IBM ⓔserver iSeries 400 Model 840-2420-001
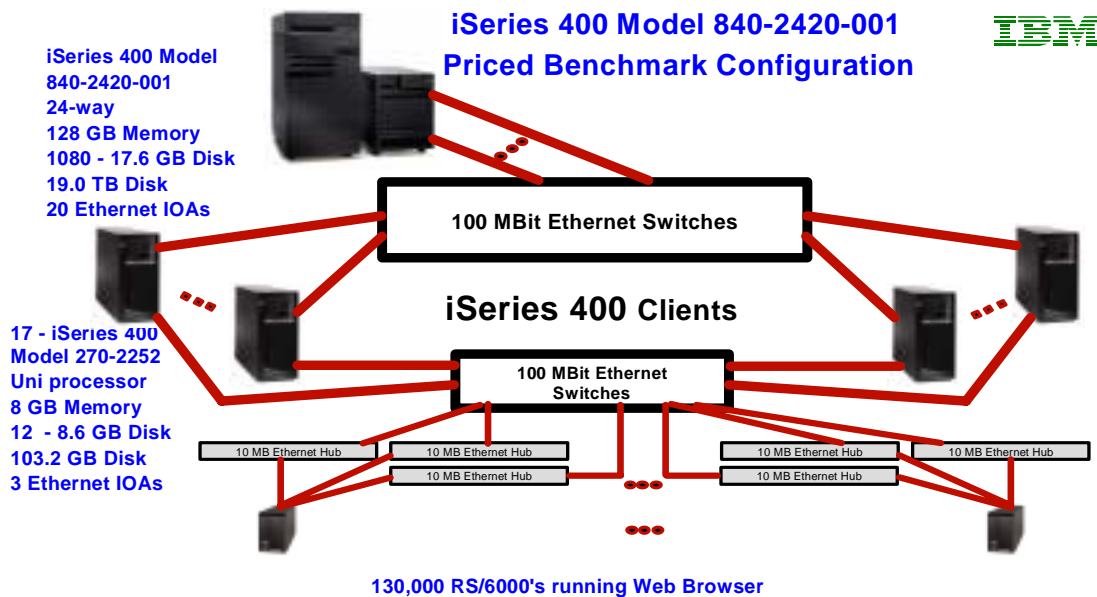
TPC-C Rev. 5.0

Report Date:
March 19, 2001

Total System Cost	TPC-C Throughput	Price/Performance	Availability Date
$8,448,137	**163,775.80**	**$51.58**	**December 15, 2000**

Processors	Database Manager	Operating System	Other Software	Number of Users
1 iSeries 400 840-2420-001 (24-way) 17 iSeries 400 9406-270 2252	**DB2 for AS/400 Version 4 Release 5**	**OS/400 Version 4 Release 5**	**BEA TUXEDO 6.4 INT LNG ENV COBOL OS/400 V4 R4 INT LNG ENV C OS/400 V4 R4**	**130,000**

iSeries 400 Model 840-2420-001 Priced Configuration

iSeries 400 Model 840-2420-001 Priced Benchmark Configuration

iSeries 400 Model 840-2420-001 24-way 128 GB Memory 1080 - 17.6 GB Disk 19.0 TB Disk 20 Ethernet IOAs

100 MBit Ethernet Switches

iSeries 400 Clients

17 - iSeries 400 Model 270-2252 Uni processor 8 GB Memory 12 - 8.6 GB Disk 103.2 GB Disk 3 Ethernet IOAs

100 MBit Ethernet Switches

10 MB Ethernet Hub · 10 MB Ethernet Hub · 10 MB Ethernet Hub · 10 MB Ethernet Hub
10 MB Ethernet Hub · 10 MB Ethernet Hub

130,000 RS/6000's running Web Browser

System components:	Qty:	Description:
Server	**1**	
Processors	24	iSeries 400 Model 840-2420-001
Memory		128 GB main memory
Disk controllers	52	RAID Disk Unit Controller (4748)
Disk drives	1080	17.6 GB DASD
		Total: 13.5 TB
Total storage		
Clients (each):	**17**	
Processor	1	iSeries 400 Model 270-2252
Memory		8 GB main memory
Disk controller	2	RAID Disk Unit Controller (4748)
Disk drives	12	8.6 GB DASD
		Total: 51.6 GB

IBM iSeries 840-2420-001 Configuration

Item Description	Feature Number	Third Party Pricing	Unit Price	Quantity	Extended Price	Extended Maintenance	3-Year Price
Server Hardware:							
IBM iSeries 400 Model 840 24-way Base System Unit	9406-840		640,000	1	640,000	42,408	682,408
RPQ 847108	847108		710,000	1	710,000		710,000
Processor - ISTAR 7S 450 Mhz 24-way, Cache 8x4 MB	2420-001		550,000	1	550,000	46,464	596,464
Interactive Card	1540		0	1	0		0
6m HSL Cable - Base I/O Tower	1461		550	26	14,300		14,300
8192 MB (RIVER - 256 MB technology)	3196		147,456	16	2,359,296		2,359,296
Programmable Regulator (req'd with 3196)	2730		750	2	1,500		1,500
PCI Ultra Magnetic Media Controller	2749		1,300	1	1,300		1,300
PCI IOP with 64 MB memory	2843		1,925	22	42,350		42,350
17.6 GB 10K RPM Disk Unit	4318		2,520	1080	2,721,600		2,721,600
CD-ROM	4425		415	1	415		415
PCI Two Line WAS IOA (ECS) req'd with 5540	4745		425	1	425		425
PCI Twinaxial IOA - Req'd with 5540	4746		750	1	750		750
PCI RAID Disk Unit Contorller with 26 MB wirte cache	4748		6,000	71	426,000		426,000
PCI 100/10 mbps Ethernet IOA	4838		900	20	18,000		18,000
PCI100/16/4 MBPS Token Ring IOA	2744		840	2	1,680		1,680
PCI Expansion Tower / Mantis	5074		17,900	23	411,700	190,992	602,692
PCI Expansion Tower	5101		9,000	24	216,000	238,464	454,464
25 GB 1/4-Inch Tape Drive	4486		5,000	1	5,000		5,000
V.24/EIA232 50ft PCI Cable - System Console	0367		125	1	125		125
Server Subtotal					8,120,441	518,328	8,638,769
Client Hardware:							
IBM iSeries 400 Model 270 Base System Unit	9406-270		4,000	1	4,000	2,208	6,208
V.24/EIA 232 20ft PCI Cable for System Console	0348		125	1	125		125
6m HSL Cable - Base I/O Tower	1461		550	2	1,100		1,100
Processor Card	2252		16,000	1	16,000	3,912	19,912
PCI IOP with 32 MB memory	2842		1,800	3	5,400		5,400
Main Store - memory riser card - 16 slots	2884		2,200	1	2,200		2,200
512 MB DIMMS Main Storage	3025		2,048	16	32,768		32,768
8.6 GB 10K RPM Disk Unit	4317		1,400	12	16,800		16,800
CD-ROM	4525		415	1	415		415
4 GB 1/4-Inch Tape Drive	4582		1,300	1	1,300		1,300
PCI Expansion Tower	5075		6,000	1	6,000	2,928	8,928
PCI Two Line WAS IOA (ECS) req'd with 5540	4745		425	1	425		425
PCI Twinaxial IOA - Req'd with 5540	4746		750	1	750		750
PCI RAID Disk Unit Contorller with 26 MB wirte cache	4748		6,000	2	12,000		12,000
PCI 100/10 mbps Ethernet IOA	4838		900	2	1,800		1,800
Single Client Subtotal					101,083	9,048	110,131
Number of Clients				17			
Client Subtotal					1,718,411	153,816	1,872,227
Server Software:							
IBM Operating System/400 V4R5M0	Bundled			1	0	33,343	33,343
DB2 Query Manager Dev. Toolkit	QU1 and ST1		28,800	1	28,800		28,800
Client Software:							
IBM Operating System/400 V4R5M0	Bundled		0	17	0	267,020	267,020
BEA Tuxedo V6.4		1	3,000	17	51,000	35,190	86,190
ILE COBOL	5769CB1		2,400	1	2,400		2,400
Application Development Toolkit	5769PW1		3,020	1	3,020		3,020
DB2 Query Mgr and SQL Development kit	5769ST1		1,600	1	1,600		1,600
ILE C	5769CX2		2,400	1	2,400		2,400
Software Subtotal					89,220	335,553	424,773
3-year System Subtotal					9,928,072	1,007,697	10,935,769

Discounts:			%Allowance	Volume	Discount	
Revenue Allowance			22	9,877,072	(2,172,956)	
3-year Term Maintenance Contract Discount			3	672,144	(20,164)	
3-year Maintenance Prepay Discount			10.36	651,980	(67,545)	
Software Support Discount For Secondary Systems			85	267,020	(226,967)	

	Purchase	Maintenance	Total
3-year System Total	7,755,116	693,021	8,448,137
tpmC			163775.80
$/tpmC			51.58

Note: All pricing is from IBM except items noted in the 3rd Party
Pricing column. 1 - BEA Systems, Inc.;

Notes:
Server Hardware requires no charge RPQ 847109
Revenue Allowance is applied to hardware and software for the priced configuration.
3-Year Term Maintenance Contract Discount is given when 3-year contract is signed.
3-Year Maintenance Prepay Discount is given when 3-year maintenance costs are prepaid.
Software Support Discount For Secondary Systems is given for maintenance costs on Multiple systems in a single I/S shop.
Results audited by François Raab of InfoSizing Inc.

Three Year Cost of Ownership: $8,448,137

tpmC Rating: 163,775.80

$/tpmC: $51.58

Numerical Quantities Summary for IBM @server iSeries 400 Model 840-2420-001

MQTH, computed Maximum Qualified Throughput   163,775.80
% throughput difference, reported & repeated   0.99%

Response Times (in seconds)	90%	Avg.	Max.
- New Order	0.5	0.32	5.01
- Payment	0.3	0.20	5.21
- Order-Status	0.5	0.31	4.43
- Delivery (interactive portion)	0.2	0.11	0.21
- Delivery (deferred portion)	2.1	1.70	6.18
- Stock-Level	1.7	0.82	9.22
- Menu	0.1	0.10	0.32
- Response time delayed for emulated components	0.1		

Transaction Mix (in percent of total transactions)	
- New Order	44.88%
- Payment	43.05%
- Order-Status	4.03%
- Delivery	4.03%
- Stock-Level	4.02%

Keying/Think Times (in seconds)	Min.	Avg.	Max.
- New Order	18.00/0.00	18.00/12.02	18.14/120.24
- Payment	3.00/0.00	3.00/12.01	3.12/120.23
- Order-Status	2.00/0.00	2.00/10.01	2.16/100.22
- Delivery	2.00/0.00	2.00/5.04	2.07/50.21
- Stock-Level	2.00/0.00	2.00/5.02	2.06/50.21

Test Duration

- Ramp-up time	85 minutes
- Measurement interval	20 minutes
- Number of checkpoints	N/A[1]
- Checkpoint interval	N/A[1]
- Number of transactions (all types) completed in Measurement Interval	7,298,931

1. Transparent file synchronization occurred at least five times during the measurement interval.

For additional information on the IBM @server iSeries 400 see: http://www.ibm.com/eserver/iseries