

VMWARE HORIZON WITH NVIDIA GRID

Delivering Secure, Immersive Graphics from the Cloud

Accelerated Desktop Virtualization – powered by the Graphics-Accelerated Data Center

Organizations are increasingly seeking greater business agility, supporting geographically dispersed teams, and the need for secure, real-time collaboration. Teams within manufacturing, architecture, education, and healthcare environments need the ability to interact with large graphics-intensive datasets that must be securely manipulated in 3D, in real-time. At the same time, workers in every industry need a flawless user experience when accessing virtual workspaces, including Windows 10 and basic office productivity apps that demand increasingly greater graphics performance than ever before.

Desktop virtualization presents an opportunity to un-tether the user workspace from the confines of hardware and location, for both professional graphics users as well as knowledge workers. Graphics Processing Units (GPUs) offer greater performance and user experience within virtual environments, while relieving virtual machine CPU of the graphics processing burden. However, a tradeoff has traditionally existed between deploying technologies that cost-effectively share GPU resources across many virtual desktops, offering limited performance uplift, versus those that allocate a single GPU to a single virtual desktop, incurring a significant per-user cost.

VMware Horizon with NVIDIA GRID

With VMware Horizon and NVIDIA GRID, the trade-off between cost and performance is eliminated. Organizations can confidently deliver immersive graphics from the cloud, to enable secure productivity for knowledge workers, as well as global collaboration on large datasets for professional graphics users, with performance that's equivalent to a physical PC or workstation, with the cost-effectiveness of GPU sharing across multiple users.

How it Works

NVIDIA GRID enables true GPU hardware acceleration and sharing across multiple virtual desktops—without compromising the graphics experience. Application features and compatibility are exactly the same as they would be at the desk. With GRID vGPU technology, 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 time-sliced across multiple users simultaneously, to deliver the ultimate in shared virtualized graphics performance. (See Fig.1)

AT A GLANCE

VMware Horizon® with NVIDIA™ GRID™ delivers secure, immersive 3D graphics from the cloud, that's easily accessed across devices and locations, more affordably than ever before. This certified joint solution ensures that everyone from power users and designers to mobile and knowledge workers can enjoy a graphics experience that's equivalent to a physical PC or workstation, delivered securely and cost-effectively on the applications they depend on.

BENEFITS

- Accelerated virtual desktop experience optimized for Windows 10 and office productivity applications
- Proven benefits and performance of NVIDIA Quadro, extended to virtual workstations
- Real-time collaboration on large graphics datasets, from the cloud
- Greater security for mission-critical data shared across locations and devices
- VMware end-to-end platform for reduced OpEx
- Growing portfolio of certifications with the industry's leading 3D application ISV's

NVIDIA GRID EDITIONS



NVIDIA GRID Virtual Applications
For VMware Horizon Hosted App solutions



NVIDIA GRID Virtual PC
For virtual desktops, delivering PC windows and applications, browsers and multimedia



NVIDIA GRID Virtual Workstation
For professional graphics applications, includes NVIDIA Quadro driver

VMware Horizon Desktop and Apps

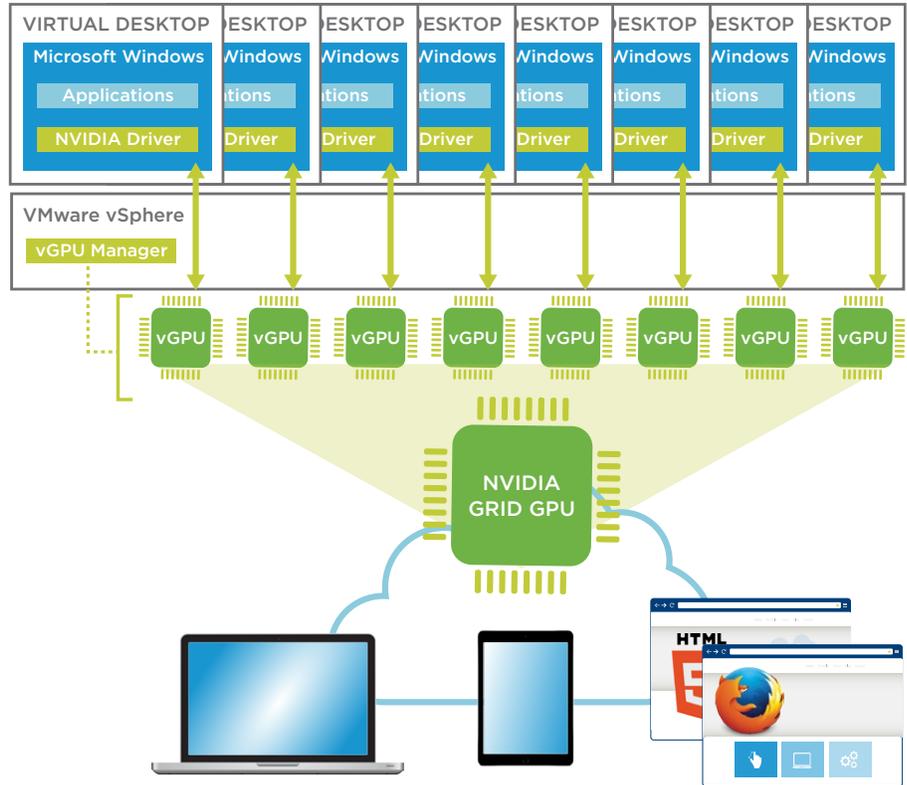


Figure 1

NVIDIA GRID software runs on NVIDIA Tesla GPU cards, installed in the VMware ESXi host. NVIDIA's GRID vGPU Manager divides the GPU into multiple vGPU instances that each have direct access to the native NVIDIA driver installed in the guest O/S. NVIDIA GRID offers three editions (see figure 2): NVIDIA GRID Virtual Applications and Virtual PC for standard office workers, and NVIDIA GRID Virtual Workstation for professional graphics users. NVIDIA GRID Virtual Workstation 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.

Features and Benefits

Immersive Graphics Delivered from the Cloud

VMware Horizon with NVIDIA GRID effectively untethers users from the constraints of physical hardware, enabling geographically dispersed teams to collaborate in real-time, and enabling office workers to enjoy a user experience as good as physical PC. Immersive 3D graphics datasets can now be rendered within virtual desktops and applications, delivered to the device of their choice, including Windows, Linux, Mac, Chromebooks, tablets, and mobile devices.

BENEFITS

VMware Horizon Resources:

Blog: <http://blogs.vmware.com/euc/>

Twitter: @VMwareHorizon

Facebook: VMware Community Forum:
[Learn more](#)

NVIDIA GRID Resources:

Website: <http://www.nvidia.com/object/vmware.html>

Newsletter: tinyurl.com/gridinfo

YouTube Channel: <http://tinyurl.com/gridvideos>

Twitter: @NVIDIAGRID

Community Forums:
gridforums.nvidia.com

Better Experience with VMware's Blast Extreme Protocol

Getting a snappy experience in virtualized environments can be challenging when accessing graphics intense workloads over remote networks due to latency and bandwidth requirements. With VMware Horizon 7 and NVIDIA GRID, organizations can significantly improve latency, bandwidth, and frames per second, while decreasing CPU utilization and increasing users per host by using NVIDIA Blast Extreme Acceleration.

Greater Security for Mission-Critical Data

With today's increasingly dispersed, mobile workforce, the threat of data loss has never been greater. Organizations can confidently enable global collaboration across their workforce knowing that mission-critical datasets are securely centralized, and that valuable 2D and 3D models are never stored on local, client-side storage prone to damage or loss.

Single Platform, Lower Costs

Built on the industry's leading hypervisor – VMware vSphere, organizations can confidently deliver scalable, high-performance graphics with a single platform that leverages VMware end-to-end, from device to datacenter, offering a single solution for VDI, RDS hosted apps and desktops, as well as SaaS apps. Manageability is simplified and streamlined when integrating VMware Horizon, VMware Virtual SAN, and App Volumes into a single solution, along with seamless pool management for load balancing across a vCenter cluster with VMware Horizon. Support for VMware high availability ensures business continuity and minimizes downtime. This unified platform helps deliver reduced OpEx with lower support and operational costs.

VMware HA provides high availability for virtual machines by pooling them and the hosts they reside on into a cluster. Hosts in the cluster are monitored and in the event of a failure, the virtual machines on a failed host are restarted on alternate hosts.

Peace of Mind with ISV Certifications

NVIDIA GRID GPUs are ISV tested and supported. This process validates that users get the same graphics performance and experience in a virtualized environment, as they would expect from their PC or workstation. Organizations can confidently deploy with a smooth, rapid ramp-up of applications for designers, power users, and knowledge workers for greater productivity and business agility. For the latest application certifications, visit www.nvidia.com/gridcertifications.

Certified with Dassault Systèmes' 3DEXPERIENCE Platform

VMware Horizon 7 is the first certified VDI solution with [Dassault Systèmes' 3DEXPERIENCE Platform](#) R2016x and R2017x. With this certification, organizations utilizing Dassault Systèmes' 3DEXPERIENCE Platform which includes 3D modeling apps, content and simulation apps, and social and collaboration apps, can also take advantage of the flexibility, cost savings and simplified management of [Horizon 7](#) desktop virtualization. This certified solution enables designers, engineers, and others to work anytime, anywhere, on any device. By combining hardware-backed GPU from NVIDIA, these end-users can have high-performance workstations at their fingertips.

