HP ProLiant DL160 G5 takes #1 **overall** most energy efficient performance on new SPECpower_ssj™2008 benchmark

The HP Difference

The new ProLiant DL160 G5 is designed for quality, performance and flexible deployments to meet the needs of the high performance computing, SMB market, and corporate scale-out market segments.

Key results at a glance:

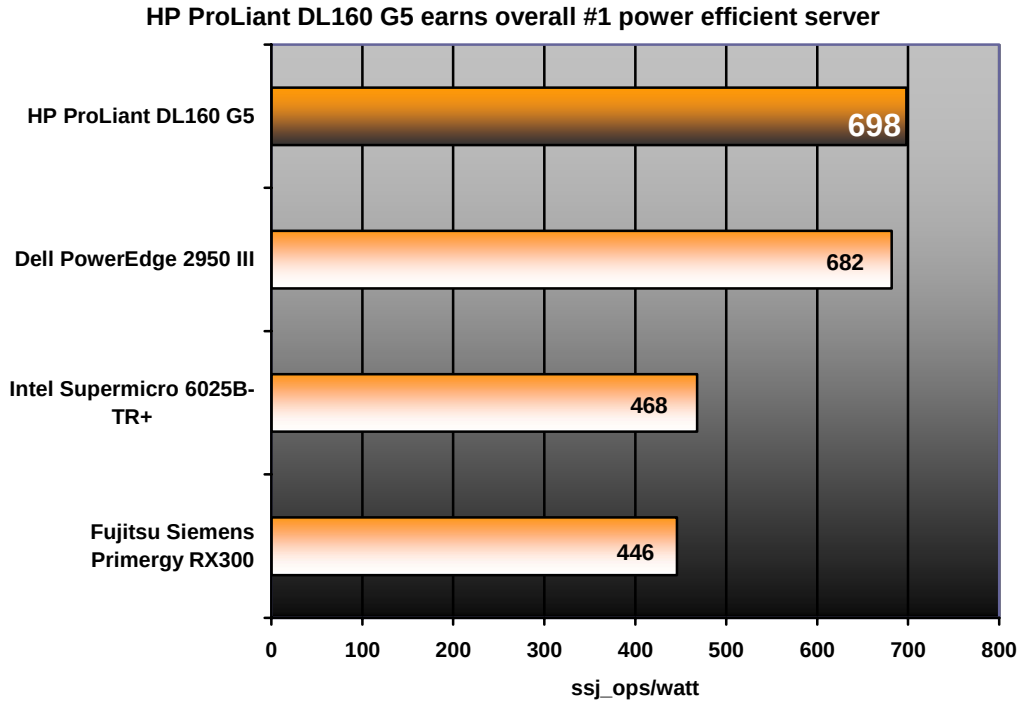
- **ProLiant leadership with the #1 overall rating on the SPECpower_ssj™2008 benchmark.**
- **The ProLiant DL160 G5 result defeated two-processor competitors by up to 56.5%.**
- **The performance result demonstrated how HP two-processor servers optimized the latest Quad-Core Intel® Xeon® technology utilizing the x5400 series processors for energy efficiency and high performance computing.**

The HP ProLiant DL160 G5 accomplished a world record for energy efficient performance on the SPECpower_ssj™2008 benchmark with a two-processor performance of **698 overall ssj_ops/watt.** This result defeated competitors, including Dell and Fujitsu Siemens. SPECpower_ssj™2008 is the first generation SPEC benchmark for evaluating the power and performance characteristics of server class computers. This measurement provides a way to compare the energy efficiency of servers. With the ProLiant DL160 G5 results, HP has proven that it is aware of and has responded to customer concerns regarding the energy use of servers. Built upon the latest industry-standard technology, the ProLiant DL160 G5 was designed for high performance computing.

The HP DL160 G5 takes the lead for energy efficiency!

More information about SPECpower benchmark results for all servers can be found at the following Web page: http://www.spec.org/power_ssj2008.

Figure 1. Comparison of SPECpower_ssj™2008 results of the HP ProLiant DL160 G5 two-processor Quad-Core server vs. two-processor competitors (All results as of 12-11-07).



ProLiant server configurations

The leading power-efficient server, the HP ProLiant DL160 G5, was configured with the Intel Xeon E5450 3.0GHz processors with 8 cores/ 2 chips/4 cores per chip, 2x6MB L2 shared cache, 1333MHz system bus, 16GB (4x4GB) low power (LP) PC2-5300F memory, 1 x 80GB 7.2K rpm SATA drive, and an embedded Intel SATA controller.

The ProLiant DL160 G5 was running Microsoft Windows Server 2003 x64 Enterprise Edition (EE) R2 and used one 1200W power supply.

Competition Comparison

Table 1. Configuration comparison of 2-processor benchmark competitors

2-socket server	overall ssj_ops/watt	Operating System
HP ProLiant DL160 G5 Intel Xeon E5450, QC, 8/2/4,16GB RAM LP	**698**	**Microsoft Windows Server 2003 x64 Enterprise Edition R2**
Dell PowerEdge 2950, Intel Xeon E5440, QC 8/2/4, 16GB RAM	**682**	**Microsoft Windows Server 2003 x64 Enterprise Edition SP2**
Intel Supermicro 6025B-TR+, Intel L5335, QC 8/2/4, 8GB RAM	**468**	**Microsoft Windows Server 2003 x64 Enterprise Edition SP2**
Fujitsu Siemens PRIMERGY RX300, Intel Xeon L5335, QC 8/2/4 16GB RAM	**446**	**Microsoft Windows Server 2003 x64 Enterprise Edition SP2**

All results as of 12-11-07

What SPECpower_ssj2008 measures

Currently, many vendors report some energy efficiency figures, but these are often not directly comparable due to differences in workload, configuration, test environment, etc. SPEC defines server power measurement standards in the same way it has done for performance. Development of this benchmark provides a means to measure power in conjunction with a performance metric. This should help IT managers to consider power characteristics along with other selection criteria to increase the efficiency of data centers.

Being a Standard Performance Evaluation Corporation (SPEC) benchmark, SPECpower_ssj™2008 is a consortium-policed benchmark that provides a way for server vendors to compare benchmark results in a fair manner.

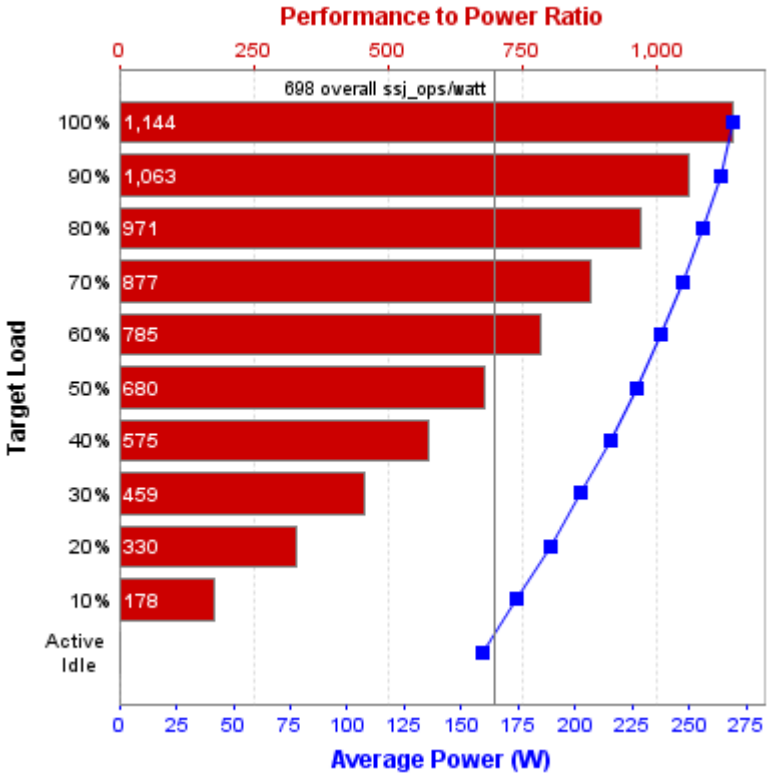


Figure 2. The SPECpower_ssj™2008 primary metric is the "overall ssj_ops/watt". The HP ProLiant DL160 G5 showed a 698 overall ssj_ops/watt ratio. This metric is computed by taking the sum of the ssj_ops scores for all target loads, and then dividing by the sum of the power consumption averages for all target loads – including the "active idle" (0% utilization) measurement interval.

For more information

HP ProLiant DL160 G5: www.hp.com/servers/dl

HP ProLiant benchmarks: www.hp.com/servers/benchmarks

For more information on SPEC benchmarks: www.spec.org

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