FREEDOM TO CREATE

GPU-Powered Virtual Workstations Offer
Greater Performance and Flexibility

In an era of disruptive distribution models, increased consumer demand 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 more flexible "work from anywhere" environments 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). NVIDIA virtual GPU software enables 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® RTX™ Virtual Workstation (RTX vWS)**, creative professionals can access the capabilities of an RTX-powered physical workstation in a VDI environment from an on-premise data center or from the cloud. NVIDIA data center GPUs, coupled with NVIDIA RTX vWS software running on NVIDIA-certified servers, give artists exponentially faster rendering performance and the option to spin up virtual workstation nodes when they're needed. Additionally, support for **Teradici Cloud Access Software** with NVIDIA RTX vWS helps artists achieve the consistent, high performance, high quality experience they need to be most productive. With **NVIDIA vPC or vApps software**, knowledge workers can achieve a seamless and consistent user experience, while IT ensures that email and internet access is separated from sensitive files.

NVIDIA virtual GPU software also 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.

WHAT IS GPU VIRTUALIZATION?

GPU virtualization enables every virtual machine to leverage the performance of a GPU as if it were a physical desktop. Because work that is typically completed by the CPU is offloaded to the GPU, the user experience is improved and more users can be supported.

TRANSFORM YOUR WORKFLOWS
FOR GREATER EFFICIENCY

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

Enhance Productivity and Creativity

NVIDIA RTX vWS provides a powerful virtual workstation platform that enables artists to create on any device, anywhere—whenever inspiration strikes. Because files are centrally located in the data center, users can seamlessly collaborate 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 file. Multi-vGPU support—the ability to assign multiple NVIDIA 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. Creative teams can work with confidence, knowing that their files are protected and that projects can move forward 24/7. Additionally, they are free to work 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, streamline the data center, and allow 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 when 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.

Improve 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 be compromised or lost. What's more, deploying VDI for air gap systems separates Internet access from artist workstations providing additional data protection.

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 RTX 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, NVIDIA RTX Enterprise software drivers are designed for stability and long lifespans.

NVIDIA VIRTUAL GPU SOLUTIONS

NVIDIA RTX vWS	NVIDIA vPC/vApps
NVIDIA RTX Virtual Workstation (RTX vWS) is ideally engineered for studios, broadcast networks, and production houses that work on sensitive files from multiple locations.	NVIDIA Virtual PC/Virtual Applications (vPC/vApps) are positioned for general-purpose VDI across all sectors of the M&E industry.

BENEFITS	**BENEFITS**
Support for one 4K, or up to four 5K or two 8K monitors, and large frame buffer sizes for increased productivity	Supports increasing graphical requirements of modern productivity applications
Security enforced in data center	Support for one 5K, or up to two 4K or four HD monitors
Lower IT management costs	Cost effective solution to scale VDI across your organization for as little as $2 per user per month[1]
Increased mobility	
Business continuity and disaster recovery managed centrally	Lower IT management costs
Reduced downtime, even during maintenance, with Live Migration	Security enforced in the data center
Support for Linux or Windows applications	Increased employee and contractor mobility
Support for multiple NVIDIA GPUs in a single VM, to power the most demanding workflows	Business continuity and disaster recovery managed centrally
Added flexibility and business agility from the cloud enablement of GPU-accelerated virtual workstations	Support for Linux or Windows applications

COMMON APPLICATIONS	**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	Microsoft Office, Skype, Adobe Creative Cloud

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[1] Assumes cost of subscription, NVIDIA vApps software, and hardware, with three-year amortization of two A16 cards supporting 87 vApps users.

CUSTOMER PROFILE

Animal Logic

Recognized as one of the world's leading independent creative digital studios, Animal Logic needed to quickly spin up a new studio to support production for The LEGO Movie 2: The Second Part. They implemented NVIDIA vWS with Teradici Cloud Access Plus as a cost-effective and flexible way to deploy high performance virtual workstations to run tools like Autodesk Maya, XSI, and Nuke. The new solution enables improved mobility for users who can now access all of the pipeline tools they need from anywhere.

"Users were surprised at how efficient the virtual machines were when loading certain scenes. Both Windows and Linux users found that they could rely on the NVIDIA vGPU performance when working with more intense applications such as ZBrush, Maya and XSI."
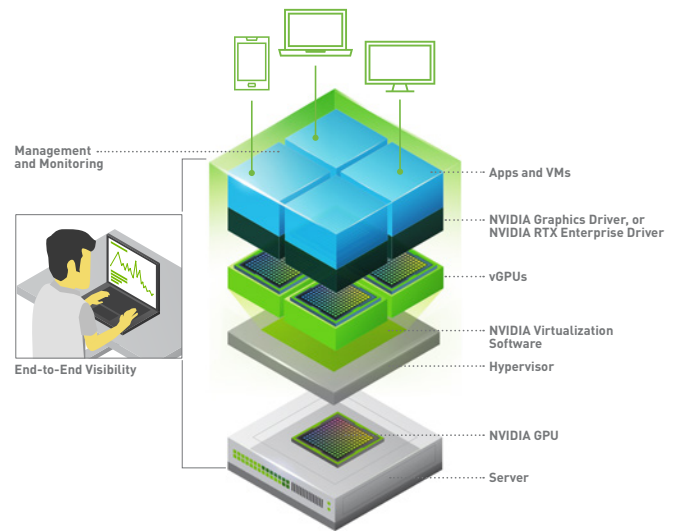
—Matt Braunstein, Systems Engineer at Animal Logic

Read how creative staff at Animal Logic streamlines production workflows with NVIDIA vWS.

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	NVIDIA RTX vWS on A40 (supports up to two 8K displays)	NVIDIA RTX vWS on A40 (supports up to two 8K displays)	NVIDIA vPC/vApps on NVIDIA A16 (supports one 5K, or up to four HD or two 4K displays)

HOW NVIDIA VIRTUAL GPUs WORK

In a virtualization 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 enable every VM to share the physical GPU installed on the server. For more demanding workflows, a single VM can harness the power of multiple physical GPUs. The NVIDIA software includes a graphics driver for every VM. NVIDIA RTX vWS, for example, includes the powerful RTX Enterprise driver. Work that is typically done by the CPU is offloaded to the GPU, providing a much better user experience for demanding engineering and creative applications now supported in a virtualized and cloud environment.

Management and Monitoring

End-to-End Visibility

Apps and VMs

NVIDIA Graphics Driver, or NVIDIA RTX Enterprise Driver

vGPUs

NVIDIA Virtualization Software

Hypervisor

NVIDIA GPU

Server

WHAT MAKES NVIDIA VIRTUAL GPUs POWERFUL

EXCEPTIONAL USER EXPERIENCE

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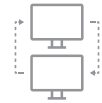
PREDICTABLE PERFORMANCE

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 64 virtual desktops per GPU, plus lower TCO with more than 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

BROADEST ECOSYSTEM SUPPORT

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

Learn more

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