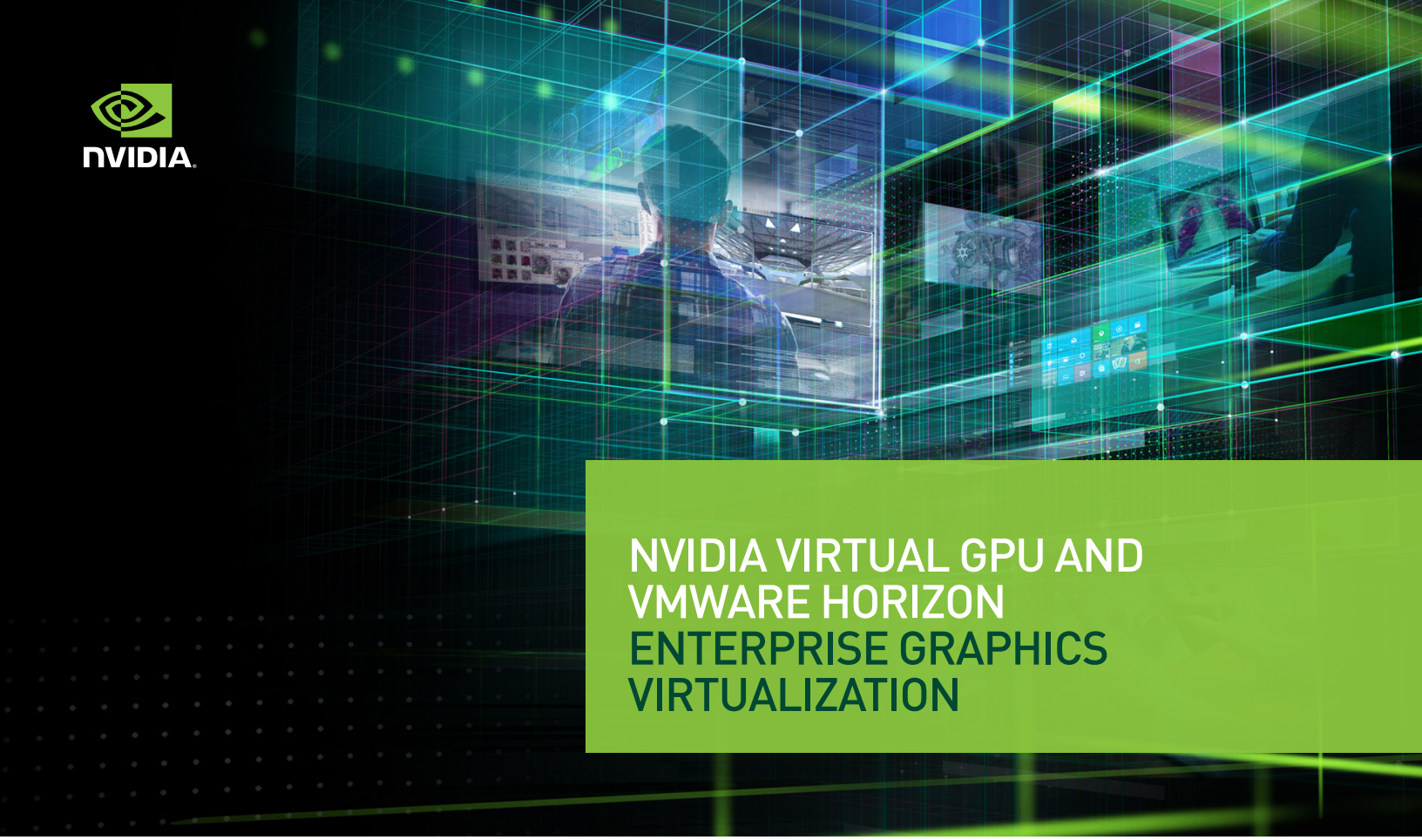


NVIDIA VIRTUAL GPU AND VMWARE HORIZON ENTERPRISE GRAPHICS VIRTUALIZATION

Across the enterprise, there's a growing need for graphics and compute acceleration with fast, secure access from anywhere, on any device. Engineers, designers, and architects are using powerful applications that rely on graphics-intensive datasets and need to be accessed by distributed teams from anywhere. At the same time, business users' requirements are rising, with Windows 10 and updated versions of the basic office productivity apps demanding higher graphics consumption than ever before.

Desktop virtualization untethers users, enabling amazing mobility and productivity. Graphics Processing Units (GPUs) enhance the VDI experience by offloading tasks from the CPU to provide better performance and user experiences. Without a GPU, some accelerated graphics and compute workloads simply won't run in a virtualized environment or, at best, will run with a reduced feature set. GPUs also broaden the applicability of your VDI technology to support use cases that weren't previously viable, and enable a cost-effective, scalable infrastructure that lets you expand virtualization to more users.

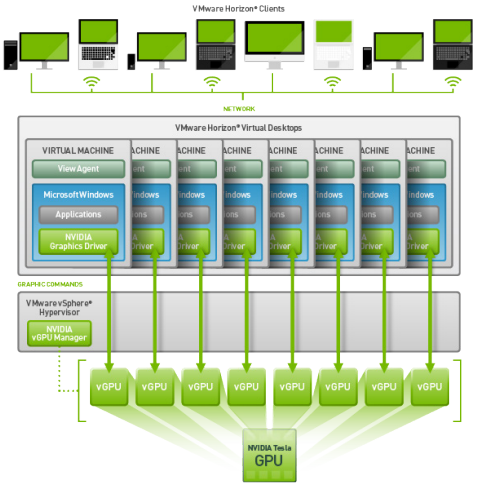
VMware Horizon with NVIDIA virtual GPU solutions give organizations around the globe the flexibility to easily support real-time collaboration with 3D applications at scale. This means you can ensure a graphics experience that's equivalent to dedicated hardware, delivered with the cost-effectiveness that only true GPU virtualization can offer.

In collaboration with VMware

VMware Solutions with NVIDIA Virtual GPU Solutions

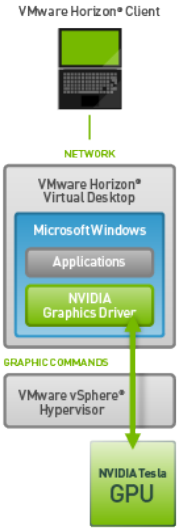
VMware Horizon with vGPU

NVIDIA virtual GPU software runs on NVIDIA® Tesla® GPUs and is installed in the VMware ESXi host. This software divides the GPU into multiple vGPU instances that each have direct access to the native NVIDIA driver installed in the guest O/S. The graphics commands of each virtual machine are passed directly to the GPU, without translation by the hypervisor. This allows the GPU hardware to be allocated for each user to deliver the ultimate in shared virtualized graphics performance. NVIDIA virtual GPU lets you deploy VMs across a wide range of users and graphics applications—from users who need to view PowerPoint slides and YouTube videos to your most demanding engineer using intensive 3D CAD software.



VMware Horizon with vDGA

NVIDIA virtual GPU solutions with VMware Horizon Virtual Dedicated Graphics Acceleration (vDGA) is ideal for 3D graphics-intensive applications. vDGA is highly recommended for dedicated 1:1 GPU mapping and workstation-equivalent performance without the need for a workstation. This solution enables designers, engineers, and architects to work remotely.



Key Benefits of the NVIDIA Virtual GPU and VMware Solution

Immersive User Experience

An accelerated virtual desktop experience optimized for Windows 10 and office productivity applications with NVIDIA GRID™

Proven benefits and performance of NVIDIA Quadro, extended to virtual workstations with the NVIDIA Quadro Virtual Data Center Workstation (Quadro vDWS)

Better experience with NVIDIA virtual GPU products and VMware Blast Extreme

Full Digital Transformation Capability

No barriers and the ability to broaden the applicability of your VDI technology to support more knowledge worker use cases with NVIDIA GRID

Quadro vDWS for support of accelerated graphics and compute (NVIDIA CUDA® and OpenCL) workflows to streamline design and computer-aided engineering simulation

Greater Security For Mission-Critical Data

The ability to confidently enable global collaboration across your workforce knowing that large, mission critical datasets are securely centralized with Quadro vDWS

Single Platform, Lower Costs

VMware end-to-end platform for reduced OpEx and NVIDIA GRID licenses tailored to the EUC requirements and budget

Integration of NVIDIA virtual GPU performance metrics in VMware vRealize Operations (vROps) to support both Quadro vDWS and NVIDIA GRID use cases

Peace of Mind with ISV Certifications

A growing portfolio of Quadro certifications with the industry's leading 3D application ISVs with the Quadro vDWS

VMware Horizon 7, the first certified VDI solution with Dassault Systèmes' 3DEXPERIENCE Platform R2016x and R2017x

The NVIDIA virtual GPU solution is comprised of Tesla data center GPUs and software licensing components. Choose from three software editions: NVIDIA GRID™ Virtual Applications (GRID vApps) and Virtual PC (GRID vPC) for standard office workers, and NVIDIA Quadro® Virtual Data Center Workstation (Quadro vDWS) for professional graphics users. The Quadro vDWS includes a certified Quadro driver to ensure that users get the same features expected of a physical workstation, including anti-aliasing, realistic models, enhanced application performance, and application certification.

Virtual Applications	Virtual Desktops	
NVIDIA GRID Virtual Applications	NVIDIA GRID Virtual PC	NVIDIA Quadro Virtual Data Center Workstation
Use with Citrix XenApp or other RDSH solutions like VMware Horizon Hosted Apps	For virtual desktop delivering standard PC applications, browser, and multimedia.	For professional graphics applications; includes an NVIDIA® Quadro® driver

OEM Systems Partners

Also available from Asus, Fujitsu, Hitachi, Huawei, Inspur, Nutanix, Sugon, Tyan, and Quanta. For a complete list of certified hardware, visit www.nvidia.com/buygrid.

VMware and NVIDIA collaborate closely during product development to assure stability and reliability of the platform. As part of a joint Certification Program, NVIDIA virtual GPU solutions are thoroughly tested to ensure that customers get the performance they expect.

For more information, visit **www.nvidia.com/grid** or **vmware.com/products/horizon**