



**DELL  
PowerEdge 6800/800FSB  
with Oracle Database 10g R2**

**TPC-H Revision 2.3.0**

Report Date:  
April 24, 2006

**Total System Cost  
USD \$460,004**

**TPC-H Composite Query per Hour  
18,881.0 QphH@300GB**

**Price/Performance  
USD  
\$24.37/QphH@300GB**

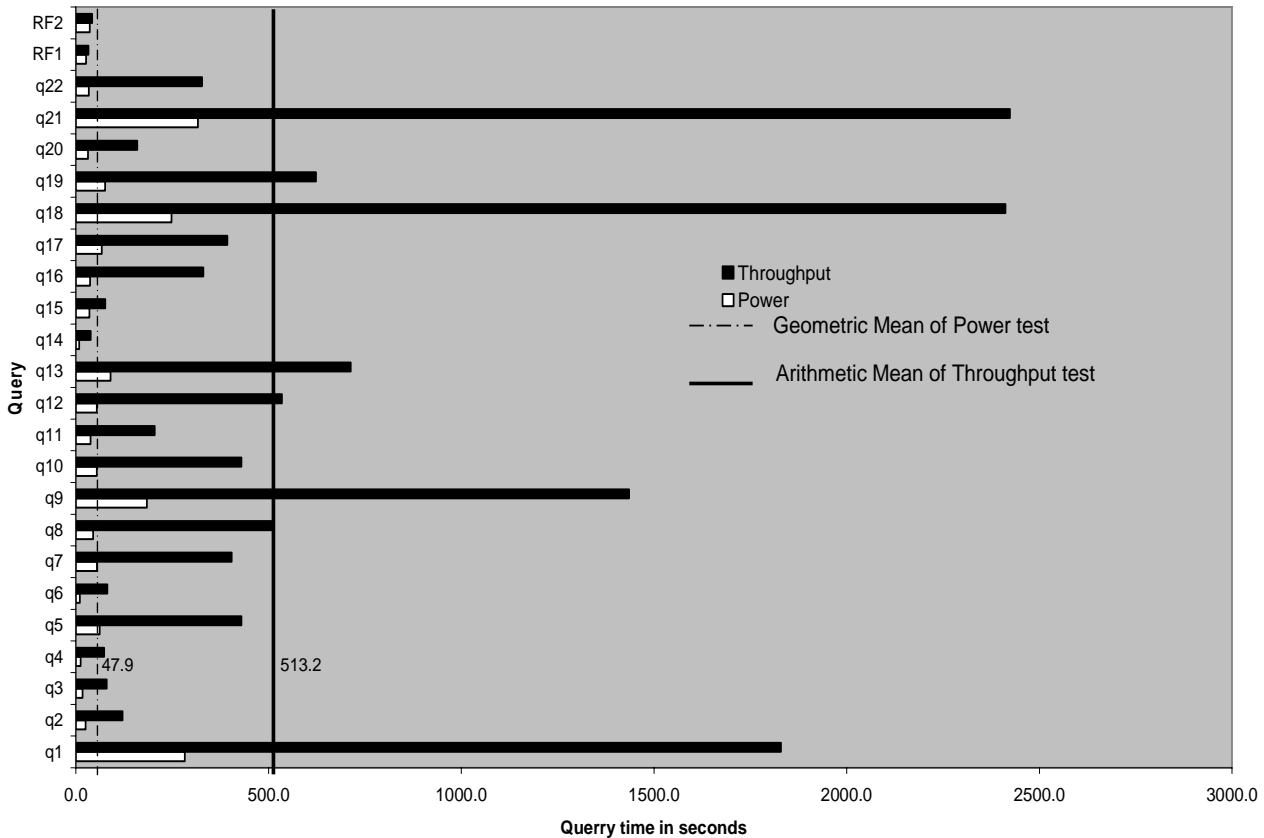
**Database Size  
300GB**

**Database Manager**  
Oracle Database 10g Release 2  
Enterprise Edition with Oracle Real  
Application Clusters and Partitioning

**Operating System**  
Red Hat Enterprise Linux  
Advanced Server v3.0

**Other Software**

**Availability Date  
April 24, 2006**



**Database Load Time**  
1:55:48

**Total Disk/Database Size**  
24.16

**Load Includes Backup**  
N

**RAID (Base tables only) : N**

**RAID (Base tables and auxiliary data structures) : N**

**RAID (Everything) : Y**

**System Configuration :** 2 nodes  
**Processors/Cores/Threads (per node) :** 4/8/16 3.0GHz/2x2MB L3 Intel Xeon MP  
**Memory: (per node) :** 16GB RAM  
**Disk Drives: 214 Drives;** 105 – 36GB 15k, FC HDD; 105 - 73GB 15K, FC HDD ; 4 – 36GB 15K, SCSI OS

“Database Size includes only raw data (e.g., no temp, index, redundant storage space, etc.)”

Dell	PowerEdge 6800/800FSB		TPC-H EXECUTIVE SUMMARY PAGE 2 OF 2				
Client/Server			Report Date: 24-Apr-06				
Description	Part Number	Third Party		Unit Price	Qty	Extended Price	3 yr. Maint. Price
		Brand	Pricing				
<b>Server Hardware</b>							
Dell PowerEdge 6800 / 800FSB	222-0684		1	18,882	2	37,764	600
Includes :							
Intel Xeon MP 3.0GHz / 2x2MB L3 - 4 processors	311-5643		1	0	2	-	-
16 GB,DDR2, 8 x 2048MB DIMMS	311-4658		1	0	2	-	-
36 GB U320M SCSI 15K RPM Hard Drive	340-1897		1	0	4	-	-
Dell 15" Monitor	320-4589		1	0	2	-	-
Crossover cable	43-425		3	2	3	5	-
QLA2342 2GB OPT HBA	221-1293		1	1,490	6	8,940	0
QLA2462 4GB OPT HBA	222-0423		1	1,339	8	10,712	0
<b>Subtotal</b>						<b>57,421</b>	<b>600</b>
<b>PowerVault Disk Subsystem</b>							
CX300 DPE 2Gbps, 15x73GB, 15K	221-6878, etc.		1	22,387	7	156,709	32,393
DAE2 Enclosure, 15x36GB 15K FC-2, 5M FC2 Cables	221-0894		1	17,636	7	123,452	13,181
42U Rack	220-4492		1	964	2	1,928	-
<b>Subtotal</b>						<b>282,089</b>	<b>45,574</b>
<b>Server Software</b>							
Oracle Database 10g Release 2, Enter. Ed., Named User Plus, 3yrs			2	10,000	8**	80,000	
Partitioning, Named User Plus, 3yrs			2	2,500	8**	20,000	
Oracle Real Application Clusters, Named User Plus, 3yrs			2	5,000	8**	40,000	
Oracle Database Server Support Package for 3yrs, per server			2	4,000	3		12,000
Oracle Mandatory E-Business Discount			2			(\$22,800)	0
Red Hat Enterprise Linux Advanced Server, 3yrs SUB NFI	420-4250		1	2,699	2	5,398	0
<b>Subtotal</b>						<b>122,598</b>	<b>12,000</b>
<b>****Other Discounts</b>						<b>(60,278)</b>	<b>-</b>
<b>Total</b>						<b>401,830</b>	<b>58,174</b>
<p>Notes: * Maint. included in PowerVault 220S disk pod or PV650F/630F fibre channel disk pod</p> <p>** Oracle Pricing Contact: MaryBeth Pierantoni, mary.beth.pierantoni@oracle.com, 916-315-5081</p> <p>8 = 16*0.50. Explanation: For purposes of counting the number of processors which require licensing, an Intel multicore chip with "n" cores shall be determined by multiplying "n" cores by a factor of 0.50.</p> <p>*** Pricing: 1 - Dell 2 - Oracle 3 - Computer Network Associates</p> <p>**** 15.4% Discount based upon total system cost as purchased by a regular customer on Dell Hardware and services. Pricing may be verified by calling 1-800-BUY-DELL, referencing quote numbers 288117585 as complex quotes.</p> <p><b>Audited by Lorna Livingtree, Performance Metrics Inc.</b></p>					<p><b>Three-Year Cost of Ownership: USD \$460,004</b></p> <p><b>QphH Rating: 18881.00</b></p> <p><b>USD \$ / QphH: 24.37</b></p>		



## Numerical Quantities Summary

### Measurement Results:

Database Scale Factor	300
Total Data Storage/Database Size	24.16
Start of Database Load	04/11/2006 10:33:13
End of Database Load	04/11/2006 12:29:01
Database Load Time	1:55:48
Query Streams for Throughput Test	8
TPC-H Power	22,547.0
TPC-H Throughput	15,811.0
TPC-H Composite Query-per-Hour Metric (QpH@300GB)	18,881.0
Total System Price Over 3 Years	USD \$460,004
TPC-H Price Performance Metric (\$/QpH@300GB)	USD \$24.37

### Measurement Interval:

Measurement Interval in Throughput Test (Ts) = 12,022.0 seconds

### Duration of stream execution:

	Seed	Start Date/Time	End Date/Time	Duration
<b>Stream00</b>	411122901	04/11/2006 16:26:16	04/11/2006 16:56:01	0:29:45
<b>Stream01</b>	411122902	04/11/2006 16:56:39	04/11/2006 20:04:23	3:07:44
<b>Stream02</b>	411122903	04/11/2006 16:56:39	04/11/2006 20:01:47	3:05:08
<b>Stream03</b>	411122904	04/11/2006 16:56:39	04/11/2006 20:07:33	3:10:54
<b>Stream04</b>	411122905	04/11/2006 16:56:39	04/11/2006 20:02:35	3:05:56
<b>Stream05</b>	411122906	04/11/2006 16:56:39	04/11/2006 20:02:51	3:06:12
<b>Stream06</b>	411122907	04/11/2006 16:56:39	04/11/2006 20:04:06	3:07:27
<b>Stream07</b>	411122908	04/11/2006 16:56:39	04/11/2006 20:07:54	3:11:15
<b>Stream08</b>	411122909	04/11/2006 16:56:39	04/11/2006 19:58:26	3:01:47
<b>Refresh00</b>		04/11/2006 16:25:49 04/11/2006 16:56:01	04/11/2006 16:26:16 04/11/2006 16:56:38	0:00:27 0:00:37
<b>Refresh01</b>		04/11/2006 20:07:54	04/11/2006 20:08:58	0:01:04
<b>Refresh02</b>		04/11/2006 20:08:58	04/11/2006 20:10:06	0:01:08
<b>Refresh03</b>		04/11/2006 20:10:06	04/11/2006 20:11:08	0:01:02
<b>Refresh04</b>		04/11/2006 20:11:08	04/11/2006 20:12:15	0:01:07
<b>Refresh05</b>		04/11/2006 20:12:15	04/11/2006 20:13:24	0:01:09
<b>Refresh06</b>		04/11/2006 20:13:24	04/11/2006 20:14:32	0:01:08
<b>Refresh07</b>		04/11/2006 20:14:32	04/11/2006 20:15:47	0:01:15
<b>Refresh08</b>		04/11/2006 20:15:47	04/11/2006 20:17:01	0:01:14



## Numerical Quantities Summary

### Timing Intervals in Seconds:

Query	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8
Stream00	282.8	25.7	17.4	12.5	61.7	10.3	55.0	44.6
Stream01	1512.8	69.6	80.1	33.4	339.5	41.4	277.4	211.9
Stream02	1434.2	121.5	49.9	62.0	412.3	25.6	336.2	295.5
Stream03	1673.1	62.3	32.7	73.4	429.3	63.1	314.9	514.5
Stream04	1663.7	69.7	42.0	68.6	312.3	41.7	328.9	191.0
Stream05	1826.3	108.8	61.4	51.1	383.8	81.8	404.3	197.2
Stream06	1729.6	90.1	40.2	56.5	388.2	53.7	342.7	258.0
Stream07	1829.7	71.0	56.8	58.2	322.7	13.1	322.0	214.8
Stream08	1502.5	66.3	58.8	59.3	329.6	50.9	266.9	182.9
Min Qi	1434.3	62.3	32.7	33.4	312.3	13.1	266.9	182.9
Max Qi	1829.7	121.5	80.1	73.4	429.3	81.8	404.3	514.5
Avg Qi	1646.5	82.4	52.7	57.8	364.7	46.4	324.1	258.2
Query	Q9	Q10	Q11	Q12	Q13	Q14	Q15	Q16
Stream00	184.2	54.7	37.8	54.4	90.2	8.5	35.0	37.0
Stream01	1275.2	372.3	146.8	330.2	666.7	38.7	75.1	291.9
Stream02	1246.2	429.7	175.7	285.6	570.9	29.6	63.4	272.0
Stream03	1268.3	327.5	132.0	130.3	713.1	20.4	59.0	159.4
Stream04	1220.0	362.0	197.1	422.1	627.9	35.7	76.6	330.9
Stream05	1196.1	338.1	204.6	331.7	570.1	35.0	55.4	256.1
Stream06	1351.8	127.1	180.1	534.9	527.1	17.3	34.8	300.5
Stream07	1436.0	245.6	153.7	183.5	644.6	18.1	32.2	65.4
Stream08	1302.0	380.9	125.9	400.3	559.1	34.7	68.2	309.8
Min Qi	1196.1	127.1	125.9	130.3	527.1	17.3	32.2	65.4
Max Qi	1436.0	429.7	204.6	534.9	713.1	38.7	76.6	330.9
Avg Qi	1286.9	322.9	164.5	327.3	609.9	28.7	58.1	248.2
Query	Q17	Q18	Q19	Q20	Q21	Q22	RF1	RF2
Stream00	67.7	248.3	75.9	31.7	316.7	33.7	26.8	36.5
Stream01	263.4	2019.3	465.4	143.4	2282.2	327.2	24.5	39.8
Stream02	319.6	1986.9	471.6	154.6	2131.2	233.8	27.0	40.5
Stream03	321.8	1980.6	396.7	139.7	2423.7	217.9	25.7	36.6
Stream04	148.9	2073.3	514.1	93.1	2128.3	208.1	28.0	38.5
Stream05	374.8	1789.2	449.4	131.9	2083.1	241.0	28.0	40.9
Stream06	339.4	1898.2	444.1	152.5	2110.2	270.0	30.8	37.2
Stream07	393.1	2411.8	189.9	158.9	2421.5	232.2	32.9	42.3
Stream08	157.7	2004.3	623.2	135.2	2046.1	241.8	32.0	41.6
Min Qi	148.9	1789.2	189.9	93.1	2046.1	208.1	24.5	36.6
Max Qi	393.1	2411.8	623.2	158.9	2423.7	327.2	32.9	42.3
Avg Qi	289.8	2020.5	444.3	138.7	2203.3	246.5	28.6	39.7