



PRIMERGY RX300 S4
using EXASolution 2.1

TPC-H Rev. 2.7.0

Report Date
June 2, 2008

Total System Cost

Composite Query per Hour Metric

Price / Performance

\$ 2,179,072

1,608,920.0
 QphH@3000GB

\$ 1.36
 \$ / QphH@3000GB

Database Size

Database Manager

Operating System

Other Software

Availability Date

3000 GB

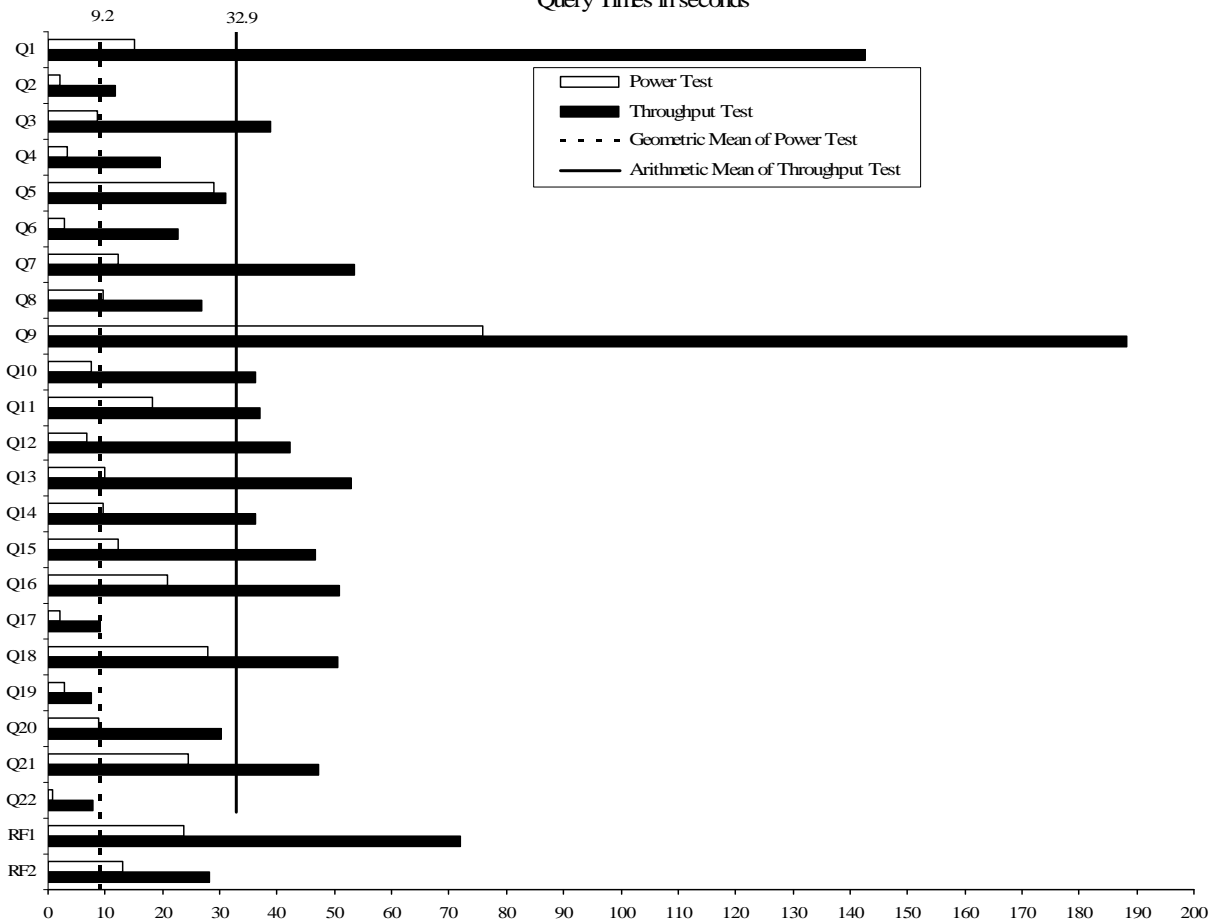
EXASolution 2.1

EXACluster OS 2.1

C++ Compiler

August 1, 2008

Query Times in seconds



Database Load Time = 3.84

Included Backup: N

Data Storage / Database Size = 7.25

RAID (Base tables only): Y

RAID (Base tables and auxiliary data structures): Y

RAID (All): Y

System Configuration:

80 x PRIMERGY RX300 S4 Server, each with:
 2 Intel XEON X5460 QC 3.16 GHz processors (each is 1 chip, 4 cores, 4 threads)
 24 GB RAM
 2x 146 GB (15k rpm) internal SAS disks

Total Storage: 21,756 GB
 (1 GB = 1024 * 1024 * 1024 bytes)



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Description	Part Number	Pricing	Unit Price	Qty	Extended Price	3 yr. Maint. Price
System Hardware						
PRIMERGY RX 300 S4						
2x 3.16 Ghz Quadcore CPUs (Intel® Xeon 5460)						
2x 3.5" SAS/S-ATA HotSwap Slots						
12x 2GB Base FBDIMM – 667MHz						
2x HD SAS 146GB 15.000 rpm hot plug 3.5"						
RAID Ctrl SAS onboard 512MB iTBBU LSI						
2x Ethernet Cable (LAN-CAT 5)						
TopUp Service 3 years, 24x7, 4h response time		1	2,772	80		221,760
Server Discount (36%)		1			-315,600	-79,840
HP ProCurve 5406zl (1000Base-T Ethernet Switch, 48 ports)	J8699A#ABB	1	9,500	2	19,000	
HP ProCurve Switch 5400ZL 24 port modul	J8702A	1	4,757	4	19,028	
HP eCare Pack ProCurve Chassis 6 Switch 5406zl, 3 years, 24x7, 4h response time	UE251E	1	1,980	2		4,298
Switch Discount		1			-11,856	-338
Subtotal					\$ 587,132	\$ 145,880

Storage

No external storage required

Software

EXASolution 2.1 licence for 3 years	EXA-80N-24G	2	1,540,000	1	1,540,000	
EXASOL Discount (10%)		2			-154,000	
EXASOL Premium Support (3.9%)	EXA-SUP-P	2				60,060
Subtotal					\$ 1,386,000	\$ 60,060
Total					\$ 1,973,132	\$ 205,940

3-Year Cost of Ownership \$ 2,179,072

QphH Rating: 1,608,920.0

\$/QphH@3000GB: 1.36

Price Key: 1-FSC, contact: Julian Sayer, Julian.Sayer@fujitsu-siemens.com
2-EXASOL, contact: Olga Sapozhnykova, sales@exasol.com

All discounts are based on list prices and for similar quantities and configurations.

Results independently audited by: Francois Raab of InfoSizing, Inc. (www.sizing.com)

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 the stated prices are not available according to these terms please inform the TPC at pricing@tpc.org.



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Numerical Quantities

Measurement Results

Database Scale Factor	3000 GB
Total Data Storage / Database Size	7.25
Start of Database Load	23:13:15
End of Database Load	03:03:41
Database Load Time	3h 50m 26 s
Query Streams for Throughput Test	11
TPC-H Power	1,172,685.3
TPC-H Throughput	2,207,432.4
TPC-H Composite Query-per-Hour Metric (QpH@3000GB)	1,608,920.0
Total System Price Over 3 Years	\$2,179,072
TPC-H Price/ Performance Metric (\$/QpH@3000GB)	\$1.36

Measurement Interval

Measurement Interval in Throughput Test (Ts)	1184 seconds
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Duration of Stream Execution

Stream ID	Seed	Start Date	Start Time	End Date	End Time	Duration
Stream 0	424030341	2008-04-24	03:03:58	2008-04-24	03:09:46	5mins:48secs
Stream 1	424030342	2008-04-24	03:10:11	2008-04-24	03:25:49	15 mins:38secs
Stream 2	424030343	2008-04-24	03:10:11	2008-04-24	03:26:25	16 mins:14secs
Stream 3	424030344	2008-04-24	03:10:41	2008-04-24	03:26:38	15 mins:57secs
Stream 4	424030345	2008-04-24	03:10:54	2008-04-24	03:27:54	17 mins:00secs
Stream 5	424030346	2008-04-24	03:11:17	2008-04-24	03:29:07	17 mins:50secs
Stream 6	424030347	2008-04-24	03:11:35	2008-04-24	03:28:44	17 mins:09secs
Stream 7	424030348	2008-04-24	03:12:00	2008-04-24	03:28:34	16 mins:34secs
Stream 8	424030349	2008-04-24	03:12:26	2008-04-24	03:28:46	16 mins:20secs
Stream 9	424030350	2008-04-24	03:12:53	2008-04-24	03:29:13	16 mins:20secs
Stream 10	424030351	2008-04-24	03:13:08	2008-04-24	03:29:31	16 mins:23secs
Stream 11	424030352	2008-04-24	03:13:21	2008-04-24	03:29:24	16 mins:03secs
Refresh		2008-04-24	03:09:47	2008-04-24	03:28:09	18 mins:22secs



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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	Stream 10	Stream 11	Min Qi	Avg Qi	Max Qi
1	15.1	148.1	150.3	66.9	151.6	148.0	148.3	155.9	134.8	148.2	171.8	146.5	66.9	142.8	171.8
2	2.0	9.8	16.0	10.4	24.5	10.7	8.7	11.3	8.9	12.2	11.5	6.2	6.2	11.8	24.5
3	8.6	12.5	41.4	43.9	40.3	41.8	40.2	39.9	43.1	38.0	41.7	43.7	12.5	38.8	43.9
4	3.4	21.1	20.4	9.4	24.7	17.4	22.2	25.3	19.4	24.6	9.4	20.2	9.4	19.5	25.3
5	29.0	20.4	48.7	20.0	16.0	39.0	39.4	35.3	42.4	30.0	11.2	40.0	11.2	31.1	48.7
6	2.8	20.4	4.9	17.8	24.5	18.5	26.9	24.4	34.7	33.0	25.4	19.5	4.9	22.7	34.7
7	12.3	50.8	61.7	30.3	60.0	66.0	60.0	56.2	57.9	58.8	63.5	23.7	23.7	53.5	66.0
8	9.6	31.8	38.1	13.4	29.9	24.1	33.2	21.9	33.5	28.3	12.2	29.7	12.2	26.9	38.1
9	75.8	188.9	173.2	251.1	246.3	210.5	208.3	148.7	159.7	152.9	167.1	165.3	148.7	188.4	251.1
10	7.5	41.2	15.3	39.5	37.4	39.0	25.5	41.3	39.7	38.9	35.1	45.1	15.3	36.2	45.1
11	18.3	24.0	40.0	39.7	39.7	46.0	44.1	40.9	27.1	43.3	22.9	38.7	22.9	36.9	46.0
12	6.7	48.3	49.5	47.2	36.6	46.0	41.2	30.6	43.1	34.2	45.6	43.0	30.6	42.3	49.5
13	9.9	54.7	57.3	51.0	60.9	56.6	54.4	52.6	56.9	52.2	59.1	25.7	25.7	52.9	60.9
14	9.7	49.1	11.8	47.6	29.7	40.1	40.5	40.9	33.7	27.4	36.1	43.0	11.8	36.4	49.1
15	12.2	58.1	56.3	46.8	30.3	31.6	38.7	42.1	48.6	58.5	46.5	57.2	30.3	46.8	58.5
16	20.9	63.3	27.8	54.6	55.3	68.5	57.0	58.2	45.5	27.1	43.0	58.2	27.1	50.8	68.5
17	2.1	7.4	2.1	3.7	5.6	7.7	4.4	19.6	8.8	12.3	17.1	10.4	2.1	9.0	19.6
18	27.9	26.8	64.8	55.8	45.7	58.5	51.1	40.9	44.9	55.4	61.2	50.2	26.8	50.5	64.8
19	2.8	7.3	4.2	6.8	5.6	19.1	6.4	8.3	6.8	8.5	5.3	5.2	4.2	7.6	19.1
20	8.9	29.9	26.3	31.8	23.8	35.6	34.3	32.5	27.7	34.8	19.9	35.2	19.9	30.2	35.6
21	24.4	17.1	55.9	62.2	26.5	39.7	38.4	58.9	53.6	55.8	61.7	50.1	17.1	47.3	62.2
22	0.9	7.3	8.4	7.2	5.4	5.4	6.2	8.3	8.7	5.6	16.0	6.2	5.4	7.7	16.0
RF1	23.7	267.1	40.7	45.7	40.0	39.1	70.1	43.0	71.6	38.8	95.9	38.6	38.6	71.9	267.1
RF2	13.0	27.5	36.2	29.1	27.4	28.0	34.7	29.8	26.3	26.9	24.4	20.8	20.8	28.3	36.2