|  |   |   |   | TPC-VM8: 1.1.0     |  |  |
|--|---|---|---|--------------------|--|--|
|  | Н   | P ProLian   | t DL385p Gen8   | TPC-E: 1.12.0      |  |  |
| <u>u</u> u   | AMD   | <b>Opteron</b> <sup>TM</sup>  | <sup>1</sup> 6386SE Processor   | TPC Pricing: 1.7.0 |  |  |
| in your  | <b>C</b> /S   | C/S with 1 Proliant DL360 G7  |   |                    |  |  |
|  |   | August 26, 2013<br>Total System Cost  |   |                    |  |  |
| TPC-VMS Throughput   | Price/Per   | Price/Performance Availability Date   |   |                    |  |  |
| 457.55 VMStpsE   | \$571 USD   | /VMStpsE  | September 30, 2013  | \$261,121 USD      |  |  |
|  | Virtua  | l System Unde   | er Test Configuration   |                    |  |  |
| VMMS   |   |   | Processor/Cores/Thread  | Memory             |  |  |
| VMware vSphere 5.5 AMI   |   |   | 2/32/32<br>Opteron™ 6386SE Processor<br>.8GHz GHz 16 MB L3  | 256 Gbyte          |  |  |
| Tier A: CI   | 256 GB Memo<br>3 x HP Smart /<br>2 x HP 146GB<br>6 x HP 146GB | D <u>L 385p Gen 8</u><br>kron™ 6386SE (2.8GH z<br>ry<br>Array P421/2GB, One p<br>SAS 15K SFF DP ENT |   |                    |  |  |
| 1 x ProLiant DL360 G7<br>2x Hex-Core Intel Xeon X5670 Processor 2.93Ghz<br>2 x 8GB PC3-10600 Memory<br>2 x 146GB 6G SAS 15K SFF DP<br>4 x Onboard 1Gbps Ethernet |   |   | 3 x HP StorageWorks D2700 Disk Enclosure, one per each VM<br>24 X HP 400GB 6G SATA MLC SFF (2.5-inch) SSD 8 per enclosure,<br>per VM.<br><u>Priced Only</u><br>6 x 500GB 6G SAS 15K SFF DP ENT HDD (60 Day Space) |                    |  |  |

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## HP ProLiant DL385p Gen8 AMD Opteron<sup>™</sup> 6386SE Processor C/S with 1 Proliant DL360 G7

TPC-VMS: 1.1.0 TPC-E: 1.12.0 TPC Pricing: 1.7.0 Report Date: August 26, 2013

|   | VM1   | VM2   | VM3   |  |
|---|---|---|---|--|
| Performance                             | 457.55 tpsE   | 468.11 tpsE   | 470.31 tpsE   |  |
| Maximum Number of<br>Virtual Processors | 10  | 10  | 10  |  |
| VM Memory                               | 80GB  | 80GB  | 80GB  |  |
| Maximum Capacity of<br>Virtual Storage  | 4173GB  | 4173GB  | 4173GB  |  |
| Operating System                        | Microsoft Windows Server 2012<br>Standard Edition   | Microsoft Windows Server<br>2012 Standard Edition   | Microsoft Windows Server 2012<br>Standard Edition   |  |
| Database Manager                        | Microsoft SQL Server 2012<br>Enterprise Edition SP1 | Microsoft SQL Server 2012<br>Enterprise Edition SP1 | Microsoft SQL Server 2012<br>Enterprise Edition SP1 |  |
| Scaling Component                       | 240,000   | 240,000   | 240,000   |  |
| Initial Number of Row<br>Per VM         | 28,091,588,432                                      | 28,091,588,432                                      | 28,091,588,432                                      |  |
| Initial Database Size Per<br>VM         | 1961GB  | 1961GB  | 1961GB  |  |

|  | HP ProLiant DL385p Gen8<br>TPC-VMS 1.1.0 |                      |               |           |                   | 1.12.0<br>1.7.0<br>26-Aug-13 |
|--|--|----------------------|---------------|-----------|-------------------|------------------------------|
| 49   |  |                      |               |           |                   |                              |
| invent   |  |                      |               |           | Report date       |                              |
|  |  |                      |               |           | Availability Date | 30-Sep-13                    |
| Description  | Part Number                              | Brand                | Unit<br>Price | Qty.      | Extended<br>Price | 3 Yr Maint<br>Price          |
| Server Hardware (Tier B)   |  |                      |               |           |                   |                              |
| HP ProLiant DL385p Gen8 8 SFF Configure-to-order Server  | 653203-B21                               | 1                    | 2,563         | 1         | 2,563             |                              |
| Gen8 AMD Opteron™ 6386SE (2.8GHz/16-core/16MB/140W) Processor  | 703939-B21                               | 1                    | 1,799         | 2         | 3,598             |                              |
| 16GB (1x16GB) Dual Rank x4 PC3-12800R (DDR3-1600) Registered Memory  | 672633-B21                               | 1                    | 319           | 16        | 5,104             |                              |
| HP 146GB 6G SAS 15K rpm SFF (2.5-inch) SC Enterprise   | 652605-B21                               | 1                    | 339           | 8         | 2,712             |                              |
| HP Smart Array P421/2GB FBWC 6Gb 2-ports Ext SAS Controller  | 631674-B21                               | 1                    | 899           | 3         | 2,697             |                              |
| HP 3 year 4 hour 24x7 ProLiant DL38x(p) Hardware Support   | U4545E                                   | 1                    | 1,371         | 1         |                   | \$1,371                      |
|  |  |                      | Subtotal      |           | \$16,674          | \$1,371                      |
| Server Software  |  |                      |               |           |                   |                              |
| SQL Server 2012 Enterprise Edition SP1, 2 Core License   | 7JQ-00256                                | 2                    | 13,472.50     | 12        | 161,670           |                              |
| Windows Server 2012 Standard Edition   | P73-05761                                | 2                    | 735           | 2         | 1,470             |                              |
| Microsoft Problem Resolution Services  | N/A                                      |                      | 259           | 1         |                   | 259                          |
| VMware VSphere 5.5 Enterprise 1 Processor  | BD713AAE                                 |                      | \$4,678       |           | 9.356             |                              |
|  |  |                      | Subtotal      |           | \$172,496         | 259                          |
| Storage  |  |                      |               |           |                   |                              |
| HP D2700 Disk Enclosure  | AJ941A                                   |                      | 3,399         | 4         | 13,596            |                              |
| HP 3 year 4 hour 24x7 D2000 Enclosure Hardware Support   | UQ540E                                   | 1                    | 1,980         |           |                   | 7,920                        |
| HP 400GB 3G SATA MLC SFF (2.5-inch) SC Enterprise Mainstream   | 653120-B21                               | 1                    | 3,019         | 24        | 72,456            |                              |
| HP 500GB 6G SAS 7.2K rpm SFF DP Midline Hard Drive (60 Day)  | 507610-B21                               | 1                    | 369           | 6         | 2,214             |                              |
|  |  |                      | Subtotal      |           | 88,266            | 7,920                        |
| Client Hardware (Tier A)   |  |                      |               |           |                   |                              |
| HP ProLiant DL360 G7 CTO Server  | 579237-B21                               | 1                    | 1,721         | 1         | 1,721             |                              |
| HP DL360 G7 Intel® Xeon® X5670 (2.93GHz/6-core/12MB/95W) Processor   | 588062-B21                               | 1                    | 2,099         | 2         | 4,198             |                              |
| HP 8GB (1x8GB) Dual Rank x8 PC3-10600 Memory Kit   | 500662-B21                               | 1                    | 169           | 2         | 338               |                              |
| HP 146GB 6G SAS 15K rpm SFF (2.5-inch) Enterprise 3yr Warranty Hard Drive  | 512547-B21                               | 1                    | 369           | 2         | 738               |                              |
| HP 3y 4h 24x7 ProLiant DL36x HW Support ,ProLiant DL36x  | U4497E                                   | 1                    | 1,086         | 1         |                   | 1,086                        |
|  |  |                      | Subtotal      |           | 6,995             | 1,086                        |
| Client Software  |  |                      |               |           |                   |                              |
| Microsoft Windows Server 2008 R2 Enterprise Edition  | P72-04217                                | 2                    | 2,280         | 1         | 2,280             |                              |
|  |  |                      | Subtotal      |           | 2,280             | (                            |
| Infrastructure   |  |                      |               |           |                   |                              |
| HP 1.2m/4ft CAT5 RJ45 M/M Ethernet Cable   | C7533A                                   | 1                    | 4.00          | 5         | 20                |                              |
| HP V142 1075mm deep Pallet 100 series Rack   | AF046S                                   | 1                    | 709           | 1         | 709               |                              |
| HP W2072a 20-inch Diagonal LED Backlit LCD Monitor   | A3M50AA#ABA                              | 1                    | 143           | 1         | 143               |                              |
| HP Keyboard And Mouse Bundle   | LV290AA#ABL                              | 1                    | 18            | 1         | 18                |                              |
|  |  |                      | Subtotal      |           | 890               | (                            |
|  |  | Total Extended Price |               | \$287,601 | \$10,636          |                              |
| Purchase and Net 30 discount (See Note 1) 28.0% Total Discounts  |  |                      | \$34,211      | \$2,90    |                   |                              |
|  |  | Grand To             | otal          |           | \$253,390         | \$7,730                      |
|  |  | Three                | voor Ca-      | t of 0    | morahin: LICD     | ¢064.404                     |
| Pricing: 1=HP Direct 800-203-6748 2= Microsoft. Note 1: Discount based on HP Direct guidan<br>where pricing = 1. Note 2: All the hardware are available to order. Note 3: The benchmark results or |  | intee.               | year COS      | 10100     | vnership: USD     | \$261,121                    |
| Johnson for InfoSizing. www.infosizing.com.  | 5 5                                      | tpsE                 |               |           |                   | 457.58                       |
|  |  |                      | /VMStpsE      | -         |                   | \$571                        |
|  |  | 1.8 U.SU             | VVIVINTOS     | -         |                   | 35/1                         |

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. Thank you.