HP ProLiant BL460c G6 achieves #1 Windows two-processor result on two-tier SAP® Sales and Distribution Standard Application Benchmark with SAP enhancement package 4 for SAP ERP 6.0

Key Points

- The HP ProLiant BL460c G6 earned a #1 Windows two-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 3,415 SAP SD Benchmark users with 18,670 SAPS.
- This score outperformed similarly configured Windows two-processor blade, rack, and tower competitors such as Fujitsu, NEC, and Hitachi displaying increased performance by up to more 15% compared to the other scores.
- Also, the performance scalability for Quad-Core processors for the ProLiant BL460c was improved compared to its previous Quad-Core processor result.
- The result also defeated a Windows four-processor NEC rack server, showing an increased performance of 15%.

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

Figure 1. HP ProLiant BL460c Windows two-processor server blade performance results compared to competitor Windows two-processor server results. For more details, please see page 3.

HP ProLiant delivers #1 Windows two-processor result on two-tier SAP SD Standard Application Benchmark with SAP enhancement package 4 for SAP ERP 6.0

- **#1 OVERALL** two-processor Windows performance result on two-tier SAP SD Standard Application Benchmark with SAP enhancement package 4 for SAP ERP 6.0
- **OUTPERFORMS** other similarly-configured two-processor Windows competitors – Fujitsu, NEC, and Hitachi blade – servers by more than 15%.
- **Improved performance scalability** compared to HP’s previous ProLiant BL460c G6 result.

Results as of 08/04/09, see: [http://www.sap.com/benchmark](http://www.sap.com/benchmark).
Outperforming the competition by over 15% in number of SAP SD Benchmark users

Table 1. HP ProLiant Windows two-processor server vs. competitor Windows two-processor servers and the NEC Express5800 Windows four-processor server. HP shows over 15% performance advantage on similarly configured servers on the two-tier SAP SD Standard Application Benchmark for Windows two-processor servers running SAP enhancement package 4 for SAP ERP 6.0. More details are in Appendix A.

<table>
<thead>
<tr>
<th>Server</th>
<th>HP ProLiant BL460c G6 BLADE</th>
<th>Fujitsu PRIMERGY Model TX300 S5 / RX300 S5 Rack and Tower</th>
<th>Fujitsu PRIMERGY BX920 S1 BLADE</th>
<th>NEC Express5800 Model R120a-2 Rack and Tower</th>
<th>Hitachi BladeSymphony BS2000 Model E55A1 BLADE</th>
<th>NEC Express5800 R140a-4 Rack</th>
</tr>
</thead>
<tbody>
<tr>
<td>Server configuration</td>
<td>Quad-Core Intel Xeon X5570 2.93GHz</td>
<td>Quad-Core Intel Xeon X5570 2.93GHz</td>
<td>Quad-Core Intel Xeon X5570 2.93GHz</td>
<td>Quad-Core Intel Xeon X5570 2.93GHz</td>
<td>Quad-Core Intel Xeon X7460 2.66GHz</td>
<td>Six-Core Intel Xeon X7460 2.66GHz</td>
</tr>
<tr>
<td>SAP SD Benchmark Users</td>
<td>3,415</td>
<td>3,328</td>
<td>3,260</td>
<td>3,250</td>
<td>2,964</td>
<td>2,957</td>
</tr>
<tr>
<td>SAPS</td>
<td>18,670</td>
<td>18,170</td>
<td>17,800</td>
<td>17,750</td>
<td>16,200</td>
<td>16,170</td>
</tr>
</tbody>
</table>

How we did it

The SAP SD Standard Application Benchmark was performed on July 25, 2009 by HP in Houston, Texas, USA, on the ProLiant BL460c G6 server blade with the SAP enhancement package 4 for SAP ERP 6.0 (Unicode), Microsoft Windows Server 2008 Enterprise Edition and Microsoft SQL Server 2008. The HP ProLiant BL460c G6 achieved 3,415 SAP SD Benchmark users, equivalent to a throughput of 373,330 fully processed order line items per hour or 18,670 SAPS. HP received certification from SAP AG of the results on the two-tier SAP SD Standard Application Benchmark for the ProLiant BL460c G6. (certification #2009031).

The ProLiant BL460c G6 was configured as a two-processor system with two Quad-Core Intel Xeon X5570 2.93GHz processors (2 processors/8 cores/16 threads), 64KB L1 cache, 256KB L2 cache per core, 8MB L3 cache per processor, and 48B main memory. The server also utilized 1 x HP Smart Array P410i Controller connected to 2 x 72GB 15K SAS internal drives, and 1 x QLogic HBA connected to an HP StorageWorks 2012fc Modular Smart Array with 12 x 146GB 15K SAS external drives.

All results as of 08-04-2009; details can be found at http://www.sap.com/benchmark.
The Market Leadership Advantage of Solutions from HP and SAP

In 2008, more than half of all new systems running SAP solutions were installed with Microsoft Windows. And more than half of the new installations of SAP applications on Windows were installed on Microsoft SQL Server. HP servers host nearly half of all installations of SAP solutions, with more than 60,000 installations and 25,000 customers. These figures show that HP, with SAP, has a leading market share with SAP solutions on Microsoft Windows and Microsoft SQL Server. In addition, the HP ProLiant BL460c is the most popular blade in the world, representing 1 in 4 of all new blades deployed, a proof point demonstrating customers trust and depend on the server for its continuance in delivering on its heritage of engineering excellence with increased flexibility and performance, enterprise-class uptime, and manageability.

HP performance scalability increases with Quad-Core technology

In addition to achieving leading performance two-processor results on the two-tier SAP SD Standard Application Benchmark on Windows, the ProLiant BL460c G6 server blade showed excellent two-processor performance scalability results with its next server generation and with the next generation of Quad-Core processors.

The ProLiant BL460c server showed an overall increase in performance when it achieved 3,415 SAP SD Benchmark users (18,670 SAPS) for its Quad-Core result from a previous result of 3,310 SAP SD Benchmark users (18,070 SAPS).

![HP BL460c server blade scalability results](image)

In addition to achieving leading performance two-processor results on the two-tier SAP SD Standard Application Benchmark on Windows, the ProLiant BL460c G6 server blade showed excellent two-processor performance scalability results with its next server generation and with the next generation of Quad-Core processors.

The ProLiant BL460c server showed an overall increase in performance when it achieved 3,415 SAP SD Benchmark users (18,670 SAPS) for its Quad-Core result from a previous result of 3,310 SAP SD Benchmark users (18,070 SAPS).

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

<table>
<thead>
<tr>
<th>Number of SAP SD Benchmark users</th>
<th>Scalability from one processor to the next</th>
</tr>
</thead>
<tbody>
<tr>
<td>ProLiant BL460c G6 QC 2.93GHz Aug. 2009</td>
<td>3,415</td>
</tr>
<tr>
<td>ProLiant BL460c G6 QC 2.93GHz April 2009</td>
<td>3,310</td>
</tr>
</tbody>
</table>

All results as of 08-04-09. Details in Appendix A.
The HP ProLiant G6 Advantage

ProLiant BL460c G6. The VALUE you get with the new HP ProLiant BL460c G6:

Trusted: The HP ProLiant BL460c is the most popular blade in the world, representing 1 in 4 of all new blades deployed.
Compatible: From Windows and Linux to Citrix XenServer and VMware, the ProLiant BL460c supports the broadest array of operating systems and applications of any blade.
Performance: New high-performance with Intel X5570 processors and 10 gigabit Ethernet adapters.

Capacity: Up to 96GB of DDR3 memory with 2X the memory footprint.
Flexibility: Storage options include hot-plug SAS drives, iHypervisors, Direct Attach Shared storage, iSCSI and SAN attach, and more.
HP Innovation with Fine-Tune Networking: Flex-10 Technology to reduce network costs.

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.

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 nearly half 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 BL460c G6: www.hp.com/servers/proliantbl460c


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

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Appendix A

Configurations and results on two-tier SAP SD Standard Application Benchmark

**Figure 1:**
Fujitsu PRIMERGY Model TX300 S5/RX300 S5 result: The Fujitsu PRIMERGY Model TX300 S5/RX300 S5 (certification #2009014) was configured as a two-processor system with two 2.93GHz Quad-Core Intel Xeon X5570 Processors (2 processors/8 cores/16 threads) with 64KB L1 cache per core, 256KB L2 cache per core, 8MB L3 cache per processor, and 48GB main memory. The server was running Microsoft Windows Server 2008 Enterprise Edition operating system, Microsoft SQL Server 2008 database, and the SAP enhancement package 4 for SAP ERP 6.0 (Unicode). The Fujitsu PRIMERGY Model TX300 S5/RX300 S5 achieved 3,328 SAP SD Benchmark users, equivalent to a throughput of 363,330 fully processed line items per hour and 18,070 total SAPS.

Hitachi BladeSymphony BS2000 Model E55A1 result: The Hitachi BladeSymphony BS2000 Model E55A1 (certification #2009013) was configured as a two-processor system with two 2.93GHz Quad-Core Intel Xeon X5570 Processors (2 processors/8 cores/16 threads) with 64KB L1 cache per core, 256KB L2 cache per core, 8MB L3 cache per processor, and 48GB main memory. The server was running Microsoft Windows Server 2008 Enterprise Edition operating system, Microsoft SQL Server 2008 database, and the SAP enhancement package 4 for SAP ERP 6.0 (Unicode). The Hitachi BladeSymphony BS2000 Model E55A1 achieved 2,964 SAP SD Benchmark users, equivalent to a throughput of 324,000 fully processed line items per hour and 16,200 total SAPS.

Table 2:
**ProLiant BL460c G6 Windows two-processor competitor results on two-tier SAP SD Standard Application Benchmark**

Fujitsu PRIMERGY Model TX300 S5/RX300 S5 result: The Fujitsu PRIMERGY Model TX300 S5/RX300 S5 (certification #2009014) was configured as a two-processor system with two 2.93GHz Quad-Core Intel Xeon X5570 Processors (2 processors/8 cores/16 threads) with 64KB L1 cache per core, 256KB L2 cache per core, 8MB L3 cache per processor, and 48GB main memory. The server was running Microsoft Windows Server 2008 Enterprise Edition operating system, Microsoft SQL Server 2008 database, and the SAP enhancement package 4 for SAP ERP 6.0 (Unicode). The Fujitsu PRIMERGY Model TX300 S5/RX300 S5 achieved 3,328 SAP SD Benchmark users, equivalent to a throughput of 363,330 fully processed line items per hour and 18,070 total SAPS.

Fujitsu PRIMERGY BX920 S1 result: The Fujitsu PRIMERGY BX920 S1 (certification #2009024) was configured as a two-processor system with two 2.93GHz Quad-Core Intel Xeon X5570 Processors (2 processors/8 cores/16 threads) with 64KB L1 cache per core, 256KB L2 cache per core, 8MB L3 cache per processor, and 48GB main memory. The server was running Microsoft Windows Server 2008 Enterprise Edition operating system, Microsoft SQL Server 2008 database, and the SAP enhancement package 4 for SAP ERP 6.0 (Unicode). The Fujitsu PRIMERGY BX920 S1 achieved 3,260 SAP SD Benchmark users, equivalent to a throughput of 356,000 fully processed line items per hour and 17,800 total SAPS.

NEC Express5800 Model R120a-2 result: The NEC Express5800 Model R120a-2 (certification #2009027) was configured as a two-processor system with two 2.93GHz Quad-Core Intel Xeon X5570 Processors (2 processors/8 cores/16 threads) with 64KB L1 cache per core, 256KB L2 cache per core, 8MB L3 cache per processor, and 48GB main memory. The server was running Microsoft Windows Server 2008 Enterprise Edition operating system, Microsoft SQL Server 2008 database, and the SAP enhancement package 4 for SAP ERP 6.0 (Unicode). The NEC Express5800 Model R120a-2 achieved 3,250 SAP SD Benchmark users, equivalent to a throughput of 355,000 fully processed line items per hour and 17,750 total SAPS.

Hitachi BladeSymphony BS2000 Model E55A1 result: The Hitachi BladeSymphony BS2000 Model E55A1 (certification #2009013) was configured as a two-processor system with two 2.93GHz Quad-Core Intel Xeon X5570 Processors (2 processors/8 cores/16 threads) with 64KB L1 cache per core, 256KB L2 cache per core, 8MB L3 cache per processor, and 48GB main memory. The server was running Microsoft Windows Server 2008 Enterprise Edition operating system, Microsoft SQL Server 2008 database, and the SAP enhancement package 4 for SAP ERP 6.0 (Unicode). The Hitachi BladeSymphony BS2000 Model E55A1 achieved 2,964 SAP SD Benchmark users, equivalent to a throughput of 324,000 fully processed line items per hour and 16,200 total SAPS.

**ProLiant BL460c G6 Windows four-processor competitor results on two-tier SAP SD Standard Application Benchmark**

NEC Express5800 Model R140a-4 four-processor result: The NEC Express5800 Model R140a-4 (certification #2009018) was configured as a four-processor system with four 2.66GHz Quad-Core Intel Xeon X7460 Processors (4 processors/24 cores/24 threads) with 64KB L1 cache per core, 3MB L2 cache per 2 cores, 16MB L3 cache per processor, and 64GB main memory. The server was running Microsoft Windows Server 2008 Enterprise Edition operating system, Microsoft SQL Server 2008 database, and the SAP enhancement package 4 for SAP ERP 6.0 (Unicode). The NEC Express5800 Model R140a-4 achieved 2,957 SAP SD Benchmark users, equivalent to a throughput of 323,330 fully processed line items per hour and 16,170 total SAPS.

**Figure 2:**
ProLiant BL460c G6 April 2009 result: The ProLiant BL460c G6 (certification #2009003) was set up as a two-processor system with two 2.93GHz Quad-Core Intel Xeon X5570 Processors (2 processors/8 cores/16 threads), with 64KB L1 cache and 256KB L2 cache per core, 8MB L3 cache per processor, and 48GB main memory. The server was running Microsoft Windows Server 2008 Enterprise Edition operating system, Microsoft SQL Server 2008 database, and the SAP enhancement package 4 for SAP ERP 6.0 (Unicode). The HP ProLiant BL460c G6 achieved 3,310 SAP SD Benchmark users, equivalent to a throughput of 361,330 fully processed order line items per hour or 18,070 SAPS.