# NVIDIA GPUs for Virtualization

NVIDIA virtual GPU (vGPU) software enables powerful GPU performance from the enterprise data center, as well as public and private clouds. Installed on a server with an NVIDIA GPU, the NVIDIA vGPU software creates virtual GPUs that can be shared between multiple virtual machines running on any device, anywhere. IT departments standardized on software-defined and hyperconverged infrastructure leverage the management and security benefits of virtualization to achieve the performance of NVIDIA GPUs for modern graphics workloads.
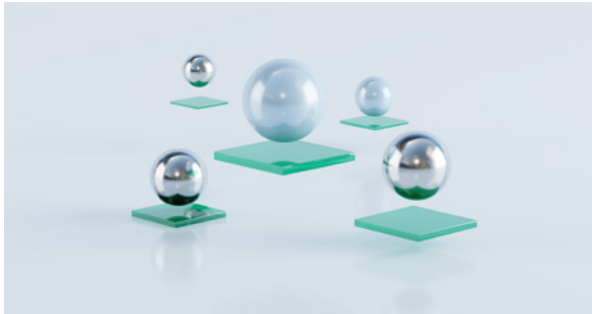
NVIDIA RTX Virtual Workstation

NVIDIA RTX™ Virtual Workstation (vWS) is engineered for designers, architects, engineers, and artists. When paired with a powerful NVIDIA GPU, users can virtualize any application from the data center —including ANSYS Discovery Live, ESRI ArcGIS Pro, Siemens NX, Dassault Systèmes SOLIDWORKS, Autodesk Revit, and more—for an amazing user experience achieving workstation-class performance on any device.

NVIDIA Virtual PC

NVIDIA Virtual PC (vPC) targets mobile professionals and knowledge workers who run virtual desktops that are optimized for Windows 10 and Microsoft Office applications. Software developers can also enjoy a modern software development environment, using 2D electronic design automation (EDA) tools and Linux applications. Healthcare providers and financial traders also benefit from increased productivity with support for multiple high-resolution monitors.

NVIDIA Virtual Apps

NVIDIA Virtual Apps (vApps) are used to launch applications on any device without having to present a full, virtualized desktop to a user. Remote desktop session host (RDSH) solutions can be paired with a more powerful GPU to run more graphics-intensive applications or paired with a less powerful GPU to run general-purpose applications with more users sharing a virtual machine.

For compute workloads such as AI and data science, learn more about the **NVIDIA AI Enterprise software suite.**

NVIDIA GPUs Recommended for Virtualization

	L40	L4	A16
GPU Architecture	1 NVIDIA Ada Lovelace	1 NVIDIA Ada Lovelace	4 NVIDIA Ampere
RTX Technology	✓	✓	✓
Guaranteed QoS (GPU Scheduler)	✓	✓	✓
Live Migration	✓	✓	✓
Multi-vGPU	✓	✓	✓
Memory Size	48GB GDDR6 with ECC	24GB GDDR6	64GB GDDR6 (16GB per GPU)
vGPU Profiles	1GB, 2GB, 3GB, 4GB, 6GB, 8GB, 12GB, 16GB, 24GB, 48GB	1GB, 2GB, 3GB, 4GB, 6GB, 8GB, 12GB, 24GB	1GB, 2GB, 4GB, 8GB, 16GB
Form Factor	PCIe 4.0 dual slot	PCIe 4.0 single slot	PCIe 4.0 dual slot
Power	300W	72W	250W
Thermal	Passive	Passive	Passive
vGPU Software Support	vWS, vPC, vApps, NVIDIA AI Enterprise	vWS, vPC, vApps	vWS, vPC, vApps
Use Case	High-end 3D design and creative workflows, optimized to deploy at scale in enterprise data centers.	Entry to mid-range 3D design and engineering workflows with vWS. High density GPU acceleration for knowledge workers with vPC. Upgrade path for T4.	Knowledge worker virtual desktops using modern productivity apps and multimedia with NVIDIA vPC or vApps. Entry NVIDIA RTX Virtual Workstations, upgrade path for M10 or T4.

The following NVIDIA GPUs are also supported for virtualization: NVIDIA A40, A2, A10, RTX 6000 Ada Generation, V100/V100S, RTX A6000, RTX A5000, Quadro RTX 8000, Quadro RTX 6000, T4, P40, P6, and M10.

What Makes NVIDIA Virtual GPUs Powerful

Exceptional User Experience
Ultimate user experience, with the ability to support both compute and graphics workloads.

Best User Density
Industry's highest user-density solution with support for up to 64 virtual desktops per physical GPU. Lower TCO with more than ten vGPU profiles for the most flexibility to provision resources to match your users' needs.

Continuous Innovation
Regular cadence of new software releases to ensure you stay on top of the latest features and enhancements.

Performance
Consistent near bare-metal performance, whether on premises or in the cloud.

Optimal Management and Monitoring
End-to-end management and monitoring for real-time insight into GPU performance. Broad partner integrations so you can use the tools you know and love.

Broadest Ecosystem Support
Support for all major hypervisors. Most extensive portfolio of professional apps certifications with NVIDIA RTX Enterprise Drivers.

To learn more about NVIDIA virtual GPU technology, visit **www.nvidia.com/virtualgpu**

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