



# BOOSTING PERFORMANCE IN AEC INDUSTRIES WITH ACCELERATED SUPERMICRO WORKSTATIONS

Increasing design productivity and creativity everywhere



Supermicro Workstation Family

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# **SUPERMICRO**

As a global leader in high performance, high efficiency server technology and innovation, we develop and provide end-to-end green computing solutions to the data center, cloud computing, enterprise IT, big data, HPC, and embedded markets. Our Building Block Solutions<sup>®</sup> approach allows us to provide a broad range of SKUs, and enables us to build and deliver application-optimized solutions based upon your requirements.

### **Executive Summary**

Workstations are currently used to fuel design and visual capabilities innovation in architecture, engineering, and construction (AEC) industries. The world of professional visualization is undergoing a significant shift as advancements such as real-time ray tracing, engineering simulation, immersive virtual reality (VR), and tools augmented by artificial intelligence (AI) drive improvements across the AEC space. With IT and operational requirements changing quickly, companies feel pressure to manage their most demanding applications in dispersed locations.

Today, many AEC companies work remotely as projects become increasingly complex, challenging teams to find new and better ways to optimize workflows, communication, and collaboration. To succeed, companies are enhancing their environments with the latest computing capabilities, with powerful CPUs and GPUs, more memory, increased storage, and intuitive management software. When combined, these technologies create AEC Companies can expect a number of advantages with cutting-edge workstations solutions:

- Supporting seamless remote work with graphics-intensive software applications.
- Improving collaboration among geographically dispersed teams.
- Reducing render times and increased render interactivity.

comprehensive workstations that enable companies to use a broad range of AEC applications with unprecedented performance.

Workstation solutions optimize the most graphics-intensive applications, including computer-aided design (CAD), computer-aided engineering (CAE), 3D modeling, and rendering. These technologies dramatically accelerate time to value for tasks like solid modeling, design visualization, structural analysis, and civil engineering. Now, teams of architects and engineers can speed up design iteration and work effectively with construction firms to accelerate development cycles while increasing cost savings.

AEC companies depend on visual computing platforms to empower teams

wherever they need to work. The ideal solutions will deliver high levels of performance to increase productivity and deliver measurable ROI. These technologies are the foundation for greater efficiency, smarter decisions, and better business results—built on extreme computational power right at everyone's desk.

# **Working with Proven Partners**

Supermicro and NVIDIA are delivering the next generation of visual computing to accelerate the future of work. Together, Supermicro and NVIDIA provide the right visual computing solutions to improve the speed and quality of any project.

Supermicro is a global leader in high-performance, high-efficiency technology, offering the broadest product portfolio for robust workstations. With operations in <u>more than 100 countries</u>, Supermicro is a leader in enterprise, cloud, AI, edge, and IoT, developing state-of-the-art products ahead of the competition. The goal is to enable the success of every customer. Supermicro achieves this through extensive engineering expertise and the industry's broadest product portfolio, which offers green computing technologies that reduce energy costs, effectively allocate resources to tackle complex workflows, and improve the overall total cost of ownership. In addition, Supermicro provides a range of performance-boosting solutions to help AEC firms work better, smarter, and faster in partnership with NVIDIA.

Supermicro is committed to building work environments that provide industry-leading energy efficiency, acceleration, and reliability. Leveraging <u>first-to-market innovations</u> from Supermicro and NVIDIA RTX<sup>™</sup> technology, each workstation is purposebuilt for unprecedented rendering, graphics, compute, and AI at scale to enhance any application. In addition, these servergrade workstations are expertly designed to optimize workloads that require powerful compute and graphics capabilities so that companies can complete their projects in record time.

Workstations from Supermicro and NVIDIA offer critical advantages at each stage of development:

- Supporting the unique software applications and requirements of different types of users
- Improving collaboration among geographically dispersed teams
- Accelerating performance to eliminate slow render times and limited render interactivity
- Expanding the ability to edit design elements, such as materials and lighting, in real-time based on client feedback
- Enhancing operational efficiency and project planning



By partnering with Supermicro and NVIDIA, every company can adopt the latest workstation solutions to power innovation anywhere. Supermicro equips engineers and designers with the right tools for success:

- Performance at scale for demanding AEC projects
- Increased operational performance and reliability for the enterprise
- Expansive visual workspaces with stunning imagery
- Unmatched GPU acceleration to accelerate development cycles

Our joint solutions make it possible to create realistic, immersive experiences that leverage the latest advancements in workstation technology to shorten design reviews and ensure more efficient construction workflows with enhanced worksite safety, immersive construction rehearsals, and safety training, all in VR.

With these technologies, AEC companies can streamline project delivery and minimize delays while providing a safer work environment. Now, companies have the ability to ramp up development from planning to the final product.

#### **Building The Ideal Production Environment**

Supermicro offers a comprehensive portfolio of workstations to fit an organization's unique requirements. Supermicro offers a high degree of flexibility and upgradability to put unparalleled compute, graphics, and AI capabilities at the core of professional environments. The workstations in this groundbreaking product line include mid-tower form factor systems, high memory bandwidth, and massive acceleration to equip architects, engineers, and builders with maximum throughput.

<u>Supermicro workstations</u> are fast and reliable and meet the demands of various businesses and lead the industry. Each platform is built on enterprise-grade technologies tested and validated to power critical applications for any AEC task. Solutions from Supermicro and NVIDIA feature a wide range of industry standard components to optimally configure the platform to accelerate innovative projects—including NVMe storage, powerful CPUs, and breakneck acceleration from NVIDIA professional GPUs. These configurations are engineered to be cost-efficient while providing the right level of performance to empower different types of users running diverse applications.









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Single-processor workstations are engineered to be cost-efficient while providing exceptional power to handle mission-critical workloads

Entry-level configurations deliver the right level of performance for teams using leading design software for applications such as CAD and 2D modeling.

- Intel® Xeon® W-1200 / W-1300 processors, up to 10 cores - 32GB DDR4-3200 Memory - NVIDIA RTX<sup>™</sup> A2000 - 1TB M.2 NVMe + 4TB HDD - Windows 10/11 Pro 64

Workstations with advanced graphics capabilities enable users to enjoy desktop-level usability on a personal workstation without sacrificing performance or features

Mainstream configurations deliver unmatched performance for a

- 11th Gen Intel<sup>®</sup> Core™ processor, up to 8 cores - 64GB DDR4-3200 Memory - NVIDIA RTX<sup>™</sup> A4500 - 2TB M.2 NVMe + 6TB HDD - Windows 10/11 Pro 64

Purpose-built to execute high-end workflows with robust visual computing capabilities and interactive performance for a new age of design

Expert configurations allow companies to harness extreme compute capacity and acceleration for complex 3D modeling and animation applications.

- AMD Ryzen<sup>™</sup> Threadripper<sup>™</sup> PRO 3900WX processor, up to 64 cores - 128GB DDR4-3200 Memory - NVIDIA RTX<sup>™</sup> A6000

- 2x 2TB M.2 PCIe Gen 4 NVMe +
- 2x 3.8TB U.2 PCIe Gen 4 SSD
- Windows 10/11 Pro 64

variety of 3D modeling and animation applications.



#### Summary

Supermicro and NVIDIA are empowering AEC firms to work better and smarter with solutions that are expertly engineered to boost productivity, creativity, and innovation. Supermicro makes it faster and simpler to design, review, modify, and accurately visualize detailed building models anywhere, from the office to customer locations and places in between. As a result, organizations can benefit from solutions and capabilities that are the best in the industry:

- **Best performance:** Highest memory and storage capacities available in a single tower system, featuring up to four passively cooled GPUs in tower form factor. Supermicro is the only manufacturer to offer up to four NVIDIA A100 Tensor Core GPUs in multiple models, with up to 80 cores, 4TB of memory, 61.44TB of NVMe, and optional DCPMM support.
- **Best expandability** Up to six PCIe Gen4 x16 expansion slots, or up to four PCIe Gen4 M.2 with optional hardware RAID 0/1/5/10 support.
- Best component selection: Supermicro validates a wide variety of memory, storage, and networking components with different specifications to help organizations configure an optimized system for demanding needs without locking into one brand.

#### RESOURCES

supermicro.com/en/products/system/Workstatio n/Tower/SYS-530A-IL

nvidia.com/content/dam/en-zz/Solutions/designvisualization/productspage/quadro/quadrodesktop/quadro-p2200-datasheet-letter-974207r4-web.pdf

supermicro.com/products/system/tower/5039/SY S-5039A-i.cfm

nvidia.com/en-us/design-visualization/rtx-a4000/

supermicro.com/en/Aplus/system/5U/5014/AS-5014A-TT.cfm

nvidia.com/en-us/design-visualization/rtx-a5000/

nvidia.com/en-us/design-visualization/desktopgraphics/

• **Best assembly and local support:** All workstation systems shipped in the Americas are built and tested at Supermicro headquarters in San Jose, California, and include technical support services by in-house Supermicro engineers and product managers.

Our cutting-edge workstations are transforming AEC operations from the ground up. Together, Supermicro and NVIDIA can help organizations deploy the ideal workstation to create the designs of tomorrow today. It's time for enterprises to execute all of their graphics work with ease and innovate without limits. Visit us online to learn more.

#### Learn more at

supermicro.com/en/products/superworkstation nvidia.com/en-us/design-visualization/rtx/

