

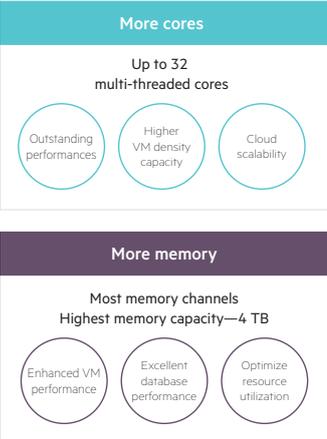
Change the economics of server virtualization

#1

SPECvirt_sc2013 score of 1500 at 84 VMs setting the bar for 1P virtualization performance¹

27%

lower cost per VM with the ProLiant DL325 Gen10 and the ProLiant DL385 Gen10²



¹ Based on hardware configuration and pricing. Lenovo pricing from Lenovo site on 05-16-18 and HPE pricing is internal until 06-05-18.

² Compared to Lenovo ThinkSystem SR650 based on SPECvirt_sc2013. The stated results are published as of 06-05-18; see spec.org. Lenovo pricing from Lenovo site as of 05-14-18. HPE pricing is internal as of 06-05-18. HPE data, not independently verified by AMD.

³ IDC Trends, "Virtualization Infrastructure and Software 2016—Market Share and Forecast Report," December 2016.

⁴ TechTarget, "IT Priorities 2017," February 2017.

⁵ IDC Market "Trends in Virtualization Infrastructure and Software 2016, Market Survey Report," December 2016.

⁶ The stated results are published as of 06-05-18; see spec.org.

⁸ Pricing from hpe.com internal as of 6-5-18 for the following configuration: 1P HPE ProLiant DL325 Gen10 server with one EPYC 7551P AMD Processor 8x16 GB memory 1x480 GB SATA drive.

⁹ Pricing from Dell site pricing as of 6-06-18 for the following configuration: 1P Dell EMC PowerEdge R440 with two Intel® Xeon® Gold 5118 processors 4x32 GB memory 2x300 GB SAS drive.

HPE ProLiant DL385 Gen10 and HPE ProLiant DL325 Gen10 servers deliver 27% lower cost per VM

Transforming IT

Businesses are transforming their IT environment by moving to a software-defined infrastructure. This improves asset utilization through consolidation leveraging virtualization and containerization, improving efficiencies and reducing costs through infrastructure automation, and building a Hybrid IT infrastructure to optimally address a range of workload and IT service delivery needs.

Virtualization is the dominant means to maximize efficiency, asset utilization, and agility in a **Hybrid IT environment**. In fact, server virtualization was the #1 planned infrastructure project for 2017.³ Analysts predict that 41% of new server shipments will be virtualized in 2020—up from 33% in 2015.⁴ And it's no wonder—enterprises report savings of almost 20% from server virtualization.⁵

Changing the economics of virtualization

HPE ProLiant DL385 Gen10 and HPE ProLiant DL325 Gen10 servers are ideal for virtualization. They help you achieve immediate cost savings from consolidation while providing superior security and simplified management that enhances productivity.

Leveraging AMD EPYC™ processors, both the HPE ProLiant DL325 1P server and the HPE ProLiant DL385 2P server are rewriting the formula for server virtualization and lowering the total cost of ownership (TCO).

Selecting the right server

Choosing the right server begins with the workload. The number of processor cores and threads per core, along with the amount of memory and storage required by the workload will determine the number of virtual machines (VMs). You can then confidently choose your server based on its processor, memory, and storage capability.

With up to 32 cores, 2 TB of memory, and 40 TBs of NVMe storage, the HPE ProLiant DL325 server is the right choice for smaller scale virtualization; in fact, it sets the bar for single-socket virtualization performance.⁶ The HPE ProLiant DL385 server, with up to 64 cores, 4 TB of memory, and 96 TBs of NVMe storage provides unrivalled scale for virtualization in a dual-socket server.

The 1P HPE ProLiant DL325 server delivers a 27% lower TCO cost as compared to a leading competitor's 2P server (Figure 1).

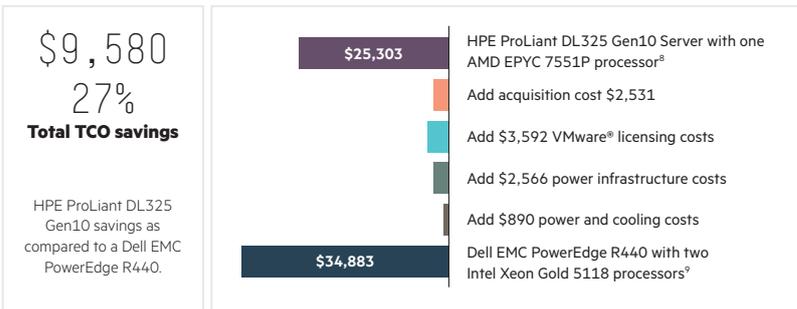


Figure 1. Total cost of ownership (TCO) savings

Solution brief

Both the HPE ProLiant DL325 and HPE ProLiant DL385 scale very linearly with respect to virtualization with up to 27% lower cost per VM than the leading 2P competitor for virtualization.⁷

AMD EPYC processors

With innovation to accelerate today's applications, the AMD EPYC processors complement the benefits of HPE ProLiant DL325 Gen10 and HPE ProLiant DL385 Gen10 servers with the right balance of core count, memory support, and high I/O capacity, delivering the utmost in flexibility for matching resources to workloads.

Delivering more resources at a competitive price point, the AMD EPYC processors support up to 2 TB memory per socket and 13% more CPU cores, with the ability to execute 13% more simultaneous threads.¹⁰ AMD EPYC also shaves costs by requiring 12% less power and providing lower VMware licensing costs on a per-core basis.¹¹

¹⁰, ¹¹ Compared to a top competitor, source AMD.

¹² Based on external firm conducting cybersecurity performing penetration testing of a range of server products from a range of manufactures, May 2017.

¹³ Based on internal HPE performance benchmark testing, May 2018.

In addition, AMD provides the industry's first hardware-embedded security for an x86 server system on a chip (SoC), including AMD Secure Encrypted Virtualization, which can isolate VMs from one another and from the hypervisor itself to protect your data. Together with the HPE silicon root of trust, the AMD secure processor validates the firmware code, so the server won't boot with compromised code. This advanced security, in combination with silicon root of trust, is part of what makes **HPE ProLiant Gen10** the world's most secure industry-standard server portfolio.¹²

With its industry-leading core count and memory support, EPYC can enable more VMs and more robustly configured VMs per server than previously possible, plus help make those VMs more secure. Whether you are deploying a single server, implementing a private cloud or enabling a hybrid cloud, EPYC provides the right balance of compute, memory, I/O, and security for your virtualized environment.

HPE SmartMemory based on Samsung Electronics 16 Gb memory technology

Higher-performing, higher-density memory is key when it comes to optimizing server resources in virtualized environments. That's because running numerous applications on a single server with more VMs requires not only higher processor speed, but also higher memory capacity.

As the leading memory supplier for the past two decades, Samsung has continuously driven innovation and recently introduced the world's first 16 Gb-based 64 GB DDR4 RDIMM. HPE ProLiant DL325 and HPE ProLiant DL385 servers leverage this leading-edge Samsung memory, which offers lower power, increased performance, and higher capacities—effectively doubling the memory footprint—making them ideal for server virtualization.

Samsung 16 Gb-based 64 GB DDR4 RDIMMs have the lowest power consumption of any 64 GB server DIMM available in the market, addressing the need for greater power efficiency in today's data centers. Testing in HPE ProLiant DL385 Gen10 servers demonstrated that the 16 Gb 64 GB RDIMMs offer up to 54% power savings and up to a 46% improvement in read/write throughput per watt when compared to 8 Gb 64 GB LRDIMMs.¹³

The 16 Gb DDR4 components will soon enable the production of a lower power 128 GB DIMM as well as a DIMM density of 256 GB. These Samsung offerings could enable a 32-DIMM system such as the HPE ProLiant DL385 server to reach up to 8 TB in the future; ideal for memory-intensive applications.

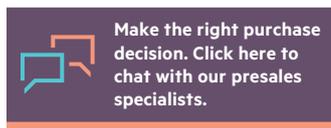
With Samsung's full portfolio of server DIMM products, you can scale your memory requirements from low-density 16 GB DIMMs all the way up to high-density 256 GB DIMMs. This gives you the flexibility to grow your memory selections to meet evolving business needs.

Get started right away

Don't wait to find out more about economical virtualization that can keep up with growing demands. Contact your HPE or authorized channel partner representative to find out more, today.

Learn more at
hpe.com/servers/dl385
hpe.com/servers/dl325

Our solution partners



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