
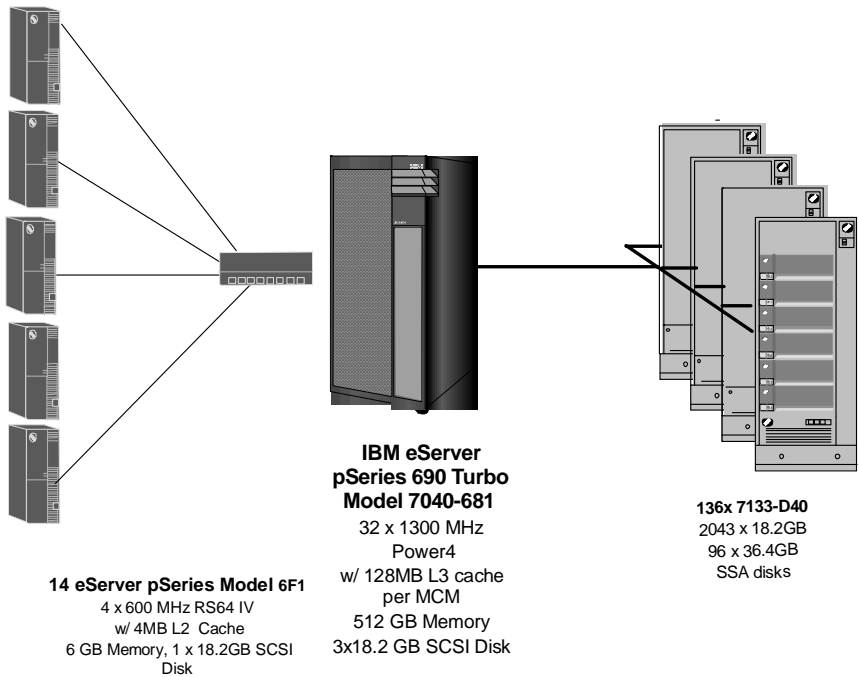
	<b>IBM eServer pSeries 690 Turbo Model 7040-681</b>		TPC-C Rev. 5.0	
			Report Date Dec 26, 2002	
Total System Cost	TPC-C Throughput	Price/Performance	Availability Date	
<b>\$7,591,038</b>	<b>427,760.83 tpmC</b>	<b>17.75\$/tpmC</b>	<b>May 31, 2003</b>	
Processors	Database Manager	Operating System	Other Software	No. Users
32 x database 56 x clients	Oracle9i Enterprise Edition Release 2 v9.2.0.1 for AIX 5L v5.2	AIX 5L V5.2	WebSphere Application Server Enterprise Edition Version 3.0	340,000



System Components	Clients		Server	
	Quantity	Description	Quantity	Description
Processor	14	4 x 600 MHz RS64 IV W/4MB L2 cache each	1	32 x 1300 MHz POWER4 w/ 128 MB L3 cache per MCM, 4 MCM in the SUT
Memory		6 GB		512 GB
Disk Controllers	1	SCSI-2 (Integrated)	1	SCSI-2 (Integrated)
Disk Drives	1	18.2 GB SCSI each client	34	SSA Adapters
			2,043	18.2 GB SSA disk
			96	36.4 GB SSA disk
Total Storage		16.93 GB each client	3	18.2 GB SCSI disk
Terminals	1	System Console	1	37,325.49 System Console



ORACLE

# IBM eServer pSeries 690 Turbo Model 7040-681

TPC-C Rev. 5.0

Report Date: December 26, 2002

Description	Part No.	Source	Unit Price	Qty	Ext Price	Maint Price
<b>Server Hardware</b>						
IBM eServer pSeries 690 (CD, cables, clock card)	7040-681	1	18,764	1	18,764	20,760
128MB (4x32) L3 Cache, 433MHz	4139	1	25,000	4	100,000	0
64GB H-Memory (inward facing)	4488	1	241,000	4	964,000	0
64GB H-Memory (outward facing)	4489	1	241,000	4	964,000	0
1.3GHz 8-way Processor MCM (1 thru 4 books)	5244	1	275,000	4	1,100,000	403,200
Std CEC Fan Pwr cblgrp, BPC(F&R), cable	6161	1	600	1	600	0
Standard CEC DC/DC Converter Assembly	6170	1	4,700	2	9,400	0
Power Cable Group, 1 thru 4 processor modules	6181	1	720	1	720	0
Additional DC/DC Converter Assembly, (DCA)	6189	1	4,200	3	12,600	0
Capacitor book (for 2 MCMs)	6198	1	1,800	2	3,600	0
Service Processor + Dual Rio Loop (GX), I/O loop adapter	6404	1	15,000	1	15,000	0
Regatta-H Planar (Mayfly)	6565	1	50,000	1	50,000	0
Media Drwr, 1U, Op Pnl/Dskt/4 SCSI Media Bays	8692	1	1,700	1	1,700	0
I/O Drawer	7040-61D	1	3,980	4	15,920	16,320
SCSI cable - B&C to Media Drawer	2122	1	275	1	275	0
Remote I/O Cable, 500MHz, 0.5m (RIO)	3145	1	310	4	1,240	0
Remote I/O Cable, 500MHz, 2m (RIO)	3149	1	350	8	2,800	0
18.2 GB Ultra3 10K RPM 1" U3 Module	3157	1	1,260	3	3,780	0
10/100 Mbps Ethernet adapter II	4962	1	275	5	1,375	0
Cable Grp, 4xUPIC/2xRIO, BPM (IO #1 thru 4) to B&C (pos 4609)	6121	1	1,600	1	1,600	0
I/O Drwr DC/DC Converter assembly, (DCA)	6172	1	4,000	8	32,000	0
Power Cable, B&C to Media Drawer	6179	1	300	1	300	0
Ultra SCSI SE Adapter	6206	1	395	1	395	0
Advanced Serial RAID Adapter	6230	1	3,000	34	102,000	0
32 MB Fast Write Cache option card	6235	1	575	6	3,450	0
B&C Planar, 10 PCI Slots, 2x integrated SCSI	6563	1	8,000	8	64,000	0
Ultra3 SCSI 4-Pack	6564	1	500	16	8,000	0
Rack (Front primary and secondary racks)	7040-61R	1	9,050	1	9,050	3,960
Back Door, Slim Line (primary or secondary)	6074	1	750	2	1,500	0
Bulk Power Regulator (BPR)	6186	1	4,000	4	16,000	0
Bulk Power Controller (BPC), 4 Fans + 3 DCAs	6187	1	1,900	2	3,800	0
Bulk Power Distribution (BPD), 10 DCAs	6188	1	3,500	4	14,000	0
Integrated Battery Backup and Redundant + cable	6200	1	4,600	4	18,400	0
Line Cord, 60A, 14', IEC309 Plug, Chargeable	8678	1	1,000	2	2,000	0
Regatta-H Bulk Power Module (2x BPA, EPO PNL)	8690	1	5,000	1	5,000	0
Expansion Rack 24", 42 EIA	8691	1	8,000	1	8,000	0
System Console + cable	7316	1	4,400	1	4,400	0
Display, White P76/P77 Color Monitor	3627	1	675	1	675	0
				<b>Sub total</b>	<b>3,560,344</b>	<b>444,240</b>
<b>Storage</b>						
System Rack Model T42 (6089,6098)	7014-T42	1	4,150	14	58,100	12,432
Additional Power Distribution Unit	6171	1	1,000	41	41,000	0
SSA Disk Subsystem	7133-D40	1	12,750	136	1,734,000	600,576
50/60 Hz AC, 300 VDC Power Supply	8022	1	2,000	136	272,000	0
Raven Black Drawer Cover	8031	1	250	136	34,000	0
Dummy Drive	8399	1	30	2	60	0
10K/18.2 GB Advanced Disk Drive Module	8518	1	4,500	2,043	9,193,500	0
10K/36.4 GB Advanced Disk Drive Module	8536	1	5,900	96	566,400	0
SSA Cables (8801, 8802)	8801	1	125	136	17,000	0
				<b>Sub total</b>	<b>11,916,060</b>	<b>613,008</b>
<b>Server Software</b>						
AIX 5.1 (media only)	5765-E61	1	50	1	50	0
IBM Websphere Application Server	D5A LCLL	1	26,687	32	853,984	158,144
IBM C for AIX V5	D5A 1ELL	1	559	1	559	104
Oracle9i Database Enterprise Edition Release 2, v9.2.0.1 for AIX 5L v5.2, Processor 3 year term for 32 processors, Unlimited Users		2	640,000	1	640,000	0
Oracle Database Server Support Package for 3 years		2				6,000
				<b>Sub total</b>	<b>1,494,593</b>	<b>164,248</b>
<b>Client Hardware and Software</b>						
WorkGroup server pSeries 620 Model 6F1	7025-6F1	1	7,997	14	111,958	67,200
32x Speed CD-ROM Drive	2624	1	375	14	5,250	0
18.2 GB 10K RPM Ultra SCSI Enhanced Disk	3153	1	1,260	14	17,640	0
P76/p77 Color Monitor, captured cable + keyboard	3627	1	675	1	675	0
16 slot memory expansion card	4075	1	1,500	14	21,000	0
1024MB (2x512MB) 200PIN SDRAM DIMM Memory	4100	1	3,072	56	172,032	0
512MB (2x256MB) SDRAM DIMM Memory	4119	1	1,536	56	86,016	0
4-port 10/100 Mbps Ethernet adapter	4961	1	1,500	84	126,000	0
Proc card 4xRS64 IV/600MHz/4MB cache	5214	1	24,500	14	343,000	60,480
IPL Disk Mounting HW cables, terminator	6555	1	595	14	8,330	0
AIX 4. Unlimited Users	5765-C34	1	50	14	700	0
				<b>Sub total</b>	<b>892,601</b>	<b>127,680</b>
<b>Third Party Hardware</b>						
8-port 10/100 Ethernet Switch	FS108NA	3	85	4	340	0
				<b>Sub total</b>	<b>340</b>	<b>0</b>
Oracle Mandatory E-Business Discount on License and Support		2	(129,200)	1	(129,200)	0
				<b>Discounts</b>	<b>(10,908,034)</b>	<b>(584,672)</b>
				<b>Total</b>	<b>6,826,704</b>	<b>764,504</b>
Audited by: Brad Askins, Info Sizing						
Pricing Sources:						
1=IBM: Bill Casey, eServer pSeries Offering Manager, wrcasey@us.ibm.com, 512-838-1422					<b>Three-Year Cost of Ownership</b>	<b>\$7,591,208</b>
2=Oracle: Herve Lejeune, herve.lejeune@oracle.com, 650-506-1894					<b>tpm c</b>	<b>427,760.83</b>
3=NETGEAR					<b>\$/tpm c</b>	<b>\$17.75</b>

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: 427,760.83 tpmC

<b><u>Response Times (in seconds)</u></b>	<b><u>90th %</u></b>	<b><u>Average</u></b>	<b><u>Maximum</u></b>
New Order	0.90	0.45	97.30
Payment	0.85	0.42	96.37
Order-Status	0.88	0.44	48.76
Delivery (interactive )	0.19	0.11	48.16
Delivery (deferred)	0.19	0.11	3.73
Stock-Level	0.83	0.40	96.28
Menu	0.01	0.00	96.14

<b><u>Transaction Mix, in percent of total transactions</u></b>	<b><u>Percent</u></b>
New Order	44.93%
Payment	43.00%
Order-Status	4.01%
Delivery	4.01%
Stock-Level	4.01%

<b><u>Keying/Think Times (in seconds)</u></b>	<b><u>Min.</u></b>	<b><u>Average</u></b>	<b><u>Max.</u></b>
New Order	18.00/0.01	18.01/12.02	18.11/120.22
Payment	3.00/0.01	3.01/12.02	3.11/120.21
Order-Status	2.00/0.01	2.01/10.01	2.10/100.20
Delivery	2.00/0.01	2.01/5.02	2.10/50.21
Stock-Level	2.00/0.01	2.01/5.02	2.11/50.20

**Test Duration**

Ramp-up Time	1 hour 18 sec
Measurement interval	2 hours
Transactions during measurement interval (all types)	114237469
Ramp-down time	20 minutes

**Checkpointing**

Number of checkpoints	4
Checkpoint interval	29 min 51 sec