

FlexPod®

FlexPod Datacenter with Citrix XenDesktop and NVIDIA GRID

Delivering Professional Graphics from the Cloud for Media and Entertainment

The Challenge

Companies engaged in digital media activities such as video editing, animation, photo retouching, web design, and graphics layout are struggling to meet the needs of an expanding and mobile workforce. As video production moves from HD, to 2K, to 4K and beyond, the sheer size of files is straining workstation storage and making data access across the network an increasingly difficult and costly proposition. In addition, having valuable assets distributed across many workstations poses significant security risks, and the total cost per seat for an edit, animation, or high-end graphics workstation continues to rise.

An alternative is needed to provide better access for a wider range of workers and stakeholders; control overall costs; and protect valuable assets from damage, loss, or theft.

The Solution

[Store centrally, produce globally: accelerated graphics in a fully integrated desktop virtualization solution](#)

FlexPod® Datacenter with Citrix XenDesktop and NVIDIA GRID addresses the critical needs of digital media. It makes full interactive graphics and video available to anyone who needs them from almost any location and eliminates the need for local copies of files. Important content remains secure inside your data center.

Key Benefits

- Provide ubiquitous fast access to accelerated graphics
- Keep valuable content secure in your data center
- Increase user productivity by reducing the need for file copies
- Gain full access to graphics applications from mobile devices
- Lower TCO by decreasing reliance on expensive, difficult-to-maintain desktop workstations and stand-alone software licenses
- Incorporate leading technologies from NetApp, Cisco, Citrix, and NVIDIA in an integrated solution that's fast and easy to deploy

CITRIX®

 **NVIDIA**



By combining validated, best-in-class technologies from industry leaders in storage, networking, desktop virtualization, and graphics, FlexPod Datacenter with Citrix and NVIDIA delivers a complete virtual desktop solution with full graphics acceleration capable of supporting video editors, animators, and other power users. Desktop environments run inside the data center, and only encrypted visual output and mouse/keyboard input are sent over the network.

FlexPod Datacenter with Citrix and NVIDIA is a fully integrated solution that addresses the full range of media and entertainment requirements. This solution:

- Eliminates the need to have local file copies, saving time and securing valuable content in your data center
- Displays the output of a graphics-intensive application wherever it's needed, including on mobile devices
 - Reviewers can preview or review content on standard desktops or mobile devices
- Improves collaboration by allowing people in different locations to view the same content
- Allows the sharing of graphics and video across organizational boundaries without putting content at risk
- Reduces overall workgroup costs

Proven FlexPod technology

FlexPod is a proven data center solution from NetApp and Cisco, offering a flexible, shared infrastructure that easily scales to support your growing workload demands without affecting performance.

NetApp® FAS storage hardware reduces your overall storage costs while delivering the necessary I/O

performance for virtual desktop infrastructure (VDI) in conjunction with demanding video editing, animation, or other graphics-intensive applications. FAS storage supports both all-flash and hybrid storage configurations, creating an optimal storage platform for the needs of power users.

Cisco UCS® unites computing, networking, storage connectivity, and virtualization in a single cohesive system that meets the unique demands of graphics-intensive applications. Cisco UCS C240 M3 rack servers feature extended memory for faster rendering, bigger datasets, more desktops per server, and the lowest latency.

Cisco UCS integrates computing resources with Cisco Nexus® switches and a unified I/O fabric, which identifies and handles different types of network traffic, including storage I/O, streamed desktop traffic, management, and application access.

FlexPod Datacenter with Citrix and NVIDIA integrates Citrix XenDesktop with HDX 3D Pro and NVIDIA GRID with the proven FlexPod architecture to provide a complete VDI solution tailored to media and entertainment needs.

Citrix XenDesktop with HDX 3D Pro

Citrix XenDesktop delivers applications and desktops as secure mobile services to improve mobility and provide greater security for intellectual property with centralized control. XenDesktop with HDX 3D Pro delivers a native, touch-enabled experience that is optimized for the type of device, as well as the network.

HDX 3D Pro technologies are specifically designed to enhance visual performance for

high-performance, graphics-intensive applications with multiple WAN optimization technologies, deep compression and quality of service (QoS) controls, hardware-level GPU acceleration, and full support for OpenGL applications.

By complementing XenDesktop with integrated GRID software and NVIDIA GPUs, this solution empowers users with full graphics capabilities regardless of location or device.

NVIDIA GRID

NVIDIA GRID technology offloads graphics processing from the CPU to the GPU in virtualized environments. As the first virtualized GPU hardware solution, NVIDIA GRID vGPU allows multiple users to access and share the graphics processing power of a single GPU. As a result, you can efficiently share GPU resources and make graphics acceleration available to more users and a wider range of users on an as-needed basis.

NVIDIA GRID provides a highly responsive experience for demanding 3D graphics applications on any device, even tablets. The NVIDIA GRID K2 boards used in the FlexPod Datacenter solution feature two high-end Kepler-based GPUs with a total of 3,072 CUDA cores.

Increase Productivity While Keeping Intellectual Property Secure

Recent data breaches have focused new light on the security of important content in media companies of all types. The best way to reduce risk is to make sure that content remains securely stored in your data center by decreasing the number of outside copies created for various postproduction workflows.

FlexPod with Citrix and NVIDIA increases the flexibility of your digital media operation, reducing the need for file copies. Critical content remains centralized in your data center, minimizing the chance of unauthorized access. Workers engaged in editing, animation, color correction, photo retouching, and other activities no longer have to copy the files on which they are working, eliminating the time wasted waiting for large files to transfer. Even if a file is copied, it remains within the confines of the data center, and the transfer occurs rapidly over high-speed network connections.

If someone needs to review work in progress, that person can start a graphics session to do so and release the resources to other users when finished. This makes accelerated graphics available to a wider range of users without requiring specialized equipment for each person. Similarly, if you need additional people on a project, you can easily allocate more resources for additional editors, animators, or whatever the requirement may be.

Local Performance, Global Reach

Users report that the FlexPod Datacenter with Citrix and NVIDIA solution delivers good performance for network round trip latencies up to 150ms. Today it's possible to achieve average latencies at that level between locations as distant as San Francisco and London, with local latencies of a few milliseconds. This means not only that local users experience great performance, but also that your workgroup can easily include people working from home or in remote locations, as requirements dictate.

Citrix
XenDesktop
with HDX 3D Pro



NVIDIA GRID
with K2 GPUs



Cisco UCS
C-Series Rack
Servers and Cisco
Nexus Switches



NetApp® All-Flash
FAS System with
10GigE and FCoE

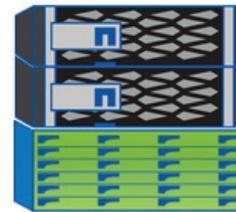


Figure 1) FlexPod Datacenter with Citrix XenDesktop HDX 3D Pro and NVIDIA GRID combines the proven capabilities of FlexPod with leading visualization technologies, delivering unparalleled remote content creation capabilities.

Productivity from Any Location

With the FlexPod Datacenter with Citrix and NVIDIA solution, editors or animators can work from any modern laptop or desktop as well as purpose-built thin clients, just as if they were using a powerful graphics workstation. High-resolution configurations with up to four monitors are supported, as are 3D mouse technology and other specialized graphics devices.

Because mobile devices such as tablets are supported, this solution extends the availability of accelerated graphics beyond traditional uses. Workers can access their full desktop environments from anywhere with no loss of productivity. Users can leave the facility and pick up a project from where they left off

remotely, while the application and the content remain secure inside the data center.

Speed Content Creation, Improve Efficiency, Reduce Costs

By increasing productivity, reducing or eliminating the need to copy files, and enhancing security, the FlexPod Datacenter with Citrix and NVIDIA solution makes your media operations more productive and decreases time to finish content.

In addition, this solution can be significantly less expensive than traditional workstation environments. Specialized graphical workstation hardware represents an expensive resource that has to be deployed and managed outside the data center. Software licenses for each workstation add to the overall expense.

FlexPod Datacenter with Citrix and NVIDIA eliminates the expense and complexity of dedicated workstations, replacing them with a much more efficient and scalable, shared resource. Because almost everything resides in the data center, this solution is much more reliable than workstations in dispersed locations, where power loss and other events can interrupt work and cause data loss.

Proceed at Your Own Pace

You don't have to completely replace your existing workstation infrastructure with FlexPod Datacenter with Citrix and NVIDIA right away. Instead, you can supplement what you have with the FlexPod environment. As your operations grow, new editors, designers, or artists can utilize the FlexPod solution, while others continue to use existing workstations. As workstations are retired, you can scale the FlexPod environment and transition more people to it.

The FlexPod architecture is designed to scale easily as your needs grow. Need more storage? You can easily scale FlexPod storage capacity and performance. Need more compute horsepower or graphics seats? Simply add more Cisco UCS servers and more NVIDIA GRID cards.

With all content stored on NetApp storage, the solution provides the tools to help you effectively manage and protect your designs while increasing storage efficiency with deduplication, compression, and cloning technologies. Disaster recovery and continuous data availability options let you easily address specific data protection and data availability objectives.

Stand Up New Infrastructure in Less Time

No matter how carefully you plan, unforeseen needs and opportunities can result in a requirement for more infrastructure in a hurry. Whether it's in an existing facility or a new

location, the integrated and tested design of FlexPod Datacenter with Citrix and NVIDIA means that you can have new infrastructure up and running in less time with less effort, providing a distinct advantage in situations where time is of the essence.

Open Delivery Ecosystem

You can choose from a broad network of world-class solution delivery partners to implement FlexPod. These partners understand your business requirements and are all certified and trained on NetApp, Cisco®, NVIDIA GRID, and Citrix, as well as complementary technologies, to deliver a complete solution that fits your business needs.

Getting Started

To learn how FlexPod enables you to build a flexible and efficient shared infrastructure today as your foundation for future-ready IT, contact your local data center partner.

