HP holds world record with SPEC CPU2006 benchmarks

New ProLiant DL385 G7 with 12-core processors displays highest performance

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Executive summary
HP is the only company to offer a full portfolio of standards-based, integrated solutions, and services developed specifically to solve the complexities of the data center. With this Converged Infrastructure solution and the latest generation of HP technology, the ProLiant DL385 G7 with 12-core AMD Opteron 6100 Processor Series achieved two new records on the SPEC CPU2006 benchmark.

Key Take Aways:
- #1 2-socket x86_64 SPECint_rate2006
- #1 2-socket x86_64 SPECfp_rate2006
- Proof point of increased performance and durability for demanding scale-out applications in a real-world workload environment.
- Defeats competitors by up to 59% greater performance

What this means for customers
Businesses have been adding servers, storage, and networking devices to keep pace with their business demands. The result: Businesses are spending upwards of 70% of their IT budget on operations versus innovation – and it’s only getting worse. The HP Converged Infrastructure enables customers to transition from this product-centric approach that has created unyielding IT sprawl to a shared-service management model.

The SPEC CPU2006 benchmark is a comparative measure of compute-intensive performance across the widest practical range of hardware using workloads developed from real user applications. Businesses can adjust to real user workload demands with the ProLiant DL385 G7 and HP-pioneered converged infrastructure.

Business transformation: HP is at an inflection point where our technology is coming together to help our clients build the data center of the future, and it will be based on a Converged Infrastructure. HP is uniquely positioned to build the Converged Infrastructure because HP is the only company to offer a full portfolio of standards-based, integrated solutions, and services developed specifically to solve the complexities of the data center. HP is also the only company that can deliver a single common, modular architecture across the data center from x86 to Superdome. This means that companies can use the same architecture to run and manage multiple workloads across servers, storage and networking. This significantly reduces complexity, resource requirements, and costs.

Why the ProLiant DL385 is the world’s best-selling Opteron rack server
The HP ProLiant DL385, also known as a versatile, dependable workhorse, is the world's best-selling Opteron rack server, maintaining its dominant share in the 2U, 2P market with new G7 benefits in its rack server format that allow for greater system efficiency, flexibility, and scalability.

Key Benefits
- Eight- and 12-core AMD Opteron 6100 Series performance for demanding scale-out applications and virtualization projects
- Ideal for virtualization with up to 24 DIMMs and four NIC ports
- Industry-leading management enables powerful administration
- Engineered for reliability and ease of ownership

1 When compared to 2 processor x86_64 competitors
Benchmark Configurations

In order to achieve the world-record performance results of 398 SPECint_rate2006 and 318 SPECfp_rate2006, the HP ProLiant DL385 G7 was configured with 2 x 2.3GHz 12-core AMD Opteron 6176 SE processors and 64GB of memory. The system ran on the Red Hat Enterprise Linux 5 Update 4 operating system. All ProLiant and competitor SPEC CPU2006 results and configurations can be found at the SPEC web site at: www.spec.org.

Interpreting the results
The two-processor configuration of the HP ProLiant DL385 G7 (24-cores) provides the following superior performance deltas on the SPEC CPU2006 benchmark: For SPECint_rate2006 and SPECfp_rate2006, respectively:

- 4% and 24% better performance than the Fujitsu PRIMERGY RX300 S6 (12-core)
- 5% and 24% better performance than the Dell PowerEdge R710 (12-core)
- 6% and 25% better performance than the IBM System X3650 M3 (12-core)
- 54% and 59% better performance than the Cisco USC C200 M1 (8-core)

Figure 1: The ProLiant DL385 G7 24-core rack server shows up to 59% greater performance when it achieved 398 SPECint_rate2006 and 318 SPECfp_rate2006.
HP ProLiant DL385 G7 with 12-core processors has up to 59% faster performance than its competitors

Table 1. The ProLiant DL385 G7 outperforms competitors

<table>
<thead>
<tr>
<th></th>
<th>SPECint_ rate2006</th>
<th>SPECfp_ rate2006</th>
<th>Cores, chips, cores/chip^2</th>
<th>Processor</th>
<th>RAM</th>
<th>OS</th>
</tr>
</thead>
<tbody>
<tr>
<td>HP ProLiant DL385 G7</td>
<td>398</td>
<td>318</td>
<td>24/2/12</td>
<td>AMD Opteron 6176 SE 2.3GHz</td>
<td>64GB</td>
<td>Red Hat Enterprise Server 5 Update 4</td>
</tr>
<tr>
<td>Fujitsu PRIMERGY RX300 S6</td>
<td>381</td>
<td>257</td>
<td>12/2/6</td>
<td>Intel Xeon X5680 3.33GHz</td>
<td>48GB</td>
<td>SUSE Linux Enterprise Server 11 (x86_64)</td>
</tr>
<tr>
<td>Dell PowerEdge R710</td>
<td>380</td>
<td>256</td>
<td>12/2/6</td>
<td>Intel Xeon X5680 3.33GHz</td>
<td>48GB</td>
<td>SUSE Linux Enterprise Server 11 (x86_64)</td>
</tr>
<tr>
<td>IBM System X3650 M3</td>
<td>377</td>
<td>255</td>
<td>12/2/6</td>
<td>Intel Xeon X5680 3.33GHz</td>
<td>48GB</td>
<td>SUSE Linux Enterprise Server 11 (x86_64)</td>
</tr>
<tr>
<td>Cisco USC C200 M1</td>
<td>258</td>
<td>200</td>
<td>8/2/4</td>
<td>Intel Xeon X5550 2.66GHz</td>
<td>24GB</td>
<td>SUSE Linux Enterprise Server 11 (x86_64)</td>
</tr>
</tbody>
</table>

^2 All Intel processors were configured with 2 threads per core (Hyper Threaded)

Bottom Line

Our customers are finding that HP’s ProLiant server innovations address their key needs and pain points - energy efficiency, virtualization and management - and deliver more business value on every IT dollar they spend. When you take HP’s success delivering superior server innovations to enable a converged infrastructure, and combine that with AMD Opteron processors and the ProLiant Generation 7 servers, superior results such as those in the SPEC CPU2006 benchmark are achieved.

About SPEC CPU2006

CPU2006 is SPEC’s next-generation, industry-standardized, CPU-intensive benchmark suite, stressing a system’s processor, memory subsystem and compiler. SPEC designed CPU2006 to provide a comparative measure of compute-intensive performance across the widest practical range of hardware using workloads developed from real user applications. These benchmarks are provided as source code and require the user to be comfortable using compiler commands as well as other commands via a command interpreter using a console or command prompt window in order to generate executable binaries. The current version of the benchmark suite is V1.1, released in June 2008.


For more information check out:

HP ProLiant DL385 G7: [www.hp.com/servers/proliantdl385g7](http://www.hp.com/servers/proliantdl385g7)


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