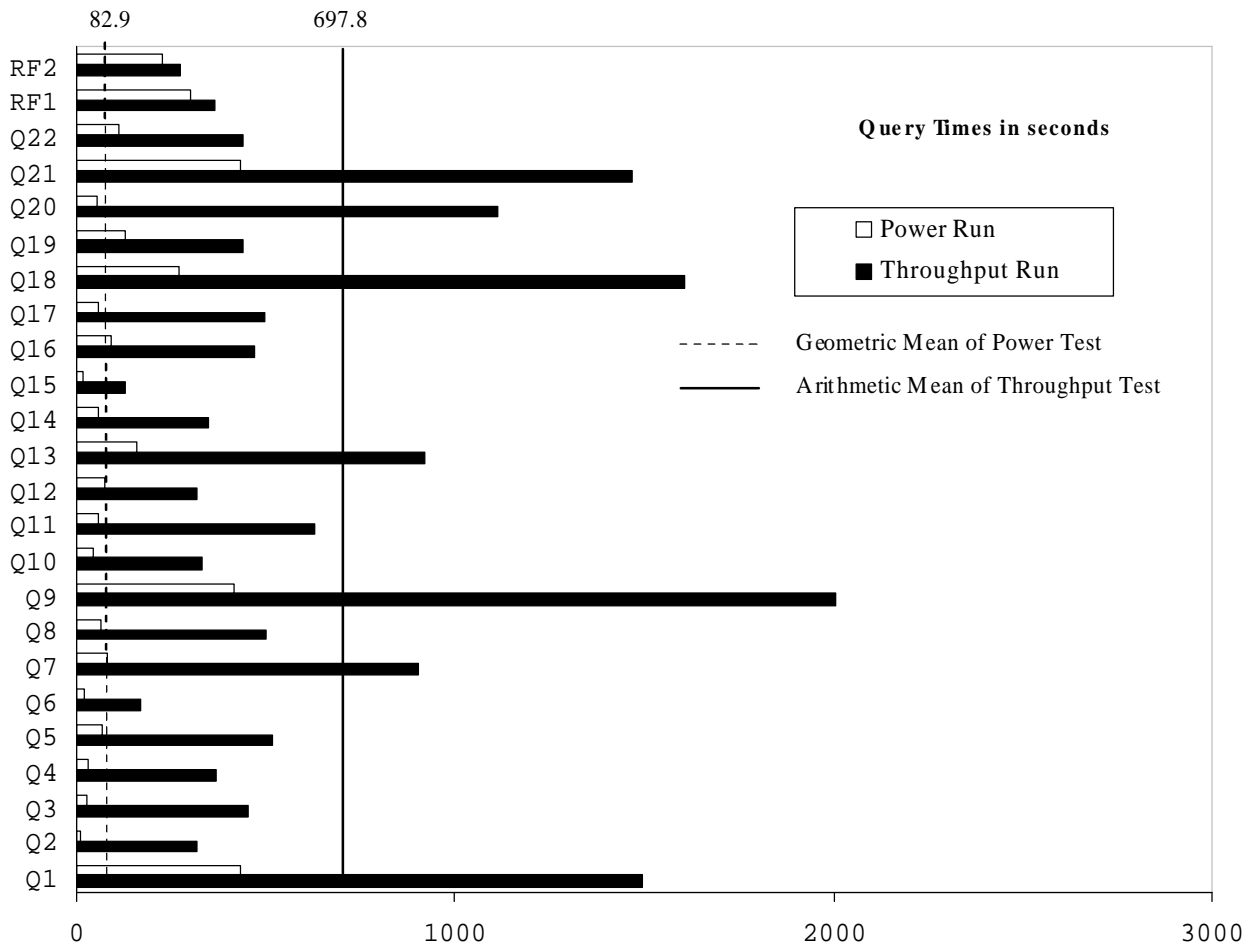
		<b>HP Integrity rx8640</b>		<b>TPC-H Rev. 2.3.0</b>	
				<b>Report Date July 18 2006</b>	
<b>Total System Cost</b>		<b>Composite Query per Hour Rating</b>		<b>Price Performance</b>	
<b>USD \$903,908</b>		<b>33,488.1</b> QphH @ 1000G		<b>USD \$27.00</b> \$ / QphH @1000G	
<b>Database size</b>	<b>Database Manager</b>	<b>Operating System</b>	<b>Other Software</b>	<b>Availability Date</b>	
<b>1000G</b>	<b>Microsoft SQL Server 2005 Enterprise Edition for Itanium-based systems SP1</b>	<b>Microsoft Windows Server 2003, Datacenter Edition (64-bit) SP1</b>	<b>MS Visual Basic MS Visual C++ MS Resource Kit</b>	<b>October 01 2006</b>	



Database Load Time = 11:40:49 Load included backup: Y Total Data Storage / Database Size = 11.16  
 RAID(Base Tables): Y RAID(Base Tables and Auxiliary Data Structure): Y RAID(All)= N

**System configuration**

Processors/Cores/Threads	16/32/64 DC Itanium 2 Processor 9050 @ 1.6GHz / 24MB	
Memory	128GB Main Memory	
Disk Controllers	32 SmartArray 6402	
Disk Drives	320	36GB SCSI (DB)
	2	146GB SCSI (Log)
	2	36GB SCSI (Local)
Total Disk Storage	11,158 GB	



## HP Integrity rx8640


TPC-H Rev. 2.3.0

TPC Pricing 1.1.0

Report Date: July 18 2006

Availability Date: October 01 2006

Description	Price Key	Part Number	Unit Price	Qty	Extended Price	3 Yr Maint Price
rx8640 16-way SMP Base System, incl (4) cell boards, (1) core IO, (6) power supplies, 16x1.6GHz/24MB cache DC Itanium II processors	1 **	AB446A #003	\$450,108	1	\$450,108	
3 Year Support Price (Hardware and Software)	1	HA1103A	\$170,019	1		\$170,019
HP Integrity rx8640 I/O Backplane	1	AD160A	\$7,700	2	\$15,400	
HP 4GB HD SyncDRAM Midrange Memory	1	AB454A	\$8,000	32	\$256,000	
HP Integrity rx8640 Sys. Expansion Unit	1	AB301A	\$35,785	1	\$35,785	
36GB, 15K hard disk for rx76/86	1	AD146A	\$1,800	2	\$3,600	
DVD+RW Drive for rx76/86	1	AB351B	\$850	1	\$850	
HP Smart Array Controller 6402	1	A9890A	\$1,669	32	\$53,408	
HP Rack Kit for rx86xx Server	1	J1528B	\$582	1	\$582	
HP Rack Kit for SEU Server	1	J1530C	\$709	1	\$709	
HP Storageworks MSA 30 SB Storage	1	302969-B21	\$2,829	32	\$90,528	
HP Storageworks MSA 30 SB Storage 10% Spares	1	302969-B21	\$2,829	3	\$8,487	
36GB, 15krpm Ultra320 Pluggable Hard Drive	1	286776-B22	\$269	320	\$86,080	
36GB, 15krpm Ultra320 Pluggable Hard Drive 10% Spares	1	286776-B22	\$269	32	\$8,608	
146GB, 10krpm U320 Pluggable Hard drive	1	286716-B22	\$409	2	\$818	
146GB, 10krpm U320 Pluggable Hard drive 10% Spares	1	286716-B22	\$409	2	\$818	
HP Universal Rack 10642 G2	1	AF003A	\$1,489	3	\$4,467	
HP 16A High Voltage Modular PDU	1	252663-B24	\$299	4	\$1,196	
ML110 G3 SATA / 17" Monitor	1	www.hp.com	\$1,076	1	\$1,076	
<b>Server Subtotal</b>					<b>\$1,018,520</b>	<b>\$170,019</b>
Microsoft Windows Server 2003, Datacenter edition (64-bit)	1	T2372A opt016	\$32,000	1	\$32,000	
Microsoft SQL Server 2005 Enterprise Edition	2	810-04794	\$8,318	1	\$8,318	\$245
Microsoft SQL Server 2005 Client License	2	359-01911	\$156	45	\$7,020	
Microsoft Visual C++ Standard	2	254-00170	\$109	1	\$109	
Microsoft Visual Basic	2	046-00856	\$109	1	\$109	
<b>Server Software Subtotal</b>					<b>\$47,556</b>	<b>\$245</b>
<b>Total Extended Price:</b>					<b>\$1,236,340</b>	
<b>HP's Large Configuration Discount *</b>					<b>Total Discount: \$332,432</b>	
Price Key: 1-HP, 2-Microsoft Audited by Lorna Livingtree of Performance Metrics, Inc.					<b>3 year cost of ownership: USD \$903,908</b>	
* All discounts are based on US list prices and for similar quantities and configurations. A 27.23 % discount was based on the overall specific components from vendor 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.					<b>QpH 33,488.1</b>	
					<b>\$/QpH: USD \$27.00</b>	

	<b>HP Integrity rx8640</b>	<b>TPC-H Rev. 2.3.0</b> <b>TPC Pricing 1.1.0</b>
		<b>Report Date: July 18 2006</b>
		<b>Availability Date: October 01 2006</b>
<p>** These components are not immediately orderable. See the FDR for more information.</p> <p>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 stated prices are not available according to these terms, please inform the TPC at <a href="mailto:pricing@tpc.org">pricing@tpc.org</a>. Thank you.</p>		
<p>Sales contact Vendor 1: HP Sales Development, 19111 Pruneridge Ave., Cupertino, CA 95014 (408) 447 2320  Sales contact Vendor 2: Jamie Reding (425) 703-0510 <a href="mailto:jamiere@microsoft.com">jamiere@microsoft.com</a></p>		



## Numerical Quantities

### Measurement Results

Database Scale Factor	1000
Total Data Storage / Database Size	11.16
Start of Database Load	2006-07-05 13:47:03
End of Database Load	2006-07-06 01:27:52
Database Load Time	11:40:49
Query Streams for Throughput Test	7
TPC-H Power	43,425.8
TPC-H Throughput	25,824.5
TPC-H Composite Query-per-Hour (QphH@1000GB)	33,488.1
Total System Price over 3 Years	USD \$903,908
TPC-H Price/Performance Metric (USD /QphH@1000GB)	USD \$27.00 / QphH@1000GB

### Measurement Interval

Measurement Interval in Throughput Test (Ts) 21,468 seconds

### Duration of Stream Execution

	Seed	Query Start Date/Time	Query End Date/Time	RF1 Start Date/Time	RF1 End Date/Time	RF2 Start Date/Time	RF2 End Date/Time	Duration
<b>Stream 00</b>	706012753	07/06/06 07/06/06	2:01:20 2:46:20	07/06/06 07/06/06	1:56:17 2:01:18	07/06/06 07/06/06	2:46:21 2:50:10	0:53:53
<b>Stream 01</b>	706012754	07/06/06 07/06/06	2:50:14 7:04:55	07/06/06 07/06/06	7:31:00 7:36:31	07/06/06 07/06/06	7:36:35 7:40:47	4:50:33
<b>Stream 02</b>	706012755	07/06/06 07/06/06	2:50:15 7:10:10	07/06/06 07/06/06	7:40:54 7:46:41	07/06/06 07/06/06	7:46:45 7:50:50	5:00:35
<b>Stream 03</b>	706012756	07/06/06 07/06/06	2:50:15 6:56:41	07/06/06 07/06/06	7:50:55 7:56:41	07/06/06 07/06/06	7:56:44 8:00:55	5:10:40
<b>Stream 04</b>	706012757	07/06/06 07/06/06	2:50:16 7:17:09	07/06/06 07/06/06	8:01:10 8:07:12	07/06/06 07/06/06	8:07:20 8:11:50	5:21:34
<b>Stream 05</b>	706012758	07/06/06 07/06/06	2:50:16 7:30:56	07/06/06 07/06/06	8:12:05 8:18:23	07/06/06 07/06/06	8:18:35 8:23:21	5:33:05
<b>Stream 06</b>	706012759	07/06/06 07/06/06	2:50:17 6:47:54	07/06/06 07/06/06	8:23:41 8:30:17	07/06/06 07/06/06	8:30:30 8:35:29	5:45:12
<b>Stream 07</b>	706012760	07/06/06 07/06/06	2:50:18 6:55:08	07/06/06 07/06/06	8:35:52 8:42:32	07/06/06 07/06/06	8:42:46 8:48:03	5:57:45



# HP Integrity rx8640

TPC-H Rev. 2.3.0  
Report Date July 18 2006

## TPC-H Timing Intervals (in seconds):

Query	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8
Stream 0	432.6	11.8	27.4	31.2	67.0	19.8	80.7	63.4
Stream 1	711.8	147.5	659.9	29.8	415.1	77.6	1485.8	626.7
Stream 2	2034.7	299.6	857.3	155.0	508.6	94.0	970.2	644.4
Stream 3	1278.8	215.3	59.1	540.6	1146.1	82.5	575.8	345.8
Stream 4	2057.6	172.1	48.9	665.7	245.5	530.7	1184.0	489.1
Stream 5	2377.5	972.7	473.7	582.7	365.7	148.8	1017.6	617.9
Stream 6	1058.6	217.5	1028.0	191.5	455.2	199.1	821.9	361.7
Stream 7	956.7	177.9	52.0	406.7	474.1	43.8	256.1	416.9
Min Qi	711.8	147.5	48.9	29.8	245.5	43.8	256.1	345.8
Max Qi	2377.5	972.7	1028.0	665.7	1146.1	530.7	1485.8	644.4
Avg Qi	1496.5	314.7	454.1	367.4	515.8	168.1	901.6	500.4
Query	Q9	Q10	Q11	Q12	Q13	Q14	Q15	Q16
Stream 0	416.0	44.0	57.9	72.9	158.0	58.6	17.5	88.7
Stream 1	2791.9	270.9	537.2	530.0	1267.8	1080.9	70.3	578.5
Stream 2	1569.2	453.9	464.6	247.2	1049.5	319.5	124.0	490.8
Stream 3	2105.3	188.1	1218.0	474.9	461.7	170.4	79.1	340.5
Stream 4	2117.6	323.9	625.1	509.4	555.4	298.4	114.3	609.5
Stream 5	452.7	44.8	432.2	105.9	622.1	332.8	141.6	240.9
Stream 6	2428.9	615.1	436.3	787.1	664.8	60.8	297.7	376.4
Stream 7	2600.0	438.1	680.3	159.3	645.4	184.2	52.1	669.9
Min Qi	452.7	44.8	432.2	105.9	555.4	60.8	52.1	240.9
Max Qi	2791.9	615.1	1218.0	530.0	1625.0	1080.9	297.7	669.9
Avg Qi	2009.4	333.5	627.7	318.0	918.6	349.6	125.6	472.4
Query	Q17	Q18	Q19	Q20	Q21	Q22	RF1	RF2
Stream 0	56.0	270.2	128.4	52.8	433.3	111.5	301.3	229.0
Stream 1	534.3	1094.9	325.0	485.6	1042.1	517.1	330.5	252.4
Stream 2	1225.2	1564.5	870.1	497.1	784.9	371.6	347.8	244.9
Stream 3	865.9	1625.0	407.0	373.0	1832.9	400.8	345.6	251.0
Stream 4	279.8	1321.0	431.7	1198.4	2105.4	129.7	362.7	270.0
Stream 5	55.0	1443.6	311.8	4317.5	1097.9	684.4	378.0	286.6
Stream 6	299.3	1350.5	472.4	389.8	1288.8	455.9	396.7	299.0
Stream 7	205.6	2826.7	263.1	555.6	2128.0	497.4	399.2	316.9
Min Qi	55.0	1094.9	263.1	373.0	784.9	129.7	330.5	244.9
Max Qi	1225.2	2826.7	870.1	4317.5	2128.0	684.4	399.2	316.9
Avg Qi	495.0	1603.7	440.2	1116.7	1468.6	436.7	365.8	274.4