

HPE ProLiant DX385 Systems Integrated with Nutanix Software Deliver Scalable Performance for Virtual Desktop Infrastructure



Looking for a highly performant, available, scalable, and cost-effective solution for your Virtual Desktop Infrastructure?

AMD EPYC™ processor-based HPE ProLiant DX385 Gen 10 Plus V2 systems running Nutanix™ software drive superior outcomes for your critical IT infrastructure and business applications requirements.

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Introduction

The recent rapid shift to remote work has left many companies supporting a larger number of employees requiring access to corporate applications and data from anywhere, on any device, at any time. Many companies are implementing on-premises Virtual Desktop Infrastructure (VDI) to address these requirements, as well as addressing the need for data sovereignty, privacy, performance, and security. IT departments are also looking for ways to streamline datacenter operations, increase scalability, and reduce costs. Hyperconverged Infrastructure (HCI) is increasingly becoming the infrastructure of choice to achieve these objectives. Enterprises implement HCI technologies in their IT ecosystem to deploy and manage IT resources and software to help improve TCO in a scalable business environment. Nutanix is a HCI software leader that has partnered with Hewlett Packard Enterprise to deliver HCI appliances that can simplify and modernize datacenters to run applications at scale.

HCI has become the platform of choice for VDI implementation with compute, storage, and network virtualization co-located on a single node. This allows sharing system resources with other applications, thereby helping significantly reduce the cost per virtual machine (VM) of the VDI for on-premises, cloud, and hybrid workloads with exceptional performance and ease-of-use. HPE ProLiant DX385 servers powered by AMD EPYC™ 7003 processors and running Nutanix Acropolis™ software deliver high performance and exceptional scaling for Virtual Desktop Infrastructure workloads.

If you are looking for highly available, flexible, and cost-effective solution for VDI workloads, then **AMD EPYC processor-powered Nutanix software-integrated HPE ProLiant DX385 Gen 10 Plus V2 appliances** are your answer. This combination brings you the power, performance, scalability, and value, along with the freedom to choose the right fit for your datacenter requirements.

AMD EPYC 7003 Processors with Nutanix Demonstrate Superior Performance on Virtual Desktop Infrastructure Workload.

AMD EPYC 7003 Series Processors provide a leadership throughout computing foundation for Nutanix HCI. Scaling is critical to HCI applications. AMD EPYC 7003 Series processors provide high bandwidth between nodes with support for PCIe® Gen 4 enabled network devices. Together AMD and Nutanix have fully tested solutions demonstrating excellent workload performance, which helps lower risk and deliver exceptional performance.

AMD EPYC CPU-Powered Nutanix-Integrated HPE ProLiant DX385 Gen10 Plus V2 Appliance Offers

- **Flexibility** – Customize VM sizes to meet your requirements
- **High Availability** – Nutanix includes powerful self-healing, data protection, and disaster recovery capabilities to keep databases and applications running and your critical data well protected.
- **Performance** – 3rd Gen AMD EPYC processors are available in a variety of core counts and frequencies to help optimize performance and costs based on your workload needs.
- **Scalability** – Either scale up by increasing the resources in the same VM to meet application requirements or scale out by spinning up more VMs or adding more nodes/cores as you grow.
- **Cost-effective** – Help reduce TCO by creating more VDI instances in the same cluster farm.

Login VSI

Login VSI™ is the industry-standard virtual desktop load-testing tool. This benchmark includes synthetic user technology that allows you to model the performance, scalability, and availability of typical virtual desktop environments. Login VSI uses Microsoft® Office and other knowledge worker applications to determine response times.

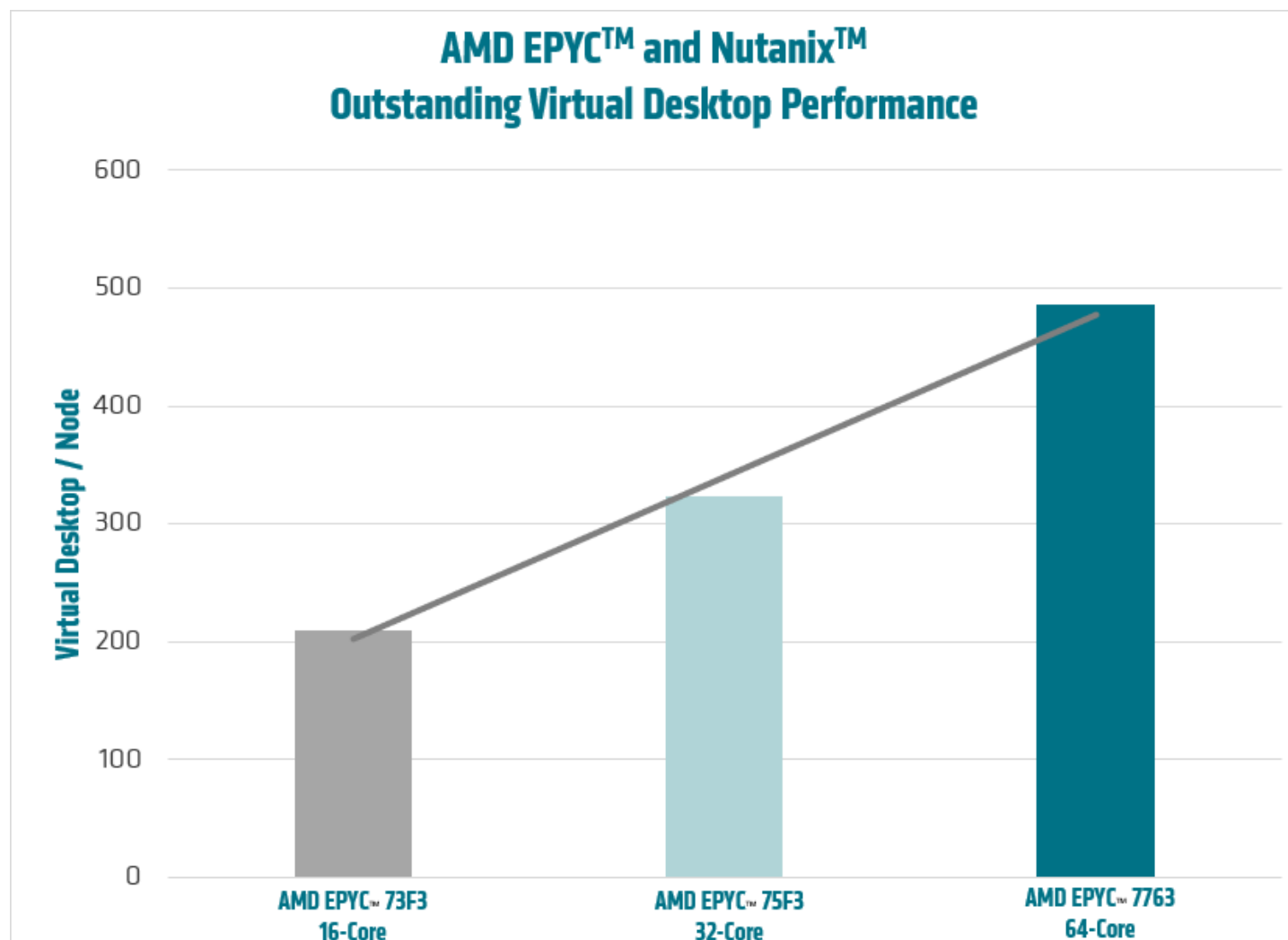


Figure 1: AMD EPYC Performance on LoginVSI "knowledgeworker" test on Windows® 10

Table 1 summarizes Login VSI Performance results on a 4-node HPE ProLiant DX385 Gen10 Plus V2 server with dual socket AMD EPYC 73F3 16-core, AMD EPYC 75F3 32-core, and 64-core AMD EPYC 7763 processors (see Test Configurations, below).

Nutanix Acropolis Software

Nutanix Acropolis™ software converges compute and storage to provide a cloud-like infrastructure that can run applications at scale. Nutanix Hyperconverged Infrastructure software tightly integrates storage, networking, and compute resources into a powerful software-defined virtualized single-managed pool. Integrating (or hyperconverged) storage, networking, and compute resources into a single infrastructure building block avoids the need to manually stitch together separate discrete computing devices. Nutanix software enables VDI, databases, and application workloads while delivering excellent user performance and scalability.

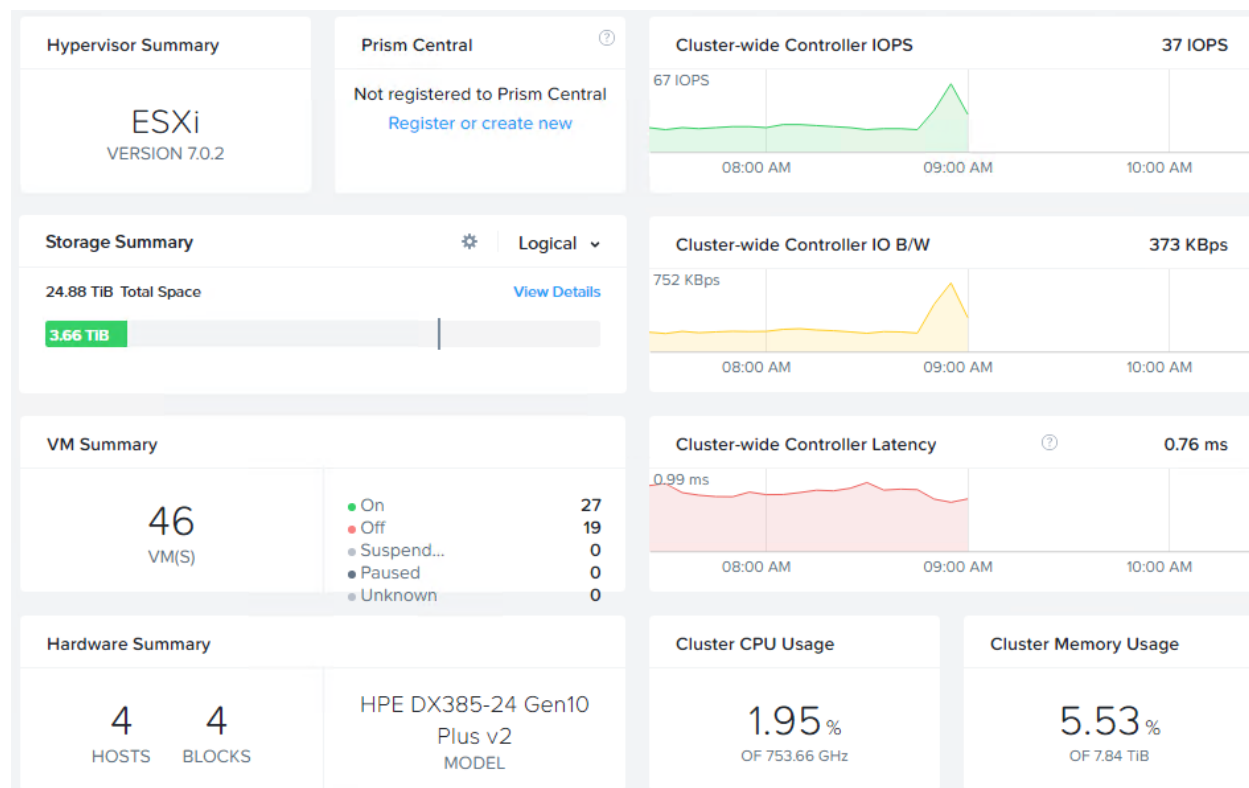


Figure 2: Example Prism view summary

Nutanix Prism™ is an end-to-end consumer-grade management solution for virtualized datacenter environments that combines several aspects of administration and reporting to offer unprecedented simplicity. It provides an intuitive user interface to simplify and streamline routine datacenter workflows, eliminating the need to have disparate management solutions for different tasks.

Test Configurations

AMD engineers configured four (4) dual-socket servers as shown in Tables 1 and 2.

The storage configuration used Nutanix software with 4 NVMe and 4 SATA SSD disks per server. Each capacity disk was 1.92 TB, for a total of 24.86 TB of high-speed total usable storage. Nutanix deduplication and erasure coding were disabled, and compression was enabled. 25-Gbps switches connected the servers.

Component	Details
Server	4 x Dual-Socket Server (HPE ProLiant DX 385 Gen10 Plus V2)
CPU	2 socket, EPYC 73F3 16 Core @ 3.50 GHz 2 socket, EPYC 75F3 32 Core @ 3.20 GHz 2 socket, EPYC 7763 64 Core @ 2.55 GHz
RAM	1-2 TB per server
Network adapter	25Gbe
Disks	4 x 1.92 TB SATA SSD 4 x 1.92 TB NVMe
Hypervisor	ESXi 7.0.2
Nutanix AOS	5.20.1.1 LTS
VMWare Horizon	8.1.0
Login VSI	4.1.40.1
BIOS Version	A42 v2.42

Table 1 Hardware and Software versions

Settings	Default Value	Custom Value
Memory Options	NPS2	NPS1

Table 2 BIOS Settings (once cluster has been created)

Test Methodology

Login VSI Pro connects to remote desktops and simulates an end user performing typical office tasks. Different profiles are available for testing. This test used the Knowledge Worker profile that simulates CPU, memory, and I/O usage representative of a typical data entry worker. This test used VMware Horizon® via Launcher VMs to connect using the VMware® Blast Protocol with 100 Launcher VMs serving a maximum of 25 connections each, and resolution levels set to a maximum of 1024 x 768 on all configurations. Login VSI Pro version 4.1.40.1 was used with benchmark mode enabled and the Knowledge Worker profile selected for all tests.

Processor	Desktop Operating System	Virtual Desktops Per Node
2 x AMD EPYC 73F3, 16 core, 3.50 GHz	Windows® 10 Enterprise 64-bit build (20H2), MS Office 2019	~209
2 x AMD EPYC 75F3, 32 core, 3.20 GHz	Windows® 10 Enterprise 64-bit build (20H2), MS Office 2019	~323
2 x AMD EPYC 7763, 64 core, 2.55 GHz	Windows® 10 Enterprise 64-bit build (20H2), MS Office 2019	~486

LoginVSI Test Results

Figures 3-5 show the LoginVSI test results. Figure 3 shows that the dual-socket, 16-core AMD EPYC 73F3 processor-based four node cluster supports up to ~838 virtual desktops. Each server thus delivers ~209 virtual desktops.

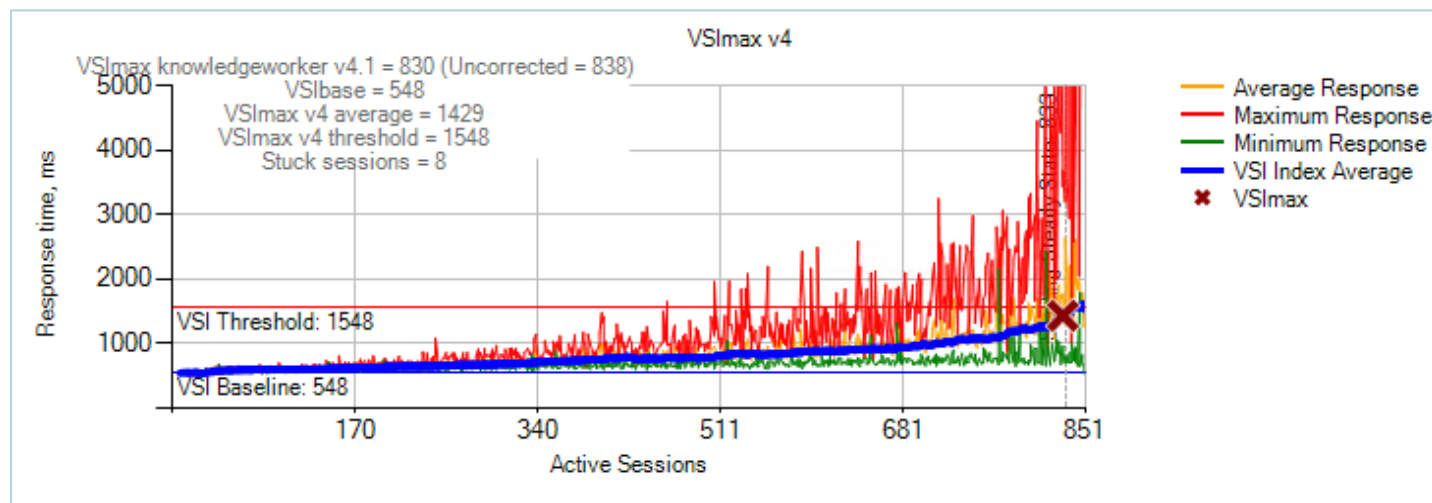


Figure 3 AMD EPYC 73F3 2P, 4-Node Server Login VSI Test Results (knowledgeworker)

This test achieved a "Very Good" baseline score of 548 out of 799 while running the Login VSI test with 838 Knowledge Worker user sessions. The blue line in the Figure 2 indicates that the system reached a VSImax average score of 1429 when 838 sessions were loaded. This is well below the VSI threshold level of 1548 set by the Login VSI tool.

Figure 4 shows that the dual-socket, 32 core AMD EPYC 75F3 processor-based four node cluster supports up to ~1291 virtual desktops. Each server thus delivers ~323 virtual desktops.

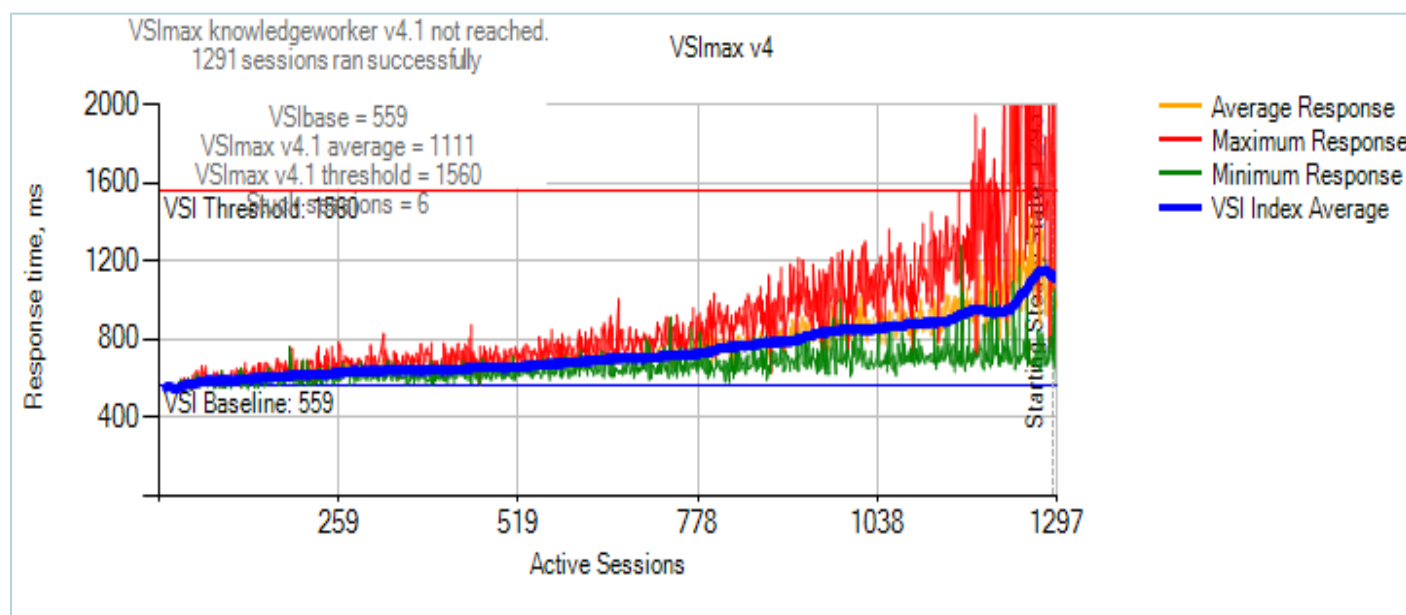


Figure 4 AMD EPYC 75F3 2P, 4-Node Server Login VSI Test Results (knowledgeworker)

This test achieved a "Very Good" score of 559 out of 799 while running the Login VSI test with ~1291 Knowledge Worker user sessions. The blue line in the Figure 4 indicates that the system reached a VSImax average score of 1111 when ~1291 sessions were loaded, which is below the VSI threshold level of 1560 set by the Login VSI tool.

Figure 5 shows that the dual-socket, 64 core AMD EPYC 7763 processor-based four node cluster supports up to 1944 virtual desktops. Each server thus delivers ~486 virtual desktops.

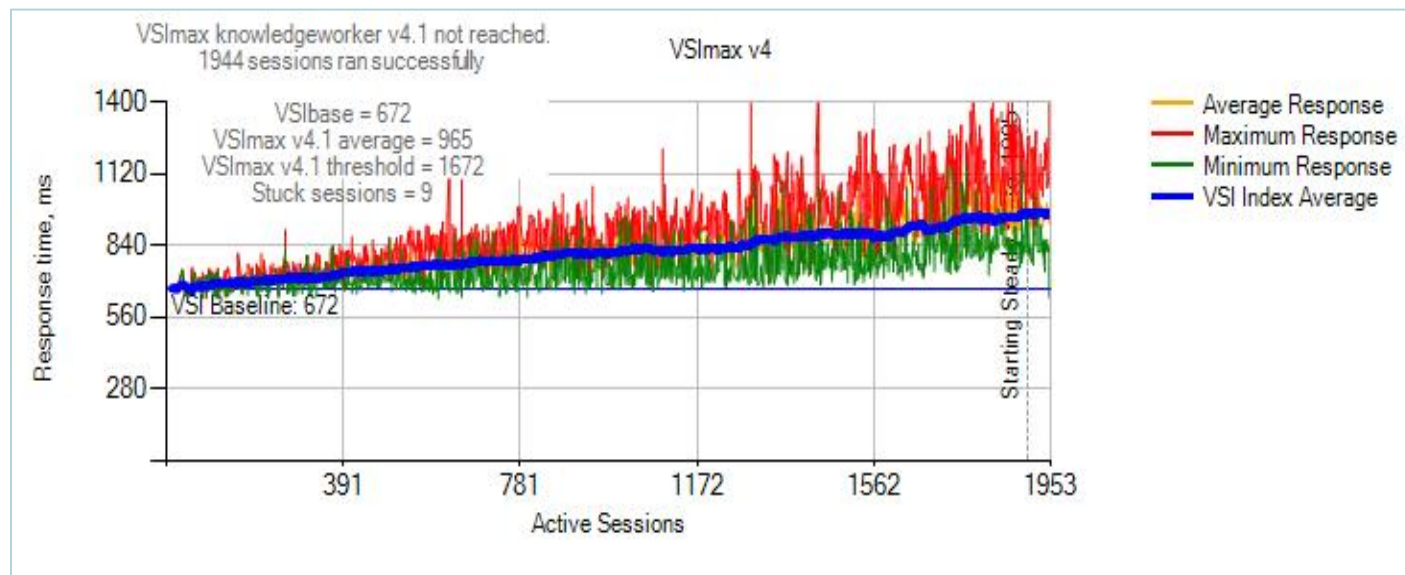


Figure 5 AMD EPYC 7763 2P, 4-Node Server Login VSI Test Results (knowledgeworker)

This test achieved a “Very Good” score of 672 out of 799 while running the Login VSI test with 1944 Knowledge Worker user sessions. The blue line in the Figure 5 indicates that the system reached a VSImax average score of 965 when ~1944 sessions were loaded, which is well below the VSI threshold level of 1672 set by the Login VSI tool.

Summary

AMD EPYC 7003 processors with 16, 32, and 64 cores can deliver excellent VDI performance with the capability to support up to:

- ~209 desktops per node on AMD EPYC 73F3 16-core processors, or up to 838 desktops in a dual-socket, 4-node cluster
- ~323 desktops per node on AMD EPYC 75F3 32-core processors, or up to 1291 desktops in a dual-socket, 4-node cluster
- ~486 desktops per node on AMD EPYC 7763 64-core processors, or up to 1944 desktops in a dual-socket, 4-node cluster.

You can select HPE ProLiant DX385 Gen10 Plus v2 servers powered by the AMD EPYC processor that best suits your needs. Depending upon the number of virtual desktops needed, customers can pick from the above EPYC processor choices or from the wide variety of EPYC processors supported on the HPE ProLiant DX385 Gen10 Plus v2 server.

Conclusion

Many enterprises are deploying VDI with HCI to address the growing need for remote workers to access corporate applications and data from anywhere, on any device, at any time, and while also addressing the need for data sovereignty, privacy, performance, and security. AMD EPYC processor based HPE ProLiant DX385 Gen 10 Plus V2 systems running Nutanix software are ideally suited for HCI and VDI environments and can help IT leaders address the rapidly changing requirements of today’s business environment.

Related Links

- [AMD EPYC Server Processors for Hyperconverged Infrastructure*](#)
- [AMD Data Center Solutions](#)
- [AMD EPYC™ Tech Docs and White Papers Library](#)
- [Nutanix*](#)
- [VMware*](#)

*Links to third party sites are provided for convenience and unless explicitly stated, AMD is not responsible for the contents of such linked sites and no endorsement is implied.

FOOTNOTES

1. Login VSI rating summary link
https://www.loginvsi.com/documentation/index.php?title=Login_VSI_Analyzing_Results#Summary *
2. Knowledge worker testing information can be found at:
https://www.loginvsi.com/documentation/index.php?title=Login_VSI_Workloads#Knowledge_Worker *
3. AMD EPYC with Nutanix and HPE Proliant DX385 Gen 10 Plus for VDI-7002
[AMD EPYC™ with Nutanix™ and HPE Proliant™ DX385 Gen10 Plus Server: Higher Density and Performance for Virtual Desktop Infrastructure](#)

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