

POWERING CUTTING-EDGE VIRTUAL PRODUCTION WORLDWIDE

CASE STUDY

AMD and Supermicro deliver best-in-class technologies to bring creative visions to life



THE VIRTUAL PRODUCTION SECTOR IS CONSTANTLY EVOLVING, ADOPTING NEW TECHNOLOGIES AND CUTTING-EDGE TECHNIQUES TO CREATE HIGH-QUALITY CONTENT WITHIN STRICT TIMELINES AND BUDGETS.

Virtual production utilizes digital tools to recreate backgrounds and locations within a studio environment. In-camera visual effects (ICVFX) allow virtual backgrounds to be rendered in real-time, delivering immersive experiences for actors with correct projection and parallax. This technique helps to make filming specific scenarios simpler, safer, and more cost-effective.

ICVFX is maturing rapidly, allowing teams to recreate increasingly complex real-world locations. However, rendering at production-quality frame rate (typically 24-60 frames per second) requires reliable computing capacity, breakneck GPU acceleration, flexibility, and the ability to scale.

ENHANCING VIRTUAL PRODUCTION APPLICATIONS

NantStudios operates in one of the fastest-moving segments of the entertainment industry, where delivery timelines are short, workloads are massive, and production quality must be uncompromising. Their teams run multiple facilities across Los Angeles and Australia, supporting projects that range from feature films and episodic television to commercials, music videos, and interactive experiences.

“The production industry requires very short delivery timelines and benefits hugely from the latest tech to drive higher resolutions at higher speeds. Supermicro worked with us to provide advance shipments of the latest AMD-powered systems for testing, ahead of general availability.”

Martin Rushworth, Head of Technology, NantStudios

To deliver on these projects, NantStudios depends heavily on real-time rendering applications such as Unreal Engine and Pixera, which require extreme compute throughput and flawless synchronization across clusters of machines. However, the stakes are high:

- **Performance bottlenecks:** Outdated computing systems often struggle with rendering ultra-high-resolution content, creating delays during on-set production and limiting creative flexibility.
- **Distributed operations:** With productions happening across multiple global locations, NantStudios needed consistent performance and reliability so teams

INDUSTRY

Virtual Production

CHALLENGES

Delivering consistent compute performance and user experiences across multiple locations

SOLUTION

Supermicro workstations powered by AMD processors

RESULTS

Achieving robust performance and processing speeds for virtual production environments

AMD TECHNOLOGY AT A GLANCE

AMD™ Threadripper™ PRO 7975WX

TECHNOLOGY PARTNER



could collaborate seamlessly regardless of site.

- **Time sensitivity:** On productions where every minute of downtime can disrupt multimillion-dollar schedules, reliability and system availability are critical (and setup must be quick and cost-efficient).
- **Creative ambitions:** As clients demand higher resolutions (20K+ camera arrays, large LED volumes) and more complex visual effects, NantStudios required infrastructure capable of scaling without compromise.

Without a robust, future-ready solution, NantStudios risked slower delivery times, higher costs, and the inability to meet the ambitious creative visions of their clients.

BUILDING A SOLUTION FOR REAL-TIME CONTENT CREATION

To overcome these obstacles, NantStudios turned to Supermicro workstations powered by AMD Ryzen™ Threadripper™ PRO processors. This combination gave their production environments the speed, scalability, and reliability they needed to support demanding workflows.

Supermicro AS -2115HV-TNRT workstations featuring AMD Ryzen Threadripper PRO 7975WX processors deliver the massive compute and graphics horsepower NantStudios needs for virtual production. High core counts, advanced multi-threading, and exceptional clock speeds from AMD power complex simulations and scene compilation to eliminate performance bottlenecks. This robust solution enables NantStudios to render complex Unreal Engine and Pixera scenes instantly, maintaining high frame rates across clustered systems.

“Jumpstarting the testing process is critical to us, as is meeting deadlines and system reliability requirements. AMD and Supermicro excel at delivering on all these points.”

Martin Rushworth, Head of Technology, NantStudios

AMD Ryzen Threadripper PRO is the ultimate processor for workstations and high-end desktops, designed to power creative workflows and innovation from day one. The latest 9000s series is helping artists and engineers increase their productivity and enhance time-sensitive projects.

Enterprise-grade Supermicro workstations provide NantStudios with a standardized technology stack that can be deployed in Los Angeles, Melbourne, or anywhere new volumes are built.

This ensures the same creative experience and predictable performance across all sites. Remote management tools are available to help minimize downtime and reduce the risk of outages.

As clients push for higher resolutions, larger LED volumes, and more complex IGVFX environments, flexible workstation configurations from Supermicro and AMD allow NantStudios to expand compute resources to scale with creative ambitions. Teams can run massive video playback, manipulate 20K footage, and deliver crystal-clear imagery while maintaining real-time responsiveness.

ACCELERATING CREATIVE WORKFLOWS AT SCALE

When deadlines are non-negotiable, artists and engineers need systems that help them excel. Supermicro workstations built on AMD Ryzen Threadripper PRO can empower teams to get more done in less time. With a combination of exceptional performance and customization with enterprise-class security and manageability, NantStudios has a reliable foundation to create next-level content.

The current solutions used by NantStudios from Supermicro and AMD offer significant advantages:

- Up to 30% speed increase compared to previous generation systems¹
- 20% higher frame rates compared to the previous solution¹
- 30% more complex geometry using high resolution textures compared to the previous solution¹

With Supermicro and AMD, NantStudios is able to render at higher quality/resolutions and at faster frame rates than with previous workstations. As a result, NantStudios now has a reliable, future-ready foundation to accelerate creative workflows, reduce project risk, and deliver on the



Supermicro and AMD deliver reliable performance and networking capabilities that teams require to create compelling content.

ambitious demands of global productions. Through ongoing collaboration, NantStudios has access to the latest technology breakthroughs to move forward creating stunning content at scale, on budget, and on time when milliseconds count.

TRANSFORMING THE INDUSTRY

NantStudios has a reputation for selecting “only the latest and greatest” technologies to power their LED volumes. This includes their Dynamic Volume System, which is a 2025 finalist for the Global AV Award for Enabling Technology of the Year.

With this reputation, their goal is to democratize the virtual production workflow and make it accessible for projects of any scale, using state-of-the-art technologies to streamline processes and fuel innovation. NantStudios proudly partners Supermicro and AMD to accelerate creative cycles and achieve better outcomes.



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ABOUT NANTSTUDIOS

NantStudios is the world's first real-time, full-service product house, reimagined from the ground up to deliver exceptional creative results through next generation technologies and skillsets. We are world leaders in virtual production—but that's not our goal. We aim to be the world's best creative partner in technology-enabled production, from concept development to real-time content creation, from LED volume design and delivery to on-set operations. We are enthusiastic innovators who love big ideas and big challenges. For more information visit nantstudios.com.

ABOUT AMD

For more than 50 years AMD has driven innovation in high-performance computing, graphics, and visualization technologies. Billions of people, leading Fortune 500 businesses, and cutting-edge scientific research institutions around the world rely on AMD technology daily to improve how they live, work and play. AMD employees are focused on building leadership high-performance and adaptive products that push the boundaries of what is possible. For more information about how AMD is enabling today and inspiring tomorrow, visit the AMD (NASDAQ: AMD) [website](http://www.amd.com), [blog](#), [LinkedIn](#), and [X](#) pages.

ENDNOTES

1. Results provided by NantStudios, 2025

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