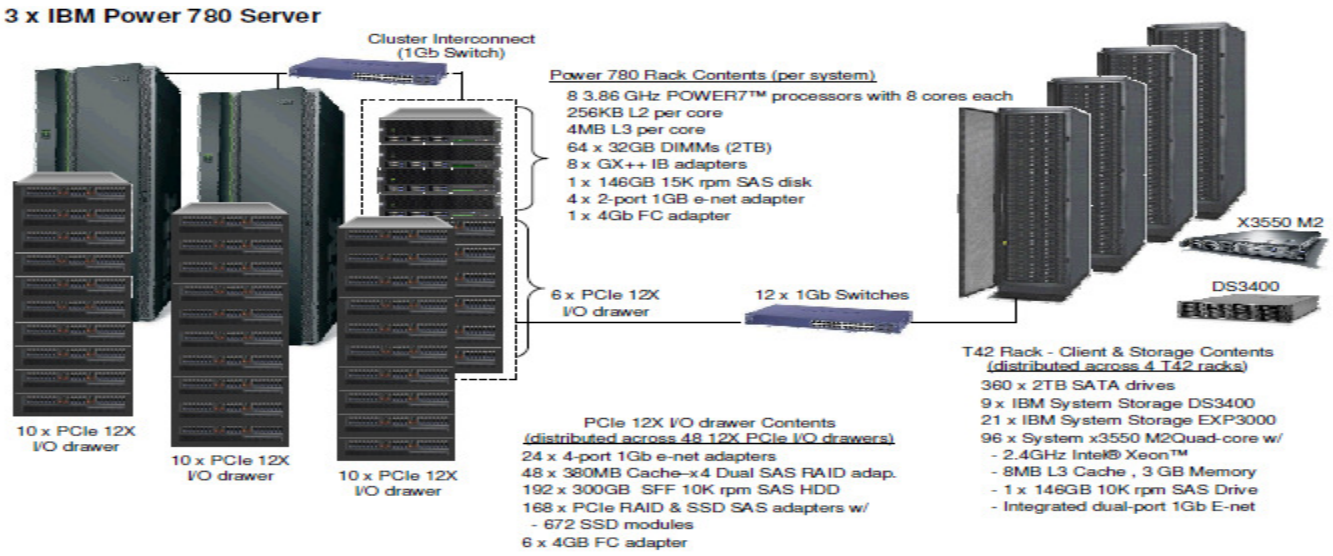
IBM	IBM Power 780 Model 9179-MHB	TPC-C Rev. 5.11 TPC Pricing Version 1.5.0 Report Date: August 17, 2010

Total System Cost	TPC-C Throughput	Price/Performance	Availability Date
$14,276,808 USD	10,366,254 tpmC	$1.38 USD/tpmC	October 13, 2010

Database Server Processors/Cores/Threads	Database Manager	Operating System	Other Software	No. Users
24/192/768 POWER7 3.86GHz	DB2 9.7	AIX V6.1	Microsoft Visual C++ Microsoft COM+	8,803,200



System Components	Each of the 3 Servers		Each of the 96 Clients	
	Quantity	Description	Quantity	Description
Processors /Cores/Threads	8/64/256	3.86GHz POWER7	1/4/8	2.4GHz Intel Xeon
Memory	64	32GB	3	1 GB
Disk Controllers	9 56 16	4 Gb FC Adapter PCIe RAID & SSD SAS Adp PCIe 380MB Cache RAID Adp	1	SAS Controller
Disk Drives	224 64 120 1	177GB SSD Modules w/eMLC 300GB 10K rpm SAS 2TB 7.2K rpm SATA 146GB 15K rpm SFF SAS	1	146GB 10K rpm SAS
Total Storage		821,447GB		136.61GB
Terminals	1	System Console	1	System Console

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Server Hardware						
Server 1:9179-MHB Base MTM	9179-MHB	1	10,195	3	30,585	24,945
IBM MMB DRWR, IBM BEZEL +CHASSIS/IBM LABELS+	5597	1	12,000	12	144,000	
SYSTEM AC POWER SUPPLY 1725 W	5632	1	1,502	24	36,048	
FSP1 FLEXIBLE SERVICE PROCESSOR CARD	5664	1	4,000	6	24,000	
SERV INTERFACE CABLE 2 3 AN	3671	1	2,000	3	6,000	
SERV INTERFACE CABLE 3 AND 4	3672	1	3,000	3	9,000	
SERV INTERFACE CABLE 4 ENCLOS	3673	1	4,000	3	12,000	
PROCESSOR CABLE TWO THREE OR	3712	1	5,000	3	15,000	
PROCESSOR CABLE THREE OR FOUR	3713	1	10,000	3	30,000	
PROCESSOR CABLE FOUR DRAWER S	3714	1	12,000	3	36,000	
FSP CLOCK PASS THROUGH CARD	5665	1	900	6	5,400	
QUAD (2X RJ45 1GB / 2X SFP+ 10GB) HEA	1803	1	699	12	8,388	
GX++ DUAL-PORT IB ADPTR	1808	1	1,499	24	35,976	
1.5 Meter 12X DDR Cable	1862	1	524	48	25,152	
SAS Cable (X) Adapter to SAS Enclosure	3661	1	197	24	4,728	
PWR CBL,. DRWR TO IBM PDU, 9' 200-240V/10A	6671	1	18	120	2,160	
OPERATOR PANEL + SHIP GROUP, P7 MR	1853	1	1,000	3	3,000	
3.8 / 4.1GHZ, 0/16w Core POWER7, 16 DDR3 Memory Slots	4982	1	57,429	12	689,148	72,864
1W PROCESSOR ACTIVATION FOR FC 4982	5469	1	8,375	192	1,608,000	552,960
0/128GB(4X32GB) SDRAM DDR3 DIMMS, 1066MHZ	5602	1	15,440	48	741,120	
100GB DDR3 MEMORY ACTIVATION	8213	1	24,500	60	1,470,000	
1GB DDR3 MEMORY ACTIVATION	8212	1	245	144	35,280	
146GB 15K RPM SFF SAS DISK	1886	1	1,045	3	3,135	
DISK/MEDIA BACK PLANE, 6X SFF DISK BAYS, 1X SA	5652	1	4,000	3	12,000	
SATA Slimeline DVD-RAM Drive	5762	1	392	3	1,176	
12X I/O DRAWER PCIE, SFF Disk	5802	1	14,277	48	685,296	374,400
4 Gigabit PCI Express Dual Port Fibre Channel Adapter	5774	1	3,273	9	29,457	
2 PORT 10 100 1000 BASE TX PCI	5767	1	692	12	8,304	
4 PORT 10 100 1000 BASE TX PCI	5717	1	1,087	24	26,088	
Power Control Cable (SPCN) - 3 Meter	6006	1	52	75	3,900	
I/O Drawer Mounting Enclosure	7314	1	687	48	32,976	
OPT FRONT DOOR FOR 2 0M RACK	6069	1	545	6	3,270	
Side Panel (Black)	6098	1	150	12	1,800	
PDU to 14', 200-240V/24A, UTG0247, PT#12	6654	1	240	18	4,320	
Power Dist Unit-Side Mount, Universal UTG0247	7188	1	1,000	18	18,000	
HMC 1:7042-C07 Desktop Hardw.Mgmt.Console	7042-C07	1	1,830	3	5,490	4,032
IBM T117 FLAT PANEL MONITOR	3645	1	875	3	2,625	
Power Cord (6-foot), To Wall Plug Type #4	6470	1	18	3	54	
Ethernet Cable, 6M, HMC to System Unit	7802	1	33	3	99	
Keyboard - English, #103P	5951	1	107	3	321	
USB Mouse	8845	1	39	3	117	
3.5TB SSD Package consisting of 5 PCIe RAID & SSD SAS adapters & 20 SSD modules with eMLC	4367	1	99,650	33	3,288,450	554,400
PCIe RAID & SSD SAS adapter	2055	1	4,000	3	12,000	
177GB SSD module with eMLC	1995	1	5,763	12	69,156	13,824
IBM 42U Enterprise Rack	7014-T42	1	3,970	6	23,820	4,608
PCIe 380MB Cache Dual - x4 3Gb SAS RAID Adapter	5903	1	2,880	48	138,240	
SAS Cables 0.6 Meters	3688	1	118	48	5,664	
300GB SFF 10K SAS HDD	1885	1	1,376	192	264,192	
Cat5 cable 10m	3762	1	29	24	696	
				Subtotal	**9,611,631**	**1,602,033**
External Storage						
DS3400	1726-42E	1	9,292	9	83,628	11,700
EXP3000	1727-01X-2676	1	3,199	21	67,179	15,960
2 TB 7.2K rpm SATA 2000GB	1727-01X-5423	1	1,279	360	460,440	
SAS Cables 0.6 Meters	3688	1	118	54	6,372	
Fiber Cable 1m	5601	1	79	18	1,422	
IBM 42U Enterprise Rack	7014-T42	1	3,970	4	15,880	
				Subtotal	**634,921**	**27,660**

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Server Software						
AIX V6 (media only)	5692-A6P	1	50	3	150	
AIX 6 for POWER V6.1	5765-G62	1	2,600	192	499,200	
AIX per processor SWMA Large Power 7 (3Y)	5773-SM3-1260	1	1,755	192		336,960
AIX per processor SWMA Large Power 7 24x7 Upgrade (3Y)	5773-SM3-1261	1	461	192		88,512
HMC Software SUB (3Y)	5773-0570	1	461	3		1,383
HMC Software Support (3Y)	5773-0569	1	675	3		2,025
C for AIX user Lic+SW maint (1Y)	D5A1DLL	1	1,140	3	3,420	
C for AIX user annual SW maint renewal	E1A1FLL	1	228	6		1,368
DB2 InfoSphere Warehouse Ent. Base Ed. 9.7 PVU Lic+Maint (1Y)		1	500	23,040	11,520,000	
DB2 InfoSphere Warehouse Ent. Base Ed. 9.7 PVU Renew (1Y)		1	100	46,080		4,608,000
				Subtotal	**12,022,770**	**5,038,248**
Client Hardware and Software						
IBM System x3550 M2 (Quad-core Xeon 2.4GHz)	7946AC1	1	3,316	96	318,336	
1 GB memory	3963	1	85	288	24,480	
146GB 10K RPM SAS SFF	5537	1	269	96	25,824	
Cat5 cable 1.5M	3802	1	17	96	1,632	
Cat5 cable 10M	3762	1	29	24	696	
Optical 3-Button Mouse - USB	8913	1	19	1	19	
Preferred Pro Full Size PS/2 Keyboard	40K9584	1	29	1	29	
ServicePac for 3-Year 24x7x4 Support	6756298	1	450	96		43,200
IBM T115 15" TFT Monitor	494215U	1	209	1	209	
				Subtotal	**371,225**	**43,200**
Third Party Hardware/Software						
Microsoft Visual Studio 2008 Professional	127-00166	2	799	1	799	
Windows Web Server 2008 R2	LWA-00984	2	469	96	45,024	
Microsoft Problem Resolution Services		2	259	1		259
Cisco Catalyst 3750G - 24TS switch - 24 ports	950732	3	3,136	1	3,136	
Cisco SMARTnet Premium extended service agreement-1year	983160	3	960	3		2,880
D-Link DGS 1224T Web Smart 24-port Gigabit Switch	652036	3	290	14	4,060	
APC Smart-UPS XL 3000VA (+2 spares)	SUA3000XL	4	1,375	20	27,500	
APC Smart-UPS XL 48V Battery Pack (+4 spares)	SUA48XLBP	4	609	40	24,360	
				Subtotal	**104,879**	**3,139**
Total					**22,745,426**	**6,714,280**
Total IBM Discounts*						**-15,182,898**
Three-Year Cost of Ownership						**14,276,808**
tpmC						**10,366,254**
$/tpmC						**1.38**

Notes:
For pricing details and contact information please see appendix D.
Pricing Sources: 1)IBM 2)Microsoft 3)CDW 4)APC
*Discounts are based on US list prices for similar quantities & configurations including pre-payment for maintenance. The discount applies to the totality of all items with price sources of "1".

Audited by: Francois Raab, InfoSizing (www.sizing.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. Thank you

Numerical Quantities Summary for the IBM Power 780 Server Model 9179-MHB

MQTH, computed Maximum Qualified Throughput: 10,366,254 tpmC

Response Times (in seconds)	90th %	Average	Maximum
New Order	2.1	1.137	24.041
Payment	2.1	1.138	21.293
Order-Status	2.06	1.095	20.169
Delivery (interactive)	1.64	0.749	17.953
Delivery (deferred)	0.95	0.42	2.48
Stock-Level	2.08	1.113	21.547
Menu	1.64	0.77	23.037

Response time delay added for emulated components was 0.1 seconds

Transaction Mix, in percent of total transactions	Percent
New Order	44.953%
Payment	43.019%
Order-Status	4.010%
Delivery	4.009%
Stock-Level	4.010%

Keying/Think Times (in seconds)	Min.	Average	Max.
New Order	18/0	18/12	18.101/120.313
Payment	3/0	3/12	3.094/120.312
Order-Status	2/0	2/10	2.065/100.313
Delivery	2/0	2/5.03	2.072/50.302
Stock-Level	2/0	2/5.03	2.085/50.313

Test Duration

Ramp-up Time	2 hour 23 minutes 44 secs
Measurement interval	2 hours 0 minutes
Transactions during measurement interval (all types)	2,767,254,834
Ramp-down time	9 minutes

Checkpoints

Number of checkpoints	N/A
Checkpoint interval	N/A