New HP 8-processor ProLiant DL980 G7 achieves #1 Windows performance on two-tier SAP® Sales and Distribution (SD) standard application benchmark with SAP enhancement package 4 for SAP ERP 6.0

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Key Take Aways

- New HP eight-processor, 64-core ProLiant DL980 G7 achieves #1 Windows performance on two-tier SAP® Sales and Distribution (SD) standard application benchmark
- Powerhouse performance scalability: 1.74X scaling over the four-processor DL580 G7 and 2.2X scaling over the eight-processor ProLiant G6 (see Appendix on page 3 for minimum data)
- 13.6 percent more SAP SD benchmark users than a similarly configured Fujitsu server (see Appendix on page 3 for minimum data)
- New HP ProLiant x86 G7 servers offer game-changing capabilities in reliability, availability, and performance to advance the Converged Infrastructure

Figure 1. The ProLiant DL980 G7 8-processor, 64-core x86 rack server scaling as compared to two other results. Configuration details of DL980 G7 can be found on page 3 and of all servers in the Appendix on page 3.

HP ProLiant DL980 G7 is a performance powerhouse

HP provides remarkable server performance and scalability

In addition to achieving leading Windows performance results on the two-tier SAP SD standard application benchmark, the ProLiant DL980 G7 server achieved excellent eight-processor performance scalability results compared to four-processor results with the same processors and compared to eight-processor results with a previous generation HP ProLiant platform. HP is enhancing the industry’s #1 x86 portfolio with a new class of scale-up systems optimized for the most demanding, data-intensive x86 workloads and providing a foundation for a converged infrastructure. Benefits of the G7 servers include:

- Reduced data center footprint and cost with a consolidation ratio of at least 91:1 through performance gains
achieved by balanced scaling
- Payback in as little as 30 days with breakthrough efficiencies

The new ProLiant DL980 G7 eight-processor advantage
ProLiant’s newest scale-up x86 workhorse, the HP ProLiant DL980 server, with the HP PREMA Architecture delivers on the key HP scale-up x86 server value proposition of balanced scaling; self-healing resiliency and breakthrough efficiency. It is optimized for the most demanding, data intensive x86 workloads and offers more than twice the performance\(^1\) and a 200 percent boost in availability\(^2\) allowing customers to scale up with confidence.

HP PREMA Architecture boosts reliability, scalability, and performance for 8-processor systems by leveraging our mission-critical computing expertise. It extends the Intel 7500/6500 series processors to deliver the following key features in the HP ProLiant DL980 G7:

- **Smart CPU Caching**
  - Performance improvements are enabled through a node controller, an HP unique hardware, which minimizes the inter-processor traffic and enables rapid access to local memory without requiring coordination across all the processors

- **Redundant System Fabric**
  - Reduces communication errors on overloaded systems

The DL980 G7 is ideal for enterprise-class database, consolidation, and virtualization environments that need outstanding performance, resiliency, scalability, and efficiency provided by all the familiar industry-leading ProLiant tools.

Customer advantages of using SAP software and HP ProLiant servers
As one of the largest technology partners for SAP, HP is a global technology partner, software solution partner, global alliance support partner, global services partner, and global hosting partner. HP ProLiant servers:
- Earn leading results on the two-tier SAP SD standard application benchmark
- Run almost 50 percent of installations of SAP solutions, with more than 60,000 installations and 25,000 customers

HP server management advantages with G7
**Breakthrough efficiency.** Customers can achieve ROI of two months with HP-only innovations such as Thermal Logic which includes power capping, Integrated Lights Out 3, iLO 3 remote management, and Insight Control.

**Only HP ProLiant servers give customers the freedom to unlock their full potential with the help of HP Insight Control.**
ProLiant G7 servers introduce next-generation Insight Control remote management functionality, powered by iLO. The third generation of iLO brings new levels of remote server management performance, user experience, and standards support to ProLiant customers. HP Insight Control enables customers to deploy and migrate ProLiant servers quickly and reliably, proactively manage ProLiant server health – be it physical or virtual, control ProLiant servers from anywhere, and optimize power confidently. The net result is the ability to get work done faster whether your server is across the hall or across the globe. Users can take advantage of these next-generation remote management features by purchasing HP Insight Control or a ProLiant G7 Performance Model.

Bottom line
**The ProLiant advantage.** HP Converged Infrastructure and HP ProLiant servers provide the thought-leadership innovation that can give customers’ businesses a technology edge. With our continuous advancements in the science of server computing combined with new Intel Xeon technology and SAP software, HP can help you gain an IT advantage over your competitive rivals.

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\(^1\)As shown with results detailed in this paper, HP ProLiant DL980 G7 scales 2X as compared to the DL785 G6; see the Appendix on page 3 for minimum data.

\(^2\)Based on HP internal research comparing HP ProLiant DL785 G5 to DL980 G7 with configurations normalized to address similar performance; defined as MTBCF (mean time between critical failures); availability varies according to specific model.
Benchmark configurations
HP received certification from SAP AG of the results of the ProLiant DL980 G7 on the two-tier SAP SD standard application benchmark (Certification #2010028). The HP ProLiant DL980 G7 was set up as an eight-processor system with eight 2.27-GHz 8-Core Intel Xeon X7560 processors (8 processors/64 cores/128 threads), with 64 KB L1 cache per core and 256 KB L2 cache per core, 24MB L3 cache per processor, and 512 GB main memory (128 x 4GB PC3-10600 DIMMs, 1333MHz). The server was also configured with one Smart Array P410i controller (onboard) connected to 8 x 72 GB 15K SAS SFF internal drives and also was configured with two x Smart Array P411 controllers each connected to a D2700 with 25 x 72GB 15K SAS SFF external drives. The server was running Windows Server 2008 R2 DC x64 operating system, SQL Server 2008 EE x64 database, and the SAP enhancement package 4 for the SAP ERP 6.0 application. The HP ProLiant DL980 G7 achieved 18,180 SAP SD Benchmark users, equivalent to a throughput of 1,986,330 fully processed order line items per hour or 99,320 SAPS. All results as of 06-18-10; details can be found at http://www.sap.com/benchmark.

About the SAP SD standard application benchmark with SAP enhancement package 4 for SAP ERP 6.0

The SAP SD standard application benchmark covers a sell-from-stock scenario, which includes the creation of a customer order with five line items and the corresponding delivery with subsequent goods movement and invoicing. The SAP Application Performance Standard (SAPS) is a hardware-independent unit that describes the performance of a system configuration in the SAP environment. It is derived from the SAP SD standard application benchmark, where 100 SAPS is defined as 2,000 fully business processed order line items per hour. In technical terms, this throughput is achieved by processing 6,000 dialog steps (screen changes), 2,000 postings per hour in the SAP SD Benchmark, or 2,400 SAP transactions. In the SAP SD standard application benchmark, fully business processed means the full business process of an order line item: creating the order, creating a delivery note for the order, displaying the order, changing the delivery, posting a goods issue, listing orders, and creating an invoice.

For more information check out:
HP ProLiant DL980 G7, DL785 G6, and DL580 G7: www.hp.com/servers/

Appendix A

<table>
<thead>
<tr>
<th>Platform, processor type (processors /cores /threads), memory</th>
<th>Certification number</th>
<th>OS, database, and SAP software</th>
<th>SAP SD benchmark users</th>
<th>SAPS</th>
</tr>
</thead>
<tbody>
<tr>
<td>HP ProLiant DL980 G7, 8 processors, 8-core 2.26 GHz Intel Xeon X7560 (8/64/128), 512 GB RAM</td>
<td>20100028</td>
<td>Windows Server 2008 R2 DC x64, SQL Server 2008 EE x64, SAP enhancement package 4 for SAP ERP 6.0</td>
<td>18,180</td>
<td>99,320</td>
</tr>
<tr>
<td>Fujitsu PRIMEQUEST 1800E, 8 processors, 8-core 2.26 GHz Intel Xeon X7560 (8/64/128), 512 GB RAM</td>
<td>20100010</td>
<td>Windows Server 2008 R2 DC, SQL Server 2008, SAP enhancement package 4 for SAP ERP 6.0</td>
<td>16,000</td>
<td>87,550</td>
</tr>
<tr>
<td>HP ProLiant DL785 G6, 8 processors, Six-core AMD Opteron 8439SE 2.8 GHz (8/48/48), 128 GB RAM</td>
<td>2009035</td>
<td>Windows Server 2008 R2 DC x64, SQL Server 2008 EE x64, SAP enhancement package 4 for SAP ERP 6.0</td>
<td>8,280</td>
<td>45,350</td>
</tr>
</tbody>
</table>

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