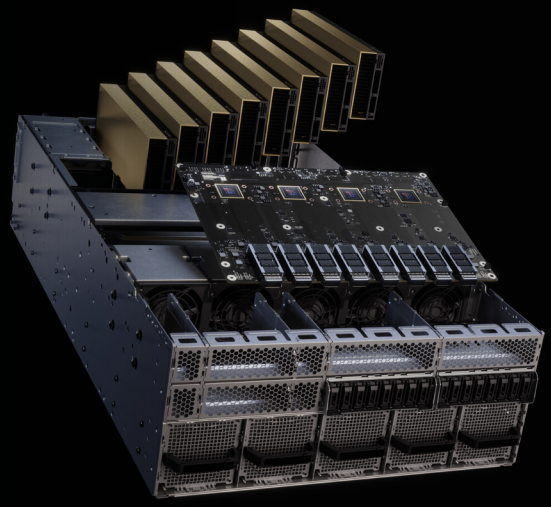
Datasheet

NVIDIA RTX PRO Server

NVIDIA Blackwell for the Enterprise.

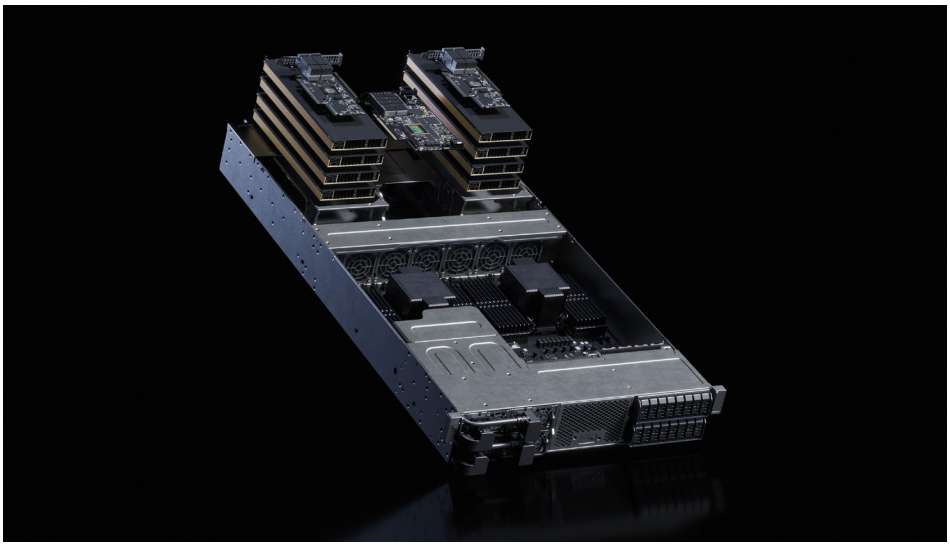


Overview

NVIDIA RTX PRO™ Servers bring the breakthrough performance of the NVIDIA Blackwell architecture to every enterprise—accelerating the shift from CPU-based systems to efficient GPU-accelerated infrastructure.

But this isn't just a performance upgrade—it's a new category of compute. RTX PRO Servers deliver a unified, high-performance computing platform capable of running any enterprise workload, on any IT stack, and across any NVIDIA software platform. From physical and industrial AI workloads, such as digital twins and robotics simulation with NVIDIA Omniverse™, to visual computing and AI agents powered by NVIDIA AI Enterprise, RTX PRO Servers handle it all.

Equipped with either NVIDIA RTX PRO 6000 Blackwell Server Edition GPUs or NVIDIA RTX PRO 4500 Blackwell Server Edition GPUs, RTX PRO Servers are available in multiple configurations, including 2U and 4U air-cooled and 6U liquid-cooled configurations to meet the needs of space-constrained and high-density environments, without compromising performance.



RTX PRO Server: 2U System Configuration | 8x RTX PRO 4500 Blackwell Server Edition

Key Workloads

- Physical and Industrial AI
- Rendering and 3D Graphics
- Agentic AI
- Generative AI
- Scientific Computing

Supporting Technologies

- NVIDIA Omniverse
- NVIDIA AI Enterprise
- NVIDIA RTX vWS, vPC
- NVIDIA Run:ai
- NVIDIA Spectrum-X
- CUDA-X

Accelerate Any Enterprise Workload

Physical and Industrial AI

NVIDIA RTX PRO Servers can accelerate the testing and optimization of physical AI with the NVIDIA Omniverse platform. With powerful visual computing and AI capabilities, RTX PRO Servers enable a wide range of industrial AI applications such as vision AI agents and full-fidelity digital twins. With powerful compute performance, RTX PRO Servers can accelerate the generation of physically based synthetic data for robotics and AV learning—enabling autonomous machines like robots and self-driving cars to perceive, understand, and perform complex actions in the real physical world.

Visual Computing

RTX PRO Servers support enterprise-grade visual computing at an entirely new level. Equipped with RTX PRO 6000 Blackwell Server Edition GPUs that feature fourth-gen RTX technology, they enable rapid rendering, accelerated ray tracing, and high-performance media processing—including advanced video encoding and decoding—making them ideal for intensive visual computing workloads, such as content creation pipelines, computer-aided design, media, and more.

Enterprise AI

With RTX PRO Servers and the NVIDIA AI Enterprise platform, organizations across industries can accelerate the development and deployment of production-grade AI solutions like AI agents, generative AI applications, and deep learning applications. With NVIDIA Blackwell architecture-based Tensor Cores and support for the second generation Transformer Engine, RTX PRO Servers deliver a massive leap in performance and efficiency for agentic AI, generative AI, and deep learning inference applications.

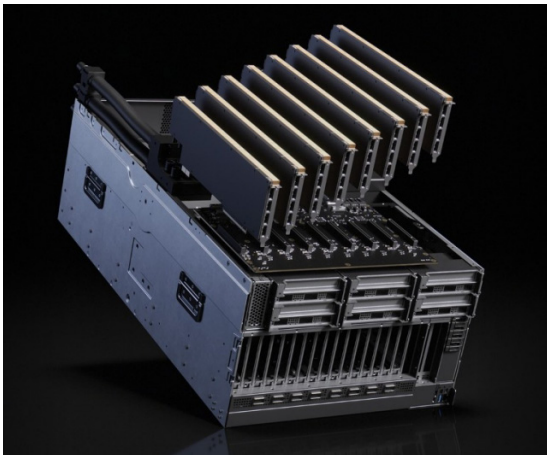
Scientific Computing and Simulation

The RTX PRO Servers are optimized for high-performance computing and complex scientific workloads through support for the NVIDIA CUDA-X™ library ecosystem. Researchers and developers across industries can run large-scale simulations, data analysis, and predictive modeling tasks with ease. From computer-aided engineering and genomics sequencing to fluid dynamics and data analytics, RTX PRO Servers provide powerful compute capabilities to accelerate the next wave of scientific innovation.

Build AI Factories With RTX PRO Server

The NVIDIA AI Factory Validated Design provides guidance for enterprises building AI factories with RTX PRO Servers from the ground up—and at scale. Along with the NVIDIA RTX PRO AI Factory Enterprise Reference Architecture, this validated design provides a full-stack blueprint inclusive of NVIDIA Accelerated Computing, NVIDIA networking, NVIDIA-Certified Storage, and NVIDIA enterprise software.

It leverages a trusted ecosystem of partner solutions along the AI stack, all vetted and tested by NVIDIA to accelerate speed-to-value, boost performance, reduce TCO, and bolster enterprise-readiness across the AI stack.

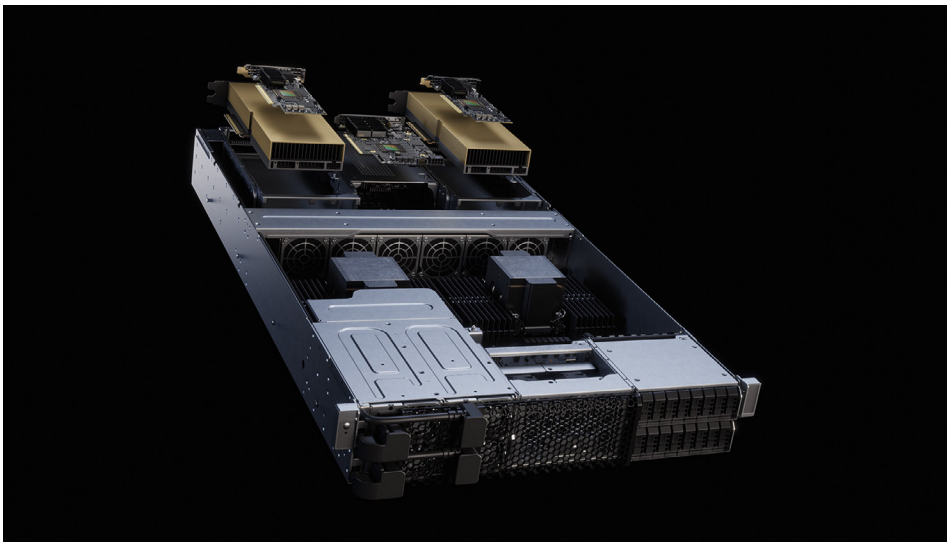


Liquid-Cooled RTX PRO Server:
6U System Configuration | Up to 8x Liquid-Cooled RTX PRO 6000 Blackwell Server Edition

Specifications

Chassis	2U, 4U, 6U (Liquid-Cooled)
GPU	Up to 8x NVIDIA RTX PRO 6000 Blackwell Server Edition or RTX PRO 4500 Blackwell Server Edition
Networking (E/W)	NVIDIA ConnectX®-7 (2x 200GbE) or NVIDIA Bluefield®-3140H or ConnectX-8 SuperNIC (1x 800GbE, 2x 400GbE) or ConnectX-8 SuperNIC with PCIe Gen 6 Switch
Networking (N/S)	1x BlueField-3 (B3220)
CPU	2x Intel Xeon or 2x AMD EPYC
Memory	128 GB DDR5 ECC Per GPU (1 DIMM per channel)
Storage	2x 4 TB NVMe* 1x 1 TB NVMe boot drive

* Recommended Minimum



RTX PRO Server: 2U System Configuration | 2x RTX PRO 6000 Blackwell Server Edition

Ready to Get Started?

To learn more about NVIDIA RTX PRO Server, visit:
nvidia.com/en-us/data-center/products/rtx-pro-server