

HP ProLiant BL680c G5 server blade takes world record for excellent performance for four-processor server on three-tier SAP® SD Standard Application Benchmark with Microsoft Windows 2008.



The HP Difference

Designed to keep pace with strenuous computing demands, the HP ProLiant BL680c G5 server blade is equipped with outstanding 4P processing power and expansion capabilities, enterprise-class availability features, and industry-leading management tools that make it easy to deploy and maintain.

Key results at a glance:

- #1 performance for four-processor server on three-tier SAP® Sales and Distribution (SD) Standard Application Benchmark with 34,000 SAP SD Benchmark users.
- First Microsoft Windows 2008 and SQL Server 2008 SAP Standard Application Benchmark.
- #2 Windows three-tier SAP SD Standard Application Benchmark. The HP 93,000 SAP SD Benchmark users result in 2005 is the #1 Windows three-tier SAP SD Standard Application Benchmark (see Appendix A for details of this 2005 benchmark result).
- The performance results demonstrate the strength of HP blade infrastructures to support robust, business-critical applications with uncompromising performance.

The HP ProLiant BL680c G5 server blade delivers no-compromise performance and expansion as the first Quad-Core 4P BladeSystem Server. The server blade showed an outstanding performance on the three-tier SAP SD Standard Application Benchmark with a result of 34,000 SAP SD Benchmark users and 170,200 total SAPs, earning the #1 position for a four-processor server on the three-tier SAP SD Standard Application Benchmark. (Result as of 2-26-08. Details on following pages).



HP 4P, Quad-Core ProLiant BL680c G5 server blade shows superb performance on a volume platform

More information about SAP benchmark results for all servers can be found at the following Web page:

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

Benefits demonstrated through this benchmark

When benchmarks such as this – running SAP solutions with SQL Server on Intel-based HP blades – are executed, top engineers from all three companies come together to develop the test plans and provide engineering support during the test execution, all to help ensure HP delivers the right results for customer success. In addition, this benchmark demonstrated:

- a flexible environment (easy to move, add, and change the setup)
- simple to manage
- small footprint (two 42U racks for the entire landscape)
- reduced cabling

Why three-tier

Since most SAP customers deploy the application in a three-tier environment, HP conducted the benchmark tests with that same setting. This situation provides HP customers with results that better match their real-world deployment scenario, giving them stronger predictability of how the application will run for them. This type of testing takes the risk out of their implementation, as customers are then better informed of expected results and know from the testing that the combined software/hardware versions operate well together.

ProLiant BL680c G5 server blade test configuration

Designed to deliver unmatched performance and expansion in the densest four-processor server blade form-factor available, the HP ProLiant BL680c G5 server blade demonstrated those features with its results on the three-tier SAP SD Standard Application Benchmark. With 34,000 SAP SD Benchmark users, the ProLiant BL680c G5 server blade earned the titles of #1 four-processor server for the three-tier SAP SD Standard Application Benchmark.

The benchmarks were performed by HP's SAP Engineering lab in Houston, TX. HP completed the testing with a 100% BladeSystem solution across all three tiers in a configuration available from HP today. HP received certification from SAP AG for the ProLiant BL680c G5 server blade ([2008003](#)) on February 26, 2008. The servers were running Microsoft Windows Server 2008 Enterprise Edition x64 operating system, Microsoft SQL Server 2008 Enterprise Edition x64 database, and the SAP ERP 6.0 application. The sixteen servers were configured with 16 x 2.4GHz Quad-Core Intel Xeon 7340 processors (4 processors/16 cores/16 threads), with 2 x 4MB L2 cache per 2 cores and 16x4GB DIMMS (64GB total main memory). The Xeon 7300 series include the first Quad-Core processors from Intel designed to be used in servers with four or more processors.

The ProLiant BL680c G5 utilized an Onboard Smart Array P400i Controller with 512MB battery-backed write cache (BBWC) attached to 2 x 72GB 15K SAS Drives and 3 x QLogic HBAs with each attached to 1 x MSA1000 (3 total) with 2 x MSA30 (6 total) each with 14 x 72GB 15K SCSI Drives (126 total), and 3 x HP BladeSystem c7000 rack enclosures.

HP server leadership

With this benchmark, HP now owns the #1 and #2 title for Microsoft Windows results on the three-tier SAP SD Standard Application Benchmark. The HP Integrity Superdome 64P server took the #1 title in 2005 with 93,000 SAP SD Benchmark users (see Appendix A), and no competitor has come close since.

The HP difference

HP provides all of the tools and services required for customers to plan their deployment of SAP ERP 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 its customers 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 strong technology capabilities are demonstrated through the results of this benchmark. HP's SAP Consulting and Integration services practice also has strong expertise with SAP solution-based deployments, and hundreds of successful customer implementations.
- From a platform perspective, HP servers are the market leader in the SQL Server space with nearly 50% share – double our nearest competitor.

The HP ProLiant Advantage

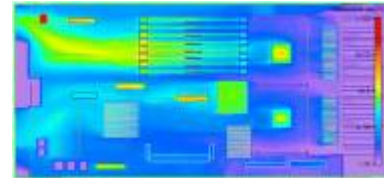
HP SFF SAS: leading the future of storage



The transition to SFF SAS drives appears as one of the most significant transitions in the industry's history, fueled by the biggest required increase in storage capacity ever experienced along with the need for faster access to stored data.

- Higher reliability
 - 1.7 million mean time between failures (MTBF) vs. 1.5 million for 3.5" SCSI
- Better performance
 - Serial point-to-point connections
 - More spindles per platform
- Greater efficiency and improved thermals with SFF drives
 - Half the power consumption – 9 Watts
 - SFF enables better airflow

← Airflow



HP Smart Array Controller P400i

The HP Smart Array P400i is HP's first PCI-E SAS RAID controller and provides new levels of performance and reliability for HP servers, through its support of the latest SCSI technology and advanced RAID capabilities. The Smart Array P400i is ideal for SAS-based servers and storage enclosures that require mission-critical reliability and high performance.

QLogic-based Fibre Channel Mezzanine HBA



The QLogic-based Fibre Channel Mezzanine HBA for HP BladeSystems uses the proven QLogic ISP2312 Fibre Channel ASIC. QLogic has successfully packaged a pair of 2Gb Fibre Channel HBAs into a single reliable ASIC including dual RISC processors, dual frame buffers, and dual Fibre Channel interfaces with a single PCI interface.

HP Modular Storage Array 1000 (MSA1000)



The MSA1000 is the premiere storage system in the HP StorageWorks Modular Smart Array family, delivering industry-leading technology to meet today's demanding and growing storage needs. The performance and scalability of the MSA1000 allows for up to 18 additional ProLiant servers to be connected.

HP StorageWorks 30 Modular Smart Array (MSA30)



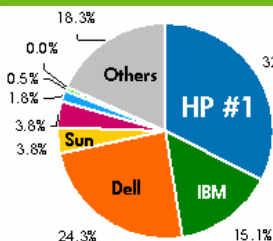
The HP StorageWorks 30 Modular Smart Array Enclosure family is the latest HP Ultra320 SCSI disk drive storage enclosure, delivering industry-leading data performance, availability, storage capacity, and upgradeability to meet demanding and growing storage needs. The MSA30 enclosure is ideal for data center, departmental, and workgroup server users who need a flexible, universal storage enclosure that utilizes a common storage building block for their current and future data center. The MSA30 enclosure is intended for use with servers delivering business-critical data and applications with requirements for high availability, performance, excellent serviceability, and large storage capacity.

HP storage technology reduces energy costs

HP's intelligent, energy-wise storage technology monitors application capacity demands and then dynamically provisions additional storage or re-provisions unused storage to lower cost and accommodate growth. "Green" storage and servers allow high-density, cost-effective, and scalable configurations for multi-TB to PB of information. High-capacity storage and Thin Provisioning reduce server count, lower power and cooling costs, and minimize carbon footprint. HP's Dynamic Smart Cooling in data centers significantly improves energy efficiency by actively managing cooling. Dynamic Smart Cooling is the industry's first solution to enable the computing infrastructure to interact with the data center facilities so that risks are minimized. Energy efficient tape backup solutions protect valuable financial data using energy efficient tape technology.

HP market share leadership

HP leads with #1 x86 market share in Q3/07



- For the 45th consecutive quarter, more than 11 years, HP ProLiant is the x86 server market share leader in both factory revenue and units.¹
- HP captured 32.4 percent of total unit shipment share.
- HP increased its worldwide server unit shipments by 10 times the total of *all other vendors combined* in the third calendar quarter of 2007.²

Source: IDC Worldwide Quarterly Server Tracker November 2007

HP is the global disk storage market leader with 23.6% market share with a No.1 position in Storage Area Networks (SAN) and internal disk storage systems. (HP News Release, June 7, 2007 – www.hp.com/hpinfo/newsroom/press/2007/070607a.html)

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 as a recommended strategic platform. 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 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.
 - One SAP Competency Center, Walldorf, Germany.
 - 24x7 support through globally connected SAP support centers in more than 15 countries worldwide.
 - Four engineering labs located in Walldorf, Germany; Houston, Texas, USA; Marlborough, MA., USA; and Redmond, Washington, USA.

¹ Includes Compaq ProLiant from Q196 through Q202 and HP ProLiant from Q302 through Q306.

² In the 3rd quarter of 2007: HP increased server shipments by more than 107,600 units. All other vendors combined accounted for an increase of just over 11,100 servers. HP shipped over 162,000 more servers than #2 Dell. HP shipped over 345,000 more servers than #3 IBM and 8.5 times as many as #4 Sun.

- HP uses SAP solutions for Enterprise Resource Planning and Supply Chain Management.
- HP's output management technology is a proven and recommended platform for output management in the context of SAP solutions.
- HP has been awarded SAP's highest level of partnership in 3 out of 4 key areas, including HP's SAP customer support process, which has won both the SAP Pinnacle Award and the SAP Award of Excellence.³

Summary

With HP's commitment to standards-based solutions and joint testing of SAP applications on HP systems, HP customers have a wide choice in comprehensive, proven solutions that meet their specific business requirements.

Blades are a viable solution for SAP customers of almost all sizes, and this latest three-tier benchmark result shows that the HP platform continues to stand up to the demands of enterprise customer needs such as SAP solution-based deployments. Since real-world deployments of SAP solutions are typically done in a three-tier environment – and HP ran the testing in that format – the results better match a real-world SAP customer deployment scenario. For the HP customer, this means taking the risk out of their implementation, and they are better informed of expected results and that the combined software/hardware versions operate well together.

For more information

HP ProLiant BL680c G5: www.hp.com/bladeservers

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>.

Appendix A

HP three-tier configuration

The HP Integrity Superdome 64P server results on the three-tier SAP SD Standard Application Benchmark. The HP Integrity Superdome 64P server (Certification #2005045) was configured as a 64-processor server (64 processors/64 cores/64 threads) with Intel Itanium 2 1.6GHz processors with 32KB L1 cache, 256KB L2 cache, 9MB L3 cache, and 256GB main memory. The HP Integrity Superdome 64P server was running the mySAP™ ERP 2004 application with Microsoft Windows Server 2003 Datacenter Edition operating system and Microsoft SQL Server 2005 Enterprise Edition database and achieved 93,000 SAP SD Benchmark users, equivalent to a throughput of 9,360,000 fully processed order line items per hour and 468,000 total SAPS.

© 2008 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.

SAP, mySAP and other SAP products and services mentioned herein as well as their respective logos are trademarks or registered trademarks of SAP AG in Germany and in several other countries all over the world. February 2008

³<http://h71028.www7.hp.com/enterprise/cache/13419-0-0-0-121.html>