					768,839.40	
					8.55	

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 pSeries 690 Turbo Model 7040-681

MQTH, computed Maximum Qualified Throughput: 768,839.40**tpmC**

<u>Response Times (in seconds)</u>	<u>90th %</u>	<u>Average</u>	<u>Maximum</u>
New Order	0.64	0.31	25.31
Payment	0.63	0.30	24.46
Order-Status	0.63	0.30	21.96
Delivery (interactive)	0.19	0.11	21.00
Delivery (deferred)	0.05	0.03	4.94
Stock-Level	0.63	0.30	23.03
Menu	0.01	0.01	2.53

Transaction Mix, in percent of total transactions

	<u>Percent</u>
New Order	44.90%
Payment	43.02%
Order-Status	4.01%
Delivery	4.01%
Stock-Level	4.02%

Keying/Think Times (in seconds)

	<u>Min.</u>	<u>Average</u>	<u>Max.</u>
New Order	18.00/0.01	18.01/12.02	18.11/120.20
Payment	3.00/0.01	3.01/12.02	3.12/120.20
Order-Status	2.00/0.01	2.01/10.01	2.09/100.10
Delivery	2.00/0.01	2.01/5.02	2.09/50.20
Stock-Level	2.00/0.01	2.01/5.02	2.10/50.20

Test Duration

Ramp-up Time	1 hour 9 min 47 sec
Measurement interval	2 hours
Transactions during measurement interval (all types)	304667487
Ramp-down time	17 minutes

Checkpointing

Number of checkpoints	4
Checkpoint interval	29 min 1 sec