Omniverse at Scale: NVIDIA Announces Third-Generation OVX Computing Systems to Power Industrial Metaverse Applications

NVIDIA RTX Ada GPU- and BlueField-3 DPU-based systems offered by global manufacturers worldwide.

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Digitalization that combines AI and simulation is redefining how industrial products are created and transforming how people interact with the digital world.

To help enterprises tackle complex new workloads, NVIDIA has unveiled the third generation of its NVIDIA OVX computing system .

OVX is designed to power large-scale digital twins built on NVIDIA Omniverse Enterprise , a platform for creating and operating metaverse applications. The latest OVX system provides the breakthrough graphics and AI required to accelerate massive digital twin simulations and other demanding applications by combining NVIDIA BlueField-3 DPUs with NVIDIA L40 GPUs, ConnectX-7 SmartNICs and the NVIDIA Spectrum Ethernet platform.

Some of the world's largest systems makers will be bringing the latest OVX systems to customers worldwide later this year, providing enterprises with the technology to handle complex manufacturing, design and Omniverse-based workloads. Businesses can take advantage of the real-time, true-to-reality capabilities of OVX to collaborate on the most challenging visualization, virtual workstation and data center processing workflows.

Customers using third-generation OVX systems can speed their workflows and optimize simulations through immersive digital twins used to model factories, cities, autonomous vehicles and more before deployment in the real world. This helps maximize operational efficiency and predictive planning capabilities.

For example, DB Netze's Digitale Schiene Deutschland is leveraging the capabilities of OVX to power large-scale digital twins of dynamic physical systems, including rail networks. Others, like Jaguar Land Rover , are leveraging the graphics and simulation capabilities of OVX systems in conjunction with the NVIDIA DRIVE Sim platform to accelerate the testing and development of next-generation autonomous vehicles.

The third generation of OVX features a new architecture, with a server design based on a dual-CPU platform with four NVIDIA L40 GPUs . Based on the Ada Lovelace architecture, the L40 GPU delivers revolutionary neural graphics, AI compute and the performance needed for the most demanding Omniverse workloads.

Each OVX server also includes two high-performance ConnectX-7 SmartNIC s to enable multi-node scalability and precise time synchronization. The Ethernet adapters enable the multi-node scalability of OVX systems and provide networking capabilities for the low-latency, high-bandwidth communication that globally dispersed teams need.

New with this generation, the BlueField-3 data processing unit offloads, accelerates and isolates CPU-intensive infrastructure tasks. For deploying Omniverse at data center scale, BlueField-3 DPUs provide a secure foundation for running the data center control-plane, enabling higher performance, limitless scaling, zero-trust security and better economics.

Helping users keep up with networking performance, the accelerated NVIDIA Spectrum Ethernet platform provides high bandwidth and network synchronization to enhance real-time simulation capabilities.

In addition to original NVIDIA OVX partners Lenovo and Supermicro , third-generation OVX systems will be available later this year through Dell Technologies, GIGABYTE and QCT . NVIDIA is also working on Digital Twin as a Service offerings based on OVX with HPE Greenlake .

To learn more about OVX, watch NVIDIA founder and CEO Jensen Huang's GTC keynote .

Register free for NVIDIA GTC, a global AI conference, to attend sessions with NVIDIA and industry leaders:

Building a Digital Twin of the German Rail Network to Deliver Next-Generation Railway Systems by Digitale Schiene Deutschland

Optimizing Distribution and Fulfillment Center Operations with Computer Vision and Digital Twins by PepsiCo

Connect With the Experts: How to Build a Digital Twin in Omniverse

Hit the Ground Running With Data Center Digital Twin Automation

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