HP ProLiant DL585 G5 earns #1 overall 4-socket virtualization performance leadership

Server also shows performance scalability progression

HP Leadership

The latest HP ProLiant DL585 G5 rack server is highly manageable, rack optimized, four-socket server designed for maximum performance in an industry standard architecture. The large 256GB footprint and nine expansion slots provide the memory and I/O scalability customers need to support multiple applications or virtual machines on a single physical server. The large memory capacity also provides an ideal platform for EDA, financial, and petrochemical applications that demand lots of memory.

With this highly scalable feature set, the ProLiant DL585 G5 is an ideal choice for the growing enterprise class database, consolidation, and virtualization environments seeking to improve server utilization and reduce server sprawl, while continuing to leverage all the familiar and easy-to-use ProLiant management tools and options.

Customer Value

What are the customer benefits of using the HP ProLiant servers for virtualization?

The HP ProLiant DL585 G5 offers up to an 80% performance advantage when compared to other four-socket, 16-core competitors utilizing VMware. With the VMmark benchmark result, customers can compare performance and scalability of different virtualization platforms, make appropriate hardware choices, and monitor virtual machine performance on an ongoing basis. And they can be reassured the HP ProLiant DL585 G5 <u>IS</u> the appropriate choice.

Key Points

- The HP ProLiant DL585 G5 is the highest performing 4-socket server on the VMmark benchmark with a VMmark score of 22.11@15 tiles. This result defeated all 4-socket rack server competitors Dell, IBM, and Sun.

- The HP ProLiant DL585 G5 is the first four-socket server to run with the VMware ESX 4.0 Virtualization Platform.

- The HP ProLiant DL585 showed an increase in scalability performance compared to previous generation technology.

Figure 1. Vendor VMmark top four-socket results
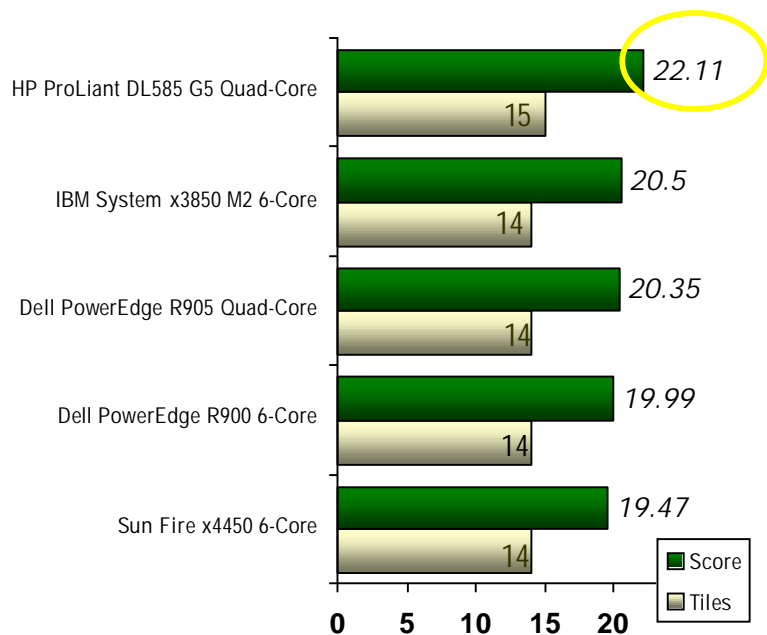
Test results as of 04/27/09.

The HP ProLiant DL585 G5 results outperformed ALL other 4-socket/16-core competitors by up to 13.5% with a one-tile advantage on the virtualization benchmark.

Technology for better business outcomes

The ProLiant advantage

HP proven performance

HP has posted hundreds of benchmark results on the most commonly used benchmarks on hundreds of ProLiant servers and blades, helping customer to identify reasons to be confident in HP.

Table 1. VMmark configuration for system results for four-socket Quad-Core and 6-Core servers

System Description	VMmark Version & Score	Processors	Published Date
Top 4-socket results			
HP ProLiant DL585 G5 Quad-Core AMD Opteron processor Model 8393 SE 3.1GHz 128GB (16 x 8GB) RAM; 4 sockets/16 total cores/16 total threads	VMmark v1.1 VMware ESX 4.0	22.11 @ 15 tiles	04/27/09
IBM System x3850 M2 Six-Core Intel Xeon X7460 2.66GHz 128GB (32 x 4GB) RAM; 4 sockets/24 total cores/24 total threads	VMmark v1.1 VMware ESX v3.5.0 Update 3	20.50 @ 14 tiles	03/06/09
Dell PowerEdge R905 Quad-Core AMD Opteron processor Model 8384 2.7GHz 128GB (16 x 8GB) RAM; 4 sockets/16 total cores/16 total threads	VMmark v1.1 VMware ESX v3.5.0 Update 3 BETA (Build 120079)	20.35 @ 14 tiles	11/12/08
Dell PowerEdge R900 Six-Core Intel Xeon X7460 2.67GHz **96GB (12 x 8GB) RAM** 4 sockets/24 total cores/24 total threads	VMmark v1.1 VMware ESX v3.5.0 Update 3	19.99 @ 14 tiles	02/10/09
Sun Fire X4450 Six-Core Intel Xeon X7460 2.66GHz 80GB (20 x 4GB) RAM; 4 sockets/24 total cores/24 total threads	VMmark v1.0.0 VMware ESX v3.5.0 Update 2	19.47 @ 14 tiles	01/13/09

Test results as of 04/27/09. For more details, please visit: http://www.vmware.com/products/vmmark/results.html

HP ProLiant DL585 G5

The ProLiant DL585 G5 improves on its reputation for performance with faster processors, more memory, and additional storage options to deliver more value than ever before. Combined with industry-leading management and support options, the DL585 G5 is a great choice for today's demanding enterprise applications and virtualization projects. The ProLiant DL585 G5 now includes:
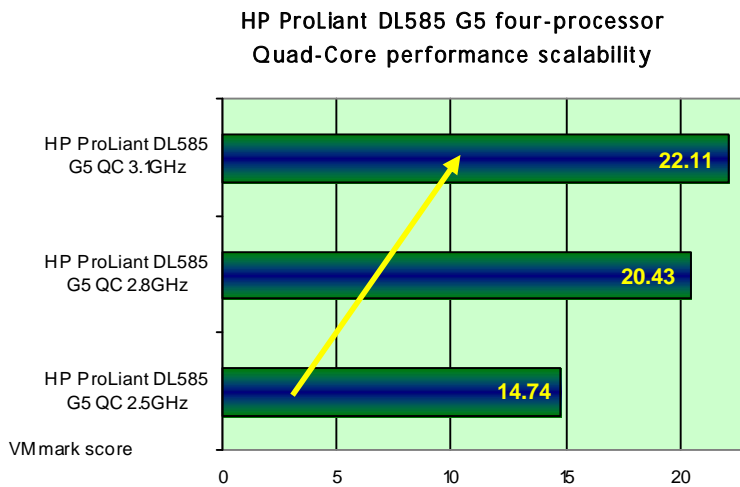
- Support for AMD's latest Opteron 8300 series processors for improved performance, price/performance, and TCO.
- Support for 8GB PC2-6400 Registered DIMMs on select models.
- Support for the AMD Opteron 8393 SE and 8381 HE for maximum flexibility.

HP performance scalability increases with Quad-Core technology

In addition to achieving the #1 4-socket performance result on the VMmark benchmark, the ProLiant DL585 G5 rack server showed outstanding four-processor performance scalability results with the progression from previous generation technology.

The ProLiant DL585 G5 server showed an increase in performance when it achieved 22.11 @ 15 tiles for its Quad-Core 3.1GHz result from its previous Quad-Core 2.8GHz result of 20.43 @ 14 tiles. Overall, the ProLiant DL585 G5 server showed a performance scalability progression of 5% going from a Quad-Core 2.5GHz result with 14.74 @ 10 tiles to the 22.11 @ 15 tiles result.

Figure 2. HP ProLiant Dl585 G5 comparison of Quad-Core performance scalability

HP ProLiant DL585 G5 four-processor Quad-Core performance scalability

HP ProLiant DL585 G5 QC 3.1GHz — 22.11
HP ProLiant DL585 G5 QC 2.8GHz — 20.43
HP ProLiant DL585 G5 QC 2.5GHz — 14.74
VMmark score

0   5   10   15   20

What is the VMmark Benchmark?

VMmark is the first benchmark that was designed specifically to quantify and measure the performance of virtualized environments. It features a novel tile-based scheme for measuring the scalability of consolidated workloads and provides a consistent methodology that captures both the overall scalability and individual application performance.

Partnership between HP and VMware

More than a dozen ProLiant servers are certified for VMware. HP can help your business plan, implement, and operate a virtual infrastructure with VMware. HP qualifies a wide range of ProLiant servers, StorageWorks storage, and integrated HP management software. HP offers more VMware certified servers than any other OEM, and we have a full array of ProLiant servers certified for VMware ESX and VMware ESX Server 3i.[1]

HP partners closely with VMware to engineer and offer innovative technologies, so you can virtualize with confidence. Only HP gives customers an end-to-end virtualization solution that encompasses all aspects of your environment—from virtualization of mission-critical platforms, to client infrastructure, to management of your virtualized data center. These offerings include industry-leading virtualization software from VMware, combined with HP infrastructure and tools for unified management of the virtual environment. Read more about HP Virtualization with VMware in our Solutions Guide.

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[1] Same cross-generational count used for competitor platforms. For the most up to date list visit: www.hp.com/go/vmware and http://www.vmware.com/pdf/vi3_systems_guide.pdf.

For more information

HP ProLiant DL585 G5: www.hp.com/servers/proliantdl585

For more information on HP ProLiant benchmarks:

http://h18004.www1.hp.com/products/servers/benchmarks/index.html

For more information on VMware for HP ProLiant servers:

http://h18004.www1.hp.com/products/servers/vmware/index.html

HP VMware information:

http://www.hp.com/go/vmware

Home page for VMware's VMmark:

http://www.vmware.com/products/vmmark/overview.html

VMmark FAQ:

http://www.vmware.com/products/vmmark/faq.html

VMmark Guide:

http://www.vmware.com/vmtn/resources/573

Full Disclosure Reports for the HP ProLiant DL585 G5 and the other core results posted as of date of publication:

http://www.vmware.com/products/vmmark/results.html

Appendix

The HP ProLiant DL585 G5 was running VMware's ESX Server 4.0, build 148783. The system contained four 3.1GHz Quad-Core AMD Opteron 8393 SE processors and was configured with 128GB of memory. Storage was provided by 10 HP StorageWorks MSA 2000 arrays connected via a 4Gb/s fiber channel links and containing 12 15,000 RPM disks configured in RAID 0. The load-generating clients were HP ProLiant DL360 G5 servers with one Quad-Core Intel Xeon 2.83GHz CPU and 2GB of memory running Microsoft Windows Server 2003 Enterprise Edition operating system with Service Pack 2.