



NVIDIA RTX SERVER FOR VIRTUAL
WORKSTATION WITH TERADICI
CLOUD ACCESS SOFTWARE ON
GIGABYTE G191-H44 DESIGN GUIDE
VERSION 1.0



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Chapter 1.

SOLUTION OVERVIEW

NVIDIA RTX Server™ is a validated combination of qualified partner systems hosting NVIDIA® Quadro® RTX™ 6000 or RTX 8000 GPUs and Quadro® Virtual Data Center Workstation (Quadro vDWS) software to provide virtualized design workstations where artists and designers can create professional, photorealistic images for the Media & Entertainment, Architecture, Engineering & Construction (AEC), and Manufacturing & Design industries.

1.1 RTX SERVER OVERVIEW

In today's media rich world, there is a massive surge of content production. Designers and artists are looking for ways to create faster and more efficiently anywhere on the device of their choice. IT looks to enable this in a secure, easily managed, cost-effective and flexible way. NVIDIA RTX Server is an ideal platform to increase user productivity while increasing data center utilization and reducing cost.

The audience for this document includes, but is not limited to, sales engineers, field consultants, professional services, partner engineers, and IT Managers who wish to take advantage of a solution that is purpose built and optimized to deliver a virtualized design and creation workflow.

Chapter 2.

SOLUTION DETAIL

NVIDIA RTX Server for Virtual Workstation with Teradici Cloud Access Software on Gigabyte G191-H44 is a reference design comprised of (a) NVIDIA Quadro RTX 6000 graphics cards; (b) VMware vSphere Hypervisor with vCenter; (c) NVIDIA Quadro vDWS software; (d) Gigabyte G191-H44 Server; (e) BRIX GB-BRi5-8250 thin client; (f) Teradici Cloud Access Software with PCoIP® Ultra. This validated solution provides unprecedented graphics performance in a virtualized environment on professional applications at a fraction of the cost, space, and power consumption to individual local workstations.

NVIDIA Quadro RTX 6000, powered by the NVIDIA Turing™ architecture and the NVIDIA RTX platform, brings the most significant advancement in computer graphics in over a decade to professional workflows. Designers and artists can now wield the power of hardware-accelerated ray tracing, deep learning, and advanced shading to dramatically boost productivity and create amazing content faster than ever before.

NVIDIA Quadro vDWS enables delivery of the most powerful virtual workstations from the data center or cloud to any device, anywhere. It lets IT virtualize any application from the data center with a native workstation user experience, eliminate constrained workflows, and flexibly scale GPU resources to run multiple workloads. Efficiently centralize applications and data for a dramatically lower IT operating expense and focus IT resources on managing strategic projects versus individual workstations – all while enabling a more secure, work-from-anywhere environment with reduced threat of data loss or leakage.

VMware vSphere provides a powerful, flexible, and secure foundation for business agility that accelerates your digital transformation. With vSphere, you can support new workloads and use cases while keeping pace with the growing needs and complexity of your infrastructure. vSphere is the heart of a secure software defined data center (SDDC), securing applications, data, infrastructure, and access. Advanced security capabilities fully integrated into the

hypervisor and powered by machine learning, provide better visibility, protection and faster response time for security incidents. vSphere helps you run, manage, connect and secure your applications in a common operating environment across the hybrid cloud.

Teradici Cloud Access Software with PCoIP® Ultra enhancements enables NVIDIA RTX servers to deliver highly interactive graphics to remote users without compromise. Leveraging NVIDIA NVENC encoding technology with security and performance benefits of the Teradici PCoIP protocol, graphic designers, artists, and CAD/CAM users can work productively over virtually any network.

The G191-H44 provides powerful parallel computing capabilities with a dense capacity of 4 x dual slot active or passive-cooled GPU cards. Each side of the system tray at the front and rear has a large bay for a GPU card, which is installed via a PCIe x16 (3.0 x16) expansion slot from a riser card connected to the main motherboard. For customers who want to maximize performance in virtualization, rendering, and AI, Gigabyte can fulfill the demand by offering ultra-high performance and scalable GPU server and workstation systems. Additionally, Gigabyte's GPU server and workstation is built to provide the most stable and reliable solution without any compromise.

Challenging the essence of how we define a desktop PC, GIGABYTE engineers have developed an ultra-compact PC with a brushed aluminum surface chassis design. Ideal for a broad range of computing applications at home or in the office, the BRIX expounds sheer simplicity and convenience. With a broad choice of processors covering the entire performance spectrum, the BRIX sets a new standard for desktop miniaturization that makes it perfect as a discreet HTPC/multimedia hub, an ultra-low power PC for the family, an office PC or as a digital signage unit.

2.1 SOLUTION CONFIGURATION

Table 1 outlines the system and virtual machine configuration recommended for Media and Entertainment industry designers. Depending on their workload size, frame buffer allocation can be changed by configuring the NVIDIA virtual GPU (vGPU) type on virtual machine.

Table 1: Designer virtual machine configuration

Component	Vender & Model	Details
System	Gigabyte G191-H44	<ul style="list-style-type: none"> • High Performance Dual Intel Platinum 8176 processors • 1.5TB Memory (128GB recommended for each user), system memory size might change based on customer's deployment configuration • Network attached storage, SSD recommended for higher performance • Dual 1 GbE network ports
Graphics Hardware	4x Quadro RTX 6000	<ul style="list-style-type: none"> • RTX 6000 24GB frame buffer, 4,608 CUDA Cores, 72 RT Cores, 576 Tensor Cores,
Graphics Software	<p>Quadro vDWS Software</p> <p>(vGPU 8.0 or later)</p> <p>128GB memory / 16 vCPU cores</p> <p>vGPU frame buffer: 12GB / 16GB / 24GB</p>	<p>Examples</p> <ul style="list-style-type: none"> • 16GB FB per user GRID_RTX8000-16Q: 3 users, Max. 9 users supported • 12GB FB per user GRID_RTX8000-12Q: 4 users, Max. 12 users supported GRID_RTX6000-12Q: 2 users, Max. 6 users supported
Hypervisor	VMware vSphere 6.7U1 or later	Enterprise license

SOLUTION DETAIL

Client Device	BRIX GB-BRi5-8250	<ul style="list-style-type: none"> • Intel® Core™ i5-8250U • DDR4 2 x SO-DIMM
Remote Access Software	Teradici Cloud Access Plus (subscription based)	<ul style="list-style-type: none"> • Windows Graphics Agent • Linux Graphics Agent • Software clients

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