SOLUTION BRIEF

# Why GPUs Matter for Virtual Desktops and Applications

**Nutanix provides advanced GPU support to accelerate graphics-intensive and compute-intensive applications on VDI**

## KEY BENEFITS

- **Excellent User Experience**
  Reduce end-user latency by 28% and deliver high performance for graphics- and compute-intensive workloads.
- **Superior Performance**
  Decreases CPU utilization by 30% for increased density, making your VDI environment more flexible and efficient.
- **Decreased Costs**
  Efficient HCI architecture with AHV hypervisor and flexible, per-user licensing keep costs under control.

GPU-accelerated VDI has long been a great alternative to expensive graphics workstations that need to be refreshed every few years. GPU resources can be allocated efficiently for each requirement without under or overprovisioning, so you can flexibly address the needs of users who only occasionally need GPU acceleration. A single application or user can also be allocated multiple GPU resources when needed without leaving valuable GPUs idle when they are not.

The need for GPU support in VDI deployments is increasing rapidly. While graphics-intensive applications in industries including healthcare, media, energy, engineering, and academic research have long required GPU support, many popular applications are also more graphics intensive. There are also an increasing number of compute-intensive applications such as machine learning that can benefit from GPU acceleration.

With thousands of people now working or studying from home because of the global COVID-19 pandemic, virtual desktop and application use has dramatically expanded. Users have become more diverse, and many users with graphics- or compute-intensive use cases are separated from their workstations.

## WHY CHOOSE NUTANIX FOR VDI?

Whether you have hundreds of users or tens of thousands, Nutanix VDI solutions deliver an excellent user experience and superior security. You can start small and grow to thousands of users without disruption, performance-related risks, or big upfront costs. Resources remain balanced, and infrastructure does not have to be replaced as your VDI environment grows.

Nutanix offers superior support for GPUs in Citrix and VMware VDI environments, including:

- **More choice.** Choose from Nutanix NX appliances, hardware from our OEM partners, or a wide range of third-party servers. Run your preferred NVIDIA GPUs on your preferred platform. See the hardware platforms dynamic spec sheet for the latest information.

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- **Flexible licensing.** With per-user licensing, usage is metered only on maximum concurrent users, simplifying initial procurement and license expansion as your environment grows.
- **Support for high-density and high-performance workloads.** Nutanix AHV incorporates advanced technologies to provide optimized support for knowledge and task workers, power users, and the most intensive applications.

## NUTANIX AHV: ELASTIC GPU INFRASTRUCTURE

The Nutanix AHV platform makes GPU configuration extremely simple, allowing you to architect VDI infrastructure that improves performance and agility while eliminating separate hypervisor licensing costs and reducing TCO. Nutanix AHV supports industry-leading NVIDIA virtual GPU (vGPU) technology for visual graphics and compute, including Quadro Virtual Data Center Workstation, Quadro vDWS and GRID Virtual PC and Virtual Apps (GRID vPC and vApps). A single GPU can be virtualized and shared among many users, or multiple vGPUs can be dedicated to a single user or application.

Advanced features enable Nutanix AHV to seamlessly support modern GPU applications and diverse needs:

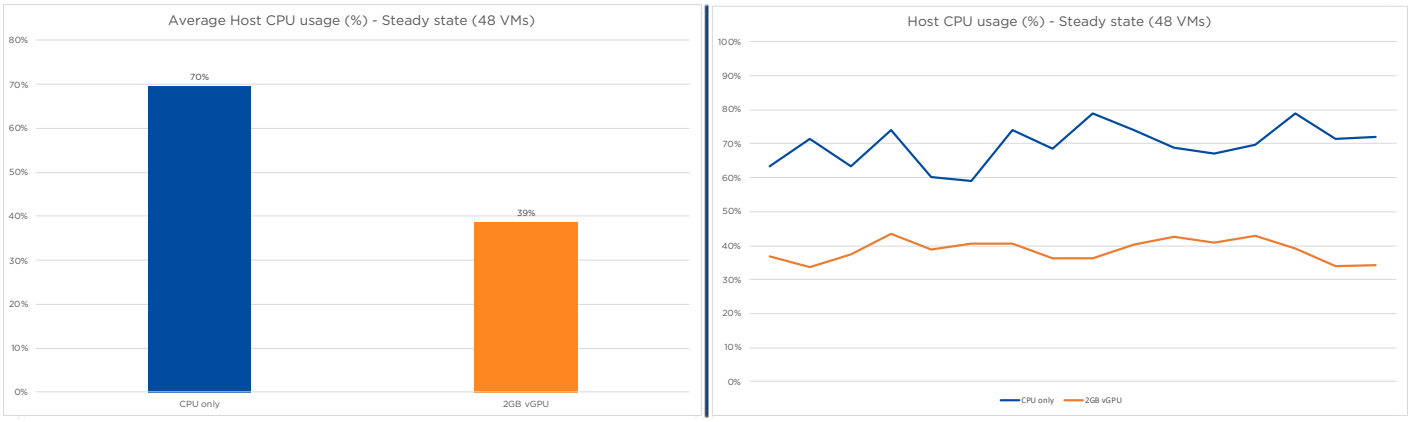
- **vGPU Live Migration.** Continuous uptime for important virtual desktops and compute-intensive workloads.
- **Multi-vGPU per VM.** A single VM can be provisioned with multiple vGPUs. These capabilities give you greater flexibility to adapt to user needs without wasting resources or causing downtime.

## NVIDIA QUADRO SUPPORT

Nutanix HCI also provides advanced support for the NVIDIA® Quadro RTX™ 6000 and 8000 passive GPUs on NX-3155G and other OEM platforms, delivering the latest hardware-accelerated ray tracing, deep learning, and advanced shading capabilities. Built on the innovative NVIDIA RTX platform, these GPUs are designed to power the most demanding professional visualization workloads. Choose the Quadro RTX 8000 over the Quadro RTX 6000 to power virtual workstations that support very large animations, files, or models.

## GPU-ACCELERATED PERFORMANCE

Nutanix has carefully benchmarked the performance of GPU-equipped platforms to verify superior performance and provide guidance for selecting GPUs and sizing your VDI environment.




NVIDIA nVector running "knowledge worker" workload was used to benchmark a Nutanix NX-3155G-G7 configured with 768GB memory, six SSDs, and two NVIDIA Quadro RTX 8000 GPUs. Tests were performed with 64VMs, each with a 1GB NVIDIA profile.

## ADDITIONAL INFORMATION

- NVIDIA vGPU on Nutanix
  nutanix.com/go/optimizing-nvidia-vgpu-on-nutanix
- NX Platforms Page
  nutanix.com/nx
- Hardware Platforms Specsheets
  nutanix.com/specsheet

A GPU-accelerated Nutanix NX platform provides a 28% decrease in observed end-user latency, while reducing load on host CPUs by 30%. These results translate to higher end-user satisfaction and an increase in density—the number of users that can be supported per server.

## GETTING STARTED

Nutanix helps IT organizations of all sizes successfully virtualize desktops and applications, with GPU acceleration to support any user, anywhere, on any device.

A variety of services are available to help you every step of the way, including planning and sizing, design and deployment, and scaling and integration.

Learn how you can benefit from GPU-accelerated Nutanix VDI solutions by contacting your local representatives or authorized resellers.

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T. 855.NUTANIX (855.688.2649) | F. 408.916.4039
info@nutanix.com | www.nutanix.com | @nutanix