



# HP takes #1 spot in 24-Core VMmark benchmark with 2-socket processors

New ProLiant DL385 G7 2-socket runs 132 virtual machines in 4-socket category

April 2010

### Executive summary

In what previously has been a four-socket-only category, the HP ProLiant DL385 G7 two-socket server set a world record on the 24-Core VMmark benchmark. The new ProLiant DL385 G7, with the latest AMD Opteron processors, is the highest performing server on the 24-core VMmark benchmark with a score of 30.96@22 tiles. This outcome means the server can run 132 virtual machines. This two-processor result exceeds results by Dell, IBM, and Sun.

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 HP Converged Infrastructure solution and the latest generation of ProLiant technology, the ProLiant DL385 G7 with AMD Opteron 6176 SE processors achieved a new world record on the VMware benchmark.

### Key Take Aways:



- ▶ #1 overall performance in 24-Core category
- ▶ Can run up to 48 more virtual machines than 4P competitors

### Multiple HP leading results

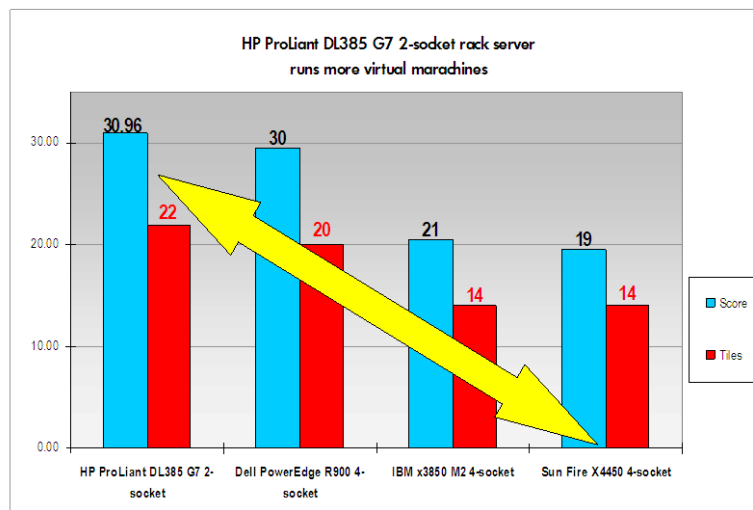
HP ProLiant servers now hold the current leadership positions for 8-core, 24-core and 48-core results as of 5-10-10.

### What this means for customers

#### Business outcomes

With this result, the DL385 G7 achieved 132 virtual machines (22 tiles x 6 virtual machines). The result is good news for businesses that have been adding servers, storage, and networking devices to keep pace with their business demands because clients want less complexity and more efficiency in their IT operations and across their network infrastructure. With its Converged Infrastructure, HP is the only company that can deliver a single common, modular architecture across the data

Figure 1. The ProLiant DL385 G7 2 socket server outperforms 4-socket competitors.



**OUTSTANDING VIRTUAL PERFORMANCE**  
**2 processor results for the HP ProLiant DL385 G7**  
**on VMmark benchmark**  
**Can run 132 virtual machines!**

Results as of 5/10/10. See: <http://www.vmware.com/products/vmmark/results.html>.





architecture to run and manage multiple workloads across servers, storage, and networking. This significantly reduces complexity, resource requirements, and costs. Add this solution with HP ProLiant servers, and the VMmark benchmark that enables companies to compare virtual platforms, businesses can enjoy significantly reduced complexity, resource requirements, and costs.

**Business transformation:** This solution will rebalance the product-centric ratio by realigning today's traditional technology silos of servers, storage, and networking into adaptive pools that can be shared by any application, optimized, and managed as a service. Customers can accelerate standardization, reduce operational costs, and accelerate business results utilizing the ProLiant DL385 G7.

## Why the ProLiant DL385 is the world's best-selling Opteron server

The HP ProLiant DL385, also known as the versatile, dependable workhorse, is the world's best-selling Opteron server, maintaining its dominant share in the 2U, 2P market with new G7 benefits in its rack server format that allows 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

These performance records show the exceptional performance that the ProLiant DL385 G7 enables on floating-point based compute-intensive applications. All ProLiant and competitor VMmark configurations can be found at the VMmark web site at: [www.vmware.com](http://www.vmware.com)

### Interpreting the results

The two-processor configuration of the HP ProLiant DL385 G7 provides the following superior performance deltas on the VMmark benchmark:

- **12 more virtual machines than Dell PowerEdge R905 (4-socket)**
- **48 more virtual machines than the IBM System x3850 M2 (4-socket)**
- **48 more virtual machines than the Sun Sun Fire X4450 (4-socket)**

## HP ProLiant DL385 G7 with 12-core processors can run 132 virtual machines, more than competitors

Table 1. The ProLiant DL385 G7 2 socket processor and competitor configurations

	System description	VMmark Version	Score	Published date
<b>HP ProLiant DL385 G7</b>	<b>Twelve-core AMD Opteron 6176 SE, 2.3GHz, 2 sockets/ 24 total cores/ 24 total threads, 128GB RAM, Microsoft Windows Server 2003 EE SP2</b>	<b>VMmark v 1.1.1 VMware ESX v4.0</b>	<b>30.96@22 tiles</b>	<b>5/04/10</b>
<b>4-socket, 24-core competitors</b>				
<b>Dell PowerEdge R905</b>	Six-core AMD Opteron 8439 SE 2.8GHz , 4 sockets/ 24 total cores/ 24 total threads, 128GB RAM, Microsoft Windows Server 2003 EE SP2	VMmark v 1.1.1 VMware ESX v4.0, Build 164009	29.51@20 tiles	7/28/09
<b>IBM System x3850 M2</b>	Six-core Intel Xeon MP X7460, 2.66GHz, 4 sockets/ 24 total cores/ 24 total threads, 128GB RAM, Microsoft Windows Server 2003 EE R2 SP2	VMmark v1.1 VMware ESX v3.5.0 U3 GA Build	20.50@14 tiles	3/24/09
<b>Sun Sun Fire X4450</b>	Six-core Intel Xeon MP X7460, 2.66GHz, 4 sockets/ 24 total cores/ 24 total threads, 80GB RAM, Microsoft Windows Server 2003 EE SP2	VMmark v 1.1.1, VMware ESX v3.5.0 Update 2	19.47@14 tiles	1/13/09

Test results as of 05-10-10. For more details, please visit: <http://www.vmware.com/products/vmmark/results.html>



## Benchmark Configurations

In order to achieve the world-record performance result of 30.96@22 tiles, the HP ProLiant DL385 G7 was configured as a two processor system with two 2.3GHz AMD Opteron™ Processor 6176 SE (2 processors/24 cores/24 threads), and 128GB (16 x 8GB) main memory. The system ran on the Microsoft Windows Server 2003 Enterprise Edition SP2 operating system.

## 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 VMmark benchmark are achieved.

### What VMmark measures

The VMmark benchmark is intended to measure the performance of virtualized servers on a system under test (SUT) so that customers can compare the capabilities of different platforms for virtualization. VMmark represents the performance of virtual machines within a server running VMware ESX and a set combination of operating systems and applications reflecting a typical datacenter environment. VMmark uses a collection of 'sub-tests' derived from commonly used load-generation tools as well as from benchmarks developed by the Standard Performance Evaluation Corporation (SPEC®). VMmark uses workloads that represent common applications in datacenters. It is important to note that VMmark is designed to benchmark the performance of the virtualization software and the hardware, and is not designed as a benchmark of any other software component.

## For more information check out:

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

HP Converged Infrastructure: <http://h18004.www1.hp.com/products/solutions/converged/overview.html>

VMmark information: [www.vmware.com/products/vmmark/overview.html](http://www.vmware.com/products/vmmark/overview.html)