



HP ProLiant BL460c and DL380 G5 achieve two-processor world record performance results on two-tier SAP® Sales and Distribution Standard Application Benchmark on Windows



HP Leadership with ProLiant servers



» The **HP ProLiant BL460c server blade** to provide enterprise-class features for high performance and reliability without compromising energy efficiency or density.

» The latest **HP ProLiant DL380 G5 rack server**



extends its history of design excellence with enterprise-class uptime and manageability, proven two-processor Intel Xeon performance, and 2U density.

Customer Value

What are the benefits of using HP ProLiant servers and SAP applications?

HP ProLiant servers consistently deliver excellent performance results on two-tier SAP SD Standard Application Benchmarks.

HP ProLiant servers have also proven to be reliable and cost-effective. HP servers host almost 50% of all installations of SAP solutions, with more than 55,000 installations and 20,000 customers.

HP ProLiant two-processor servers for use with SAP applications provide industry-leading management, performance, and availability for growing businesses. With the ability to run multiple operating systems and a full spectrum of redundancy features for best-in-class availability, HP ProLiant servers offer maximum flexibility and adaptability for future growth for customers' SAP solution-based environments.

HP BladeSystem servers provide a faster, simpler, and lower cost way to build and run SAP application-based infrastructure right out of the box.

HP has unified server, storage, network, power/cooling, and management capabilities so customers can now quickly and easily deliver applications and services while operating their environment—without compromising reliability, performance, or growth.

All results as of 09-12-2008. Details can be found at <http://www.sap.com/benchmark>

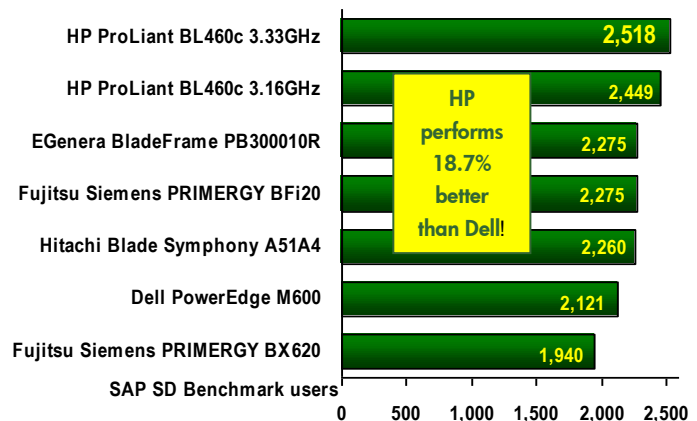
Key Points

The HP ProLiant BL460c and ProLiant DL380 G5 earned two-processor world record performance results on the two-tier SAP® Sales and Distribution (SD) Standard Application Benchmark on Windows. These results surpassed competitors such as Dell, IBM, and Fujitsu Siemens, among others, by up to 29.7% and 39.8% in performance results, respectively¹.

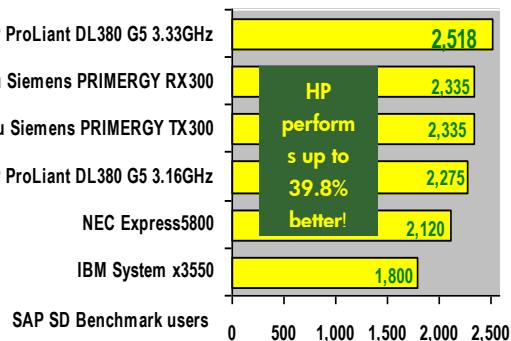
In addition, the performance scalability for Quad-Core processors from generation to generation for the HP ProLiant servers was 36.7% better for the BL460c and there was a 40.2% increased performance for the ProLiant DL380 G5 when compared to its previous Quad-Core generations. See page 2 for details.

Tables 1 and 2. HP ProLiant BL460c and ProLiant DL380 G5 two-processor QC results on two-tier SAP SD Standard Application Benchmark, respectively. Configuration details can be found in Appendix A.

Two-socket, Quad-Core blade configurations



Two-socket, Quad-Core configurations



¹ The HP ProLiant BL460c performs 29.7% better than the Fujitsu Siemens PRIMERGY BX620. The HP ProLiant DL380 G5 performs 39.8% better than the IBM System x3550. All performance details can be found in Appendix A.

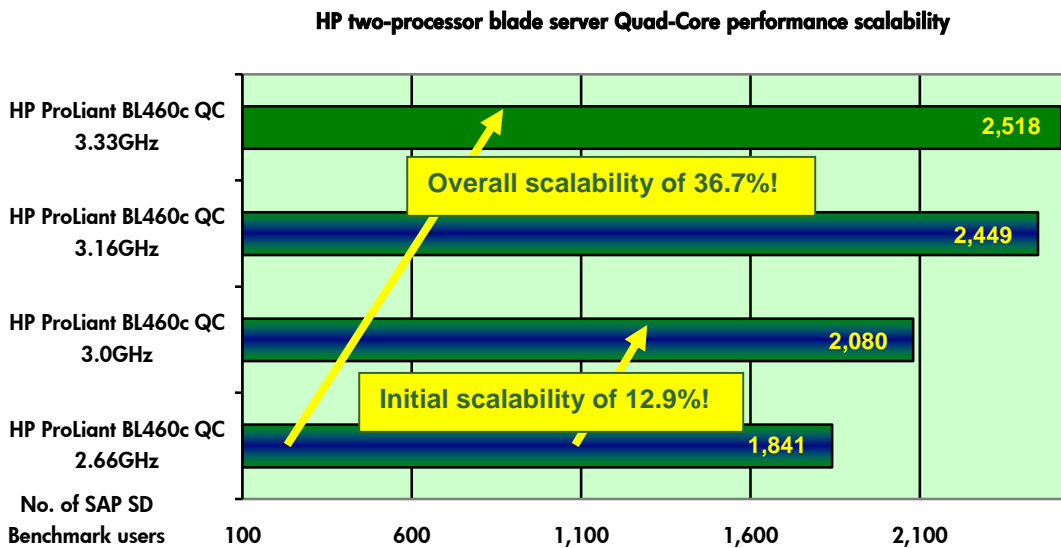
HP performance scalability increases with Quad-Core technology

In addition to achieving world record performance results with 2,518 SAP SD Benchmark users on the two-tier SAP SD Standard Application Benchmark on Windows, both the HP ProLiant BL460c server blade and the ProLiant DL380 G5 rack server showed excellent two-processor performance scalability results with the next generation of Quad-Core processors.

The ProLiant BL460c server blade showed a 12.9% initial increase in performance when it achieved 2,080 SAP SD Benchmark users (10,400 SAPS) for its Quad-Core result from its previous result of 1,841 SAP SD Benchmark users (9,000 SAPS). It then progressed to an overall performance scalability of 36.7% going to the latest generation of Quad-Core processors with 2,518 SAP SD Benchmark users (12,600 SAPS).

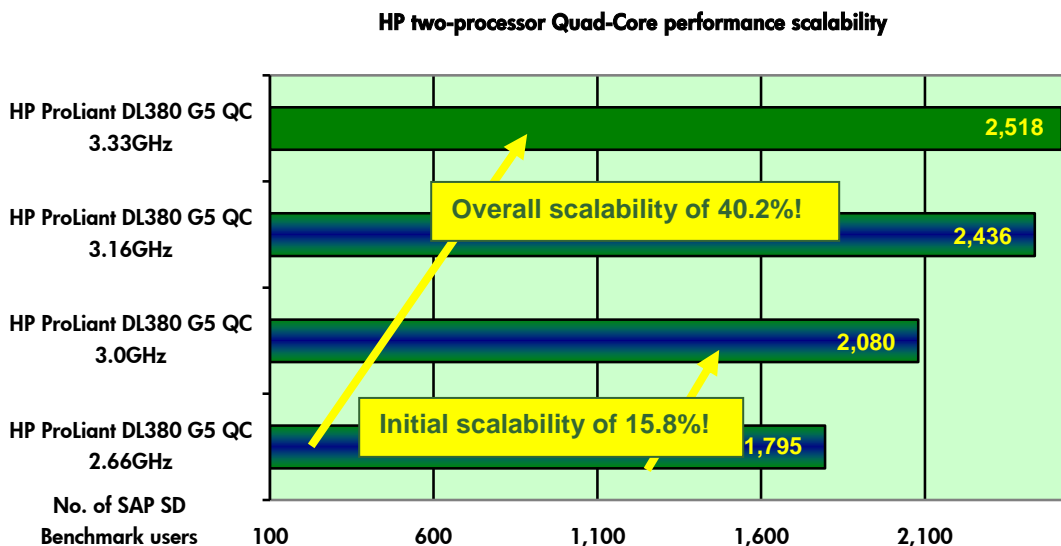
All results as of 09-12-08. Details in Appendix A.

Table 3. HP ProLiant BL460c Quad-Core performance scalability results with last three generations.



The ProLiant DL380 G5 server showed a 15.8% initial increase in performance when it achieved 2,080 SAP SD Benchmark users (10,430 SAPS) for its Quad-Core result from its previous result of 1,795 SAP SD Benchmark users (9,000 SAPS). It then showed an overall performance scalability progression of 40.2% going to the next generation of Quad-Core processors with 2,518 SAP SD Benchmark users (12,600 SAPS).

Table 4. HP ProLiant DL380 G5 Quad-Core performance scalability results with last three generations.



HP ProLiant servers leading performance results

The HP ProLiant BL460c server blade showed a performance leadership advantage above all other two-processor, 8-core server blade competitors with its excellent result on the two-tier SAP SD Standard Application Benchmark on Windows.

And, the HP ProLiant DL380 G5 rack server, with its history of design excellence, maintained its streak of leadership performance by earning its top Windows result for two-processor, 8-core servers on the two-tier SAP SD Standard Application Benchmark.

ProLiant server testing configurations

Tests were performed on the HP ProLiant BL460c server blade and ProLiant DL380 G5 rack server by HP's Houston Solution Alliances SAP Engineering lab in Houston, TX. HP received certification from SAP AG of the results on the two-tier SAP SD Standard Application Benchmark for the ProLiant BL460c (Certification #2008048) and ProLiant DL380 G5 (Certification # 2008047) on September 12, 2008.

The ProLiant BL460c server blade was configured as a two-processor system with two 3.33GHz Quad-Core Intel Xeon X5470 Processors (2 processors/8 cores/8 threads), with 12MB Level 2 cache (6MB shared per 2 cores), and 32GB (8 x 4GB) main memory. The server was running Microsoft Windows Server 2003 Enterprise Edition x64 SP2 operating system, Microsoft SQL Server 2005 Enterprise Edition x64 SP1 database, and the SAP ERP application Release 6.0. The HP ProLiant BL460c server blade achieved 2,518 SAP SD Benchmark users, equivalent to a throughput of 252,000 fully processed order line items per hour or 12,600 SAPS.

The ProLiant DL380 G5 rack server was set up as a two-processor system with two 3.33GHz Quad-Core Intel Xeon X5470 Processors (2 processors/8 cores/8 threads), with 12MB Level 2 (6MB shared per 2 cores), and 32GB (8 x 4GB) main memory. The server was running Microsoft Windows Server 2003 Enterprise Edition x64 SP2 operating system, Microsoft SQL Server 2005 Enterprise Edition x64 SP1 database, and SAP ERP 6.0. The HP ProLiant DL380 G5 achieved 2,518 SAP SD Benchmark users, equivalent to a throughput of 252,000 fully processed order line items per hour or 12,600 SAPS.

All results as of 09-12-2008. Details can be found at <http://www.sap.com/benchmark>

The ProLiant Advantage

HP ProLiant BL460c server blade

The HP ProLiant BL460c server blade continues to provide enterprise-class features for high performance and reliability without compromising energy efficiency or density. With features equal to standard 1U rack mount servers, the two-processor, multi-core ProLiant BL460c server blade combines power-efficient compute power and high density with expanded memory and I/O for maximum performance. The ProLiant BL460c server blade now features the latest models of Intel Xeon 5400 series processors with optional hot-plug hard drives, mirrored memory, online spare memory, memory interleaving, and much more to ensure high availability. The BladeSystem c7000 enclosure supports up to 16 BL460c server blades with Intel Xeon processors, two more servers than the IBM BladeCenter and each ProLiant BL460c supports double the memory capacity of the HS21 server without their expansion blade. The ProLiant BL460c server blade key benefits include:

- [Concentrated compute power](#)
- [Deployment versatility in an efficient dense form factor](#)
- [Industry-leading management and configuration tools](#)

HP ProLiant DL380 G5 rack server

The latest HP ProLiant DL380 G5, the world's best-selling server, extends its history of design excellence with enterprise-class uptime and manageability, proven two-processor Intel Xeon performance, and 2U density for a variety of rack deployments and applications.

The ProLiant DL380 G5 is designed for environments of all types and sizes, space-constrained corporate data centers and service providers, and sophisticated SMB locations.

Key benefits include:

- Engineered for reliability and ease of ownership
- Dual and Quad-Core Intel Xeon performance for demanding scale-out applications and virtualization projects
- Industry-leading management enables powerful administration
- Versatility and availability for a wide range of deployments

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 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.
- 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.ⁱ

HP market leadership²

HP ProLiant servers and server blades are a vital part of the HP success story. **For the 47th consecutive quarter, HP ProLiant is the x86 server market share leader in both factory revenue and units, shipping 1 out of every 3 servers in this market.**³

- HP's x86 revenue share was 11.7 points higher than its nearest competitor, Dell.
- HP remains the leading provider of AMD Opteron processor-based servers and server blades, with a 35.8% of factory revenue share.

For the 24th consecutive quarter, 6 years, HP is the #1 vendor in worldwide server shipments. HP shipped 1 out of every 3 servers worldwide as HP captured 33.6 percent total unit shipment share.

- HP shipped over 165,000 more servers than #2 Dell.
- HP shipped over 400,000 more servers than #3 IBM and 8.1 times as many as #4 Sun.

For more information

HP ProLiant DL380 G5: www.hp.com/servers/proliantdl380

HP ProLiant BL460c: www.hp.com/servers/proliantbl460c

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>

Technology for better business outcomes.

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² Source: IDC Worldwide Quarterly Server Tracker May 2008

³ Includes Compaq ProLiant from Q196 through Q202 and HP ProLiant from Q302 through Q306.

vs. ProLiant BL460c server blade:

EGenera BladeFrame PB300010R results on the two-tier SAP SD Standard Application Benchmark. The EGenera BladeFrame PB300010R (**Certification #2008022**) was configured as a 2-processor server (2 processors/8 cores/8 threads) with Quad-Core Intel Xeon Processors E5450 3.0GHz with 64KB L1 cache per core and 6MB L2 cache per 2 cores, and 32GB main memory. The server was running SAP ERP 6.0 with Microsoft Windows Server 2003 Enterprise Edition operating system and Microsoft SQL Server 2005 database and achieved 2,275 SAP SD Benchmark users, equivalent to a throughput of 228,300 fully processed line items per hour and 11,420 total SAPS.

Fujitsu Siemens PRIMERGY BFi20 S4 results on the two-tier SAP SD Standard Application Benchmark. The Fujitsu Siemens PRIMERGY BFi20 S4 (**Certification #2008022**) was configured as a 2-processor server (2 processors/8 cores/8 threads) with Quad-Core Intel Xeon Processors E5450 3.0GHz with 64KB L1 cache per core and 6MB L2 cache per 2 cores, and 32GB main memory. The server was running SAP ERP 6.0 with Microsoft Windows Server 2003 Enterprise Edition operating system and Microsoft SQL Server 2005 database and achieved 2,275 SAP SD Benchmark users, equivalent to a throughput of 228,300 fully processed line items per hour and 11,420 total SAPS.

Hitachi Blade Symphony A51A4 results on the two-tier SAP SD Standard Application Benchmark. The Hitachi Blade Symphony A51A4 (**Certification #2008029**) was configured as a 2-processor server (2 processors/8 cores/8 threads) with Quad-Core Intel Xeon Processors E5460 3.16GHz with 64KB L1 cache per core and 6MB L2 cache per 2 cores, and 32GB main memory. The server was running SAP ERP 6.0 with Microsoft Windows Server 2003 Enterprise Edition operating system and Microsoft SQL Server 2005 database and achieved 2,260 SAP SD Benchmark users, equivalent to a throughput of 228,300 fully processed line items per hour and 11,420 total SAPS.

Dell PowerEdge M600 results on the two-tier SAP SD Standard Application Benchmark. The Dell PowerEdge M600 (**Certification #2008043**) was configured as a 2-processor server (2 processors/8 cores/8 threads) with Quad-Core Intel Xeon Processors E5460 3.16GHz with 64KB L1 cache per core and 6MB L2 cache per 2 cores, and 32GB main memory. The server was running SAP ERP 6.0 with Microsoft Windows Server 2003 Enterprise Edition operating system and Microsoft SQL Server 2005 database and achieved 2,121 SAP SD Benchmark users, equivalent to a throughput of 217,000 fully processed line items per hour and 10,850 total SAPS.

Fujitsu Siemens PRIMERGY BX620 results on the two-tier SAP SD Standard Application Benchmark. The Fujitsu Siemens PRIMERGY BX620 (**Certification #2008049**) was configured as a 2-processor server (2 processors/8 cores/8 threads) with Quad-Core Intel Xeon Processors X5365 3.0GHz with 64KB L1 cache per core and 4MB L2 cache per 2 cores, and 32GB main memory. The server was running SAP ERP 6.0 with Microsoft Windows Server 2003 Enterprise Edition operating system and Microsoft SQL Server 2005 database and achieved 1,940 SAP SD Benchmark users, equivalent to a throughput of 194,000 fully processed line items per hour and 9,700 total SAPS.

ProLiant BL460c Quad-Core scalability configurations and results on the two-tier SAP SD Standard Application Benchmark

ProLiant BL460c November 2007 Quad-Core. The HP ProLiant BL460c (**Certification #20070065**) was configured as a two-processor server (2 processors/8 cores/8 threads) with Quad-Core Intel Xeon X5460 Processors Quad-Core 3.16GHz with 64KB L1 cache per core and 6MB L2 cache per 2 cores, and 32GB main memory. The HP ProLiant BL460c was running SAP ERP 6.0 with Microsoft Windows Server 2003 Enterprise Edition operating system and Microsoft SQL Server 2005 database and achieved 2,449 SAP SD Benchmark users, equivalent to a throughput of 245,000 fully processed line items per hour and 12,250 total SAPS.

ProLiant BL460c September 2007 The HP ProLiant BL460c (**Certification #2007054**) was configured as a two-processor server (2 processors/8 cores/8 threads) with Quad-Core Intel Xeon X5655 Processors 3.0GHz with 64KB L1 cache per core and 4MB L2 cache per 2 cores, and 32GB main memory. The HP ProLiant BL460c was running SAP ERP 6.0 with Microsoft Windows Server 2003 Enterprise Edition operating system and Microsoft SQL Server 2005 database and achieved 2,080 SAP SD Benchmark users, equivalent to a throughput of 208,000 fully processed line items per hour and 10,400 total SAPS.

ProLiant BL460c January 2007 Quad-Core. The HP ProLiant BL460c (**Certification #2007002**) was configured as a two-processor server (2 processors/8 cores/8 threads) with Quad-Core Intel Xeon X5355 Processors 2.66GHz with 64KB L1 cache per core and 4MB L2 cache per 2 cores, and 32GB main memory. The HP ProLiant BL460c was running SAP ERP 6.0 with Microsoft Windows Server 2003 Enterprise Edition operating system and Microsoft SQL Server 2005 database and achieved 1,841 SAP SD Benchmark users, equivalent to a throughput of 184,670 fully processed line items per hour and 9,230 total SAPS.

vs. ProLiant DL380 G5 server:

Fujitsu Siemens PRIMERGY TX300/RX300 results on the two-tier SAP SD Standard Application Benchmark. The Fujitsu Siemens PRIMERGY TX300/RX300 (**Certification #2007069**) was configured as a 2-processor server (2 processors/8 cores/8 threads) with Quad-Core Intel Xeon Processors X5460 3.16GHz with 64KB L1 cache per core and 6MB L2 cache per 2 cores, and 32GB main memory. The server was running SAP ERP 6.0 with Microsoft Windows Server 2003 Enterprise Edition operating system and Microsoft SQL Server 2005 database and achieved 2,335 SAP SD Benchmark users, equivalent to a throughput of 237,000 fully processed line items per hour and 11,850 total SAPS.

NEC Express5800 results on the two-tier SAP SD Standard Application Benchmark. The NEC Express5800 (**Certification #2008036**) was configured as a 2-processor server (2 processors/8 cores/8 threads) with Quad-Core Intel Xeon Processors X5460 3.16GHz with 64KB L1 cache per core and 6MB L2 cache per 2 cores, and 48GB main memory. The server was running SAP ERP 6.0 with Microsoft Windows Server 2003 Enterprise Edition operating system and Microsoft SQL Server 2005 database and achieved 2,120 SAP SD Benchmark users, equivalent to a throughput of 215,330 fully processed line items per hour and 10,770 total SAPS.

IBM System x3550 results on the two-tier SAP SD Standard Application Benchmark. The IBM System x3550 (**Certification #2007044**) was configured as a 2-processor server (2 processors/8 cores/8 threads) with Quad-Core Intel Xeon Processors X5355 2.66GHz with 64KB L1 cache per core and 4MB L2 cache per 2 cores, and 32GB main memory. The server was running SAP ERP 6.0 with Microsoft Windows Server 2003 Enterprise Edition operating system and Microsoft SQL Server 2005 database and achieved 1,800 SAP SD Benchmark users, equivalent to a throughput of 180,000 fully processed line items per hour and 9,000 total SAPS.

ProLiant DL380 G5 Quad-Core scalability configurations and results on the two-tier SAP SD Standard Application Benchmark

ProLiant DL380 G5 November 2007 Quad-Core. The HP ProLiant DL380 G5 (**Certification #20070064**) was configured as a two-processor server (2 processors/8 cores/8 threads) with Quad-Core Intel Xeon X5460 Processors 3.0GHz with 64KB L1 cache per core and 6MB L2 cache per 2 cores, and 32GB main memory. The HP ProLiant DL380 G5 was running SAP ERP 6.0 with Microsoft Windows Server 2003 Enterprise Edition operating system and Microsoft SQL Server 2005 database and achieved 2,436 SAP SD Benchmark users, equivalent to a throughput of 243,670 fully processed line items per hour and 12,180 total SAPS.

ProLiant DL380 G5 November 2007 Quad-Core. The HP ProLiant DL380 G5 (**Certification #20070057**) was configured as a two-processor server (2 processors/8 cores/8 threads) with Quad-Core Intel Xeon X5365 Processors 3.0GHz with 64KB L1 cache per core and 4MB L2 cache per 2 cores, and 32GB main memory. The HP ProLiant DL380 G5 was running SAP ERP 6.0 with Microsoft Windows Server 2003 Enterprise Edition operating system and Microsoft SQL Server 2005 database and achieved 2,080 SAP SD Benchmark users, equivalent to a throughput of 208,670 fully processed line items per hour and 10,430 total SAPS.

ProLiant DL380 G5 April 2007 Quad-Core. The HP ProLiant DL380 G5 (**Certification #20070028**) was configured as a two-processor server (2 processors/8 cores/8 threads) with Quad-Core Intel Xeon X5355 Processors 2.66GHz with 64KB L1 cache per core and 4MB L2 cache per 2 cores, and 32GB main memory. The HP ProLiant DL380 G5 was running SAP ERP 6.0 with SUSE Linux Enterprise Server 10 operating system and Oracle 10g database and achieved 1,795 SAP SD Benchmark users, equivalent to a throughput of 180,000 fully processed order line items per hour and 9,000 SAPS.

ⁱ<http://h71028.www7.hp.com/ERC/downloads/4AA0-9971ENW.pdf> and <http://h71028.www7.hp.com/enterprise/cache/13419-0-0-0-121.html>