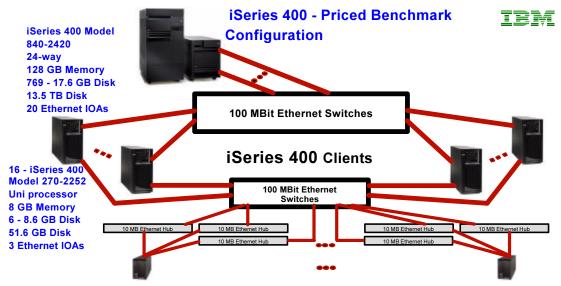| IBM @ server iSeries 400 Model 840-2420	TPC-C Rev. 3.5
	Report Date: October 24, 2000

Total System Cost	TPC-C Throughput	Price/Performance	Availability Date
$7,846,074	**152,346.25**	**$51.50**	**September 15, 2000**

Processors	Database Manager	Operating System	Other Software	Number of Users
1 iSeries 400 840-2420 (24-way) 16 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**	**121,000**

iSeries 400 Model 840-2420 Priced Configuration

iSeries 400 - Priced Benchmark Configuration

IBM

iSeries 400 Model 840-2420 24-way 128 GB Memory 769 - 17.6 GB Disk 13.5 TB Disk 20 Ethernet IOAs

100 MBit Ethernet Switches

iSeries 400 Clients

16 - iSeries 400 Model 270-2252 Uni processor 8 GB Memory 6 - 8.6 GB Disk 51.6 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	

121,000 RS/6000's running Web Browser

System components:	Qty:	Description:
Server	**1**	
Processors	24	**iSeries 400 Model 840-2420**
Memory		**128 GB main memory**
Disk controllers	52	**RAID Disk Unit Controller (4748)**
Disk drives	769	**17.6 GB DASD**
		Total: 13.5 TB
Total storage		
Clients (each):	**16**	
Processor	1	**iSeries 400 Model 270-2252**
Memory		**8 GB main memory**
Disk controller	2	**RAID Disk Unit Controller (4748)**
Disk drives	6	**8.6 GB DASD**
		Total: 51.6 GB

iSeries 400 Model 840-2420 Config

Item Description	Feature Number	Third Party Pricing	Unit Price	Quantity	Extended Price	Extended Maintenance	5-Year Price
Server Hardware:							
iSeries 400 Model 840 24-way Base System Unit	9406-840		640,000	1	640,000	84,816	724,816
Processor - ISTAR 7S 500 MHz 24-way, Cache 8x4 MB	2420		550,000	1	550,000	92,928	642,928
Interactive Card	1540		0	1	0		0
6m HSL Cable - Base I/O Tower	1461		550	20	11,000		11,000
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	769	1,937,880		1,937,880
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 Controller with 26 MB write cache	4748		6,000	52	312,000		312,000
PCI 100/10 mbps Ethernet IOA	4838		900	20	18,000		18,000
PCI 100/16/4 mbps Token Ring IOA	2744		840	2	1,680		1,680
PCI Expansion Tower / Mantis	5074		17,900	17	304,300	282,336	586,636
PCI Expansion Tower	5101		9,000	18	162,000	357,696	519,696
25 GB 1/4-Inch Tape Drive	4486		6,000	1	6,000		6,000
V.24/EIA232 50ft PCI Cable - System Console	0348		125	1	125		125
Server Subtotal					6,349,021	817,776	7,166,797
Client Hardware:							
iSeries 400 Model 270 Base System Unit	9406-270		4,000	1	4,000	4,416	8,416
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	7,824	23,824
Interactive Card	1516		0	1	0		0
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	6	8,400		8,400
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	5,856	11,856
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 Controller with 26 MB write cache	4748		6,000	2	12,000		12,000
PCI 100/10 mbps Ethernet IOA	4838		900	3	2,700		2,700
Single Client Subtotal					93,583	18,096	111,679
Number of Clients				16			
Client Subtotal					1,497,328	289,538	1,786,864
Server Software:							
IBM Operating System/400 V4R5M0	Bundled			1	0	41,164	41,164
DB2 Query Manager Dev. Toolkit	QU1 and ST1		28,800	1	28,800		28,800
Client Software:							
IBM Operating System/400 V4R5M0	Bundled		Bundled	16	0	310,263	310,263
BEA Tuxedo V6.4		1	3,000	16	48,000	38,400	86,400
ILE COBOL	5769CB1		2,400	1	2,400		2,400
Application Development Toolkit	5769PW1		3,020	1	3,020		3,020
ILE C	5769CX2		2,400	1	2,400		2,400
DB2 Query Mgr and SQL Development Kit	5769ST1		1,600	1	1,600		1,600
Software Subtotal					86,220	389,827	476,047
User Connectivity:							
24-port 10/100 Ethernet Switch (2 spares)		2	975	20	19,504		19,504
8-Port 10Mb Hub (10% spares)		2	29	22315	637,093		637,093
User Connectivity Subtotal					656,598	0	656,598
5-year System Subtotal					8,589,167	1,497,139	10,086,306

Discounts:				% Allowance	Volume	Discount	
Revenue Allowance				22	7,884,569	(1,734,605)	
5-year Term Maintenance Contract Discount				8	1,107,312	(88,585)	
5-year Maintenance Prepayment Discount				15.05	1,018,727	(153,318)	
Software Support Discount For Secondary Systems				85	310,262	(263,723)	
					Purchase	Maintenance	Total
5-year System Total					6,854,562	991,512	7,846,074
tpmC							152,346.25
$/tpmC							51.50

Note: All pricing is from IBM except items noted in Third Party
Pricing column. 1. BEA Systems, Inc.; 2. Venture Computer
Systems

Notes:
Server Hardware requires no charge RPQ 847109
Revenue Allowance is applied to hardware and software for the priced configuration.
5-Year Term Maintenance Contract Discount is given when 5-year contract is signed.
5-Year Maintenance Prepay Discount is given when 5-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.

Five-Year Cost of Ownership: $7,846,074

tpmC Rating: 152,346.25

$/tpmC: $51.50

Numerical Quantities Summary for IBM ^   iSeries 400 Model 840-2420

MQTH, computed Maximum Qualified Throughput   152,346.25
% throughput difference, reported & repeated   0.99%

Response Times (in seconds)	90%	Avg.	Max.
- New Order	0.5	0.32	9.97
- Payment	0.3	0.20	4.99
- Order-Status	0.5	0.30	2.76
- Delivery (interactive portion)	0.2	0.11	0.19
- Delivery (deferred portion)	2.1	1.70	6.18
- Stock-Level	1.8	0.82	6.00
- Menu	0.1	0.10	0.37
- Response time delayed for emulated components	0.1		

Transaction Mix (in percent of total transactions)
- New Order		44.85%
- Payment		43.06%
- 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	18.00/12.01	18.23/120.23
- Payment	3.00/0.00	3.00/12.03	3.17/120.23
- Order-Status	2.00/0.00	2.00/10.01	2.10/100.20
- Delivery	2.00/0.00	2.00/5.05	2.07/50.22
- Stock-Level	2.00/0.00	2.00/5.03	2.21/50.21

Test Duration
- Ramp-up time	75 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	6,792,938

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

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