

X13 Petascale All-Flash

The Architecture for Low-Latency, High-Throughput Storage



Designed for the Most Demanding Storage Workloads

X13 Petascale storage systems are ideal for deployments where storage throughput and latency are paramount, including generative AI, mission-critical databases, virtualization, next-gen big data, HPC, media & entertainment and hot-tier caching. Supermicro's open architectures are designed to work with the widest range of software partners to create a solution to drive every application.

Revolutionary Storage Architecture

The Supermicro X13 Petascale family has been completely redesigned to maximize the performance of the latest generation CPUs and storage components. The symmetrical dual-CPU architecture not only balances resources, it also reduces latency by minimizing the length of data paths and maximizes airflow over critical components for optimal thermal performance.

The Future of Flash, Memory, and Beyond

Get ahead of the competition with the latest industry-standard EDSFF E3.S and E1.S form factors designed specifically for high performance solid-state media, facilitating maximum performance from the X13 range's PCIe 5.0 interconnects and ensuring compatibility with future iterations of the PCIe protocol. These systems support the new Gen 5 drives from all major vendors, giving customers the freedom to choose the best

Up to 720TB of flash storage in 2U

- Dual socket 5th/4th Gen Intel® Xeon® Scalable processors
- 32 DIMM slots per node supporting DDR5-4800MHz
- Up to 2 AIOM slots and 2 PCIe 5.0 slots for networking and expansion
- Support for the latest industry standard EDFSS E3.S and E1.S drive form factors
- Support for the latest Gen5 drives from all major manufacturers
- Optional CXL support on some models to provide up to 1TB of additional memory
- Balanced architecture to minimize latency and maximize airflow over critical components

components for their specific application. Embracing the future, Supermicro X13 Petascale systems also support the industry's first CXL expansion modules, which can add up to 1TB of DDR memory to the already powerful 32-DIMM solution. This emerging CXL technology is now available to add capacity and bandwidth for memory-bound applications.

High-Speed Networking

High performance storage of this caliber is nothing without networking to match. Supermicro X13 Petascale systems feature dual PCIe 5.0 AIOM slots for high-speed networking cards, as well as flexible FHHL PCIe 5.0 expansion slots with auxiliary power to support the most powerful I/O devices such as IPUs & DPUs with offload engines.

Powered by 5th Gen Intel Xeon Scalable Processors

Just like the X13 Petascale systems themselves, the new 5th Gen Intel Xeon Scalable processors are optimized for storage workloads, with storage-specific CPUs engineered to enhance data movement and compression performance. Inside, built-in accelerator engines including Intel Data Streaming Accelerator (Intel DSA) and Intel QuickAssist Technology (Intel QAT) offload common storage tasks from CPU cores to expand workload capabilities.



Petascale	SSG-221E-NE324R	SSG-121E-NE316R	SSG-121E-NES24R
Processor Support	Dual 5th/4th Gen Intel® Xeon® Scalable processors Up to 350W TDP (air cooled) [†]	Dual 5th/4th Gen Intel® Xeon® Scalable processors Up to 270W TDP (air cooled) [†]	Dual 5th/4th Gen Intel® Xeon® Scalable processors Up to 270W TDP (air cooled) [†]
Memory Slots & Capacity	32 DIMM slots; Up to 8TB DDR5-4800MT/s	32 DIMM slots; Up to 8TB DDR5-4800MT/s	32 DIMM slots; Up to 8TB DDR5-4800MT/s
I/O Ports	1 RJ45 dedicated IPMI LAN port 2 USB 3.0 ports (rear) 1 VGA port (rear)	1 RJ45 dedicated IPMI LAN port 4 USB 3.0 ports (front/rear) 1 COM port (rear) 1 VGA port	1 RJ45 dedicated IPMI LAN port 4 USB 3.0 ports (front/rear) 1 COM port (rear) 1 VGA port
Motherboard	X13DSF-A	X13DSF-A	X13DSF-A
Form Factor	2U Rackmount Enclosure: 790mm/30.8" depth	1U Rackmount Enclosure: 773.25mm/30.4" depth	1U Rackmount Enclosure: 773.25mm/30.4" depth
Expansion Slots	2 PCIe 5.0 x16 FHHL slots or 4 PCIe 5.0 x8 FHHL slots 2 PCIe 5.0 x 16 AIOM slots	2 PCIe 5.0 x16 FH slots 2 PCIe 5.0 x16 AIOM slots	2 PCIe 5.0 x16 FH slots 2 PCIe 5.0 x16 AIOM slots
Drive Bays	24 hot-swap E3.S NVMe drive slots	16 hot-swap E3.S NVMe drive slots	24 hot-swap E1.S NVMe (9.5mm or 15mm) drive slots
Cooling	8 heavy duty 8cm fans	8 heavy duty 4cm fans	8 heavy duty 4cm fans
Power	Redundant 2000W Titanium level (96%)	Redundant 1600W Titanium level (96%)	Redundant 2000W Titanium level (96%)

[†] CPUs with high TDP supported under specific conditions. Contact Technical Support for details.