

Deliver exceptional hyperconverged performance

With HPE ProLiant DL385 Gen10 on Login VSI

Server test configurations

- (3) 2-socket HPE ProLiant DL385 servers
- AMD EPYC 7601 processors with 128 threads per server (Figure 2)
- 512 GB of memory in a high-throughput, single-DIMM-per-channel configuration
- (9) NVMe disks in three disk groups per server
- Each disk was 1.6 TB for a total of 28.8 TB of high-speed storage
- Mellanox 25 Gbps switches connected the servers

Virtual desktop test configurations

- Microsoft Windows® 10 LTSB 2016 with two vCPUs—2304 MB of memory allocated and 40 GB of vDisk each
- The VM guest operating system (OS) is optimized using the VMware® OS Optimization Tool⁶ and the #VDILIKEAPRO tuning template from Login VSI⁷

The HPE ProLiant DL385 Gen10 server has been designed with flexibility while delivering a high maximum core count and large memory footprint. Choose this purpose-built platform for virtualization.

Server platform

- HPE ProLiant DL385 Gen10 Servers
- 3 disk groups per node (1:9)
 - Storage 1:3 x 12G 1.6 TB NVMe SSD drives per server
 - Storage 2:3 x 12G 1.6 TB NVMe SSD drives per server
 - Storage 3:3 x 12G 1.6 TB NVMe SSD drives per server

Software

- VMware vSAN™ 6.6

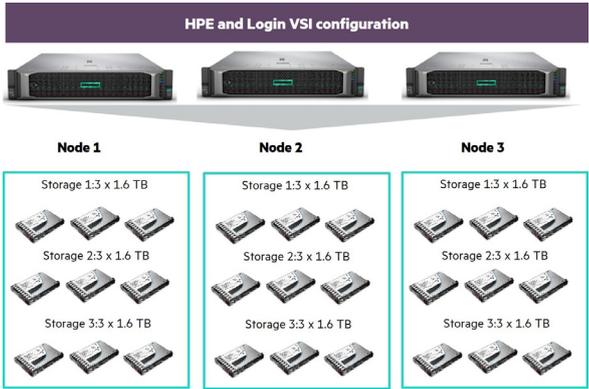


Figure 1. Systems under test HPE ProLiant DL385 Gen10 cluster

When planning a virtual desktop infrastructure, the number of virtual desktops per node is a key metric that decision-makers consider. The **HPE ProLiant DL385 Gen10 server powered with AMD EPYC processors** includes highest core count,¹ highest memory bandwidth,² and a large number of virtual desktops per server,³ proves to be an excellent choice for deploying virtual desktops in a **hyperconverged** environment.

HPE ProLiant DL385 Gen10 enables you to run a large number of virtual desktops per node with few servers to support an impressive total of 700 virtual desktops.⁴ This helps you reduce the number of physical servers needed, as well as decreases CAPEX and OPEX.

Tested with Login VSI



Login VSI is the industry-standard virtual desktop load-testing tool. With the Login VSI benchmark, you can model the performance, scalability, and availability of typical virtual desktop environments based on their synthetic user technology. Login VSI uses Microsoft® Office and other knowledge worker applications to determine response times.

Table 1. HPE ProLiant DL385 Gen10

Server	Processor	Total virtual desktops	Number of nodes	Virtual desktops per node
HPE ProLiant DL385 Gen10	2 x AMD EPYC 7601 ⁵	700	3	233

¹ AMD EPYC 7601 processor includes up to 32 CPU cores versus Intel® Xeon® Platinum 8180 Processor with 28 CPU cores.

² AMD EPYC 7601 processor supports up to 8 channels of DDR4-2667, versus Intel Xeon Platinum 8180 Processor at 6 channels of DDR4-2667.

³ AMD EPYC processor supports up to 128 PCIe Gen3 I/O lanes (in both 1- and 2-socket configuration), versus the Intel Xeon Scalable processors supporting a maximum of 48 lanes PCIe Gen3 per CPU, plus 20 lanes in the chipset (maximum of 68 lanes on 1 socket and 116 lanes on 2 socket).

⁴ Based on internal AMD testing, HPE verified results, October 2018.

⁵ Based on AMD internal testing, October 2018.

⁶ labs.vmware.com/flings/vmware-os-optimization-tool

⁷ loginvsi.com/blog/520-the-ultimate-windows-10-tuning-template-for-any-vdi-environment

Partners you can rely on

VMware

VMware enables low-cost, high-performance hyperconverged infrastructure (HCI) solutions powered by VMware vSAN. The natively integrated software solution combines enterprise-class vSAN storage with the industry-standard VMware vSphere® Hypervisor and VMware vCenter Server®, a unified virtualization management solution for today's modern data centers. VMware Horizon® provides end users access to all their virtual desktops, applications, and online services through a single digital workspace.

AMD

AMD EPYC provides more CPU cores, memory, and I/O to enable outstanding performance, which can be rightsized for your target workload. In a dual-socket configuration, it provides up to 64 CPU cores and 4 TB of RAM leveraging 8 DDR4 memory channels (for more bandwidth).

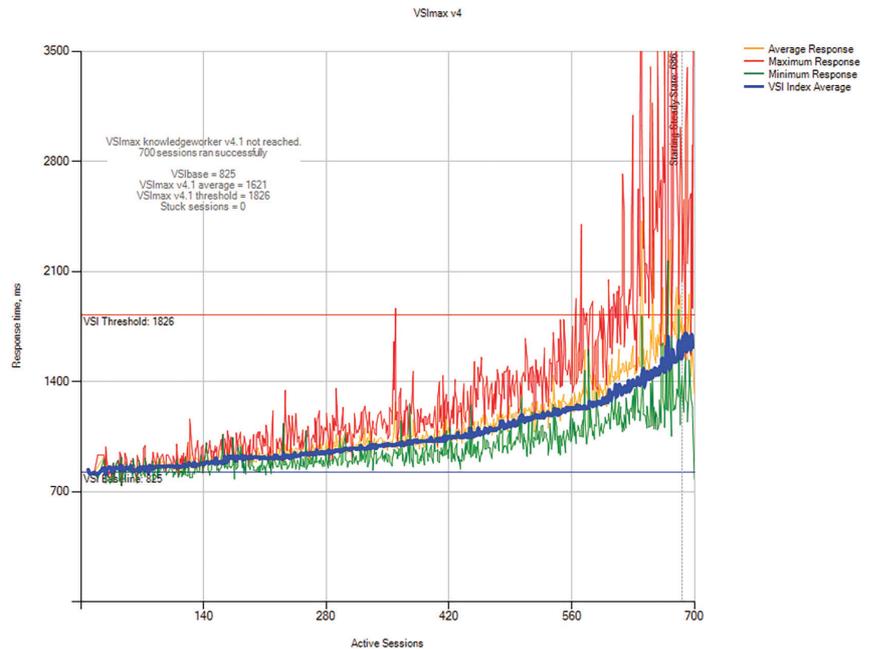


Figure 2. Login VSI test results showing exceptional virtual desktop density

Learn more at hpe.com/servers/dl385

⁸ The test numbers reported are based on an attempt to maximize each system under test. The real world numbers will be affected by requirements for availability, infrastructure variation, OS image build, and application suites.

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Innovation is becoming imperative

Innovation is the reason for these outstanding results. As the once automatic leaps in processor performance become increasingly elusive, innovation becomes even more important. The AMD EPYC 7601 system on chip (SoC) delivers 32 cores of CPU performance. The ability to package more cores in a comprehensive SoC becomes essential to delivering superior performance at a reduced cost. It is part of AMD's strategy of delivering a better balance of resources for efficient real-world application performance. The AMD EPYC SoC delivers more—cores, memory capacity and bandwidth, and massive I/O capacity—all essential elements of virtual desktop environments.

The results⁸

Login VSI testing (Figure 2) shows that the HPE ProLiant DL385 Gen10 servers with dual AMD EPYC 7601 processors running VMware vSAN can deliver exceptional virtual desktop density. VMware vSAN with HPE ProLiant DL385 Gen10 can save on capital expense, deployment, as well as power and cooling costs.

Confidently virtualize your desktops

With a high concurrent number of virtual desktops per server and satisfied end users, data center managers can now deploy more virtual desktops in hyperconverged environments. They will need fewer servers at lower cost than before thanks to HPE ProLiant DL385 Gen10 servers with AMD EPYC processors.

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