NVIDIA EGX™ SERVER FOR BATCH RENDERING WITH AUTODESK VRED 2021 DESIGN GUIDE

VERSION: 1.1

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Chapter 1.
SOLUTION OVERVIEW

NVIDIA EGX Server is a validated reference design for multiple workloads that are accelerated by NVIDIA Quadro RTX A6000, A40, RTX 8000 or RTX 6000 graphics cards. When deployed for high performance virtual workstations, the EGX Server solution delivers a native physical workstation experience from the data center, enabling creative professionals to do their best work from anywhere, using any device. EGX Server can also bring GPU-acceleration and performance to deliver the most efficient end-to-end rendering solution, from interactive sessions in the desktop to final batch rendering in the data center.

1.1 NVIDIA EGX SERVER OVERVIEW

Introduction:
Content production is undergoing massive growth as render complexity and quality demands increase. Designers and artists across industries continually strive to produce more visually rich content faster than ever before, yet find their creativity and productivity bound by inefficient CPU-based render solutions. NVIDIA EGX Server delivers the performance that all artists need, by allowing them to take advantage of key GPU enhancements to increase interactivity and visual quality, while centralizing GPU resources.

Audience:
The audience for this document include, but not limited to: Sales Engineers, Field Consultants, Professional Services, Partner Engineers, IT Managers and Customers who wish to take advantage of an appliance that is built and optimized to deliver on batch rendering workflows.

Chapter 2.
SOLUTION DETAILS

NVIDIA EGX Server for Rendering with Autodesk VRED 2021 is a reference design comprised of (a) NVIDIA Quadro RTX A6000, A40, RTX 8000 or RTX 6000 graphics cards; (b) Autodesk VRED 2021 software; and a (c) Qualified OEM server system. Combined, this validated solution provides unprecedented rendering and compute performance at a fraction of the cost, space, and power consumption of traditional CPU-based render nodes.

Built on the NVIDIA Ampere™ architecture, the NVIDIA® Quadro RTX™ A6000 and NVIDIA® A40, combine 48GB of graphics memory with the latest generation RT Cores, Tensor Cores, and NVIDIA Ampere architecture CUDA® cores for unprecedented graphics, rendering, and AI performance. Additional support for a range of commercially available remote access software means you can access the power of your Quadro desktop workstation from anywhere. Achieve breakthrough innovations with the world's most powerful graphics solution

The NVIDIA Quadro RTX 6000 and RTX 8000, both powered by the NVIDIA Turing™ architecture and the NVIDIA RTX platform, 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. The Quadro RTX 6000 has 24GB of GPU memory, whereas the RTX 8000 has 48GB to handle larger animations or visualizations.

Autodesk VRED™ is a 3D visualization application used to evaluate CAD data interactively and to create off-line photo-realistic images and animation in batch mode. VRED is the dominant visualization app used throughout the automotive design and engineering industry to evaluate the entire process from design to perceived quality. VRED is used for advanced, concept, and production interior and exterior design as well engineer confirmation for fit and finish. The

VRED tools are optimal for both in-progress design review as well as final presentation using interactive ray tracing and analytic render modes.

EGX Servers, built by our OEM Partners, undergo NVIDIA's Qualification test suite. Among systems that qualify as an EGX Server there is a subset that has gone through additional testing and validation for Autodesk VRED workload. These EGX Server Validated systems capture best practices from NVIDIA and its ecosystem partners.

Configurations for the Validated EGX Servers are listed in the below segment.

2.1 VALIDATED SERVER CONFIGURATIONS

Table 1 outlines the servers utilized to complete the NVIDIA EGX Server validation process.

Table 1: Validated Server Configurations

Server Model	Graphics	Configuration
ASUS ESC4000 G4 Series	4x Quadro RTX 8000 or RTX 6000 2x Quadro RTX NVLink High Bandwidth Bridge 2-slot Quadro Driver Release 418 U1 (418.81)	Dual Intel® Xeon® Gold 6126 processor: 2.6-3.7GHz; 12 Cores, 24 Threads 512 GB Memory 1.9 TB SSD
Supermicro SuperServer 4029GP-TRT2	8x Quadro RTX 8000 4x Quadro RTX NVLink HB bridge 2-slot Quadro Driver Release 430 U2 (430.64)	Dual Intel® Xeon® Gold 6126 processor: 2.6-3.7GHz; 12 Cores, 24 Threads 256GB ECC DDR4 memory 1TB M.2 PCIe NVMe SSD

Tyan Thunder HX FT48T-B7105	4x Quadro RTX 6000 Quadro Driver Release 430 U2 (430.64)	Dual-Socket 2nd Gen. Intel Xeon Scalable Processors Up to 1.5TB DDR4 RDIMM/LRDIMM ECC Memory
Tyan Thunder HX FT77D-B7109	8x Quadro RTX 6000 4x Quadro RTX NVLink HB bridge 2-slot Quadro Driver Release 430 U2 (430.64)	Dual socket 2nd Gen Xeon Scalable Processor Up to 3TB DDR4 RAM