

HP VirtualSystem delivers leadership performance

HP VirtualSystem with HP ProLiant BL460c G7 and VMware ESX5.0 – on the three-tier SAP® Sales and Distribution (SD) standard application benchmark – supports more SAP SD benchmark users than any other two-processor competitor

SAP Performance Brief

November 2011



Executive Summary

Earning the OVERALL worldwide record result for two-processor platforms on the three-tier SAP® Sales and Distribution (SD) standard application benchmark, the new HP VirtualSystem Solution with HP ProLiant BL460c G7 and VMware ESX5.0 achieved 32,125 SAP SD benchmark users and 175,320 SAPS (Certification #2011044) on a virtualized platform.

HP VirtualSystem
Ideal for hosting
one or multiple apps
in VMs

The HP VirtualSystem Advantage. With VMware and HP joining forces via the HP VirtualSystem, built on HP Converged Infrastructure architecture and portfolio, ProLiant customers enjoy a solution that reduces storage administration, speeds time to service delivery, increases energy efficiency, and improves access for any data type or application workload. This benchmark result underscores that HP VirtualSystem VS2 utilizing ProLiant BL460c G7 servers and VMware ESX5.0 with Microsoft Windows 2008 R2 and SQL Server 2008 provides customers a solution that gains maximum performance for their dedicated business applications. (See Figures 1 and 2 and Appendix A for minimum data comparison.)

Key Take Aways

- Performance leadership with the HP VirtualSystem with the two-processor ProLiant BL460c G7, the world's most popular blade,¹ on a virtualized platform on the three-tier SAP SD standard application benchmark. (See Figures 1 and 2 and Appendix A for minimum data comparison.)
- The HP VirtualSystem Solution achieved more than TWO TIMES as many SAP SD benchmark users compared to results from two-processor Fujitsu PRIMERGY RX300 S5 server with a virtualized platform. (See Figures 1 and 2 and Appendix A for minimum data comparison.)
- The HP VirtualSystem Solution also outperformed the IBM POWER System p550 by more than 6%. (See Figures 1 and 2 and Appendix A for minimum data comparison.)
- This result is another high-performance proof point for the HP VirtualSystem Solution that eliminates integration headaches of virtual environments, optimizes performance and scalability in highly virtualized data centers, and provides the foundation for cloud computing.

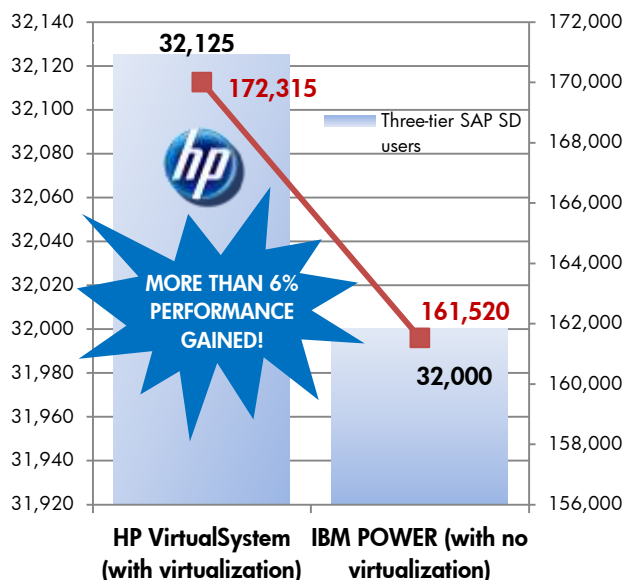


Figure 1. HP VirtualSystem with the ProLiant BL460c G7 outperforms the IBM POWER solution on the three-tier SAP SD standard application benchmark (see Appendix A for minimum data comparison).

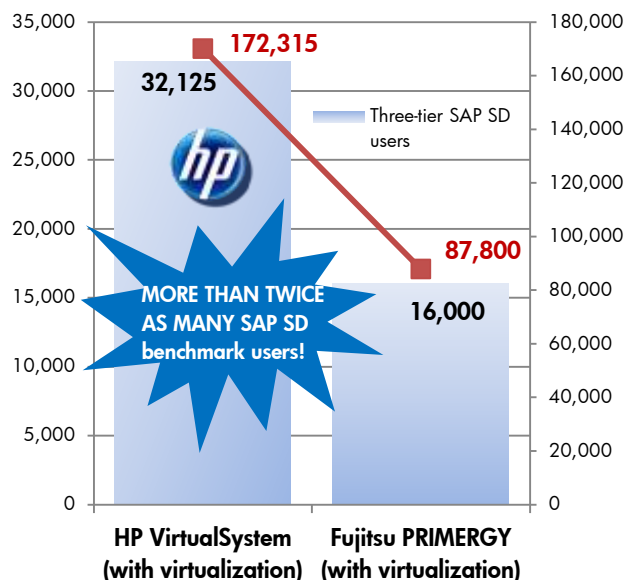


Figure 2. HP VirtualSystem with the ProLiant BL460c G7 also defeated the Fujitsu PRIMERGY solution on the three-tier SAP SD standard application benchmark (see Appendix A for minimum data comparison).

¹ "Worldwide Quarterly Server Tracker," IDC, first quarter, 2011.

Customer Value

Business transformation with HP Converged Infrastructure

Converged Infrastructure – HP’s blueprint for consolidating IT – drives cost reduction and accelerates service delivery. HP Converged Infrastructure delivers breakthrough CAPEX and OPEX savings and streamlines on-demand application and service delivery by unifying server, storage, and networking resources and providing automated, end-to-end service orchestration and management capabilities.

HP VirtualSystem is the fastest path to complete virtual infrastructure and is a foundation for cloud

HP VirtualSystem for VMware melds HP Converged Infrastructure with the new VMware vSphere 5.0 and seamlessly integrates with the VMware portfolio. HP VirtualSystem provides a converged infrastructure platform with jointly optimized configurations, management capabilities, and services to ensure the most comprehensive solutions. HP VirtualSystem saves months of deployment time, tightly fusing VMware vSphere 5.0 with HP Converged Infrastructure, delivered as one factory integrated, turnkey solution, ready to run on day one, featuring the latest innovations which enable customers to:

- **Accelerate virtual machine mobility** by up to 40 percent while doubling throughput and reducing network recovery time by more than 500 times⁽¹⁾ with the [HP FlexFabric](#) virtualized networking solution²
- **Cut capacity requirements** by 50%, double virtual machine density, and speed deployment by 41% with HP LeftHand and HP 3PAR Storage Systems.²
- **Cut downtime** by 83% and improve server performance with HP Insight Control for VMware vCenter.³
- **Speed business results** with full lifecycle services from virtualization and cloud computing experts at HP Technology Services and HP ServiceONE partners.⁴



ProLiant BL460c G7

Packing two processors sockets, two hot-plug hard drive bays, 12 DIMM sockets for up to 384GB of memory, integrated P410i Smart Array Controller, and an integrated dual-port 10Gb FlexFabric adapter into a half-height blade, the ProLiant BL460c G7 gives IT managers a single platform that can handle any business applications.

Benchmark configurations

HP received certification from SAP AG of the results of the ProLiant BL460c G7 server on the three-tier SAP SD standard application benchmark (certification #2011044), performed in Houston, TX, USA on October 21, 2011. The HP ProLiant BL460c G7 was configured with the following setup:

Presentation tier: 5 benchmark drivers (4 drives on SLES11, 1 driver on Microsoft Windows 2008 R2 x64).

Application tier: 10 x ProLiant BL460c G7 servers with 2 VMs each with 12vCPU/40GB memory (central server instance with 6 dialogs, 2 updates, 4 enqueues, and all the other instances running 6 dialog, and 3 updates, with 3 instances running per VM):

- 2 x 3.06GHz 12 Core/24Thread Intel Xeon Processors X5675 (2P/12C/24T), 96GB main memory on the server, and 1 x integrated NC553i Dual Port FlexFabric 10Gb Adapter.

Database tier: 1 x BL460cG7 server with 1 VM 20vCPU/75GB memory:

- 2 x 3.06GHz 12 core/24 thread Intel Xeon Processors X5675 (2P/12C/24T), 96GB main memory, DIMMs (96GB), 1 x integrated NC553i Dual Port FlexFabric 10Gb Adapter, 2 x HP P4800 G2 42TB SAS SAN BladeSystem each with 70 x 600GB 15K RPM SAS disk drives. Connectivity provided through HP VC Flex-10 and HP 3Gb SAS c7000 modules.

The platform ran Microsoft Windows Server 2008 R2 Enterprise Edition x64 operating system, Microsoft SQL Server 2008 Enterprise Edition x64 database, VMware ESX5.0 with Microsoft Windows 2008 R2 and SQL Server 2008 for virtualization, and SAP enhancement package 4 for the SAP ERP application 6.0. The HP ProLiant BL460c G7 result was 32,125 SAP SD benchmark users and 175,320 SAPS. Results as of November 7, 2011; details can be found at <http://www.sap.com/benchmark>.

For more information

To read more about HP ProLiant BL460c G7 Server Blade and the SAP benchmark:

HP ProLiant BL460c G7 Server Blade: <http://www.hp.com/servers/proliantbl460cg7>

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

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

² <http://www.hp.com/hpinfo/newsroom/press/2011/110829xa.html>

³ http://www.ts.avnet.com/uk/vendors/hp/assets/hp_insight_control_data_sheet.pdf

⁴ <http://www.nikeconsultants.co.uk/2011/09/new-optimize-virtual-environments-with-hp/>

Appendix A

Three-tier SAP SD Standard Application Benchmark Results

Table 1: Configuration details and certification numbers for Figures 1 and 2.

Page 1. Figures 1 and 2. – Configuration details and certification numbers of two-processor three-tier results

Platform, processor type (total processors/cores/threads), memory	Certification number	OS, database, and SAP software	SAP SD benchmark users	SAPS
Database tier: HP ProLiant BL460c G7, 6 Core, 3.06GHz Intel Xeon X5675, (2 Processors/12 Cores/24 Threads), 96GB memory Application tier: 10 x ProLiant BL460c G7 3.06GHz Intel Xeon X5675 (2 Processors/12 Cores/24 Threads), 96GB main memory	2011044	Microsoft Windows Server 2008 R2 Datacenter Edition on VMware ESX5.0, SQL Server 2008 Enterprise Edition X64, SAP enhancement package 4 for SAP ERP 6.0	32,125	175,320
Database tier: IBM System p550, 2 Core 4.20GHz POWER6, (2 Processors/4 Cores/8 Threads), 64GB memory Application tier: 28 x IBM BladeCenter JS22 4.20GHz POWER6 (2 Processors/4 Cores/8 Threads) 16GB memory	2008001	AIX 5L Version 5.3, MaxDB2 9.5, SAP ECC 6.0 (2005)	32,000	161,520
Database tier: Fujitsu PRIMERGY RX300 S5, 4 Core, 2.93GHz Intel Xeon X5570, (2 Processors/8 Cores /16 Threads), 96GB memory Application tier: 7 x Fujitsu PRIMERGY BX900 S1 blade servers 2,80GHZ Intel Xeon X5560 (2 Processors/8 Cores/16 Threads), 36GB memory	2010016	SuSE Linux Enterprise Server 10 on VMware ESX Server 4.0, MaxDB 7.8, SAP enhancement package 4 for SAP ERP 6.0	16,000	87,800

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Created November 2011

