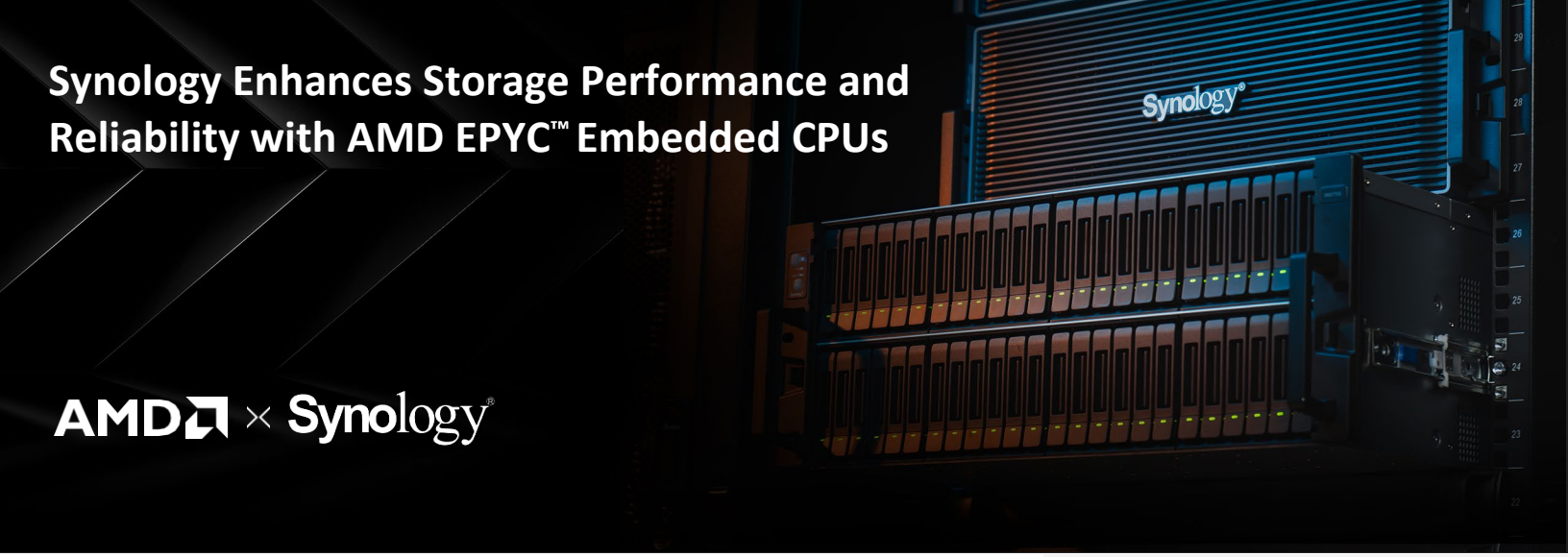
Synology Enhances Storage Performance and Reliability with AMD EPYC™ Embedded CPUs



AMD × Synology®

Synology is dedicated to revolutionizing business data management with solutions that are intuitive, secure, and dependable. These enterprise-grade solutions are tailored to address the storage industry's most demanding requirements, offering vast storage capacity with scalable expansion options to accommodate evolving data needs.

Featuring high-performance all-flash storage, high-availability clusters, and advanced data protection through tools like the Active Backup Suite and robust encryption, Synology ensures seamless virtualization with Virtual Machine Manager and flexible hybrid cloud integration. These capabilities position Synology's latest offerings as ideal for large-scale enterprise deployments, delivering unmatched performance, scalability, and security.

CHALLENGE

Synology was founded in 2000 with the goal of developing a better data management system while making it accessible to everyone. Network-attached storage (NAS) solutions enable customers to build a private cloud to store, access, back-up, and share files freely and securely. Synology continues to make strides globally with more than six million installations, hundreds of channel partners, and six branches across the globe. Synology's software stack, built around DiskStation Manager (DSM) provides strong data management and security features. These features include Synology Drive for file synchronization, Synology Office for productivity, and Surveillance Station for security management. The stack supports virtualization with Virtual Machine Manager and offers comprehensive backup solutions through the Active Backup Suite, making it ideal for both personal and professional applications.

"Until recently, managing mission-critical data required deep technical expertise," said Tony Chu, corporate marketing manager at Synology. "By combining our deep software and hardware development expertise with close partner and enterprise customer collaboration, we've engineered a solution to deliver ultra-high performance and scalability that meets enterprise demands."

As enterprises increasingly rely on data for critical operations, the demand for high-performance, secure, and scalable storage solutions has surged. Enterprises require systems that ensure data availability, integrity, and efficiency for mission-critical workloads, such as real-time analytics, large-scale virtualization, and high-transaction databases. Synology needed a robust, scalable, and cost-effective solution that offered exceptional connectivity, including PCIe, while providing high-speed performance and power efficiency for its rackmount form-factor systems to meet these enterprise demands.

INDUSTRY
Storage

CHALLENGES
Synology sought a high-performance, scalable, and cost-effective NAS solution to simplify data management for enterprise mission-critical workloads

SOLUTION
Synology deployed PAS7700 servers with AMD EPYC Embedded CPUs

RESULTS
AMD EPYC™ Embedded CPUs are powering Synology to help deliver some of the highest performance and scalability storage systems that ensures data availability, integrity, and efficiency for mission-critical workloads

AMD TECHNOLOGY AT A GLANCE
AMD EPYC™ Embedded CPUs

SOLUTION

To address these requirements, Synology integrated AMD EPYC™ Embedded processors into its PAS7700 active-active NVMe storage systems, achieving broad scalability and accommodating up to 1.65 petabytes of raw storage capacity with the addition of seven expansion units. This versatile AMD solution has been designed into a variety of products, and the design is built for high reliability, with an active-active dual-controller architecture to keep mission-critical services running, even during hardware failures.

"We chose AMD for its TDP (thermal design power), performance, and value. The AMD chips are well rounded and have good PCIe and I/O capabilities, and the processor has a good price to performance ratio that fits well into our portfolio," said Michael Wang, corporate marketing at Synology.

The PAS7700, powered by dual AMD EPYC Embedded 7443P 24-core CPUs running at 2.85GHz with a maximum boost of up to 4GHz[1], delivers leadership performance with up to 2 million 4K random read IOPS and 30GB/s sequential throughput. It supports up to 2,048GB of redundant memory across both controllers and high-speed 100GbE networking, ensuring low latency and high availability for demanding workloads. The system supports a range of file and block protocols, including NVMe-oF, and features robust data protection tools like immutable snapshots, advanced replication, and flexible offsite tiering for end-to-end data integrity.

AMD EPYC™ Embedded processors offer exceptional performance, energy efficiency, and scalability, making them an excellent choice for Synology's needs. "AMD exceeded its 30x25 energy efficiency goal[2], achieving a 38x increase in node-level energy efficiency for AI-training and HPC, which equates to a 97% reduction in energy for the same performance compared to systems from just five years ago," said Madhu Indurthi, senior product marketing manager at AMD.

"AMD processors provide the same socket design across different generations. This gives Synology the flexibility to adopt the technology across different products and product generations," said Jason Fan, product manager at Synology.

RESULT

Synology's high performance and scalability are achieved by the PAS7700, powered by AMD EPYC™ Embedded CPUs, which maximize high storage capacity and expansion capabilities to host large amounts of data on a central repository. Synology's current product features EPYC Embedded 7443P processors, which are AMD "Zen" architecture-powered solutions. Because they have a common software platform, Synology can simplify development work and allow for the design flexibility it requires.

"One of the most important things we've gained from using AMD is being able to offer comprehensive and well-rounded products. They not only offer better performance or price, but also reliability. We've seen great reliability from AMD processors, as well as great forward-and backward compatibility," said Wang.

Want to learn more about AMD EPYC™ Embedded CPUs?
Visit our website.

ABOUT SYNOLOGY

Synology is committed to transforming the way businesses manage their data – elegantly simple, secure, and reliable. Synology proudly boast a wide array of solutions backed by cutting-edge innovation and field-proven reliability with a solid track record in meeting the ever-increasing expectations and demands. Synology uniquely enables every business to manage, secure, and protect their data wherever access is needed from flash to disk to multiple cloud architectures – at the scale needed to accommodate the exponential data growth of the digital word.

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, blog, LinkedIn, and Twitter pages.

FOOTNOTES & GENERAL DISCLAIMERS

Performance and cost-savings claims are provided by Synology and have not been independently verified by AMD. Performance and cost benefits are impacted by a variety of variables. Results herein are specific to Synology and may not be typical GD-181.

1. EPYC-018: Max boost for AMD EPYC™ processors is the maximum frequency achievable by any single core on the processor under normal operating conditions for server systems.
2. AMD Surpasses 30x25 Goal, Sets Ambitious New 20x Efficiency Target

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