HP Integrity rx4640-8

Total System Cost	TPC Throughput	Price/Performance	Report Date	Availability Date
$788,155 USD	**290,644 tpmC**	**$2.71 USD per tpmC**	**March 27, 2006**	**Sept 1, 2006**

Procs/Cores/Threads	DataBase Manager	Operating System	Other Software	Number of Users
Srvr - 4/8/16 Dual Core Itanium 2 Processor 9050 @ 1.6GHz Client - 8 x 2/2/4 Intel Xeon @ 3.6 GHz	Microsoft SQL Server 2005 Enterprise Itanium Edition SP1	Microsoft Windows Server 2003, Enterprise Edition for Itanium-based Systems, SP1	Microsoft Visual C++ Microsoft COM+ Transaction Monitor	231,740

HP Integrity RX4640-8

10 x 2Gbs Fiber Cables

18 x 2Gbs Fiber Cables

18 x Storageworks MSA1000

2 x Gigabit

HP Procurve 2848

2 x Qlogic SanBox 5200-16A

1 x 2Gbs Fiber Cable

Ultra-320 SCSI

8 x Gigabit

MSA1000 (DB Log)

8 DL140 2 x 3.6 Ghz Zeon

36 x Storage-Works MSA30
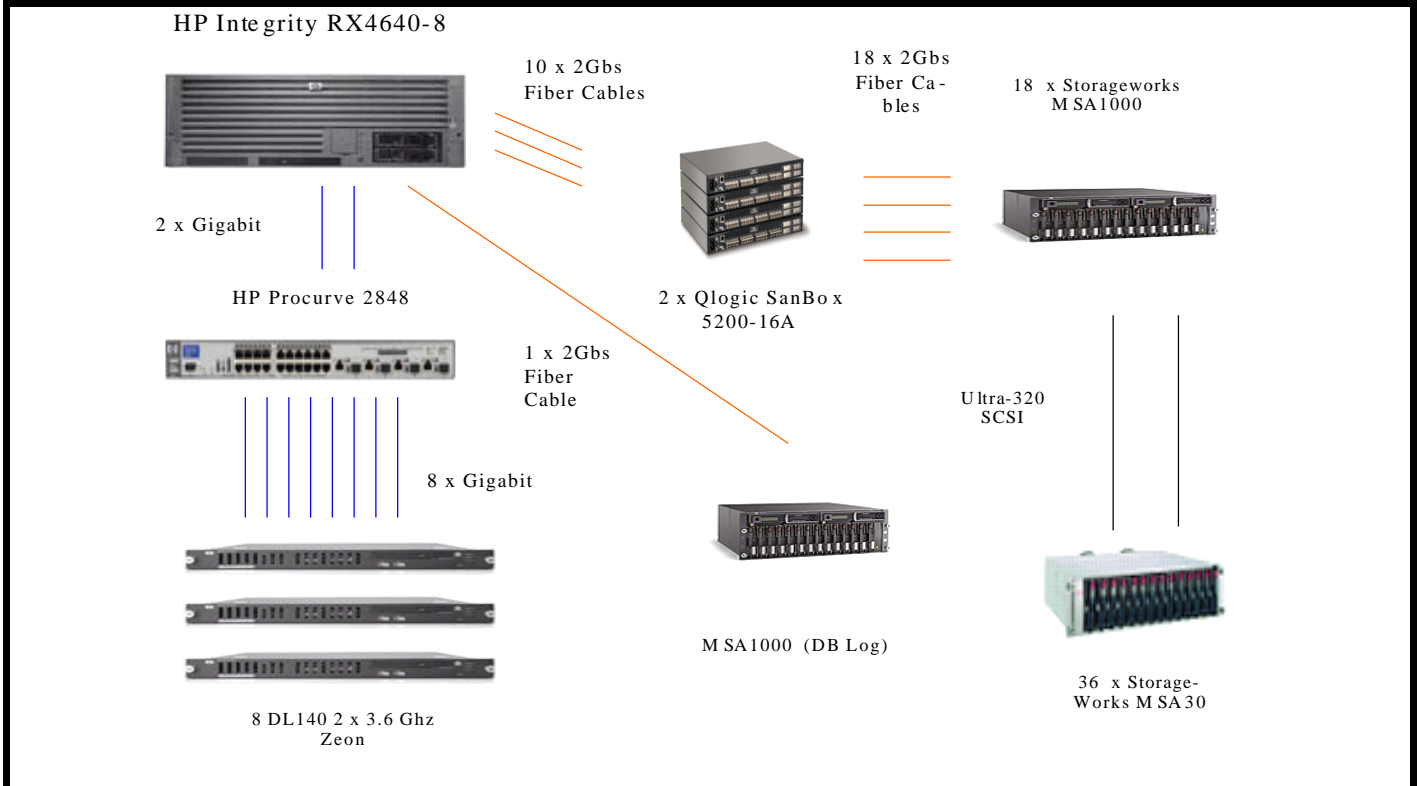
System Components	Server			Each Client		
	Qty	Type		Qty	Type	
Procs/Cores/Thrds **Cache Memory**	4/8/16	Dual Core Itanium 2 Processor 9050 CPUs @ 1.6GHz 24 MB L3 cache		2/2/4	3.6 GHz Intel Xeon 512 KBYTE L2 Cache	
Memory	8	4 x 4 Gbyte		1	1024 MB	
Disk Controllers	5 1	Qlogic 2342 Emulex 1050DC		1	ATA	
Disk Drives	756 14 1	HP 36GB 15 KRPM HP 146GB, 10 KRPM U320 HP 36 GB 15 KRPM drive for Boot		1	80 Gbyte disk	
Total Storage		27245.88			80 Gbyte	
Tape Drives	1	HP TA5300				
Terminals	1	Console Terminal		1	Console Terminal	

Hewlett Packard Company

HP Integrity rx4640-8

TPCC Rev 5.6 December 2005
Report Date March 27, 2006

Description	Price Key	Part Numbr	Unit Price	0	Extended Price	3 Yr Maint Price
HP Integrity rx4640 base system (includes Single power supply, 3-Year Limited Warranty, VGA, dual port GigE LAN card an one dual channel U320 SCSI controller card)	1	AB370B	$6,800	1	$6,800	
36GB 15K hot Plug U320 SCSI Low Profile Drive	1	AB420A	$389	1	$389	
DVD-ROM slimline drive	1	A7163B	$150	1	$150	
3 Year Svc & Support Price (Hardware and Software)	1	HA110A3-6KT	$15,253	1		$15,253
Dual Core Itanium 2 9050 Processor	1	AD268A	$14,663	4	$58,652	
16Gb Memory Quad (4x4gb dimms)	1	AB475A	$27,300	8	$218,400	
32DIMM mem carrier board, 4U chassis	1	A9739B	$4,450	1	$4,450	
2 Port 1000Base-T Gigabit Adapter	1	A9900A	Included	1	$0	
FC-HBA 2GB, 2 Channel (LP1050DC)	1	AB466A	$2,450	1	$2,450	
Qlogic QLA-2342 Dual Port Fibre-Channel Adapter	3	QLA2342-CK	$1,849	5	$9,245	
Qlogic QLA-2342 Dual Port Fibre-Channel Adapter (10% spares)	3	QLA2342-CK	$1,849	2	$3,698	
36GB, 15krpm Ultra3 Wide disk	1	286776-B22	$269	756	$203,364	
36GB, 15krpm Ultra3 Wide disk (10% Spares)	1	286776-B22	$269	76	$20,444	
Storageworks MSA30 SB	1	302969-B21	$2,829	36	$101,844	
Storageworks MSA30 SB (10% Spares)	1	302969-B21	$2,829	4	$11,316	
HP9000 Standard Rack System E41	1	A4902A	$1,910	5	$9,550	
UPS - HP R1500 XR Low Voltage US	1	204404-001	$866	1	$866	
HP Power Distribution Unit 120-240V	1	A5137AZ	$145	5	$725	
Modular Storage Array 1000	1	201723-B22	$6,995	19	$132,905	
Modular Storage Array 1000 (10% spares)	1	201723-B22	$6,995	2	$13,990	
MSA1000 controller (10% spares)	1	218231-B22	$4,290	2	$8,580	
146GB, 10krpm disk	1	286716-B22	$459	14	$6,426	
146GB, 10krpm disk (10% spares)	1	286716-B22	$459	2	$918	
5M LC to LC Cable Kit	1	221692-B22	$82	29	$2,378	
TA5300 Enclosure for DAT tape	1	C7508B	$729	1	$729	
DAT Tape	1	C7497B	$1,049	1	$1,049	
Server Subtotal					**$819,318**	**$15,253**
Microsoft Windows Server 2003, Enterprise Edition for Itanium-based Systems, SP1	1	T2030A	$2,149	1	$2,149	
Microsoft SQL Server 2005 Enterprise Itanium Edition SP1	2	810-03134	$23,432	4	$93,728	$245
Server Software Subtotal					**$95,877**	**$245**
DL140 G2 3.6GHz Xeon 1GB 80GB SATA	1	383504-001	$2,149	8	$17,192	
2nd 3.6GHz Xeon Processor for DL140	1	378283-B21	$999	8	$7,992	
HP 3 Yr. 4h 24x7 ProLiant DL140 Hardware Support	1	HA104A3 #7HA	$419	8		$3,352
HP Mouse	1	P5304M	$28	8	$224	
HP Enhanced Keyboard (USB/PS2)	1	DC852A#ABA	$25	1	$25	
HP ProCurve 2824 port switch	1	J4903A	$2,499	1	$2,499	
HP 3y 24x7 Procurve 2824 support	1	HA104A3 #4AE	$1,041	1		$1,041
S7540 17in CRT Monitor	1	PF997AA	$139	1	$139	
Aten MasterView Plus 8 Port KVM Switch w/Cables	4	CS138A+	$199	1	$199	
Client Subtotal					**$28,270**	**$4,393**
Microsoft Windows 2003 Server	2	P73-00295	$719	8	$5,752	
Microsoft Visual C++ Standard	2	254-00170	$109	1	$109	
Microsoft Problem Resolution	2		$245	1		$245
Client Software Subtotal					**$5,861**	**$245**
Qlogic SANBox 5200 16 2GB Port	3	SB5200-16A	$4,371	2	$8,742	
SANbox 5200 Prime 7x24x4 Maint. Upgrade, 1-Year	3	Prime-SB5200	$1,327	6		$7,964
Finisar 2GB SFP (incl 10% spares)	3	FTRJ8519P1BNL	$84	31	$2,604	
Connectivity Subtotal					**$11,346**	**$7,964**
*Total Extended Price:						**$988,772**
HP's Large Configuration Discount *						
*Total Discount:						**-$200,617**

Price Key: 1-HP, 2-Microsoft, 3-SANMarketplace.com 4 - KVMs.com

3 year cost of ownership: **$788,155 USD**

tpmC: 290,644

* A 23.43% discount was based on the overall value of the specific components from HP (Price Key 1) in this single quotation. Discounts for similarly sized configurations will be similar to those quoted here, but may vary based on the components in the configuration

$/tpmC: **$2.71 USD**

Numerical Quantities Summary for
HP Integrity rx4640-8

MQTH, Computed Maximum Qualified Throughput   **290644 tpmC**

Response Times (in seconds)

	90th %-ile	Maximum	Average
New-Order	0.53s	5.02s	0.34s
Payment	0.51s	3.68s	0.32s
Order-Status	0.56s	5.05s	0.37s
Delivery (interactive portion)	0.16s	1.19s	0.11s
Delivery (deferred portion)	0.11s	4.72s	0.09s
Stock-Level	0.83s	2.11s	0.58s
Menu	0.15s	1.49s	0.11s

Response time delay added for emulated components 0.1 seconds

Transaction Mix, in percent of total transactions

New-Order	44.96%
Payment	43.01%
Delivery	4.01%
Stock-Level	4.01%
Order-Status	4.01%

Keying/Think Times

	Keying Time			Think Time		
	Min	Avg	Max	Min	Avg	Max
New-Order	18.00s	18.02s	18.07s	0.00s	12.06s	120.54s
Payment	3.00s	3.02s	3.07s	0.00s	12.06s	120.53s
Order-Status	2.00s	2.02s	2.07s	0.00s	10.06s	100.54s
Delivery (interactive)	2.00s	2.02s	2.07s	0.00s	5.07s	50.52s
Stock-Level	2.00s	2.02s	2.07s	0.00s	5.06s	50.53s

Test Duration

Ramp up time	59 minutes
Measurement interval	120 minutes
Transactions during measurement interval	77576448
Ramp down time	5 minutes

Checkpointing

Number of checkpoints in measurement interval	4
Checkpoint Interval	28.33 minutes