



HP ProLiant BL660c Gen9 Server Blade shows excellent generational performance gains and two- to four-processor scaling with Microsoft Windows and SQL Server and Intel Xeon EP v3 processors

Significant HP ProLiant performance gains from Gen8 to Gen9, Intel Xeon processors E5 v2 to Intel Xeon processors E5 v3, and scaling from 2P EP to 4P EP v3 on two-tier SAP Sales and Distribution (SD) standard application benchmark with SAP enhancement package 5 for SAP ERP 6.0

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Executive summary

The HP ProLiant BL660c Gen9 Server Blade established compelling generational performance gains on the two-tier SAP® Sales and Distribution (SD) standard application benchmark using four Intel Xeon E5-4669 v3 processors. The server achieved 27,200 benchmark users of the SD component of the SAP® ERP application with 148,850 SAPs, running Microsoft Windows Server 2012 Datacenter Edition, Microsoft SQL Server 2012, and SAP enhancement package 5 for SAP ERP 6.0. With this four-processor (4P) result, the HP ProLiant BL660c Gen9 obtained a 50% increase in performance compared to the HP ProLiant BL660c Gen8 and previous Intel Xeon v2 processor technology.

Key take aways regarding SAP SD benchmark users on two-tier SAP SD standard application benchmark

- **Significant performance increase from Intel Xeon processors 4P EP v2 to v3:**
 - 50% performance gain from HP ProLiant BL660c Gen8 v2 to HP ProLiant BL660c Gen9 v3
- **Impressive scaling for 2P EP and 4P EP servers with the latest Intel Xeon processors v3:**
 - 74% scaling from HP ProLiant DL380 Gen9 2P EP v3 to HP ProLiant BL660c Gen9 4P EP v3
- **Exceptional performance with Microsoft Windows operating system and SQL Server 2012 database**



Figure 1. HP ProLiant Gen9 Servers show excellent generational performance gains and 2P to 4P scaling with new Intel Xeon processor EP v3 technology. (See Appendix A)

Only from HP How we do it

HP ProLiant Gen9 Servers: Reimagine the server. Think compute. HP ProLiant Gen9 servers deliver the right compute for the right workload at the right economics every time. With ProLiant Gen9 servers, HP powers the next wave of transformation, bringing faster insight, new paths to revenue, smarter economics, and increased productivity

HP and Microsoft partnership. HP and Microsoft are leveraging their depth of expertise developed over three decades of partnership to create solutions that deliver next-generation performance requirements. Their solutions are designed to deliver a cost-effective, simplified, and open platform for mission-critical data management requirements. HP and Microsoft work together and combine their respective strengths to deliver innovative technologies to help advance customers' businesses.

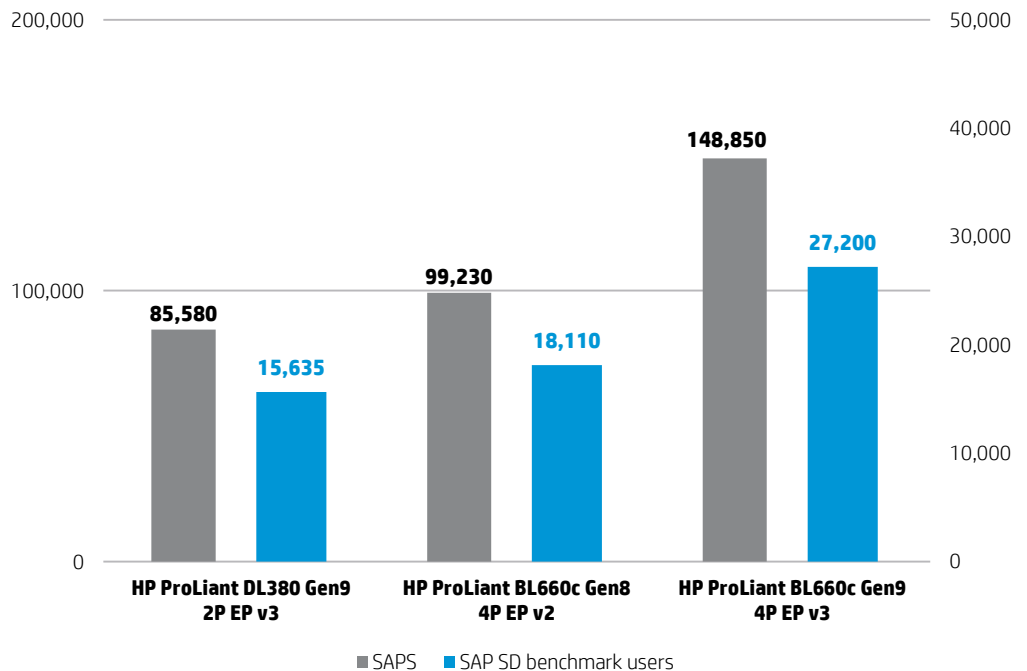
Ability to execute. Delivering blazing fast results, the HP ProLiant BL660c Gen9 Server Blade offers superior performance density with up to 2,304 cores per 42U rack.

For more information:

HP ProLiant benchmarks:
hp.com/servers/benchmarks

HP ProLiant BL660c Gen9 Server Blade:
hp.com/servers/bl660cgen9

HP ProLiant BL660c Gen9 Server shows excellent generational performance gains and 2P to 4P v3 scaling



Customer value

The new HP ProLiant BL660c Gen9, part of the HP ProLiant scale-up portfolio, is an ideal four-socket blade platform designed to address most customer requirements and workloads. It is purpose-built for applications such as business processing, decision support, server consolidation, application development, HPC, and CPU, memory, I/O bandwidth, and data-intensive applications. The HP ProLiant BL660c Gen9 is ideal for large-scale virtualization where price/performance is the driver, large-scale databases where the license costs are based on core count, and efficient performance for HPC workloads.

HP DDR4 SmartMemory. HP SmartMemory is an HP innovation that is verified, authenticated, optimized, and certified for HP ProLiant servers. HP DDR4 SmartMemory delivers 14% better throughput at 2133 MHz compared to HP DDR3 Smart Memory.¹

Intel Xeon processors. The latest Intel Xeon processor E5-4699 v3 provides up to 72 cores for additional compute power when compared to the Intel Xeon Processor E5-4657 with up to 48 cores.

HP Smart Array P246br Controller. The HP Smart Array P246br Controller is a 12Gb/s SAS RAID controller that provides enterprise-class storage performance and data protection. Industry unique features include a three-core processor, rapid rebuild, and non-disrupting flashing.

Appendix A

Benchmark configurations

HP received certification from SAP SE of the results of the ProLiant BL660c Gen9 (certification # 2015026) on the two-tier SAP SD standard application benchmark performed in Houston, TX, USA on April 20, 2015. The ProLiant BL660c Gen9 achieved 27,200 SAP SD benchmark users and 148,850 SAPS. The ProLiant BL660c Gen9 was configured with four Intel Xeon processors E5-4699 v3 2.10 GHz (4 processors/72 cores/144 threads total) with 1 TB of RAM with 32x16 GB PC3-14900 R 2133 MHz DIMMs. The platform used one HP FlexFabric 10Gb 2-port 554FLB Adapter and an HP Smart Array P246br Controller connected to 4x400 GB Small Form Factor (SFF) internal drives and 12 x 200 GB SAS SSD Modular Storage Array (MSA) 2040 external drives. The server was running Microsoft Windows Server 2012 Datacenter Edition operating system, Microsoft SQL Server 2012 Enterprise Edition x64 database, and SAP enhancement package 5 for SAP ERP 6.0.

Results as of June 1, 2015; details can be found at sap.com/benchmark.

Table 1. Benchmark configurations. HP received certification from SAP SE of the results of the HP ProLiant BL660c Gen9 on the two-tier SAP SD standard application benchmark performed in Houston on May 22, 2015. Results as of June 1, 2015; details can be found at <http://www.sap.com/benchmark>.

System description: Processor type, total (processor/cores/threads), memory	Certification number	SAP SD benchmark users	SAPS	OS, database, SAP software
HP ProLiant BL660c Gen9 Intel Xeon processors E5-4699 v3, 2.10 GHz, (4/72/144), 512 GB HP DDR4 SmartMemory	<u>2015026</u>	27,200	148,850	Microsoft Windows Server 2012 Datacenter Edition; Microsoft SQL Server 2012; SAP enhancement package 5 for SAP ERP 6.0
HP ProLiant BL660c Gen8 Intel Xeon processors E5-4657L v2, 2.40 GHz, (4/48/96), 512 GB HP DDR3 SmartMemory	<u>2014025</u>	18,110	99,230	Microsoft Windows Server 2012 Datacenter Edition; Microsoft SQL Server 2012; SAP enhancement package 5 for SAP ERP 6.0
HP ProLiant DL380 Gen9 Intel Xeon processors E5-2699 v3, 2.3 GHz, (2/36/72), 256 GB HP DDR4 SmartMemory	<u>2014037</u>	15,635	85,580	Microsoft Windows Server 2012 Datacenter Edition; Microsoft SQL Server 2012; SAP enhancement package 5 for SAP ERP 6.0

¹ [HP DDR4 Smart Memory Data Sheet](#), September 2014, HP internal testing

