



## Dell PowerEdge R710 using EXASolution 4.0

TPC-H Rev. 2.14.0

Report Date  
April 5, 2011

Total System Cost

Composite Query per Hour Metric

Price / Performance

**\$ 766,444**

**4,253,937.3**  
QphH@1000GB

**\$ 0.19**  
\$ / QphH@1000GB

Database Size

Database Manager

Operating System

Other Software

Availability Date

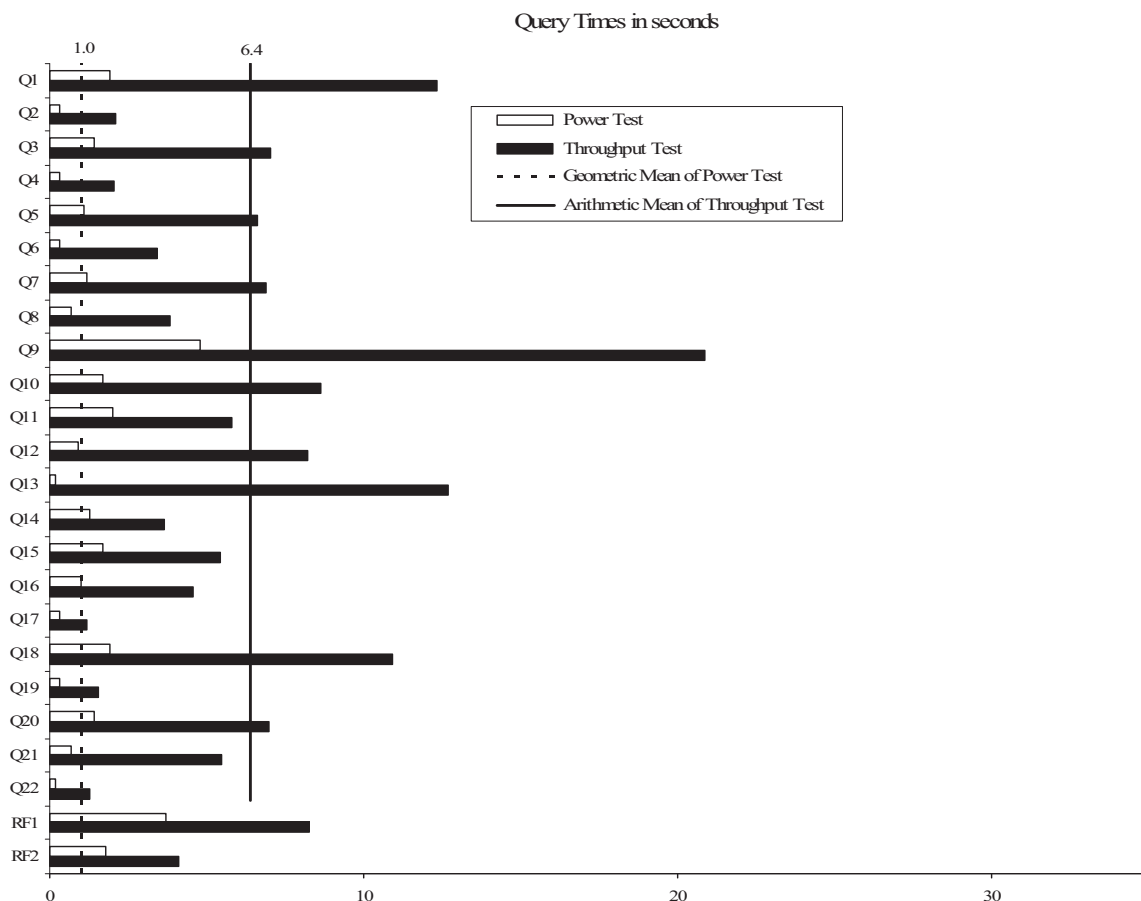
**1000 GB**

**EXASolution 4.0**

**EXACluster OS 4.0**

**C++ Compiler**

**October 1, 2011**



### Storage Redundancy Levels:

Database Load Time = 0:21:36

Base Tables

2

Load Includes Backup: N

Auxiliary Data Structures

2

Total Data Storage / Database Size = 35.76

DBMS Temporary Space

1

Memory to Database Size Percentage = 76.8

OS and DBMS Software

1

### System Configuration:

32 x Dell PowerEdge R710 Server, each with:

2 Intel Xeon X5690 QC 3.46 GHz processors (each is 1 chip, 6 cores, 12 threads)

24 GB RAM

2x 600 GB (10k rpm) internal SAS disks

**Total Storage:** 35,763 GB (GB = 1024\*1024\*1024 bytes)





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### Numerical Quantities

#### Measurement Results

Database Scale Factor	1000 GB
Total Data Storage / Database Size	35.76
Start of Database Load	15:23:11
End of Database Load	15:44:47
Database Load Time	0h 21m 36 s
Query Streams for Throughput Test	9
TPC-H Power	3,630,366.9
TPC-H Throughput	4,984,615.4
TPC-H Composite Query-per-Hour Metric (QpH@1000GB)	4,253,937.3
Total System Price Over 3 Years	\$766,444
TPC-H Price/ Performance Metric (\$/QpH@1000GB)	\$0.19

#### Measurement Interval

Measurement Interval in Throughput Test (Ts)	143 seconds
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#### Duration of Stream Execution

Stream ID	Seed	Start Date	Start Time	End Date	End Time	Duration
Stream 0	329154447	2011-03-29	15:44:52	2011-03-29	15:45:25	33s
Stream 1	329154448	2011-03-29	15:45:25	2011-03-29	15:47:47	2m:22s
Stream 2	329154449	2011-03-29	15:45:25	2011-03-29	15:47:46	2m:21s
Stream 3	329154450	2011-03-29	15:45:25	2011-03-29	15:47:47	2m:22s
Stream 4	329154451	2011-03-29	15:45:25	2011-03-29	15:47:47	2m:22s
Stream 5	329154452	2011-03-29	15:45:25	2011-03-29	15:47:47	2m:22s
Stream 6	329154453	2011-03-29	15:45:25	2011-03-29	15:47:46	2m:21s
Stream 7	329154454	2011-03-29	15:45:25	2011-03-29	15:47:47	2m:22s
Stream 8	329154455	2011-03-29	15:45:25	2011-03-29	15:47:46	2m:21s
Stream 9	329154456	2011-03-29	15:45:25	2011-03-29	15:47:47	2m:22s
Refresh		2011-03-29	15:45:25	2011-03-29	15:47:21	1m:56s



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## TPC-H Timing Intervals (in seconds)

Query	Power	Stream 1	Stream 2	Stream 3	Stream 4	Stream 5	Stream 6	Stream 7	Stream 8	Stream 9	Min Q <sub>i</sub>	Avg Q <sub>i</sub>	Max Q <sub>i</sub>
1	1.9	11.0	14.3	12.1	12.5	11.6	14.2	11.8	12.1	11.2	11.0	12.3	14.3
2	0.3	2.7	2.2	3.7	1.5	1.7	1.6	1.7	1.7	1.9	1.5	2.1	3.7
3	1.4	7.8	6.7	5.5	6.5	9.2	6.5	7.5	6.9	6.7	5.5	7.0	9.2
4	0.3	1.3	2.3	1.8	2.0	1.9	2.4	2.3	2.4	2.1	1.3	2.1	2.4
5	1.1	6.0	7.4	7.2	8.6	5.5	7.0	7.1	5.6	5.4	5.4	6.6	8.6
6	0.3	3.5	5.9	3.0	2.9	2.9	3.1	3.2	3.1	3.1	2.9	3.4	5.9
7	1.2	7.8	6.9	6.1	6.9	5.8	7.4	8.6	7.5	5.2	5.2	6.9	8.6
8	0.7	3.4	3.1	5.9	3.3	2.4	3.9	2.9	3.5	5.9	2.4	3.8	5.9
9	4.8	21.2	20.3	22.5	21.0	17.8	20.9	22.8	19.8	21.4	17.8	20.9	22.8
10	1.7	7.2	7.2	8.4	8.4	8.2	10.5	8.6	9.9	9.1	7.2	8.6	10.5
11	2.0	5.9	5.1	5.0	5.9	5.8	6.0	6.0	5.4	7.0	5.0	5.8	7.0
12	0.9	8.3	8.6	7.7	8.1	9.1	6.7	6.3	8.4	10.5	6.3	8.2	10.5
13	1.7	11.9	12.4	12.7	12.9	13.0	12.6	12.4	12.7	13.5	11.9	12.7	13.5
14	1.3	4.9	4.4	3.2	3.5	3.4	3.3	3.1	3.5	3.5	3.1	3.7	4.9
15	1.7	5.8	5.2	4.9	4.8	6.3	5.5	4.9	5.7	5.6	4.8	5.4	6.3
16	1.0	5.5	4.3	4.4	5.6	4.4	5.1	4.4	4.5	3.0	3.0	4.6	5.6
17	0.3	1.7	1.0	1.3	1.5	1.3	0.8	1.0	1.0	0.9	0.8	1.2	1.7
18	1.9	9.7	9.7	11.7	10.2	12.1	10.3	13.4	10.2	10.9	9.7	10.9	13.4
19	0.3	1.1	1.2	1.1	1.3	1.6	1.0	1.1	4.0	1.4	1.0	1.5	4.0
20	1.4	6.9	6.4	7.8	6.5	9.9	5.9	6.2	6.8	6.5	5.9	7.0	9.9
21	0.7	7.0	4.4	4.7	6.0	7.0	4.5	5.0	4.8	5.7	4.4	5.5	7.0
22	0.2	0.9	1.5	1.2	1.1	1.3	1.5	1.5	1.1	1.3	0.9	1.3	1.5
RF1	3.7	8.0	6.3	7.4	9.1	8.6	9.2	9.4	7.5	8.7	6.3	8.2	9.4
RF2	1.8	4.9	4.3	4.5	4.2	6.2	3.8	4.2	4.3	5.1	3.8	4.6	6.2