



# Cisco UCS C250 M2 Extended-Memory Server

TPC-H Rev. 2.14.0  
TPC-Pricing Rev. 1.6.0

Report Date:  
February 14, 2012

Total System Cost

Composite Query per Hour Metric

Price / Performance

**\$49,644 USD**

**332,481.7**  
QphH@100GB

**\$0.15 USD**  
\$ / QphH@100GB

Database Size

Database Manager

Operating System

Other Software

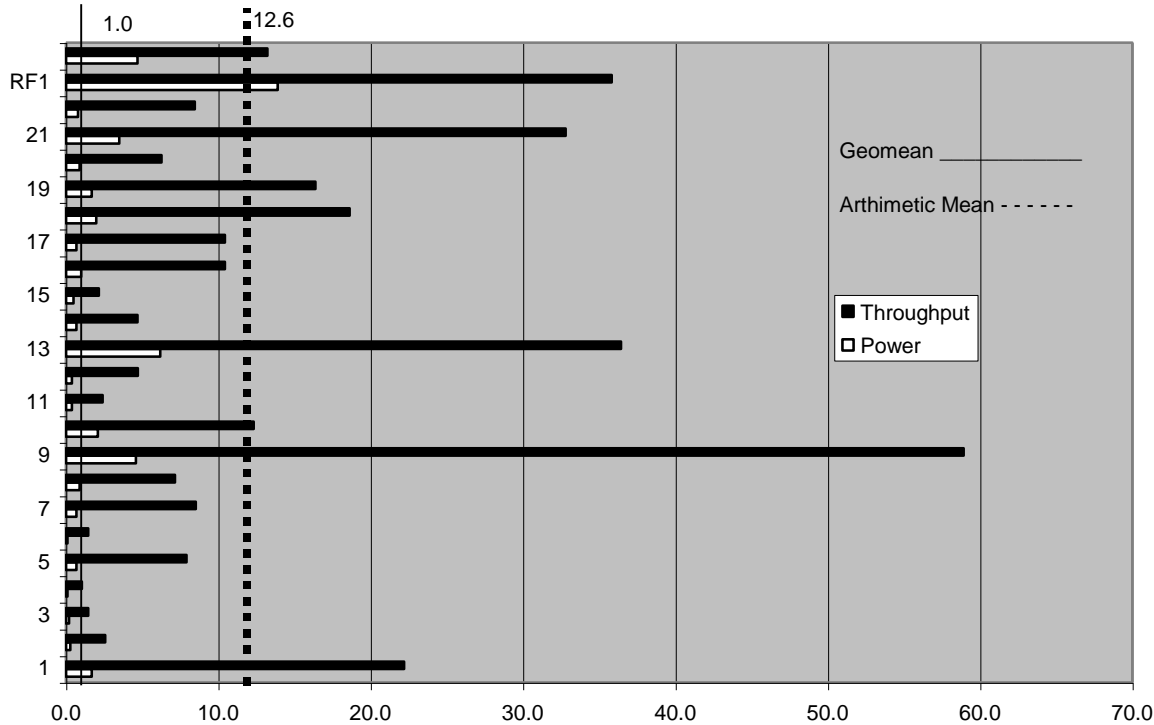
Availability Date

**100GB**

**VectorWise 2.0.1**

**RedHat Enterprise Linux 6.0**

**February 14,  
2012**



Database Load Time = 2:15:09

### Storage Redundancy Level

Load Includes Backup: N

Base Tables and Auxiliary Data Structures

5

Total Data Storage / Database Size = 11.68

DBMS Temporary Space

5

Percentage Memory / Database Size = 192%

OS and DBMS Software

5

### System Configuration:

**Cisco UCS C250 M2 Extended-Memory Server**

Memory: 192 GB

Disk Controller: LSI MegaRAID SAS 9261-8i

Storage: 8 x 146GB 6Gb SAS 15K RPM SFF HDD

Total Storage: 1.17 TB

LAN Controller: 4 x Integrated 1Gb Ethernet ports.



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Report Date: 13-Feb-2012

| Description   | Part Number        | Brand      | Source | Unit Price | Qty | Extended Price    | 3 Year Maint. Price    |
|---|--------------------|------------|--------|------------|-----|-------------------|------------------------|
| <b>Server Hardware</b>                                      |                    |            |        |            |     |                   |                        |
| UCS C250 M2 Srvr w/1PSU,DVD w/o CPU, mem, HDD, or PCIe card | R250-2480805W      | Cisco      | 1      | \$4,687    | 1   | \$4,687           |                        |
| Intel Xeon X5690 3.46GHz/6c/130W/12M/DDR3 1333MHz           | A01-X0115          | Cisco      | 1      | \$4,686    | 2   | \$9,372           |                        |
| 4GB DDR3-1333-MHz RDIMM/PC3-10600                           | UCS-MR-1X041RX-A   | Cisco      | 1      | \$299      | 48  | \$14,352          |                        |
| 850W power supply for the UCS C250 M2                       | R250-PSU2-850W     | Cisco      | 1      | \$560      | 1   | \$560             |                        |
| LSI 6G MegaRAID 9261-8i card (RAID 0,1,5,6,10,60) - 512WC   | R2XX-PL003         | Cisco      | 1      | \$1,591    | 1   | \$1,591           |                        |
| 146GB 6Gb SAS 15K RPM SFF HDD                               | A03-D146GA2        | Cisco      | 1      | \$561      | 8   | \$4,488           |                        |
| MS Comfort Curve DT 3000 USB-EN NA Keyboard & Mouse         | 7ZJ-00001          | Provantage | 3      | \$18       | 1   | \$18              |                        |
| V173DJb LCD Monitor   | ET-BV3RP-D03       | Provantage | 3      | \$90       | 1   | \$90              |                        |
| Cisco R42610 expansion rack                                 | RACK-UCS           | Cisco      | 1      | \$2,857    | 1   | \$2,857           |                        |
| C250 24x7x4Hr Onsite Support Service                        | CON-UCS7-R250W     | Cisco      | 1      | \$566      | 3   |                   | \$1,698                |
|   |                    |            |        |            |     | Subtotal          | \$38,015      \$1,698  |
| Large Purchase Discount <sup>1</sup>                        | 57.0%              | Cisco      | 1      |            |     |                   | -\$21,669              |
|   |                    |            |        |            |     | Hardware Subtotal | \$16,346      \$1,698  |
| <b>Software</b>   |                    |            |        |            |     |                   |                        |
| VectorWise 2.0 3-Y License                                  | VW-3Y-GB-CISCO     | Action     | 2      | \$250      | 100 | \$25,000          |                        |
| VectorWise 2.0 1-Y Maintenance Bug Fixes                    | VW-3Y-GB-CISCO-SUP | Action     | 2      | \$25       | 300 |                   | \$7,500                |
| Vectorwise Discount   | 10.0%              | Action     | 2      |            |     | -\$2,500          | -\$750                 |
| RHEL 1-2 SKT 24x7 3 Year RHN SW                             |                    |            | 1      | \$2,349    | 1   |                   | \$2,349                |
|   |                    |            |        |            |     | Software Subtotal | \$22,500      \$9,099  |
|   |                    |            |        |            |     | Total             | \$38,846      \$10,797 |

Pricing: 1=Cisco 800-553-6387 2=Action 3=Provantage; i-For all items source 1 except support services

**Audited by Lorna Livingtree of Performance Metrics, Inc.**

All discounts are based on US list prices and for similar quantities and configurations. The discounts are based on the overall specific components pricing from respective vendors 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.

**Three-Year Cost of Ownership:      \$49,644 USD**

**QphH:      332,481.7**

**\$/ QphH:      \$0.15 USD**

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 at [pricing@tpc.org](mailto:pricing@tpc.org). Thank you.



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## Measurement Results

|   |                   |
|---|-------------------|
| Database Scaling (SF/Size)                    | 100               |
| Total Data Storage/Database Size              | 11.68             |
| Percentage Memory/Database Size               | 192%              |
| Start of Database Load Time                   | 12/20/11 21:43:00 |
| End of Database Load Time                     | 12/20/11 23:58:09 |
| Database Load Time                            | 2:15:09           |
| Query Streams for Throughput Test (S)         | 11                |
| TPC-H Power                                   | 367,972.7         |
| TPC-H Throughput                              | 300,413.8         |
| TPC-H Composite                               | 332,481.7         |
| Total System Price Over 3 Years               | \$49,644 USD      |
| TPC-H Price/Performance Metric (\$/QpH@100GB) | \$0.15 USD        |

## Measurement Interval

Measurement Interval in Throughput Test (Ts) 290

## Duration of stream execution:

| Power Run          | Seed       | Query Start Time                           | Duration(sec) | RF1 Start Time                             | RF 2 Start Time                            |
|--------------------|------------|--|---------------|--|--|
|                    |            | Query End Time                             |               | RF1 End Time                               | RF 2 End Time                              |
|                    | 1220235809 | 12/21/2011 00:13:22<br>12/21/2011 00:13:52 | 30.1          | 12/21/2011 00:13:08<br>12/21/2011 00:13:22 | 12/21/2011 00:13:52<br>12/21/2011 00:13:57 |
| Throughput Streams | Seed       | Query Start Time<br>Query End Time         | Duration(sec) | RF1 Start Time<br>RF1 End Time             | RF 2 Start Time<br>RF 2 End Time           |
| 1                  | 1220235810 | 12/21/2011 00:13:58<br>12/21/2011 00:18:49 | 290.7         | 12/21/2011 00:13:58<br>12/21/2011 00:14:19 | 12/21/2011 00:14:19<br>12/21/2011 00:14:27 |
| 2                  | 1220235811 | 12/21/2011 00:13:58<br>12/21/2011 00:18:19 | 260.5         | 12/21/2011 00:14:27<br>12/21/2011 00:14:44 | 12/21/2011 00:14:44<br>12/21/2011 00:14:51 |
| 3                  | 1220235812 | 12/21/2011 00:13:58<br>12/21/2011 00:18:42 | 283.9         | 12/21/2011 00:14:51<br>12/21/2011 00:15:09 | 12/21/2011 00:15:09<br>12/21/2011 00:15:17 |
| 4                  | 1220235813 | 12/21/2011 00:13:58<br>12/21/2011 00:18:44 | 285.7         | 12/21/2011 00:15:17<br>12/21/2011 00:15:34 | 12/21/2011 00:15:34<br>12/21/2011 00:15:43 |
| 5                  | 1220235814 | 12/21/2011 00:13:58<br>12/21/2011 00:18:23 | 264.4         | 12/21/2011 00:15:43<br>12/21/2011 00:16:01 | 12/21/2011 00:16:01<br>12/21/2011 00:16:10 |
| 6                  | 1220235815 | 12/21/2011 00:13:58<br>12/21/2011 00:18:33 | 275.3         | 12/21/2011 00:16:10<br>12/21/2011 00:16:37 | 12/21/2011 00:16:37<br>12/21/2011 00:16:50 |
| 7                  | 1220235816 | 12/21/2011 00:13:58<br>12/21/2011 00:18:30 | 271.5         | 12/21/2011 00:16:50<br>12/21/2011 00:17:09 | 12/21/2011 00:17:09<br>12/21/2011 00:17:15 |
| 8                  | 1220235817 | 12/21/2011 00:13:58<br>12/21/2011 00:18:35 | 276.4         | 12/21/2011 00:17:15<br>12/21/2011 00:17:32 | 12/21/2011 00:17:32<br>12/21/2011 00:17:39 |
| 9                  | 1220235818 | 12/21/2011 00:13:58<br>12/21/2011 00:18:41 | 282.7         | 12/21/2011 00:17:39<br>12/21/2011 00:17:55 | 12/21/2011 00:17:55<br>12/21/2011 00:18:02 |
| 10                 | 1220235819 | 12/21/2011 00:13:58<br>12/21/2011 00:18:44 | 285.8         | 12/21/2011 00:18:02<br>12/21/2011 00:18:20 | 12/21/2011 00:18:20<br>12/21/2011 00:18:26 |
| 11                 | 1220235820 | 12/21/2011 00:13:58<br>12/21/2011 00:18:34 | 276.0         | 12/21/2011 00:18:26<br>12/21/2011 00:18:41 | 12/21/2011 00:18:41<br>12/21/2011 00:18:47 |



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| Stream ID | Q1   | Q2  | Q3  | Q4   | Q5   | Q6   | Q7   | Q8  | Q9   | Q10  | Q11  | Q12  |
|-----------|------|-----|-----|------|------|------|------|-----|------|------|------|------|
| 0         | 1.7  | 0.3 | 0.2 | 0.1  | 0.7  | 0.1  | 0.7  | 0.9 | 4.6  | 2.1  | 0.4  | 0.4  |
| 1         | 20.5 | 1.8 | 1.6 | 0.1  | 7.7  | 1.2  | 8.3  | 7.1 | 56.8 | 19.2 | 5.4  | 5.9  |
| 2         | 23.0 | 2.8 | 1.3 | 1.0  | 9.7  | 0.3  | 12.8 | 7.8 | 54.5 | 9.3  | 2.2  | 5.2  |
| 3         | 20.8 | 3.0 | 0.6 | 0.9  | 10.4 | 1.1  | 8.5  | 9.6 | 65.7 | 15.1 | 2.2  | 4.2  |
| 4         | 24.6 | 2.3 | 0.4 | 1.1  | 9.0  | 2.2  | 7.8  | 4.8 | 70.6 | 10.0 | 2.2  | 4.8  |
| 5         | 20.4 | 4.3 | 1.6 | 1.0  | 8.6  | 2.2  | 7.4  | 6.5 | 54.7 | 10.0 | 1.9  | 3.9  |
| 6         | 23.0 | 1.9 | 1.7 | 1.0  | 9.1  | 1.8  | 8.4  | 6.6 | 56.8 | 8.0  | 2.4  | 2.4  |
| 7         | 24.3 | 2.2 | 2.1 | 1.5  | 8.0  | 1.4  | 9.0  | 9.1 | 58.4 | 10.7 | 2.2  | 3.9  |
| 8         | 22.5 | 2.3 | 1.3 | 0.9  | 7.5  | 1.4  | 9.6  | 6.8 | 55.7 | 8.9  | 1.1  | 5.0  |
| 9         | 21.5 | 3.1 | 1.3 | 1.1  | 4.9  | 2.8  | 7.9  | 8.8 | 62.2 | 16.0 | 2.0  | 4.5  |
| 10        | 21.5 | 2.8 | 3.0 | 2.0  | 2.3  | 0.3  | 7.6  | 1.8 | 59.6 | 19.5 | 2.1  | 4.7  |
| 11        | 22.0 | 2.0 | 1.3 | 0.9  | 9.8  | 1.5  | 6.6  | 9.9 | 53.3 | 8.8  | 2.8  | 7.5  |
| Minimum   | 1.7  | 0.3 | 0.2 | 0.1  | 0.7  | 0.1  | 0.7  | 0.9 | 4.6  | 2.1  | 0.4  | 0.4  |
| Maximum   | 24.6 | 4.3 | 3.0 | 2.0  | 10.4 | 2.8  | 12.8 | 9.9 | 70.6 | 19.5 | 5.4  | 7.5  |
| Average   | 20.5 | 2.4 | 1.4 | 1.0  | 7.3  | 1.4  | 7.9  | 6.6 | 54.4 | 11.5 | 2.2  | 4.4  |
| Stream ID | Q13  | Q14 | Q15 | Q16  | Q17  | Q18  | Q19  | Q20 | Q21  | Q22  | RF1  | RF2  |
| 0         | 6.2  | 0.7 | 0.5 | 1.0  | 0.7  | 2.0  | 1.7  | 0.9 | 3.5  | 0.8  | 13.9 | 4.7  |
| 1         | 44.4 | 3.7 | 2.4 | 8.9  | 10.4 | 19.2 | 17.1 | 5.8 | 35.9 | 7.1  | 21.3 | 7.5  |
| 2         | 15.1 | 8.8 | 2.4 | 8.8  | 11.1 | 17.2 | 16.3 | 7.7 | 36.2 | 6.9  | 17.1 | 7.4  |
| 3         | 37.0 | 5.0 | 1.6 | 7.1  | 10.2 | 18.8 | 18.4 | 5.7 | 32.2 | 5.6  | 17.9 | 7.5  |
| 4         | 39.0 | 3.1 | 2.2 | 15.2 | 11.0 | 19.2 | 17.3 | 1.7 | 35.5 | 1.8  | 17.5 | 8.3  |
| 5         | 40.2 | 3.8 | 4.2 | 12.4 | 10.2 | 18.6 | 15.9 | 7.4 | 17.4 | 11.9 | 18.5 | 8.9  |
| 6         | 37.1 | 4.2 | 1.9 | 8.3  | 12.7 | 21.6 | 18.0 | 6.4 | 32.2 | 9.6  | 26.7 | 13.5 |
| 7         | 35.5 | 3.8 | 2.2 | 12.4 | 9.8  | 10.9 | 18.2 | 8.1 | 29.2 | 8.8  | 18.2 | 6.6  |
| 8         | 38.5 | 5.2 | 1.7 | 17.4 | 9.6  | 17.6 | 7.7  | 6.0 | 36.4 | 13.3 | 16.5 | 6.9  |
| 9         | 38.3 | 3.0 | 2.0 | 7.1  | 10.5 | 21.5 | 17.7 | 5.2 | 30.3 | 11.1 | 16.0 | 7.1  |
| 10        | 37.1 | 3.8 | 2.0 | 9.9  | 10.6 | 20.3 | 16.6 | 8.4 | 41.7 | 8.3  | 17.8 | 6.9  |
| 11        | 38.7 | 7.4 | 1.2 | 7.4  | 8.7  | 20.0 | 17.1 | 6.7 | 33.9 | 8.6  | 14.9 | 5.5  |
| Minimum   | 6.2  | 0.7 | 0.5 | 1.0  | 0.7  | 2.0  | 1.7  | 0.9 | 3.5  | 0.8  | 13.9 | 4.7  |
| Maximum   | 44.4 | 8.8 | 4.2 | 17.4 | 12.7 | 21.6 | 18.4 | 8.4 | 41.7 | 13.3 | 26.7 | 13.5 |
| Average   | 33.9 | 4.4 | 2.0 | 9.7  | 9.6  | 17.2 | 15.2 | 5.8 | 30.4 | 7.8  | 18.0 | 7.6  |