X13 Hyper

Best-in-class Performance and Flexibility Rackmount Server

Flagship Performance 1U and 2U Rackmount Systems

- **Dual socket 4th Gen Intel® Xeon® Scalable processors with support for Intel Xeon CPU Max Series**
- **Free-air and liquid cooling options for maximum performance and efficiency**
- **32 DIMM slots per node supporting DDR5-4800MHz**
- **NVMe SSD support with up to 24 drives in 2U**
- **Optional 2.5"/E1.S SSD hybrid configuration**
- **Up to 3 PCIe 5.0 slots in 1U or 8 PCI-E 5.0 slots in 2U**
- **PCIe 5.0 AIOM slots supporting up to 400G networking**
- **Tool-less system for simplified maintenance**

Ultimate Configurability for Enterprise Applications

The new X13 Hyper series brings next-generation performance to Supermicro's range of rackmount servers, built to take on the most demanding workloads along with the storage & I/O flexibility that provide a custom fit for a wide range of application needs. With up to 8 PCIe 5.0 expansion slots in a 2U chassis that can accomodate up to 4 double-width GPUs, Hyper represents the ultimate in flexibility and configurability for tomorrow's data centers.

Designed for Enterprise Applications

Supermicro X13 Hyper servers deliver the power to handle today's most demanding enterprise workloads, with flexibile expansion and storage capacities to allow custom configurations for almost any application.

- Virtualization and cloud, including virtual desktop infrastructure with GPU acceleration
- Hyperconverged infrastructure
- Enterprise applications including database, customer relationship management, and enterprise resource planning
- High performance computing clusters

Flexiblity for I/O, Acceleration and Storage

Hyper has been designed from the ground up for maximum versatility while still supporting latest generation technologies. A wide array of PCIe 5.0 expansion slots supports double-width GPUs in both 1U and 2U, with the ability to reduce the number of front-loading drives in favor of not only increased throughput but also enhanced airflow. A wide array of storage options delivers up to 12 2.5" NVMe drives in 1U or 24 2.5" drives in 2U, plus the option of rear-access NVMe drives for boot or caching.

Consistent Deployment

X13 Hyper is designed for consistent, tool-less deployment and maintenance of both the motherboard and the systems themselves. All X13 Hyper systems feature the same motherboard and dual-socket configuration, while each system has configuration options that enable varying numbers of expansion slots and disk drives. By simply ordering or swapping in the appropriate configuration kits, systems can be tailored to application needs while maintaining complete architectural consistency. This helps to reduce the chance of errors that can cause downtime, and ease the need for staff to train on multiple server types. .

Powered by 4th Gen Intel® Xeon® Scalable Processors

As Supermicro's flagship 1U and 2U rackmount platform, Hyper's architecture supports the full range of 4th Gen Intel Xeon Scalable processors, including the Intel Xeon CPU Max series with High-Bandwidth Memory. Take advantage of Intel's workload-optimized processor SKUs for networking, cloud or storage applications, plus built-in accelerator engines such as Intel Data Streaming Accelerator (Intel DSA) to offload CPU overhead for media and cloud workloads or Intel QuickAssist Technology (Intel QAT) to increase core workload capacity for popular compression and cryptographic algorithms.

Hyper	SYS-221H-TNR/TN24R	SYS-621H-TN12R	SYS-121H-TNR
Processor Support	Dual Socket E (LGA-4677) 4th Gen Intel® Xeon® Scalable processors†	Dual Socket E (LGA-4677) 4th Gen Intel® Xeon® Scalable processors†	Dual Socket E (LGA-4677) 4th Gen Intel® Xeon® Scalable processors†
Outstanding Features	Tool-less system design for easy maintenance Storage configurations up to 24x 2.5" hot-swap NVMe/SATA/SAS drive bays Flexible networking options with AIOM/OCP NIC 3.0 support	Tool-less system design for easy maintenance Flexible networking options with AIOM/OCP NIC 3.0 support 12x 3.5"/2.5" hot-swap NVMe/SATA/SAS drive bays	Tool-less system design for easy maintenance Storage configurations up to 12x 2.5" hot-swap NVMe/SATA/SAS drive bays Flexible networking options with AIOM/OCP NIC 3.0 support
Memory Slots & Capacity	32 DIMM slots Up to 8TB: 32x 256GB DRAM	32 DIMM slots Up to 8TB: 32x 256GB DRAM	32 DIMM slots Up to 8TB: 32x 256GB DRAM
I/O Ports (optional)	2x 100GbE QSFP28 with Broadcom® BCM57508 2x 10GbE RJ45 with Intel® X550-AT2 2x 10GbE SFP+ with Intel® X710-BM2 2x 1GbE RJ45 with Intel® i350-AM2 2x 25GbE SFP28 with Broadcom® BCM57414 4x 10GbE RJ45/SFP+ with Intel® X710-TM4 4x 10GbE SFP+ with Intel® XL710-BM1 4x 1GbE RJ45 or 4x 1GbE SFP with Intel® i350-AM4 4x 25GbE RJ45/SFP28 with Mellanox® CX-4 Lx EN via AIOM	2x 100GbE QSFP28 with Broadcom® BCM57508 2x 10GbE RJ45 with Intel® X550-AT2 2x 10GbE SFP+ with Intel® X710-BM2 2x 1GbE RJ45 with Intel® i350-AM2 2x 25GbE SFP28 with Broadcom® BCM57414 4x 10GbE RJ45/SFP+ with Intel® X710-TM4 4x 10GbE SFP+ with Intel® XL710-BM1 4x 1GbE RJ45 or 4x 1GbE SFP with Intel® i350-AM4 4x 25GbE RJ45/SFP28 with Mellanox® CX-4 Lx via AIOM	2x 100GbE QSFP28 with Broadcom® BCM57508 2x 10GbE RJ45 with Intel® X550-AT2 2x 10GbE SFP+ with Intel® X710-BM2 2x 1GbE RJ45 with Intel® i350-AM2 2x 25GbE SFP28 with Broadcom® BCM57414 4x 10GbE RJ45/SFP+ with Intel® X710-TM4 4x 10GbE SFP+ with Intel® XL710-BM1 4x 1GbE RJ45 or 4x 1GbE SFP with Intel® i350-AM4 4x 25GbE RJ45/SFP28 with Mellanox® CX-4 Lx via AIOM
Motherboard	X13DEM	X13DEM	X13DEM
System Management	Intel® Node Manager; IPMI 2.0; KVM with dedicated LAN; NMI; Redfish API; SPM; SSM; SUM; SuperDoctor® 5; Watch Dog	Intel® Node Manager; IPMI 2.0; KVM with dedicated LAN; NMI; Redfish API; SPM; SSM; SUM; SuperDoctor® 5; Watch Dog	Intel® Node Manager; IPMI 2.0; KVM with dedicated LAN; NMI; Redfish API; SPM; SSM; SUM; SuperDoctor® 5; Watch Dog
Form Factor	2U Rackmount Enclosure: 437 x 88.9 x 760mm (17.2" x 3.5" x 29.9") Package: 605 x 263 x 1107mm (23.8" x 10.4" x 43.6")	2U Rackmount Enclosure: 437 x 88.9 x 803mm (17.2" x 3.5" x 31.6") Package: 605 x 263 x 1107mm (23.8" x 10.4" x 43.6")	1U Rackmount Enclosure: 437 x 43 x 747mm (17.2" x 1.7" x 29.4") Package: 605 x 206 x 1032mm (23.8" x 8.1" x 40.6")
Expansion Slots	Configurable PCIe slot options up to 8 PCIe 5.0 x8 or 4 PCIe 5.0 x16 FH, 10.5"L	Configurable PCIe slot options up to 8 PCIe 5.0 x8 or 4 PCIe 5.0 x16 FH, 10.5"L	2 PCIe 5.0 x16 FH, 10.5"L and 1 PCIe 5.0 x16, FH, 6.6"L
Drive Bays	8x 2.5" hot-swap NVMe/SATA/SAS drive bays (SYS-221H-TNR) 24x 2.5" hot-swap NVMe/SATA/SAS drive bays (SYS-221H-TN24R) Optional RAID support via RAID Controller AOC	12x 3.5" hot-swap NVMe/SATA/SAS drive bays; Optional RAID support via RAID Controller AOC	8x 2.5" hot-swap NVMe/SATA/SAS drive bays; Optional RAID support via RAID Controller AOC
Cooling	4x 8cm heavy duty fan(s)	4x 8cm heavy duty fan(s)	4x 8cm heavy duty fan(s)
Power Supply	Redundant 1200W/1600W Titanium level (96%)	Redundant 1200W Titanium level (96%)	Redundant 1200W Titanium level (96%)

† Supports up to 350W TDP CPUs (Aircooled). CPUs with high TDP supported under specific conditions. Contact Technical Support for details.

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