NVIDIA Launches Data-Center-Scale Omniverse Computing System for Industrial Digital Twins

NVIDIA OVX Purpose-Built to Simulate Massively Complex Applications Across Robotics, AI, Industrial Automation and More

NVIDIA today announced NVIDIA® OVX™, a computing system designed to power large-scale digital twins.

NVIDIA OVX is purpose-built to operate complex digital twin simulations that will run within NVIDIA Omniverse™, a real-time physically accurate world simulation and 3D design collaboration platform.

The OVX system combines high-performance GPU-accelerated compute, graphics and AI with high-speed storage access, low-latency networking and precision timing to provide the performance required for creating digital twins with real-world accuracy. OVX will be used to simulate complex digital twins for modeling entire buildings, factories, cities and even the world.

“Physically accurate digital twins are the future of how we design and build,” said Bob Pette, vice president of Professional Visualization at NVIDIA. “Digital twins will change how every industry and company plans. The OVX portfolio of systems will be able to power true, real-time, always-synchronous, industrial-scale digital twins across industries.”

OVX will enable designers, engineers and planners to build physically accurate digital twins of buildings or create massive, true-to-reality simulated environments with precise time synchronization across physical and virtual worlds. Companies can evaluate and test complex systems and processes with multiple autonomous systems interacting in the same space-time to optimize, expand or create more efficient factories and warehouses or train robots and autonomous vehicles before deploying them in the physical world.

Developing Digital Twins
Within the sector initiative “Digitale Schiene Deutschland” (Digital Rail for Germany), DB Netze is building in Omniverse a digital twin of Germany's national railway network to train systems for automatic train operation and enable AI-enhanced predictive analysis for unforeseen situations in railway operations.

“Using a photorealistic digital twin to train and test AI-enabled trains will help us develop more precise perception systems to optimally detect and react to incidents,” said Annika Hundertmark, head of Railway Digitization at DB Netze. “In our current project, NVIDIA OVX will provide the scale, performance and compute capabilities that we need to generate data for intensive machine learning development and operate these highly complex simulations and scenarios.”

Computing System Specifications
The OVX server consists of eight NVIDIA A40 GPUs, three NVIDIA ConnectX®-6 Dx 200Gbps NICs, 1TB system memory and 16TB NVMe storage. The OVX computing system scales from a single pod of eight OVX servers, to an OVX SuperPOD consisting of 32 OVX servers connected with NVIDIA Spectrum-3 switch fabric or multiple OVX SuperPODs to accelerate massive digital twin simulations.

Availability
OVX solutions are NVIDIA-Certified Systems™, tested and validated to provide the necessary performance, manageability, security and scalability. Comprehensive enterprise-grade support for NVIDIA OVX solutions and Omniverse software will be provided jointly by NVIDIA and OEM system builders.

NVIDIA OVX will be available later this year through Inspur, Lenovo and Supermicro.

To learn more about NVIDIA Omniverse, watch the GTC 2022 keynote from NVIDIA CEO Jensen Huang. Register for GTC for free to attend sessions with NVIDIA and industry leaders.

About NVIDIA
NVIDIA’s (NASDAQ: NVDA) invention of the GPU in 1999 sparked the growth of the PC gaming market and has redefined modern computer graphics, high performance computing, and artificial intelligence. The company’s pioneering work in accelerated computing and AI is reshaping trillion-dollar industries, such as transportation, healthcare and manufacturing, and fueling the growth of many others. More information at https://nvidianews.nvidia.com/.

Certain statements in this press release including, but not limited to, statements as to: the benefits, impact, specifications, performance and availability of NVIDIA OVX and NVIDIA Omniverse; physically accurate digital twins as the future of how we design and build; digital twins changing how every industry and company plans; and the OVX portfolio of systems being able to power true, real-time, always-synchronous, industrial-scale digital twins are forward-looking statements that are

subject to risks and uncertainties that could cause results to be materially different than expectations. Important factors that could cause actual results to differ materially include: global economic conditions; our reliance on third parties to manufacture, assemble, package and test our products; the impact of technological development and competition; development of new products and technologies or enhancements to our existing product and technologies; market acceptance of our products or our partners' products; design, manufacturing or software defects; changes in consumer preferences or demands; changes in industry standards and interfaces; unexpected loss of performance of our products or technologies when integrated into systems; as well as other factors detailed from time to time in the most recent reports NVIDIA files with the Securities and Exchange Commission, or SEC, including, but not limited to, its annual report on Form 10-K and quarterly reports on Form 10-Q. Copies of reports filed with the SEC are posted on the company's website and are available from NVIDIA without charge. These forward-looking statements are not guarantees of future performance and speak only as of the date hereof, and, except as required by law, NVIDIA disclaims any obligation to update these forward-looking statements to reflect future events or circumstances.

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