SOLUTION SHOWCASE

NVIDIA Omniverse™ Enterprise is a game-changing virtual platform built for collaboration and real-time photorealistic simulation. Project teams can now maximize productivity, enhance communication, and boost innovation while collaborating on the same 3D model from anywhere.

Built For

> Business decision-makers in AEC

> Architects

> ArchViz specialists

> Designers

> VDC managers

Platform Features

> Compatible with top industry design and visualization software

> Scalable and works on all NVIDIA RTX solutions, from the laptop to the data center

> Multi-GPU enabled

> Open standards, built on Pixar's Universal Scene Description (USD)

> Options for individuals and Enterprise

Subscription Inclusions

> Omniverse Nucleus Workstation and Enterprise Nucleus Server

> Use of Omniverse Connectors

> Omniverse Create

> Omniverse View

> Full NVIDIA Enterprise Support services

POWERING A NEW ERA OF COLLABORATION AND SIMULATION IN ARCHITECTURE, ENGINEERING, AND CONSTRUCTION (AEC)

"At KPF, we're constantly testing new applications that help us to engage with our clients. We see NVIDIA Omniverse as an application that will enable our real-time and collaborative requirements in one platform, changing the way we progress as a sustainable design practice."
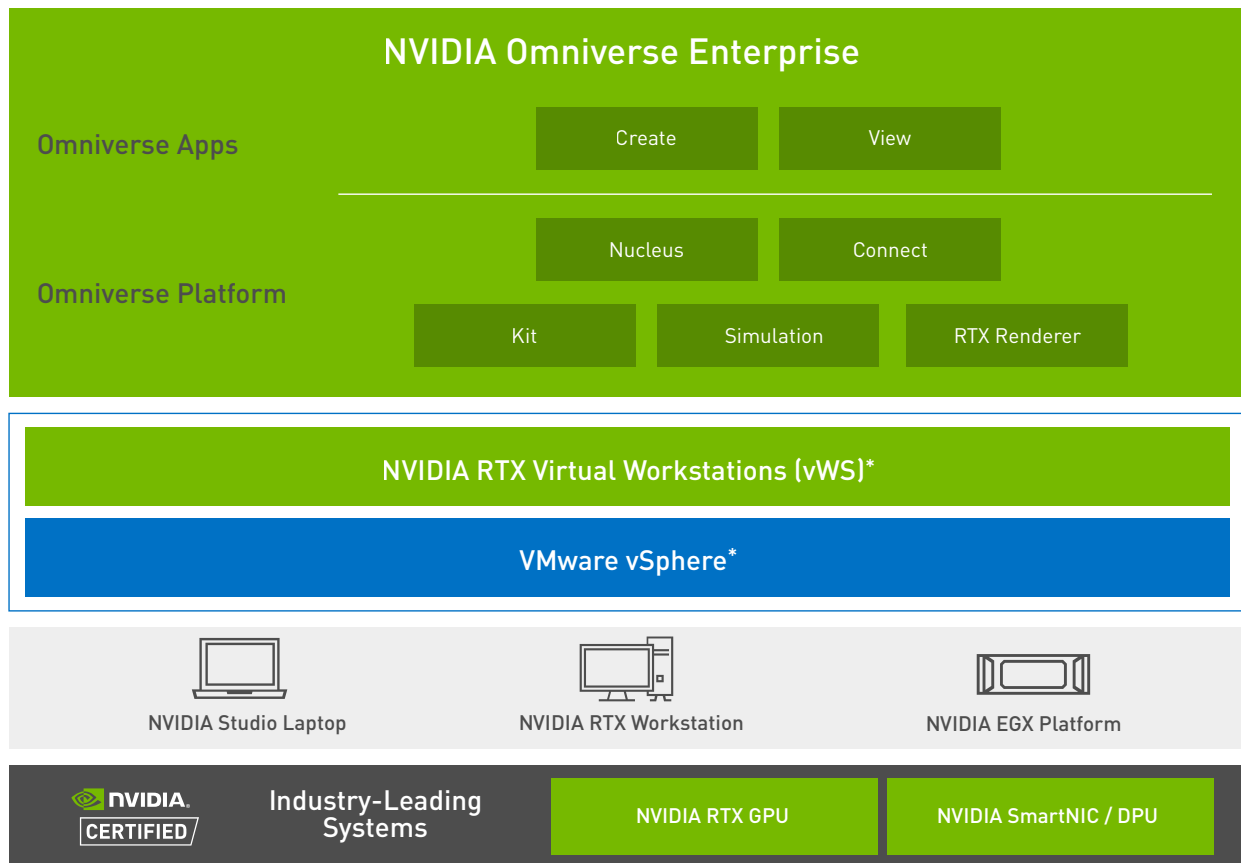
— **Cobus Bothma,** Director, Applied Research, KPF

Challenges in the AEC Industry

Collaboration and communication of design intent rank high among the many challenges project teams face when designing buildings. These become even more difficult with remote and geographically dispersed team members. The need to translate and composite data from different software tools, datasets, and other project contributors complicates matters and slows down the design process. Today, there's a growing demand for more efficient team collaboration during design, faster iteration on high-fidelity renders, and the expectation of accurate photorealistic simulation. NVIDIA Omniverse delivers unique capabilities to address each of these needs.

AEC Use Cases for Omniverse

> **Initial Concept Design** - Architects and designers can create and quickly iterate on initial ideas for building designs.

> **Competition and Bid Submissions** - Teams can iterate on ideas swiftly to accelerate innovation and create compelling photorealistic renders faster, to meet deadlines and win new projects.

> **Client Presentation** - Clients, owners, and developers can view beautiful, photoreal visualizations from almost any device, allowing teams to convey ideas effectively with stunning realism.

> **Global Collaboration** - Globally dispersed project teams with a broad range of disciplines can now collaborate and communicate more effectively, reducing the likelihood of design flaws and delays to agreeing on design decisions.

> **Speedy Design Reviews** - Simple presentation of accurate visualizations and enhanced team collaboration minimize the number of review cycles, keeping projects on track and accelerating the path to design approvals.

NVIDIA Omniverse Enterprise

Omniverse Apps

Create
View

Omniverse Platform

Nucleus
Connect
Kit
Simulation
RTX Renderer

NVIDIA RTX Virtual Workstations (vWS)*

VMware vSphere*

NVIDIA Studio Laptop
NVIDIA RTX Workstation
NVIDIA EGX Platform

NVIDIA CERTIFIED Industry-Leading Systems
NVIDIA RTX GPU
NVIDIA SmartNIC / DPU

VMware vSphere and NVIDIA RTX vWS only required for virtualized deployment

An Open Platform Built for Speed and Collaboration

NVIDIA Omniverse™ Enterprise is a simple to deploy, end-to-end collaboration and true-to-reality simulation platform that fundamentally transforms complex design workflows for organizations of any scale.

Omniverse Enterprise unites teams, assets, and software tools in a shared virtual space, enabling diverse workgroups to simultaneously collaborate on a single project file. With real-time interoperability across applications, infinite iterations come at no opportunity cost. Design teams can maximize creative risks to achieve new heights of quality and innovation with faster time-to-market.

The platform is optimized and certified to run on NVIDIA RTX™ professional mobile workstations and NVIDIA-Certified Systems™, including desktops and servers on the NVIDIA EGX™ platform.

Platform Components
The Omniverse platform consists of five key components:

NUCLEUS

Lets you store, share, and collaborate on project data and provides the unique ability to collaborate live across multiple applications. Nucleus can be deployed on a workstation, on-premise, or in the cloud.

CONNECT

Opens the portals for content-creation tools to connect to the Omniverse platform and save USD and MDL content. With Omniverse, users continue to work in their favorite industry applications.

KIT

A powerful toolkit for developers to create new Omniverse Apps and extensions. Kit Extensions are plug-ins to Omniverse Kit that extend its capabilities for developers to enhance their workflows and UI.

SIMULATION

Powered by NVIDIA technologies that simulate real-world physics including PhysX®, Flow, Blast, and Rigid Body Dynamics.

RTX RENDERER

An advanced, multi-GPU renderer based on NVIDIA RTX that supports both real-time ray tracing and ultra-fast path tracing.

Accelerating Workflows at Any Scale

Seamless Collaboration

Project teams are unified on a single, interactive platform, even when working with different software applications simultaneously, to rapidly develop architectural models in real time.

Design to Ray-Traced in One Click

Teams can produce beautiful, physically accurate visuals with minimal effort—no data preparation or model data decimation needed.

Faster Time to Approvals

Contributors can iterate quickly and explore more designs with the ability to export with RTX ray-traced quality. Teams, clients, and contractors can view the high-fidelity model on any device, anywhere.

Omniverse Platform Apps for Architecture, Engineering, and Construction

NVIDIA OMNIVERSE™ CREATE

Omniverse Create is an app that accelerates advanced scene composition and allows users to interactively assemble, light, simulate, and render scenes in Pixar USD in real-time.

NVIDIA OMNIVERSE™ VIEW

Omniverse View powers seamless collaborative design and immersive visualization of design and simulation projects for reviewers, clients, and project managers.

Omniverse Connectors

Omniverse Connectors are plug-ins to top industry software applications and microservices. NVIDIA is partnering with over 40 ISVs to connect the tools you use today with the platform of tomorrow.

Autodesk 3ds Max

Autodesk Maya

Autodesk Revit

McNeel & Associates Rhino including Grasshopper
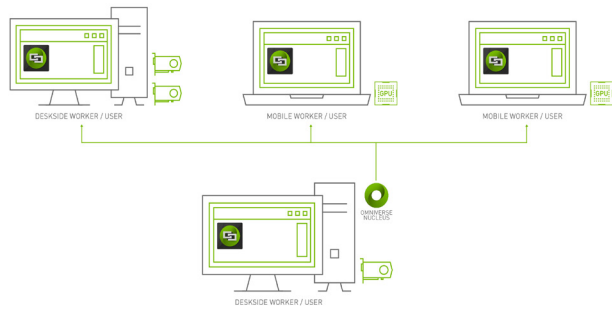
Trimble SketchUp

Epic Games Unreal Engine 4

Deploy Across Any Organization

Omniverse Enterprise is designed, tested, and optimized to run on NVIDIA RTX™ laptops and desktops, and NVIDIA-Certified Systems™ on NVIDIA EGX™ in the data center. This makes it possible to deploy NVIDIA Omniverse Enterprise across organizations of any scale, from small workgroups using local desktops and laptops to globally distributed teams accessing the data center using various devices. Unite your teams, tools, and systems while maintaining flexibility in how your teams prefer to work.
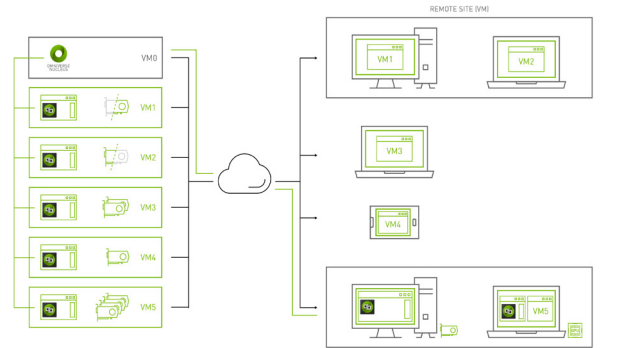
Small Workgroups

Deploy Omniverse across a small workgroup on a local network with NVIDIA RTX professional workstations and laptops.

EXAMPLE TOPOLOGY COMPONENTS

Local Clients	Mobile Workstation Desktop Workstation
Collaboration Server	Nucleus Workstation
GPU	Recommended NVIDIA RTX GPUs for Professional Visualization
Omniverse Applications	Omniverse Create Omniverse View
Connected Applications	Omniverse Connector Supported Applications

Large Enterprise

Connect teams to the same Omniverse environment, whether they're working virtualized from the data center with NVIDIA RTX Virtual Workstation software (RTX vWS), or using local NVIDIA RTX professional workstations or laptops.

EXAMPLE TOPOLOGY COMPONENTS

Remote Clients	Mobile Workstation Desktop Workstation Tablet Phone
Collaboration Server	Enterprise Nucleus Server
Virtualization Host Software	VMware vSphere NVIDIA RTX Virtual Workstation (RTX vWS) Teradici Cloud Access Software
Virtualization Client Software	VMware Horizon Teradici PCoIP Client
GPU	Recommended NVIDIA RTX GPUs for Professional Visualization
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Connected Applications	Omniverse Connector Supported Applications

LEARN MORE ABOUT OMNIVERSE FOR AEC

For more information, visit: **www.nvidia.com/ov-aec**

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