



NVIDIA Virtual PC and Virtual Apps

GPU-accelerated performance for the virtual enterprise.

The future digital workspace needs to be able to adapt to any disruptions with enterprises adopting an agile solution that enables their workforce to seamlessly work from anywhere without any impact to productivity. Remote offices, virtual collaboration, fast access to information, and the rising use of modern, graphics-intensive applications make GPUs more relevant than ever.

NVIDIA® Virtual PC (vPC) and Virtual Apps (vApps) improve virtual desktops and applications for every user, with proven performance built on NVIDIA GPUs for exceptional productivity, security, and IT manageability. The virtualization software divides NVIDIA GPU resources, so the GPU can be shared across multiple virtual machines running any application.

Here are three powerful reasons to deploy vPC and vApps in your data center.

Reason 1: The modern workforce requires a seamless experience

NVIDIA vPC extends the power of NVIDIA GPU to cost-effectively deliver immersive, virtualized hybrid workspace. Mobile professionals and office workers can finally enjoy VDI, with a consistently great user experience that's optimized for office apps and multimedia, with performance as good as a physical PC. Video collaboration and simple productivity applications found in Microsoft Windows 11, Office 365, web browsers, and streaming video can all benefit from GPU acceleration.

Traditional desktop and laptop PCs boost application performance with embedded or integrated GPUs. However, when transitioning from physical to virtual, IT has traditionally left the computer graphics burden—such as from DirectX and OpenGL workloads and video streaming—to a server CPU. This burden causes a performance bottleneck that limits scale and compromises the user experience. Now, IT departments can take advantage of GPU technology to deliver a virtual desktop experience that's as good as a physical device.



82% of organizations have the option of working remotely.

Reason 2: Modern digital employees need access to multiple devices

Knowledge workers have changed the way they work. In today's fast-paced, digital world, technology has altered information accessibility. Knowledge workers have multiple devices and expect access to the web conferencing and productivity tools applications they need, anytime, with a seamless experience between those devices while collaborating with remote teams. The modern digital workplace includes multiple devices and 4K resolution monitors. No longer used only by professionals in the financial services or healthcare industries, multi-monitor setups have quickly become an affordable and effective way to boost productivity.

At the same time, software developers and electronic design automation (EDA) engineers, and designers that require Linux-based development environments, can also increase productivity by utilizing the like-native experience that vPC provides.

Reason 3: There are more users to support than ever before

Today's virtual desktops and applications require graphics acceleration for a native-PC experience. With NVIDIA, you can deliver GPU acceleration to every virtualized user and support up to 64 concurrent users on a GPU card.² Because work typically done by the CPU has been offloaded to the GPU, the user has a much better experience, and more users can be supported.

NVIDIA developed a benchmarking tool based on a methodology that measures key aspects of the user experience. The testing results showed that a GPU-enabled VDI environment delivered a better user experience with improved end-user latency and more remoted frames. Even with up to 50% better performance than the CPU-only virtual desktop environment, the GPU-accelerated virtual desktop environment provided an incomparably better experience.³

NVIDIA enables organizations to extend the reach of their virtual desktop infrastructure (VDI) investment and give every user a native-PC experience that meets the needs of today's graphics-intensive applications.

Cost effectively scale VDI across your enterprise with NVIDIA

Contact your NVIDIA sales specialist for details.

NVIDIA delivers productivity without boundaries



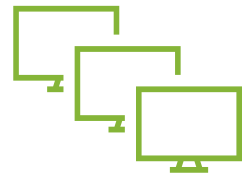
- > **Native PC Experience:** Utilize NVIDIA software with GPUs to deliver responsive, virtual workspaces that perform like native PCs for every user. Mobile professionals and knowledge workers can now enjoy virtual desktops optimized for web conferencing and productivity applications.



- > **Multiple Monitor:** Support multiple HD displays and up to one 5K- or two 4K-resolution displays to expand your workspace, enhance multi-tasking, and increase productivity.



- > **Video Performance:** Optimize video performance and scalability through hardware encode/decode via NVIDIA NVENC. Support the latest video-compression standards, including HEVC/H.265 codec.



There has been a steady rise in multi-monitor setups across all industries.¹



Up to 50% better performance with NVIDIA vPC.³



- > **Better Server Density:** Bypass the challenges of modern applications and operating systems such as Windows 11 that are more graphics intensive and result in lower server density of VDI deployments. Increase user density and deliver a better user experience with NVIDIA virtual GPU solutions.³



- > **Linux OS Applications:** Deliver the benefits of like-native performance of VDI environments to software developers and EDA designers who rely on a Linux-based development environment.



- > **Investment Protection:** Support increasing graphical requirements of Windows 11 and modern productivity applications, with continuous innovation delivered through every vGPU software release.

NVIDIA Feature List

Configuration and Deployment	vPC	vApps
Desktop Virtualization	✓	
Remote Desktop Session Host (RDSH) App Hosting	✓	✓
RDSH Desktop Hosting	✓	✓
Windows OS Support	✓	✓
Linux OS Support	✓ ⁴	
GPU Pass-Through Support ⁵		✓
Bare Metal Support ⁶		✓
NVIDIA Graphics Driver	✓	✓
Guaranteed Quality-of-Service Scheduling ⁷	✓	✓

Display	vPC	vApps
Maximum Hardware Rendered Display	Four HD, Two 4K ⁴ , One 5K ¹³	One ⁸
Maximum Resolution	5120 x 2880 ¹³	1280 x 1024

Data Center Management	vPC	vApps
Host-, Guest-, and Application-Level Monitoring ⁹	✓	✓
Live Migration ⁴	✓	✓

Support	vPC	vApps
NVIDIA Direct Enterprise-Level Technical Support	✓	✓
Maintenance Releases, Defect Resolutions, and Security Patches for up to Three Years ¹⁰	✓	✓

Advanced Professional Features	vPC	vApps
CUDA™/OpenCL		✓ ¹¹

Graphics Features and APIs	vPC	vApps
NVENC	✓	
OpenGL Extensions, Including WebGL	✓	✓
DirectX	✓	✓

Profiles ¹²	vPC	vApps
Max Frame Buffer Supported	2 GB ⁴	48 GB
Available Profiles	0B, 1B, 2B ⁴	48A, 32A, 24A, 16A, 12A, 8A, 6A, 4A, 3A, 2A, 1A

NVIDIA Virtual GPU Hardware

GPUs	vPC	vApps
Best Density and Performance for the Knowledge Worker	A16 ¹⁴	A16 ¹⁴

Ready to Get Started?

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

1. [Lakeside: How GPUs Accelerate Work-From-Home Productivity](#).
2. This assumes the NVIDIA® A16 GPU with 1 GB frame buffer per user.
3. [NVIDIA Virtual PC Sizing Guide](#).
4. Support starts with the NVIDIA virtual GPU software March 2018 release (version 6.0).
5. GPU pass-through is only supported on 1:1 profiles.
6. Only NVIDIA® M6 hardware is supported as a primary display device.
7. Scheduling options include fixed share, equal share, and best effort/time slicing.
8. NVIDIA vApps supports one 1280x1024 display from the GPU card. However, Citrix renders to an offscreen buffer, so it can support multiple software-rendered displays at higher resolutions.
9. Application-level monitoring is only available starting with the NVIDIA virtual GPU August 2017 release (version 5.0).
10. Listed support is available with an active Support, Update, and Maintenance (SUMs) contract.
11. CUDA/OpenCL is only supported for NVIDIA Maxwell™ 8A profile on NVIDIA vGPU 4.x and earlier releases.
12. Profiles supported have dependency on GPU selected. For more information, read the NVIDIA virtual GPU software user guide.
13. 5K resolution support starting with NVIDIA virtual GPU December 2019 (10.0) release.
14. Available with a future vGPU Software release.

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