NEW HP ProLiant DL585 G7 wins twice: 4-socket leader for price and price/performance on TPC-C benchmark

Over 1 million tpmC for more performance, less cost than IBM and Bull competitors

July 2010

Executive summary

The new HP DL585 G7, the obvious choice for virtualization/consolidation environments and corporate data center infrastructure, has earned two world records for performance and price/performance. With 1,193,472 tpmC @ $.68USD/tpmC, the HP ProLiant DL585 G7 acquired the highest 4-socket result performance and, again, is in the TOP TEN for price/performance on the TPC-C benchmark.

Key Take Aways:

- #1 4-socket performance
- HP dominates with TEN of the top TEN for 4-socket price/performance
- Up to more than 2.5X greater performance than the IBM x3850 M2, the IBM Power 550 Express Model 8204 E8A, and the Bull Escala PL860R with up to 3X less cost.
- Only HP delivers the most comprehensive portfolio of Scale-Up servers combining business-critical and x86 expertise and technologies from an industry leader in both.

HP uses less energy

Utilizing the new TPC-Energy parameters, the HP ProLiant DL585 G7 achieved an impressive energy/performance result of 5.93Watts/KtpmC on the TPC-C benchmark. No other competitors have published TPC-Energy results for 4-socket servers.

Figure 1. Best 4-socket results for each vendor.

HP provides the most comprehensive portfolio of Scale-Up ProLiant servers optimized for the most demanding, data-intensive x86 workloads.

The HP ProLiant DL585 G7 is part of the HP Converged Infrastructure portfolio, which integrates servers, storage, network devices, and facility resources into a common environment, allowing IT to rapidly respond to business demands. HP ProLiant servers provide modular, standards-based building blocks that advance clients toward a converged infrastructure.

Results as of 07/30/10; see: www.tpc.org. Per socket improvement as compared to IBM System x3850 M2, IBM Power 550 Model 8204 E8A, and Bull Escala PL860RM2 results. #1 claim refers to the top 4-socket system result on TPCC benchmark.
The new HP ProLiant Scale-Up x86 servers are optimized for the most demanding, data-intensive x86 workloads, extending the capability of ProLiant systems and built to be convergence-ready to fuel business innovation. The HP ProLiant DL585 G7 is the world’s first server capable of paying for itself in less than 30 days with breakthrough efficiencies, delivering 4P performance at 2P economics for compelling price/performance.¹

**Business transformation with HP Converged Infrastructure:** HP is at an inflection point where our technology comes together to help our clients build the data center of the future, and it will be based on the Converged Infrastructure. HP is uniquely positioned to build the Converged Infrastructure because HP is the only company to offer a full portfolio of standards-based, integrated solutions, and services developed specifically to solve the complexities of the data center. HP is also the only company that can deliver a single common, modular architecture across the data center from x86 to Superdome. This means that companies can use the same architecture to run and manage multiple workloads across servers, storage, and networking. This significantly reduces complexity, resource requirements, and costs.

**HP takes SIX of the OVERALL TOP TEN results for performance, FIVE of the TOP TEN results for 4-socket performance, and ALL of the TOP TEN for 4-socket price/performance.**

Table 1. HP ProLiant servers dominate the four-socket price/performance results for the TPC-C benchmark.

<table>
<thead>
<tr>
<th>Sponsor</th>
<th>System</th>
<th>tpmC</th>
<th>Price/tpmC</th>
<th>System Availability</th>
<th>Database</th>
<th>Date Submitted</th>
</tr>
</thead>
<tbody>
<tr>
<td>HP ProLiant DL585 G7</td>
<td>1,193,472</td>
<td>0.68 USD</td>
<td>9/1/2010</td>
<td>MS SQL Server 2005 Ent. x64 Ed. SP3</td>
<td>6/21/2010</td>
<td></td>
</tr>
<tr>
<td>HP ProLiant DL585 G7</td>
<td>578,814</td>
<td>0.96 USD</td>
<td>11/17/2008</td>
<td>MS SQL Server 2005 Ent. x64 Ed. SP2</td>
<td>11/17/2008</td>
<td></td>
</tr>
<tr>
<td>HP ProLiant 580 G5</td>
<td>639,253</td>
<td>0.97 USD</td>
<td>01/26/2009</td>
<td>Oracle Database 11g Standard Edition</td>
<td>01/26/2009</td>
<td></td>
</tr>
<tr>
<td>HP ProLiant DL580 G5</td>
<td>634,825</td>
<td>1.10 USD</td>
<td>09/15/2008</td>
<td>MS SQL Server 2005 Ent. x64 Ed. SP2</td>
<td>08/19/2008</td>
<td></td>
</tr>
<tr>
<td>HP ProLiant DL585 G5</td>
<td>471,883</td>
<td>1.17 USD</td>
<td>07/14/2008</td>
<td>MS SQL Server 2005 Ent. x64 Ed. SP2</td>
<td>07/14/2008</td>
<td></td>
</tr>
<tr>
<td>HP ProLiant DL585 G5</td>
<td>402,234</td>
<td>1.26 USD</td>
<td>03/31/2008</td>
<td>MS SQL Server 2005 Ent. x64 Ed. SP2</td>
<td>03/31/2008</td>
<td></td>
</tr>
<tr>
<td>HP ProLiant DL580 G5</td>
<td>407,079</td>
<td>1.71 USD</td>
<td>09/05/2009</td>
<td>Microsoft SQL Server 2005 x64 Enterprise Ed. SP2</td>
<td>09/05/2009</td>
<td></td>
</tr>
<tr>
<td>HP ProLiant ML570 G4</td>
<td>318,407</td>
<td>1.88 USD</td>
<td>04/19/2007</td>
<td>MS SQL Server 2005 Ent. x64 Ed.</td>
<td>10/19/2006</td>
<td></td>
</tr>
<tr>
<td>Integrity rx6000</td>
<td>359,440</td>
<td>1.99 USD</td>
<td>12/15/2006</td>
<td>Oracle Database 10g Standard R2 Ent. Ed.</td>
<td>10/26/2006</td>
<td></td>
</tr>
</tbody>
</table>

¹ based on HP internal testing comparing hardware on DL360 G4 to DL585 G7
Benchmark Configurations

The HP ProLiant DL585 G7 was set up as a 4-processor system with four AMD Opteron™ 6176 SE processor 2.3GHz 12-Core (4 processors/48 cores/48 threads), with 12MB L3 cache, and 512GB main memory (16x16GB and 32x 8GB) DDR3 DIMMs. The server was also configured with 1 SMART Array P410i SAS RAID Controller, 1 SMART Array P812SAS RAID CHP StorageWorks, 1 FC1242 Dual Channel 4Gb PCI-e HBA, 9 LSI 9200_8E HBA, and 2 x 146GB 15K SFF SAS Drives in internal bays. The server was running Windows Server 2008 R2 Enterprise Edition operating system and SQL Server 2005 Enterprise Edition x64 SP3 database. System availability date is 09/01/10.

Bottom Line

Customers know that data intensive enterprise workloads, including business processing and decision support, are placing x86 infrastructure under tremendous stress. The HP ProLiant DL585 G7 TPC-C leading results are proof points that the HP new class of Scale-Up x86 servers deliver the reliability and performance to handle more demanding workloads with confidence.

About the TPC-C benchmark

The TPC-C benchmark simulates an Online Transaction Processing (OLTP) database environment. The performance of a system is measured when the system is tasked with processing numerous short business transactions concurrently. The TPC-C workload simulates a tiered environment wherein users interact with web pages to enter business transactions. Transactions are entered by simulated users, business logic and queuing of the transactions are handled by a middle tier server, and then the transactions are passed to the TPC-C database server for processing. For more details, see ftp://ftp.hp.com/pub/c-products/servers/benchmarks/HP_ProLiant_tpcc_Overview.pdf.

About the TPC-Energy benchmark

TPC-Energy is a new TPC specification which augments the existing TPC Benchmarks with Energy Metrics developed by the TPC. The Energy Specification is a continuation of ongoing efforts to meet the needs of a rapidly changing industry. Customers will be able to go to the TPC Web site to identify systems that meet their price, performance, and energy requirements. Systems that use less energy also have reduced cooling requirements. The reporting of energy metrics are optional to not restrict TPC benchmark publications and allow time for implementers to invest in required infrastructure. Competitive demands will encourage test sponsors to include energy metrics as soon as possible.

TPC Disclosure

A full disclosure report describing these benchmark results has been filed with the Transaction Processing Performance Council (TPC) and is available upon request. This report describes the benchmark HW and SW configuration in detail, provides costs, and lists the code actually used to perform the test. Similar reports from other vendors are the source of the price/performance comparisons provided above. Summaries of all tests are published each month by the TPC and on the Internet on the TPC’s World Wide Web Server. With these benchmarks, customers can objectively compare the performance of different vendors’ servers in specific areas. Results as of 7-30-10.

For more information check out:
HP ProLiant DL585 G7: www.hp.com/servers/
TPC-C details: http://www.tpc.org

© 2010 Hewlett-Packard Development Company, L.P. The information contained herein is subject to change without notice. The only warranties for HP products and services are set forth in the express warranty statements accompanying such products and services. Nothing herein should be construed as constituting an additional warranty. HP shall not be liable for technical or editorial errors or omissions contained herein. ProLiant is a trademark of Hewlett-Packard Development Company. AMD, the AMD Arrow logo, AMD Opteron, and combinations thereof are trademarks of Advanced Micro Devices, Inc. in the U.S. and other countries. Microsoft and Windows are U.S. registered trademarks of Microsoft Corporation. Oracle is a registered trademark of Oracle Corporation and/or its affiliates. TPC-C is a trademark of the Transaction Processing Performance Council. July 2010