Redefining Workstations: NVIDIA, Intel Unlock Full Potential of Creativity and Productivity for Professionals

Workstations powered by the latest Intel Xeon CPUs, NVIDIA RTX 6000 Ada GPUs and NVIDIA SmartNICs revolutionize performance for workflows in architecture, manufacturing, media and entertainment, and more.

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AI-augmented applications, photorealistic rendering, simulation and other technologies are helping professionals achieve business-critical results from multi-app workflows faster than ever.

Running these data-intensive, complex workflows, as well as sharing data and collaborating across geographically dispersed teams, requires workstations with high-end CPUs, GPUs and advanced networking.

To help meet these demands, Intel and NVIDIA are powering new platforms with the latest Intel Xeon W and Intel Xeon Scalable processors, paired with NVIDIA RTX 6000 Ada Generation GPUs , as well as NVIDIA ConnectX-6 SmartNICs .

These new workstations bring together the highest levels of AI computing, rendering and simulation horsepower to tackle demanding workloads across data science, manufacturing, broadcast, media and entertainment, healthcare and more.

"Professionals require advanced power and performance to run the most intensive workflows, like using AI, rendering in real time or running multiple applications simultaneously," said Bob Pette, vice president of professional visualization at NVIDIA. "The new Intel- and NVIDIA-Ada powered workstations deliver unprecedented speed, power and efficiency, enabling professionals everywhere to take on the most complex workflows across all industries."

"The latest Intel Xeon W processors — featuring a breakthrough new compute architecture — are uniquely designed to help professional users tackle the most challenging current and future workloads," said Roger Chandler, vice president and general manager of Creator and Workstation Solutions in the Client Computing Group at Intel. "Combining our new Intel Xeon workstation processors with the latest NVIDIA GPUs will unleash the innovation and creativity of professional creators, artists, engineers, designers, data scientists and power users across the world."

Metaverse applications and the rise of generative AI require a new level of computing power from the underlying hardware. Creating digital twins in a simulated photorealistic environment that obeys the laws of physics and planning factories are just two examples of workflows made possible by NVIDIA Omniverse Enterprise , a platform for creating and operating metaverse applications.

BMW Group , for example, is using NVIDIA Omniverse Enterprise to design an end-to-end digital twin of an entire factory. This involves collaboration with thousands of planners, product engineers and facility managers in a single virtual environment to design, plan, simulate and optimize highly complex manufacturing systems before a factory is actually built or a new product is integrated into the real world.

The need for accelerated computing power is growing exponentially due to the explosion of AI-augmented workflows, from traditional R&D; and data science workloads to edge devices on factory floors or in security offices, to generative AI solutions for text conversations and text-to-image applications.

Extended reality (XR) solutions for collaborative work also require significant computing resources. Examples of XR applications include design reviews, product design validation, maintenance and support training, rehearsals, interactive digital twins and location-based entertainment. All of these demand high-resolution, photoreal images to create the most intuitive and compelling immersive experiences, whether available locally or streamed to wireless devices.

With a breakthrough new compute architecture for faster individual CPU cores and new embedded multi-die interconnect bridge packaging, the Xeon W-3400 and Xeon W-2400 series of processors enable unprecedented scalability for increased workload performance. Available with up to 56 cores in a single socket, the top-end Intel Xeon w9-3495X processor features a redesigned memory controller and larger L3 cache, delivering up to 28% more single-threaded (1) and 120% more multi-threaded (2) performance over the previous- generation Xeon W processors.

Based on the NVIDIA Ada Lovelace GPU architecture, the latest NVIDIA RTX 6000 brings incredible power efficiency and performance to the new workstations. It features 142 third-generation RT Cores, 568 fourth-generation Tensor Cores and 18,176 latest-generation CUDA cores combined with 48GB of high-performance graphics memory to provide up to 2x ray-tracing, AI, graphics and compute performance over the previous generation.

NVIDIA ConnectX-6 Dx SmartNICs enable professionals to handle demanding, high-bandwidth 3D rendering and computer-aided design tasks, as well as traditional office work with line-speed network connectivity support based on two 25Gbps ports and GPUDirect technology for increasing GPU bandwidth by 10x over standard NICs. The high-speed, low-latency networking and streaming capabilities enable teams to move and ingest large datasets or to allow remote individuals to collaborate across applications for design and visualization.

The new generation of workstations powered by the latest Intel Xeon W and Intel Scalable processors and NVIDIA RTX Ada Generation GPUs will be available for preorder beginning today from BOXX and HP , with more coming soon from other workstation system integrators.

To learn more, tune into the launch event.

(1) Based on SPEC CPU 2017_Int (1-copy) using Intel validation platform comparing Intel Xeon w9-3495X (56c) versus previous generation Intel Xeon W-3275 (28c). (2) Based on SPEC CPU 2017_Int (n-copy) using Intel validation platform comparing Intel Xeon w9-3495X (56c) versus previous generation Intel Xeon W-3275 (28c).

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