



SAP SD Standard Application Performance Brief

HP ProLiant DL380 G7 demonstrates unsurpassed 2-processor performance on two-tier SAP® Sales and Distribution (SD) standard application benchmark with SAP enhancement package 4 for SAP ERP 6.0

World's best-selling rack server



May 2010

Executive summary

The HP ProLiant DL380 with the latest ProLiant Generation 7 technology, Intel® Xeon® X5680 Processors, on the two-tier SAP® Sales and Distribution (SD) standard application benchmark with SAP enhancement package 4 for the SAP ERP application 6.0, accomplished a leading 2-processor performance result that showed greater performance than the similarly configured 2-processor Fujitsu PRIMERGY BX922 S2.¹ With HP Converged Infrastructure, a full portfolio of standards-based integrated solutions and services developed specifically to solve the complexities of the data center, the ProLiant DL380 G7 earned 5,075 SAP SD benchmark users with 27,720 SAPs, a #1 overall 2-processor result on the two-tier SAP SD standard application benchmark with SAP enhancement package 4 for SAP ERP 6.0.

Key Take Aways:

- ▶ **New ProLiant Generation 7 technology delivers leading performance**
- ▶ **Proof point of greater performance with 6-core Intel Xeon 5600 Series Processors for demanding scale-out applications in a business environment**
- ▶ **Greater number of SAP SD benchmark users than similarly configured Cisco and Fujitsu competitors**
- ▶ **New ProLiant 6-core processors scale up to 48.6% greater performance than the previous generation processors**

A tough act to follow: HP has leading performance with 6-core processors

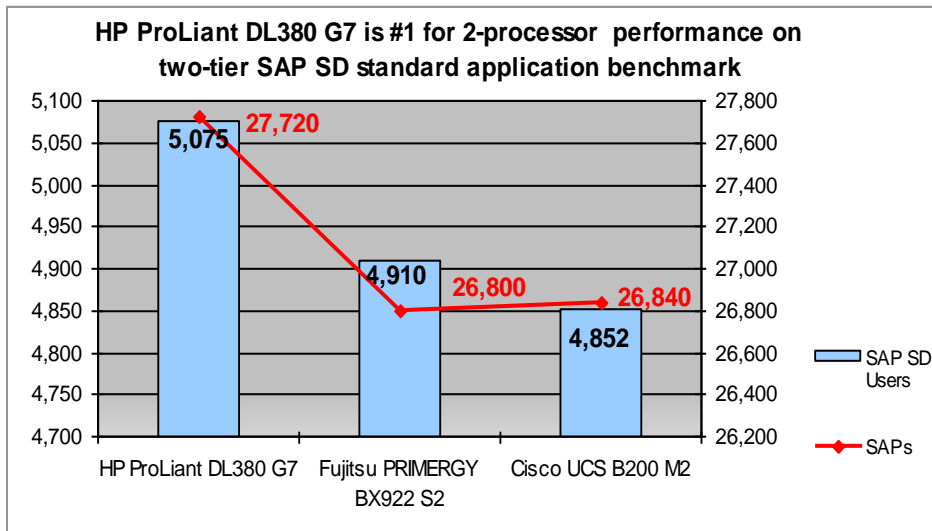


Figure 1: The ProLiant DL380 G7 6-core rack server earned the #1 2-processor performance result when it achieved 5,075 SAP SD benchmark users (27,720 SAPs). See page 3 for Figure 1 configurations and Appendix A on page 5 for comparison minimum data.

¹ Increased performance derived from comparing HP ProLiant DL380 G7 3.33GHz 6-core processors to Fujitsu PRIMERGY BX922 S2 and Cisco UCS B200 M2 6-core 3.33GHz processors. See Appendix A on page 5 for comparison minimum data.



HP also provides remarkable processor scalability

In addition to achieving leading performance two-processor results on the two-tier SAP SD standard application benchmark, the ProLiant DL380 G7 server showed excellent two-processor performance scalability results with its next server generation and with the new 6-core processors compared to two processor 6-core and Quad-core previous results.

The ProLiant DL380 G7 server showed an overall increase in performance of 54% when it achieved 5,705 SAP SD benchmark users (27,720 SAPs) for its 6-core result from a previous result of 3,300 SAP SD benchmark users (18,030 SAPs) with the ProLiant DL380 G6 with Quad-core processors.

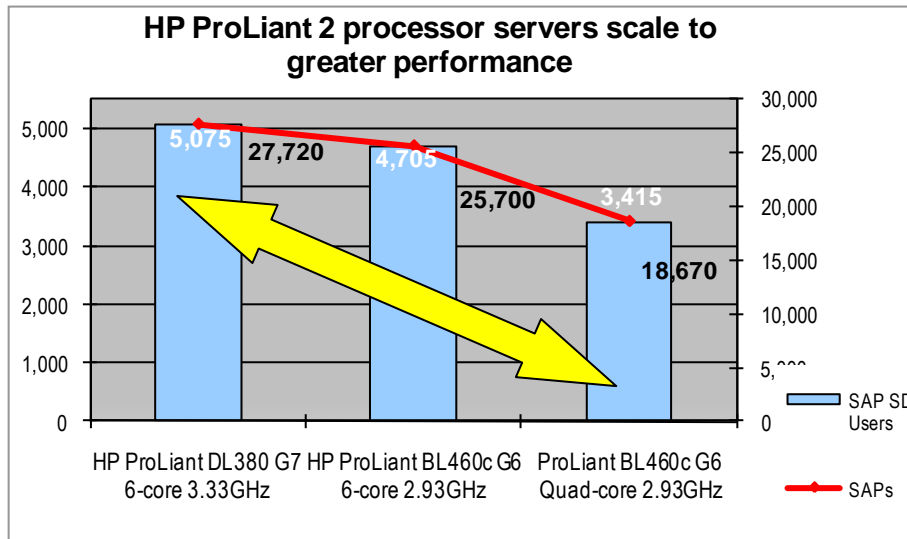


Figure 2: Scaled performance derived from comparing HP ProLiant DL380 G7 3.33GHz 6-core processors to HP ProLiant BL460c G6 2.93GHz 6-core processors and HP ProLiant BL460c G6 2.93GHz Quad-core processors. See Appendix A on page 5 for comparison minimum data.

What this means for customers

Clients want less complexity and more efficiency in their IT operations and across their network infrastructure. HP is the only company that can deliver a single common, modular architecture across the data center from x86 to Superdome. HP is at an inflection point where our technology is coming together to help our clients build the data center of the future, and it will be based on a Converged Infrastructure.

Business transformation:

HP is uniquely positioned to build the Converged Infrastructure because HP is also 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. 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.

And with the ProLiant DL380 G7 technology and SAP software, customers can enjoy the benefits of:

- Providing basic information to configure and size SAP Business Suite software
- Allowing users to compare different platforms
- Enabling proof-of-concepts scenarios
- Providing an outlook for future performance levels (new platforms, new servers, and so on)



Customer advantages of using SAP software and HP ProLiant servers

Leading companies realize that to succeed, they must deploy strategies faster than the competition – and close the gap between strategic goals and operational execution. With platform technology from SAP AG, customers can keep their competitive edge with agile operations that can support continuous business improvement.

SAP standard application benchmarks test the hardware and database performance of SAP applications and components. 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.

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 and have proven to be reliable and cost-effective. HP servers run almost 50% of all installations of SAP solutions, with more than 60,000 installations and 25,000 customers worldwide. HP's strong technology capabilities are demonstrated through the result of this benchmark.

All results as of 04-26-2010. Details can be found at <http://www.sap.com/benchmark>.

Why the ProLiant DL380 is the world's best-selling rack server

The HP ProLiant DL380 G7 Server continues to deliver on its heritage of engineering excellence with increased flexibility and performance, enterprise-class uptime and manageability, 2-socket Intel Xeon performance, and 2U density for a variety of applications.

Key Benefits

- 6-core /4-core Intel Xeon 5600 Series performance for demanding scale-out applications and virtualization projects
- Flexible, ready to deploy for complex, dynamic environments
- Powerful administration management tools
- Versatility and availability for a wide range of deployments

Bottom line

The ProLiant Advantage. HP ProLiant provides the thought-leading 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.

Benchmark configurations

HP received certification from SAP AG of the results of the ProLiant DL380 G7 Server Blade on the two-tier SAP SD standard application benchmark (Certification #2010019). The HP ProLiant DL380 G7 was set up as a 2-processor system with two 3.33GHz 6-Core Intel Xeon X5680 Processors (2 processors/12 cores/24 threads), with 64KB L1 cache per core, 256KB L2 cache per core, 12MB L3 cache per processor, and 96GB main memory (12 x 8GB PC3-10600 DIMMs, 1333MHz). The server was also configured with one Smart Array P410i Controller (onboard) and one Smart Array P411 Controller connected to 33 x 72GB 6GB dual-port 15K SAS SFF external drives. The server was running Windows Server 2008 Enterprise Edition x64 operating system, SQL Server 2008 Enterprise Edition x64 database, and SAP enhancement package 4 for SAP ERP 6.0 (7.01 kernel) patch 31 (Unicode). The HP ProLiant DL380 G7 achieved 5,075 SAP SD benchmark users, equivalent to a throughput of 554,330 fully processed order line items per hour or 27,720 SAPS. All results as of 05-10-10; 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. 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 standard application 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 www.hp.com/servers/

HP Converged Infrastructure: <http://h18004.www1.hp.com/products/solutions/converged/overview.html>

SAP: www.sap.com

© 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 emissions contained herein. ProLiant is a trademark of Hewlett-Packard Development Company. SAP and all SAP logos are trademarks or registered trademarks of SAP AG in Germany and several other countries. AMD and AMD Opteron are trademarks of Advanced Micro Devices, Inc. Intel, Intel Itanium, and Intel Xeon are trademarks of Intel Corporation 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. May 2010



Appendix A

Note: All results noted were achieved on the two-tier SAP SD standard application benchmark and all servers shown ran SAP enhancement package 4 for SAP ERP 6.0 (Unicode).

Figure 1. Configuration and Certification Number Details

Platform, processor type (processors/cores/ threads), memory	Certification number	OS, database, and SAP software	SAP SD benchmark users	Order line items/hour	SAPS
Page 1 – Greater performance compared to competitor with six-core processors graph					
HP ProLiant DL380 G7, 2-processors, 6-core 3.33GHz Intel Xeon X5680 (2/12/24), 96GB RAM	2010019	Windows Server 2008 Enterprise Edition (EE) x64, SQL Server 2008 EE x64 , SAP enhancement package 4 for SAP ERP 6.0	5,075	554,330	27,720
Fujitsu PRIMERGY BX922 S2, 2-processors, 6-core Intel Xeon X5680, 3.33GHz (2/12/24), 72GB RAM	2010008	Windows Server 2008 R2 Enterprise Edition, SQL Server 2008, SAP enhancement package 4 for SAP ERP 6.0	4,910	536,000	26,800
Cisco UCS B200 M2, 2-processors, 6-cores, Intel Xeon X5680 3.33GHz (2/12/24), 96GB RAM	2010018	Windows Server 2008 Enterprise Edition (EE), SQL Server 2008, SAP enhancement package 4 for SAP ERP 6.0	4,852	529,670	26,480
Page 2, Figure 2. – Heightened scalability with 6-core/Quad-core processors graph					
Platform, processor type (processors/cores/ threads), memory	Certification number	OS, database, and SAP software	SAP SD benchmark users	Order line items/hour	SAPS
HP ProLiant DL380 G7, 2-processors, 6-core 3.33GHz Intel Xeon X5680 (2/12/24), 96GB RAM	2010019	Windows Server 2008 Enterprise Edition (EE) x64, SQL Server 2008 EE x64 , SAP enhancement package 4 for SAP ERP 6.0	5,075	554,330	27,720
HP ProLiant BL460c G6 2-processors, 6-core, 2.93GHz Intel Xeon X5670 (2/12/24); 96GB RAM	2010009	Windows Server 2008 Enterprise Edition, SQL Server 2008, SAP enhancement package 4 for SAP ERP 6.0	4,705	514,000	25,700
HP ProLiant BL460c G6 2-processors, Quad-core 2.93GHz Intel Xeon X5570 2/8/16, 48GB RAM	2009031	Windows Server 2008 Enterprise Edition, SQL Server 2008, SAP enhancement package 4 for SAP ERP 6.0	3,415	373,330	18,670