

FREEDOM TO CREATE

GPU-POWERED VIRTUAL WORKSTATIONS OFFER GREATER PERFORMANCE AND FLEXIBILITY.



NVIDIA.

In an era of disruptive distribution models, increased consumer demands for high-quality visual effects, and shrinking production schedules and budgets, Media & Entertainment (M&E) companies have been tied to the desktop for too long.

To address the need for greater mobility and collaboration among creative professionals — and to provide opportunities for more iterations in less time — M&E companies are starting to turn to virtual desktop infrastructure (VDI). Revolutionary features, now included in NVIDIA's virtual GPU software, enable artists to work productively from anywhere on almost any device with access to Windows-based applications, or even the Linux-, CUDA-, and OpenCL-based applications they rely on for production. With NVIDIA® Quadro® Virtual Data Center Workstation (Quadro vDWS), creative professionals can access the capabilities of a Quadro physical workstation in a VDI environment. With NVIDIA GRID® software, knowledge workers can achieve a seamless and consistent user experience, while IT can ensure that email and internet access is separated from sensitive files.

The power and flexibility of NVIDIA's virtual GPU software offers additional benefits from an IT management perspective. Because resources can be centralized in the data center or cloud and scaled as needed, it's easier than ever to bid jobs more competitively, onboard employees, partners, and contractors, and protect valuable intellectual property. Now M&E firms can better align budgets and projects for a growing number of use cases.

Certified by more than 140 server manufacturers and supported by every major public cloud vendor, NVIDIA virtual GPU solutions continue to set the industry standard for virtualized creativity and efficient IT management.



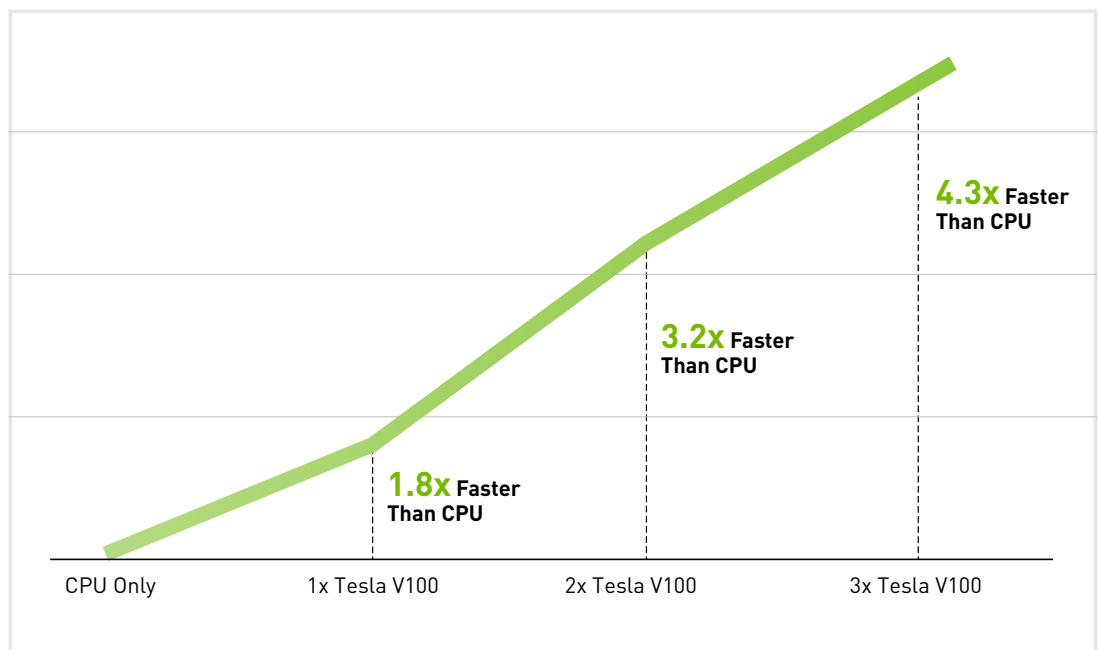
WHAT IS GPU VIRTUALIZATION?

GPU virtualization enables every virtual machine to get the benefits of a GPU just like a physical desktop has. Because work that was typically done by the CPU has been offloaded to the GPU, the user has a much better experience and more users can be supported.

BLENDER CYCLES (CUDA) RENDER TIME

SPEED RENDER TIME UP TO 4.3X

Render scenes in Blender Cycles up to 4.3X faster than CPU-only when you assign three Tesla V100-32Q GPUs to a VM with Quadro vDWS.



TRANSFORM YOUR WORKFLOWS FOR GREATER EFFICIENCY

NVIDIA's virtual GPU software makes it possible for M&E organizations to gain unprecedented performance and manageability in a virtual desktop environment.

Enhance Productivity and Creativity

Because files are centrally located in the data center, NVIDIA Quadro vDWS enables seamless collaboration from separate offices or production locations with less risk of version control issues. This is especially important when the pressure is on and several people need to work on the same files.

Multi-vGPU support — the ability to assign up to four NVIDIA® Tesla® GPUs to a single virtual machine (VM) — makes it possible for artists and contractors to work on the most graphics-intensive 3D and rendering workloads.¹ Creative teams can work with confidence, knowing that their files are protected and that projects can keep moving forward 24/7. Additionally, they are free to work where and whenever inspiration strikes – on just about any device, including **Wacom tablets**, without latency or pressure sensitivity issues.

Increase Manageability and Scalability

The rapid scaling of resources simplifies IT management, helps accelerate production schedules, and keeps costs low. Because VMs can be up and running in minutes, M&E companies can respond to changing project requirements with greater agility. Live Migration, with support for VMware vMotion and Citrix XenMotion, enables live VMs to be migrated without user disruption. This facilitates more efficient data center maintenance, and enables creative and technical professionals to access productivity apps by day and render scenes at night on the same server infrastructure.

Create Cost Efficiencies

Reducing the need for physical workstations can reduce power consumption, streamlines the data center, and allows IT administrators to quickly set up users, troubleshoot issues, and facilitate upgrades — with no disruption or data loss. This can be particularly useful in mergers and acquisitions, and working across geographically-dispersed productions. As traditional applications are phased out, M&E companies are increasingly motivated to switch from Mac applications to virtualized, Windows- and Linux-based applications.

Enhance Security and Compliance

With multi-million dollar budgets in play, M&E companies must protect their valuable 3D and film production assets. They can't afford data loss due to computer crashes or failures, or to have projects leaked online before an official release. By keeping files centralized in the data center or cloud, while enabling editing and rendering on endpoint devices, data can't walk away or get lost. What's more, deploying VDI for air gap systems separates Internet access from artist workstations for additional data protection.



INNOVATIVE CAPABILITIES

Advanced functionality, such as Multi-vGPU support — the ability to assign up to four NVIDIA® Tesla® GPUs to a single virtual machine (VM) — makes it possible to work on the most graphics-intensive 3D and rendering workloads on just about any device.

¹ Multi-GPU capabilities supported with NVIDIA Quadro vDWS software October 2018 release (aka vGPU 7.0) and Red Hat Enterprise Linux 7.5 and Red Hat Virtualization 4.2 KVM hypervisors.

TESTED AND CERTIFIED FOR ENTERPRISE-CLASS RELIABILITY

NVIDIA virtual GPU solutions set the industry standard for virtualized creativity, ensuring that users have a smooth, responsive experience while editing, rendering, and working with massive 3D datasets. To maximize performance—and to get the best possible experience from your IT investment—NVIDIA Quadro professional graphics solutions are tested and certified by all the leading workstation OEMs and have received independent software vendor (ISV) certifications for more than 100 professional applications and IT management tools. What's more, Quadro software drivers are designed for stability and long lifespans.

NVIDIA VIRTUAL GPU SOLUTIONS

Virtualization with NVIDIA Quadro vDWS and Tesla GPUs

Quadro vDWS is ideally positioned for studios, broadcast networks, and production houses that work on sensitive files from multiple locations.

BENEFITS

Support for up to four 4K monitors and large frame buffer sizes for increased productivity

Security enforced in data center

Lower IT management costs

Increased mobility

Business continuity and disaster recovery managed centrally

Reduce downtime, even during maintenance, with Live Migration

Support for Linux or Windows applications

Support for multiple Tesla GPUs in a single VM, to power the most demanding workflows

Added flexibility and business agility from the cloud enablement of GPU-accelerated virtual workstations

COMMON APPLICATIONS

Adobe: Photoshop, After Effects, Premiere Pro, Dimension, Character Animator

Autodesk: 3ds Max, Arnold, Maya

Avid: Media Composer, Pro Tools

Blackmagic Design: DaVinci Resolve, Fusion

Epic Games: Unreal Engine

Foundry: Modo, Katana, NUKE, NUKE Studio

Epic Games: Unreal Engine

Unity Technologies: Unity

Virtualization with NVIDIA GRID and Tesla GPUs

NVIDIA GRID® Virtual PC/Virtual Applications (GRID vPC/vApps) are positioned for general-purpose VDI across all sectors of the M&E industry.

BENEFITS

Supports increasing graphical requirements of modern productivity applications

Up to two 4K monitors or four HD monitors supported for increased productivity

Cost effective solution to scale VDI across your organization for as little as \$2 per user per month²

Lower IT management costs

Security enforced in the data center

Increased employee and contractor mobility

Business continuity and disaster recovery managed centrally

Support for Linux or Windows applications

COMMON APPLICATIONS

Microsoft Office, Skype, Adobe Creative Cloud

² Assumes cost of subscription, NVIDIA GRID software, and hardware, with three-year amortization of two Tesla M10 cards supporting 87 GRID vApps users.

CUSTOMER PROFILE

Moving Picture Company (MPC) London, England

This Academy Award-winning visual effects powerhouse deployed Quadro vDWS on NVIDIA Tesla M60-based servers to provide remote access to its production platform, reviewTool. By staying connected and creative worldwide, MPC supervisors can see their teams' work at all times, whether they're on location, in one of the company's international offices, or even on vacation. In addition, authorized mobile users can easily access applications on the go, completely securely, with no reduction in performance — even in remote locations.

“As a VFX supervisor on large feature films, I need immediate access to my team’s work at all times. Whether I’m on location for the shoot, in Los Angeles for client meetings, or at home strategizing, NVIDIA technology helps me to keep my projects moving forward.”

—Greg Butler, award-winning VFX Supervisor, MPC



Read how production teams at MPC enjoy greater flexibility with NVIDIA Quadro vDWS. »

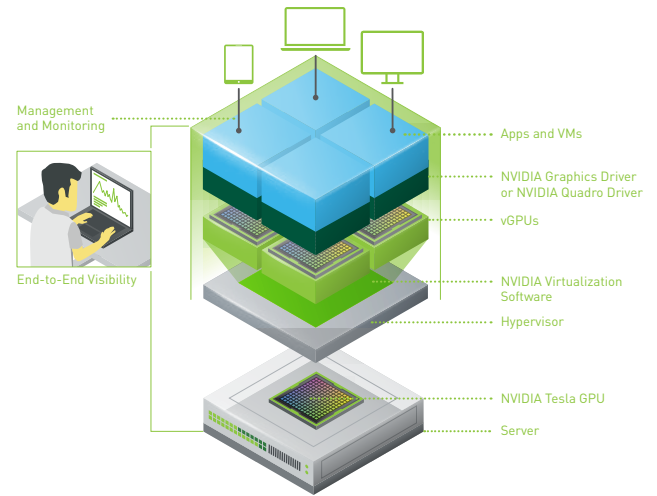


KEY M&E USER GROUPS

	ANIMATORS, PRODUCTION ARTISTS, VFX PRODUCERS	VIDEO EDITORS	MARKETING, CREATIVE, DESIGN, ILLUSTRATORS
USE CASES	Rendering and making changes to graphics-intensive scenes	Remotely viewing and editing film footage, including real-time on-air production, highlight reels, and rotoscoping.	General purpose VDI using Windows 10 and graphics-rich productivity apps, as well as virtualized design and creative apps such as Adobe Creative Cloud
RECOMMEND	Quadro vDWS with up to four Tesla T4, P4, P40, or V100 GPUs assigned to each virtual machine	Quadro vDWS on Tesla T4, P4, P40, or V100 (supports up to four 4K displays)	GRID vPC/vApps on Tesla M10 or P6 (supports up to four HD or two 4K displays)

HOW NVIDIA VIRTUAL GPU_s WORK

In a VDI environment powered by NVIDIA virtual GPUs, NVIDIA virtual GPU software is installed at the virtualization layer, along with the hypervisor. This software creates virtual GPUs that let every VM share the physical GPU installed on the server. For more demanding workflows, a single VM can harness the power of up to four physical GPUs. The NVIDIA software includes a graphics driver for every VM. Quadro vDWS, for example, includes the powerful Quadro driver. Because work that was typically done by the CPU is offloaded to the GPU, the user has a much better experience, and demanding engineering and creative applications can now be supported in a virtualized and cloud environment.



WHAT MAKES NVIDIA VIRTUAL GPU_s POWERFUL



EXCEPTIONAL USER EXPERIENCE

Superior performance, with the ability to support both compute and graphics workloads for every vGPU



PREDICTABLE PERFORMANCE

Consistent performance with guaranteed quality of service, whether on-premises or in the cloud



BEST USER DENSITY

The industry's highest user density solution, with support for up to 32 virtual desktops per GPU, plus lower total cost of ownership (TCO) with up to 9 vGPU profiles for the most flexibility to provision resources to match your users' needs



OPTIMAL MANAGEMENT AND MONITORING

End-to-end management and monitoring that delivers real-time insight into GPU performance, as well as broad partner integrations so you can use the tools you know and love



CONTINUOUS INNOVATION

Regular cadence of new software releases that ensures you stay on top of the latest features and enhancements



BROADCAST ECOSYSTEM SUPPORT

Support for all major hypervisors and the most extensive portfolio of professional apps certifications with Quadro drivers

For more information, visit www.nvidia.com/virtualgpu

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