



NVIDIA RTX SERVER FOR VIRTUAL  
WORKSTATION WITH TERADICI  
CLOUD ACCESS SOFTWARE ON HPE  
DL380 GEN10 DESIGN GUIDE  
VERSION 1.3

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# Chapter 1.

## SOLUTION OVERVIEW

NVIDIA RTX Server™ is a validated reference architecture consisting of qualified OEM server hardware with 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 SOLUTION 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 solution 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 solution is a reference design comprised of (a) NVIDIA Quadro RTX 8000 or Quadro RTX 6000 graphics cards; (b) VMware vSphere Hypervisor with vCenter; (c) NVIDIA Quadro vDWS software; (d) HPE DL380 Gen10 Server; (e) thin client[spec below in Table 1]; (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 8000 and RTX 6000, powered by the NVIDIA Turing™ architecture and the NVIDIA RTX Server solutions, bring 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 HPE ProLiant DL380 Gen10 server delivers the latest in security, performance and expandability, backed by a comprehensive warranty. Standardize on the industry's most trusted compute platform. The HPE ProLiant DL380 Gen10 server is securely designed to reduce costs and complexity, featuring Intel® Xeon® Processor Scalable Family with up to a 60% performance gain and 27% increase in cores, plus the HPE 2666 MT/s DDR4 SmartMemory supporting 3.0 TB. It supports 12 Gb/s SAS, and up to 20 NVMe drive plus a broad range of compute options. HPE Persistent Memory offers unprecedented levels of performance for databases and analytic workloads. Run everything from the most basic to mission-critical applications and deploy with confidence.

## 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
<b>System</b>	HPE ProLiant DL380 Gen10	<ul style="list-style-type: none"> <li>• High Performance Dual Intel Xeon processors</li> <li>• 1.5TB Memory (128GB recommended for each user), system memory size might change based on customer's deployment configuration</li> <li>• Network attached storage, SSD recommended for higher performance</li> <li>• Dual 1 GbE network ports</li> </ul>
<b>Graphics Hardware</b>	2x Quadro RTX 8000 or RTX 6000	<ul style="list-style-type: none"> <li>• GPU memory: 48GB or 24GB</li> <li>• CUDA cores: 4,608</li> <li>• Tensor cores: 576</li> <li>• RT cores: 72</li> </ul>
<b>Graphics Software</b>	Quadro vDWS Software  (vGPU 8.0 or later)  128GB memory / 16 vCPU cores  vGPU frame buffer: 12GB / 16GB / 24GB	Examples <ul style="list-style-type: none"> <li>• 16GB FB per user GRID_RTX8000-16Q: 3 users, Max. 9 users supported</li> <li>• 12GB FB per user GRID_RTX8000-12Q: 4 users, Max. 12 users supported GRID_RTX6000-12Q: 2 users, Max. 6 users supported</li> </ul>

SOLUTION DETAIL

<b>Hypervisor</b>	VMware vSphere 6.7U1 or later	<ul style="list-style-type: none"> <li>• Enterprise license</li> </ul>
<b>Client Device</b>	Any Client	<ul style="list-style-type: none"> <li>• Intel® Core™ i5-8250U or higher</li> <li>• DDR4 2 x SO-DIMM</li> </ul>
<b>Remote Access Software</b>	<a href="#">Teradici Cloud Access Plus</a> (subscription based)	<ul style="list-style-type: none"> <li>• <a href="#">Windows Graphics Agent</a></li> <li>• <a href="#">Linux Graphics Agent</a></li> <li>• <a href="#">Software clients</a></li> </ul>

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