



HP ProLiant servers sweep competition with numerous #1 performance results on SPEC CPU2000 benchmarks



HP ProLiant servers took FOUR performance records for the SPEC CPU2000 benchmark, defeating competitors such as IBM, Dell, Fujitsu Siemens, and Sun, among others.

Interpreting the results

- The ProLiant DL585 G2 defeated competitors by up to 33% in performance.
- The ProLiant BL45p G2 bested the competition by up to 7% in performance.
- The ProLiant BL480c is up to 7.5% faster than competitors.

HP, a performance leader for industry-standard servers, recently announced new results for the SPEC CPU2000 benchmarks.

Key results at a glance:



OVERALL: 4P SPECint_rate2000 – ProLiant BL45p G2



x86/64: 1P SPECfp_rate2000 – ProLiant BL480c



OVERALL x86/64: SPECfp_rate_base2000
x86/64: 4P SPECfp_rate2000 – ProLiant DL585 G2

The results prove ProLiant leadership over major competitors.

With these latest results, HP now holds the following:

#1 through #6 spots for the x86/64: 1P SPECfp_rate2000 with the ProLiant BL480c, BL460c, DL380 G5, ML370 G5, BL20p G4, and DL360 G5, respectively.

#1 and #2 spots for the x86/64: 4P SPECfp_rate2000 with the ProLiant DL585 G2 and BL685c, respectively.

Leading performance results are just some of the reasons HP is still the #1 vendor in worldwide server shipments for the 19th consecutive quarter in the past five years.¹

For the 42nd consecutive quarter, more than 10 years, HP (combined with Compaq) is the x86 server market share leader in both factory revenue and units.¹ HP grew x86 revenue and units year-over-year faster than the overall market. Dell and IBM both had year-over-year declines in x86 units. In a single quarter, HP shipped 6 times as many x86 servers as Sun in the full year 2006. In addition, HP's x86 revenue share was 13.8 percentage points higher than its nearest competitor, IBM.

In the x86-64 based server segment, HP was No. 1 in factory revenue and units shipped, with year-over-year unit shipment growth of 28.8 percent. This includes both AMD Opteron™ and Intel® x86-64 Xeon™-based servers.

HP remains the leading provider of AMD Opteron processor-based servers and server blades, with a commanding 42.8 percent of factory revenue share. HP shipped more than 4 times the Opteron servers as #2, Sun, and more than 6.9 times than IBM. HP grew Opteron revenue, 67.2% year-over-year while IBM declined 3.6% year-over-year.

¹Source: All of the following market share figures are for the 4th Quarter of 2006 (unless otherwise noted) and represent worldwide results as reported by the IDC Worldwide Quarterly Server Tracker, February 2007.

ProLiant server SPEC CPU2000 configurations

All ProLiant and competitor results and configurations are found in Appendix A at the end of this paper or at the SPEC web site at: www.spec.org.



ProLiant BL45p G2: The ProLiant BL45p G2 was configured as 4x2.8GHz (8 cores, 4 chips, 2 cores/chip) AMD Opteron processors running Microsoft Windows Server 2003 Enterprise SP1. The ProLiant BL45p G2 earned a record SPECint_rate2000 performance result of 175, trumping competitors Dell, Fujitsu Siemens, IBM, and Acer.



ProLiant BL480c: Configured with 1x2.66GHz (4 cores, 1 chip, 4 cores/chip) Intel Xeon processor X5 and running SuSE Linux Enterprise Server 10 (x86_64), the ProLiant BL480c took the number one record for 1P x86/64 SPECfp_rate2000 with a score of 65.8 beating competitors Fujitsu Siemens, and Sun.



ProLiant DL585 G2: The ProLiant DL585 G2 took the top number for Overall x86/64 4P SPECfp_rate_base2000 with a result of 197. The server was equipped with 4x2.8GHz (8 cores, 4 chips, 2 cores/chip) AMD Opteron 8220SE processors and running Solaris 10 6/06 and defeated Sun, AMD, Dell, IBM, and Fujitsu Siemens competitors.

All results as of 3-21-07

Solaris customers can easily migrate to ProLiant

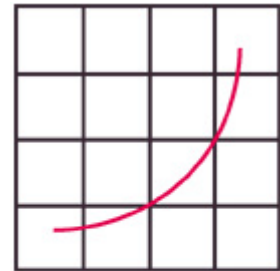
The ProLiant DL585 G2 SPECfp_rate2000 results prove that ProLiant servers can outperform Sun using the Solaris operating system as well.

In a bold, assertive move, HP announced on February 6, 2007, that it has made it easier for dissatisfied SPARC-based Sun Microsystems server customers using Solaris to migrate to higher performing, more affordable industry standard x86-based HP ProLiant platforms. The announcement states that HP has expanded certification of the Solaris 10 operating system on seven of its existing Xeon-based ProLiant platforms. For more information, refer to Drawer Statement: http://hpcompetition.corp.hp.com/CI_docs/sun/proliantanncdrawer2-5a.pdf

For more information

About SPEC CPU2000

SPEC CPU2000 is an industry-standardized CPU-intensive benchmark suite. SPEC designed CPU2000 to provide a comparative measure of compute intensive performance across the widest practical range of hardware. The implementation resulted in source code benchmarks developed from real user applications. These benchmarks measure the performance of the processor, memory and compiler on the tested system.



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HP ProLiant BL20p: www.hp.com/servers/proliantbl20p

HP ProLiant BL45p: www.hp.com/servers/proliantbl45p

HP ProLiant BL480c: www.hp.com/servers/proliantbl480c

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

HP ProLiant BL685c: <http://h18004.www1.hp.com/products/servers/proliant-bl/c-class/685c/index.html>

HP ProLiant DL360 G5: www.hp.com/proliant/serversdl360g5

HP ProLiant DL380 G5: www.hp.com/proliant/serversdl380g5

HP ProLiant ML370 G5: www.hp.com/servers/proliantml370g5

HP ProLiant DL585 G2: www.hp.com/servers/proliantdl585

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Appendix A

Configurations and Results of ProLiant BL45p G2 4P SPECint_rate2000 vs. competitors

HP ProLiant BL45p. 2.8GHz AMD Opteron 8220. 8 cores, 4 chips, 2 cores/chip. Result: 175.
Dell PowerEdge 6950. 2.8GHz AMD Opteron 8220SE. 8 cores, 4 chips, 2 cores/chip. Result: 174.
Fujitsu Siemens PRIMERGY BX630. 2.8GHz AMD Opteron 890. 8 cores, 4 chips, 2 cores/chip. Result: 173.
IBM BladeCenter LS41. 2.8GHz AMD Opteron 8220. 8 cores, 4 chips, 2 cores/chip. Result: 164.
Acer Altos R910. 3.4GHz Intel Xeon 7140M. 8 cores, 4 chips, 2 cores/chip. Result: 163.
Dell PowerEdge 6800 and 6850. 3.4GHz Intel Xeon 7140M. 8 cores, 4 chips, 2 cores/chip. Result: 162.

Configurations and Results of ProLiant BL480c 1P x86/64 SPECfp_rate2000 vs. competitors

HP ProLiant BL480c. 2.66GHz Intel Xeon X5355. 4 cores, 1 chip, 4 cores/chip. Result: 65. 8.
HP ProLiant BL460c. 2.66GHz Intel Xeon X5355. 4 cores, 1 chip, 4 cores/chip. Result: 65. 7.
HP ProLiant DL380 G5. 2.66GHz Intel Xeon X5355. 4 cores, 1 chip, 4 cores/chip. Result: 65. 7.
HP ProLiant ML370 G5. 2.66GHz Intel Xeon X5355. 4 cores, 1 chip, 4 cores/chip. Result: 65. 7.
HP ProLiant BL20p G4. 2.66GHz Intel Xeon X5355. 4 cores, 1 chip, 4 cores/chip. Result: 65. 6.
HP ProLiant DL360 G5. 2.66GHz Intel Xeon X5355. 4 cores, 1 chip, 4 cores/chip. Result: 65. 6.
Fujitsu Siemens PRIMERGY BX620 SE. 2.66GHz Intel Xeon X5355. 4 cores, 1 chip, 4 cores/chip. Result: 61.
Fujitsu Siemens PRIMERGY RX300 S3 and TX300 S3. 2.66GHz Intel Xeon X5355. 4 cores, 1 chip, 4 cores/chip. Result: 60.8.
Sun Microsystems Sun Fire X2100 M2. 2.6GHz AMD Opteron 1218. 2 cores, 1 chip, 2 cores/chip. Result: 56.5

Configurations and Results of ProLiant DL585 G2 4P x86/64 SPECfp_rate_base2000 and SPECfp_rate2000 vs. competitors

HP ProLiant DL585 G2. 2.8GHz AMD Opteron 8220SE. 8 cores, 4 chips, 2 cores/chip. Result: SPECfp_rate_base2000 = 197, SPECfp_rate2000 = 230.
HP ProLiant BL685c. 2.8GHz AMD Opteron 8220. 8 cores, 4 chips, 2 cores/chip. Result: Result: SPECfp_rate_base2000 = 191, SPECfp_rate2000 = 224.
Sun Microsystems Sun Fire X4600 M2. 2.8GHz AMD Opteron 8220SE. 8 cores, 4 chips, 2 cores/chip. Result: SPECfp_rate_base2000 = 184, SPECfp_rate2000 = 214.
Sun Microsystems Sun Blade x8400. 2.6GHz AMD Opteron 885. 8 cores, 4 chips, 2 cores/chip. Result: SPECfp_rate_base2000 = 167, SPECfp_rate2000 = 182.
Dell PowerEdge 6950. 2.8GHz AMD Opteron 8220SE. 8 cores, 4 chips, 2 cores/chip. Result: SPECfp_rate_base2000 = 175.
IBM BladeCenter LS41. 2.8GHz AMD Opteron 8220. 8 cores, 4 chips, 2 cores/chip. Result: SPECfp_rate_base2000 = 156, SPECfp_rate2000 = 172.
IBM System X3755. 2.6GHz AMD Opteron 8218. 8 cores, 4 chips, 2 cores/chip. Result: SPECfp_rate_base2000 = 151, SPECfp_rate2000 = 162.
Fujitsu Siemens PRIMERGY BX630. 2.8GHz AMD Opteron 890. 8 cores, 4 chips, 2 cores/chip. Result: SPECfp_rate_base2000 = 144, SPECfp_rate2000 = 154.