



HP ProLiant DL585 G5 earns #1 four-processor performance result on two-tier SAP® Sales and Distribution Standard Application Benchmark with SAP Enhancement Package 4 for SAP ERP 6.0



HP leadership with ProLiant servers



The latest HP ProLiant DL585 G5 rack server is highly manageable, rack optimized, four-socket

server designed for maximum performance in an industry standard architecture. The large 256GB footprint and nine expansion slots provide the memory and I/O scalability customers need to support multiple applications or virtual machines on a single physical server. The large memory capacity also provides an ideal platform for EDA, financial, and petrochemical applications that demand lots of memory.

With this highly scalable feature set, the ProLiant DL585 G5 is an ideal choice for the growing enterprise class database, consolidation, and virtualization environments seeking to improve server utilization and reduce server sprawl, while continuing to leverage all the familiar and easy-to-use ProLiant management tools and options.

Customer value

What are the benefits of using HP ProLiant servers and SAP applications?



SAP Standard Application Benchmarks test the hardware and database performance of SAP applications and components.

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 consistently earn leading results on the two-tier SAP SD Standard Application Benchmark.

HP ProLiant servers have proven to be reliable and cost-effective. HP servers host almost 50% of all installations of SAP solutions, with more than 60,000 installations and 25,000 customers.

HP's strong technology capabilities are demonstrated through the results of these benchmarks.

All results as of 04-27-2009. Details can be found at <http://www.sap.com/benchmark>.

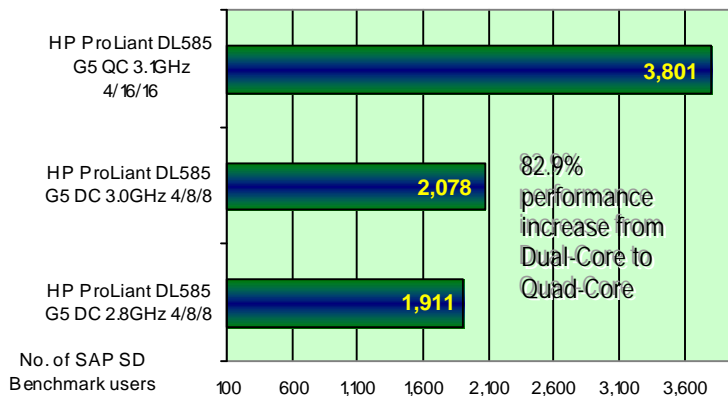
Key Points

- The HP ProLiant DL585 G5 earned a #1 four-processor performance result on the two-tier SAP® Sales and Distribution (SD) Standard Application Benchmark running on the SAP enhancement package 4 for the SAP ERP application Release 6.0 on Windows, achieving 3,430 SAP SD Benchmark users with 18,730 SAPS.
- The HP ProLiant DL585 G5 is also the first four-processor result with the SAP enhancement package 4 for SAP ERP 6.0.
- In addition, the performance scalability for Quad-Core processors for the ProLiant DL585 G5 was increased 82.9% when compared to its previous Dual-Core generation.

All details for above points can be found on the following pages of this paper.

Figure 1. Comparative results on two-tier SAP SD Standard Application Benchmark for HP ProLiant DL585 G5 four-processor servers

HP ProLiant DL585 G5 four-processor Quad-Core/Dual-Core performance scalability



All results as of 04-27-09. Details in Appendix A.

Technology for better business outcome.

What's New

The SAP SD Standard Application Benchmark was performed in Houston, Texas, on the HP ProLiant DL585 G5 rack server with the new SAP enhancement package to the SAP SD Standard Application Benchmark and the usage of Microsoft Windows Server 2008 Enterprise Edition and Microsoft SQL Server 2008 Enterprise Edition. In addition, the benchmark used the ProLiant DL585 G5 with the latest AMD Opteron processors at 3.1GHz.

SAP Enhancement Package 4 for SAP ERP 6.0

On January 1, 2009, SAP upgraded the SAP SD Standard Application Benchmark to the SAP enhancement package 4 for SAP ERP 6.0, part of SAP Business Suite 7 software. These enhancements make the SAP SD Standard Application Benchmark more resource intensive, which has a direct impact on the benchmark results, according to SAP. The steps of the benchmark scenario remain unchanged. The updates include utilizing a Unicode codepage, a change in the subsecond response time to below one second, use of the new general ledger, and the activation of credit limit check functionality that marks a date of change for the SAP ERP benchmarks.¹

Interpreting the performance results

ProLiant server testing configurations

HP received certification from SAP AG of the results on the two-tier SAP SD Standard Application Benchmark for the ProLiant DL585 G5 (Certification #2009008).

The ProLiant DL585 G5 rack server was set up as a four-processor system with four 3.1GHz Quad-Core AMD Opteron 8393 SE Processors (4 processors/16 cores/16 threads), with 128KB L1 cache and 512KB L2 cache per core, 6MB L3 cache per processor, and 64GB (16 x 4 GB) DDR2 800MHz main memory. The server was running Microsoft Windows Server 2008 Enterprise Edition operating system, Microsoft SQL Server 2008 Enterprise Edition database, and the SAP enhancement package 4 for SAP ERP 6.0 (Unicode). The HP ProLiant DL585 G5 achieved 3,430 SAP SD Benchmark users, equivalent to a throughput of 374,670 fully processed order line items per hour or 18,730 SAPS.

All results as of 04-27-2009; details can be found at <http://www.sap.com/benchmark>.

HP performance scalability increases with Quad-Core vs. Dual-Core technology

In addition to achieving the #1 performance result on the two-tier SAP SD Standard Application Benchmark on Windows, the ProLiant DL585 G5 rack server showed outstanding four-processor performance scalability results with the progression from Dual-Core to Quad-Core processors.

The ProLiant DL585 G5 server showed a 82.9% increase in performance when it achieved 3,801 SAP SD Benchmark users (19,020 SAPS) for its Quad-Core result from its previous Dual-Core result of 2,078 SAP SD Benchmark users (10,500 SAPS). Overall, the ProLiant DL585 G5 server showed a performance scalability progression of 98.9% going from a Dual-Core 2.8GHz result with 1,911 SAP SD Benchmark users (9,570 SAPS) to the 3,801 SAP SD Benchmark users (19,020 SAPS) result.

All results as of 04-27-09. Details in Appendix A.

¹ <http://www.sap.com/solutions/benchmark/pdf/January2009newsfaq.pdf>

Table 2. Comparison of performance scalability from processor generation progression.

	Number of SAP SD Benchmark users	Scalability from one processor to the next
ProLiant DL585 G5 QC 2.5GHz 4 processors/16 cores/16 threads	3,801	82.9% performance improvement
ProLiant DL585 G5 DC 3.0GHz 4 processors/8 cores/8 threads	2,078	8.7% performance improvement
ProLiant DL585 G5 DC 2.8GHz 4 processors/8 cores/8 threads	1,911	98.9% total performance improvement from DL585 G5 DC 2.8GHz to DL585 G5 QC 2.5GHz

The HP difference

HP provides all of the tools and services required for customers to plan their deployment of the SAP ERP application as well as the best practices and experience to help implement the application successfully without disruption to business operations. Thousands of deployments of SAP solutions worldwide run mission-critical environments on HP servers.

Unlike many other service providers, HP Services shares with customers its solid expertise in HP technology for flexible management, virtualization, consolidation, and integration of SAP solution-based environments.

In addition, HP is a global SAP partner offering leading support for SQL implementations. HP's SAP Consulting and Integration services practice also has strong expertise with SAP solution-based deployments, and hundreds of successful customer implementations.

The HP ProLiant Advantage



The ProLiant DL585 G5 improves on its reputation for performance with faster processors, more memory, and additional storage options to deliver more value than ever before. Combined with industry-leading management and support options, the DL585 G5 is a great choice for today's demanding enterprise applications and virtualization projects. The ProLiant DL585 G5 now includes:

- Support for AMD's latest Opteron 8300 series processors for improved performance, price/performance, and TCO.
- Support for 8GB PC2-6400 Registered DIMMs on select models.
- Support for the AMD Opteron 8393 SE and 8381 HE for maximum flexibility.

SAP and HP Partnership



HP has been partnering with SAP AG for over 20 years and is one of the largest SAP customers in the world. In fact, SAP selected HP output management technology. Together, SAP and HP created a remarkable legacy providing world-class business solutions to global clients. They offer a unique combination of open, flexible technologies and broad expertise. That's why nearly half of the worldwide implementations of SAP applications run on HP infrastructure.

- HP servers host almost 50% of all SAP solution-based installations with more than 60,000+ installations and more than 25,000 customers.
- HP is a worldwide leader in SAP solution-based operations, with 250+ outsourcing customers managing over 850,000 users.
- We integrate, certify, and optimize new solutions by utilizing:
 - Six SAP Solutions Centers located in Atlanta, Georgia and Houston, Texas, USA; and in Asia in Singapore, India, China, and Korea and one SAP Competency Center in Walldorf, Germany.
 - 24x7 support through globally connected support centers in support of SAP solutions in more than 15 countries worldwide.
 - Four engineering labs located in Walldorf, Germany; Houston, Texas, USA; Marlborough, MA., USA; and Redmond, Washington, USA.

For more information

HP ProLiant DL585 G5: www.hp.com/servers/proliantdl585

HP ProLiant storage solutions: www.hp.com/go/serial and

<http://h18004.www1.hp.com/products/servers/platforms/storage.html>

SAP benchmark details: <http://www.sap.com/benchmark>

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Appendix A

ProLiant DL585 G5 Quad-Core/Dual-Core scalability configurations and results on two-tier SAP SD Standard Application Benchmark

[HP ProLiant DL585 G5 Quad-Core June 2008.](#) The ProLiant DL585 G5 (Certification #2008041) was set up as a four-processor system (4 processors/ 16 cores/ 16 threads) with four 2.5GHz Quad-Core AMD Opteron Processor 8360 SE with 128KB L1 cache and 256KB L2 cache per core, 2MB L3 cache per processor, and 64GB main memory. The server was running Microsoft Windows Server 2003 Enterprise Edition operating system, Microsoft SQL Server 2005 Enterprise Edition database, and SAP ERP 6.0. The HP ProLiant DL585 G5 achieved 3,801 SAP SD Benchmark users, equivalent to a throughput of 380,330 fully processed order line items per hour or 19,020 SAPS.

[HP ProLiant DL585 G5 Dual-Core May 2007.](#) The ProLiant DL585 G5 (Certification #2007034) was set up as a four-processor system (4 processors/ 8 cores/ 8 threads) with four 3.0GHz Dual-Core AMD Opteron Processor 8222 SE with 128KB L1 cache and 1MB L2 cache per core, and 32GB main memory. The server was running Microsoft Windows Server 2003 Enterprise Edition operating system, Microsoft SQL Server 2005 database, and SAP ERP 6.0. The HP ProLiant DL585 G5 achieved 2,078 SAP SD Benchmark users, equivalent to a throughput of 210,000 fully processed order line items per hour or 10,500 SAPS.

[HP ProLiant DL585 Dual-Core August 2006.](#) The ProLiant DL585 G5 (Certification #2006066) was set up as a four-processor system (4 processors/ 8 cores/ 8 threads) with four 2.6GHz Dual-Core AMD Opteron Processor 8218 with 128KB L1 cache and 1MB L2 cache per core, and 32GB main memory. The server was running Microsoft Windows Server 2003 Enterprise Edition 64-bit operating system, Microsoft SQL Server 2005 64-bit database, and SAP ERP 5.0 (64-bit). The HP ProLiant DL585 G5 achieved 1,911 SAP SD Benchmark users, equivalent to a throughput of 191,330 fully processed order line items per hour or 9,570 SAPS.