

REMOTE WORK SOLUTIONS FOR MEDIA AND ENTERTAINMENT



REMOTE WORK CHALLENGES IN M&E

The demands of the media and entertainment industry are constantly evolving. Artists are challenged to maximize creative iterations in shorter time frames, and studios are hiring globally to get the best talent and keep projects moving forward. Audiences are expecting high-quality visual effects and animation, and studios are striving to meet tight production deadlines to meet revenue goals. For mergers, acquisitions, new startups, and remote workforces, companies need to be able to scale their compute resources and quickly set up users to ensure productivity. And keeping intellectual property and assets secure is extremely important.

NVIDIA SOLUTIONS: PERFORMANCE FROM ANYWHERE

NVIDIA virtual GPU (vGPU) technology enables increased productivity and a satisfying user experience with superior graphics performance on virtual workstations. Studios can easily onboard new employees in minutes versus days, while ensuring the security of media assets in the data center or cloud.

Artists and designers can speed the creative process by accessing fully 3D-capable virtual workstations on any device. Studios can also run multiple workloads from a single infrastructure, spinning up virtual workstations and render nodes and scaling resources as needed. Professionals can centralize projects in the data center or cloud for greater consistency and control over upgrades, changes, and quality.

For studios who still require access to physical NVIDIA® Quadro® desktop workstations due to specific hardware configurations or data requirements, NVIDIA's hardware and software partners offer a variety of solutions for secure, remote access.

For studios looking for more flexibility with mobile computing, Quadro RTX[™] mobile workstations are now capable of desktopclass performance, helping artists to stay productive anywhere.



Men In Black © 2019 CTMG. All Rights Reserved. | Image courtesy of DNEG



Altered Carbon 2 © 2020 Netflix | Image courtesy of DNEG

REMOTE WORK WITH NVIDIA: SOLUTIONS OVERVIEW

NVIDIA remote work solutions are optimized for designers and artists. From laptops and desktops to workstations, servers, and the cloud, GPUs provide users with enhanced mobility, flexibility, and performance for graphics and visualizations, along with improved security and IT management capability.

> NVIDIA RTX Studio Laptops

NVIDIA RTX[™] Studio laptops give creators the ability to transform their home into the studio of their dreams. With support for premiere creative applications and next-generation AI and ray-tracing technology, these laptops deliver power and performance in thin, light designs for effortless content creation— whenever and wherever.

> NVIDIA Quadro Virtual Data Center Workstation (Quadro vDWS)

NVIDIA Quadro vDWS provides artists with GPU-accelerated virtual desktops and applications to enable remote access of 3D modeling, animation, visual effects, and creative finishing software such as Autodesk Maya, 3ds Max, and Flame, Foundry Nuke, Blackmagic Design DaVinci Resolve, and Adobe[®] Creative Cloud.

NVIDIA GRID Virtual PC (GRID vPC) and Virtual Apps GRID vApps)

Artists and designers can leverage NVIDIA GRID® vPC and GRID vApps for general-purpose virtual desktop infrastructure (VDI) running Windows 10 and modern productivity applications, streaming video and multimedia, and using interactive training platforms and teleconferencing.

> NVIDIA Virtual Compute Server (vComputeServer)

NVIDIA vComputeServer enables researchers and designers to run computationally intensive workloads—including AI, data science, and highperformance computing (HPC)—with virtualized GPUs. With vComputeServer, studios can harness the power of multiple GPUs in a single virtual machine (VM) to scale application performance, important for deep learning training workloads. They can also run containerized applications for machine learning and deep learning in a virtualized environment and extend compute resources to support multiple users.



Dark Crystal © 2019 Netflix | Image courtesy of DNEG



Togo © 2019 Disney Enterprises, Inc. All Rights Reserved. | Image courtesy of DNEG



> NVIDIA Quadro Virtual Workstations (Quadro vWS) in the Cloud

With instances of Quadro vWS available in the public cloud, artists can leverage the simplicity and flexibility of AWS, Google Cloud, and Azure Cloud. Desktopas-a-service (DaaS) solutions like Windows Virtual Desktop and Horizon Cloud ease manageability. This allows new users to be supported quickly and instances to be deprovisioned just as quickly, so companies only need to pay for what they use. With support for the latest NVIDIA GPUs by global cloud service providers, users can run graphics-intensive applications such as modeling, visual effects, and rendering in the cloud.

> NVIDIA RTX Server

Modern production pipelines involve multiple artist disciplines that require different GPU configurations depending on the task at hand—and studios are often faced with the choice to overprovision some artists or limit others. NVIDIA RTX[™] Server, a highly flexible reference design that combines high-end NVIDIA[®] Quadro RTX[™] 6000 and 8000 GPUs with NVIDIA Quadro vDWS software to deliver exceptional compute power. It delivers the performance that all artists need, by allowing them to take advantage of high-performance GPUs to increase interactivity and visual quality, while centralizing GPU resources. NVIDIA RTX-accelerated virtual desktops cater to production-specific requirements, leveraging Quadro vDWS software to make it easy to reallocate GPUs to different artists, whether they're creating content virtually or rendering massive datasets.

COMMON QUESTIONS, ANSWERED

Remote work technology opens up infinite opportunities for studios in the media and entertainment industry. When developing their technology roadmaps, studios have to assess their current infrastructure needs, goals, and how to best utilize cloud and virtualization. Here are a few high-level questions that can help guide that journey.

> I don't have VDI. How can my company get up and running in the cloud?

Artists and designers can leverage the combination of a workstation and cloud computing to unleash the full potential of work-from-anywhere power and flexibility. NVIDIA Quadro vWS makes it possible to access Quadro-powered GPU acceleration from the cloud and pay only for what they use, without worrying about setup, upgrade, or management costs. Organizations can scale appropriately to handle project-related demand spikes in any region of the world and collaborate at unprecedented levels while maintaining a smaller headcount.

> Why do I need vGPUs?

Studios in the film and television industry have traditionally relied on deskside workstations for production. Over time, many studios have moved these workstations into the data center for increased security, easier IT maintenance, and quieter, cooler environments for their artists to work in. With vGPUs, creative and technical professionals can access the most demanding applications from any device, work from anywhere, and tackle larger datasets, all while meeting the need for greater security.

Today's workforce is diverse, and even simple productivity applications found in Microsoft Windows 10, Office 2016, web browsers, and streaming video can benefit from GPU acceleration. Additionally, NVIDIA vGPU technology efficiently powers higher-resolution monitors, such as 4K displays, and multi-monitor setups, which are an affordable and effective way to boost productivity.

Today's organizations find themselves operating in multiple geographies, with distributed teams needing to collaborate and share highly confidential data in real time. Quadro vDWS, extends the trusted benefits of Quadro to deliver a true GPU-accelerated data center.

> What is the cost benefit?

Virtual desktops and workstations are easy to deploy and maintain, and they drastically simplify IT management and can reduce overall cost. For example, Animal Logic deployed NVIDIA Quadro vDWS instead of purchasing new \$10,000 workstations to run their Windows applications, giving their artists the ability to access Windows applications from their Linux workstations. IT was also able to set up new users in just minutes.

Untold Studios chose virtual GPUs in the cloud from the outset to gain multiple advantages - from tailoring compute resources to individual artist workloads, to simplifying studio-wide upgrades:

"We were able to migrate painlessly from [NVIDIA] M60 to T4 [GPUs] in just minutes by changing a single line of code," said Sam Reed, head of technology at Untold Studios. "Moving from M60 to T4 gave us improved performance with some apps and ended up being less expensive, because we were able to provision artists with workstations that are more suitable for their workload."

> Which operating systems and application experiences does this support?

NVIDIA vGPU technology supports Windows and Linux and common creative applications like Adobe Creative Cloud®, Autodesk 3ds Max, Autodesk Maya, Autodesk Arnold, Chaos Group V-Ray, Redshift, Foundry NUKE, and Avid Media Composer.

REMOTE WORK SUCCESS WITH NVIDIA TECHNOLOGY



Animal Logic Studios creates visual effects and animations for feature films. Their second studio needed a cost-effective and flexible way to provide users with secondary desktops for Windows applications. The IT team deployed VMs powered by NVIDIA Quadro vDWS instead of purchasing new \$10,000 workstations. The NVIDIA vGPU-enabled VMs ensure that Animal Logic's artists can access both Linux- and Windows-based applications from a single machine. Flexible training environments can also be set up and broken down in a matter of minutes.

DNEG

DNEG

ANIMALLOGIC

DNEG is behind some of the most advanced and visually rich films and TV programs ever created. They wanted to deploy virtual machines for visual effects artists working at a new Montréal studio. The virtual workstations needed to deliver a great user experience for graphics-intensive 3D applications. DNEG's IT team deployed infrastructure installed with NVIDIA RTX GPUs and powered by NVIDIA Quadro vDWS software. This enabled artists to access VMs from anywhere and enjoy performance on the same level as physical workstations. DNEG's IT compute resources can easily be scaled according to the needs of artists and projects.

IIIITAIR

Untold Studios

VIIIVLU

Untold Studios is an independent creative studio composed of seasoned artists and producers. Their projects range from commercials to the latest season of Netflix's The Crown. Being cloud-based has given Untold Studios the ability to move around and work from anywhere. With the AWS G4 instances powered by NVIDIA T4 Tensor Core GPUs, the artists at Untold Studios get all the creative power they need to work remotely.

Tangent



Tangent Animation delivers computer-generated animation, live-action film production, visual effects, and software development for films, including the Netflix sci-fi feature Next Gen and the Spanish-Canadian co-production feature film Ozzy. Accessing NVIDIA GPU-acceleration from AWS enables them to pay for just the GPU power they need. An artist can log in to a Blender instance powered by multiple NVIDIA T4 GPUs running Quadro Virtual Workstation for crowd work and later log in to an instance with a single GPU for simpler animation. Managing IT costs this way leaves more budget for artists and technical staff—leading to a better product.



DO YOUR LIFE'S WORK FROM ANYWHERE WITH NVIDIA

NVIDIA vGPU technology helps the media and entertainment companies get the performance, speed, and flexibility they need to gain a competitive edge.

NVIDIA Quadro RTX-powered laptops deliver the performance and large GPU memory that content creation and VFX teams need to work from anywhere.

Learn more about NVIDIA's remote working solutions at: nvidia.com/remote-work

© 2020 NVIDIA Corporation. All rights reserved. NVIDIA, the NVIDIA logo, CUDA-X AI, GRID, Quadro, Quadro RTX, and RTX are trademarks and/or registered trademarks of NVIDIA Corporation in the U.S. and other countries. All other trademarks and copyrights are the property of their respective owners.

