

X13 BigTwin[®]

Industry-leading Multi-node Architecture



Highly Modular Multi-Node Systems with Tool-Less Design

Supermicro X13 BigTwin[®] systems provide maximum performance and serviceability in a multi-node architecture, with dual 4th Gen Intel[®] Xeon[®] Scalable processors per node and a hot-swappable toolless design. Optimized for density (2U4N) or storage (2U2N), BigTwin systems with shared components can be more cost-effective than standard 1U servers, with Supermicro's Resource Saving Architecture of shared power and cooling reducing TCO and TCE. A range of storage configurations are also available, with up to 24 2.5" NVMe drives in a 2U rackmount chassis.

Power and Density for Cloud, HPC and HCI

Supermicro's X13 BigTwin offers a range of configurations ideal for hyperscale cloud data centers, with high density compute and storage options enabling customers to maximize space utilization and increase efficiency, while the dual processor architecture, high memory density and NVMe storage also make BigTwin well suited to HPC workloads where maximum performance and data throughput are essential. For HCI environments, the 2U 4-Node BigTwin configuration enables three compute nodes to operate with an additional hot spare in the same chassis, eliminating the need for multiple discrete rackmount systems.

Highly configurable 2U 4-node and 2U 2-node systems optimized for density or storage

- Dual socket architecture featuring 4th Gen Intel[®] Xeon[®] Scalable processors
- Optimized thermal design with liquid cooling options
- All-hybrid hot-swappable NVMe/SAS/SATA drive bays - Up to 12 drives per node
- Resource Saving Architecture with shared power and cooling for increased efficiency
- Flexible networking with up to 200G Ethernet per node

Optimized for Green Computing

BigTwin's Resource Saving Architecture significantly reduces power consumption thanks to shared power and cooling components and optimized airflow for more efficient cooling. All BigTwin systems can be air cooled, with liquid cooling options available to not only further reduce power consumption and noise levels, but also allow maximum compute density of up to eight 350W TDP CPUs in a 2U chassis.

AIOM for Powerful yet Flexible Networking

Each hot-swappable BigTwin node features a PCIe 5.0 Supermicro Advanced I/O Module (AIOM) slot to enable flexible, high-speed networking based on workload requirements. Both Ethernet and InfinBand networking are supported, with speeds of up to 400Gb per node.

Powered by 4th Gen Intel Xeon Scalable Processors

BigTwin's dual-processor architecture is further enhanced by new 4th Gen Intel Xeon Scalable processors with CPU SKUs optimized for cloud, storage and networking workloads. The built-in Intel Data Streaming Accelerator (Intel DSA) engine delivers improved data movement performance and efficiency and Intel QuickAssist Technology (Intel QAT) offload popular compression and cryptographic algorithms, increasing core workload capacity.



BigTwin	SYS-221BT-HNTR/HNC8R/HNC9R	SYS-221BT-DNTR/DNC8R
Processor Support	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 support for swapping AOC cards Supports Liquid Cooling up to 350W TDP Optional TPM 1.2 or 2.0 module HW Boot Controller for NVMe M.2 drives	Tool-less support for swapping AOC cards Supports Liquid Cooling up to 350W TDP Optional TPM 1.2 or 2.0 module HW Boot Controller for NVMe M.2 drives
Memory Slots & Capacity	16 DIMM slots (Up to 8 Intel Optane Persistent Memory 300 Series) Up to 4TB: 16x 256GB DRAM	16 DIMM slots (Up to 8 Intel Optane Persistent Memory 300 Series) Up to 4TB: 16x 256GB DRAM
I/O Ports	Networking via AIOM 1 VGA Port 1 RJ45 Dedicated BMC LAN port 2 USB 3.1 port(s) (2 rear)	Networking via AIOM 1 VGA Port 1 RJ45 Dedicated BMC LAN port 2 USB 3.1 port(s) (2 rear)
Motherboard	X13DET-B	X13DET-B
Form Factor	2U Rackmount Enclosure: 449 x 88 x 730mm (17.68" x 3.47" x 28.75") Package: 626 x 248 x 1150mm (24.65" x 9.76" x 45.28")	2U Rackmount Enclosure: 449 x 88 x 730mm (17.68" x 3.47" x 28.75") Package: 626 x 248 x 1150mm (24.65" x 9.76" x 45.28")
Expansion Slots	2 M.2 slot(s) Up to 2 PCIe 5.0 x16 LP slot(s)	2 M.2 slot(s) PCIe 5.0 x16 LP slot 2 PCIe x8 LP slot(s)
Drive Bays	6x 2.5" hot-swap NVMe/SATA drive bays; RAID support via Intel® PCH (SYS-221BT-HNTR) 6x 2.5" hot-swap NVMe/SAS drive bays; HBA support via SAS3808 Adapter (SYS-221BT-HNC9R) 6x 2.5" hot-swap NVMe/SAS drive bays; Optional RAID support via Broadcom® 3908 AOC (SYS-221BT-HNC8R)	12x 2.5" hot-swap NVMe/SATA drive bays; RAID support via Intel® PCH (SYS-221BT-DNTR) 12x 2.5" hot-swap NVMe/SAS drive bays; Optional HBA support via SAS3816 AOC (SYS-221BT-DNC8R)
Cooling	4x 16K RPM Counter Rotating 8cm Fan(s)	4x 16.5K RPM Heavy Duty 8cm Fan(s)
Power	Redundant 3000W Titanium level (96%)	Redundant 2200W Titanium level (96%)

[†] Supports up to 205W TDP CPUs (Aircooled). CPUs with high TDP supported under specific conditions. Contact Technical Support for details.

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



BigTwin		SYS-621BT-HNTR/HNC8R	SYS-621BT-DNTR/DNC8R
Processor Support		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 support for swapping AOC cards Supports Liquid Cooling up to 350W TDP Optional TPM 1.2 or 2.0 module HW Boot Controller for NVMe M.2 drives	Tool-less support for swapping AOC cards Supports Liquid Cooling up to 350W TDP Optional TPM 1.2 or 2.0 module HW Boot Controller for NVMe M.2 drives
Memory Slots & Capacity		16 DIMM slots (Up to 8 Intel Optane Persistent Memory 300 Series) Up to 4TB: 16x 256GB DRAM	16 DIMM slots (Up to 8 Intel Optane Persistent Memory 300 Series) Up to 4TB: 16x 256GB DRAM
I/O Ports		Networking via AIOM 1 VGA Port 1 RJ45 Dedicated BMC LAN port 2 USB 3.1 port(s) (2 rear)	Networking via AIOM 1 VGA Port 1 RJ45 Dedicated BMC LAN port 2 USB 3.1 port(s) (2 rear)
Motherboard		X13DET-B	X13DET-B
Form Factor		2U Rackmount Enclosure: 449 x 88 x 730mm (17.68" x 3.47" x 28.75") Package: 626 x 248 x 1150mm (24.65" x 9.76" x 45.28")	2U Rackmount Enclosure: 449 x 88 x 730mm (17.68" x 3.47" x 28.75") Package: 626 x 248 x 1150mm (24.65" x 9.76" x 45.28")
Expansion Slots		2 M.2 slot(s) 2 PCIe 5.0 x16 LP slot(s)	2 M.2 slot(s) PCIe 5.0 x16 LP slot 2 PCIe x8 LP slot(s)
Drive Bays		3x 3.5" hot-swap NVMe/SATA drive bays; RAID support via Intel® PCH (SYS-621BT-HNTR) 3x 3.5" hot-swap NVMe/SAS drive bays; HBA support via SAS3808 Adapter (SYS-621BT-HNC8R)	6x 3.5" hot-swap NVMe/SATA drive bays; RAID support via Intel® PCH (SYS-621BT-DNTR) 6x 3.5" hot-swap NVMe/SAS drive bays; HBA support via SAS3808 Adapter (SYS-621BT-HNC8R)
Cooling		4x 14.9K RPM Heavy Duty 8cm Fan(s)	4x 14.9K RPM Heavy Duty 8cm Fan(s)
Power		Redundant 3000W Titanium level (96%)	Redundant 2200W Titanium level (96%)

[†] Supports up to 185W TDP CPUs (Aircooled). CPUs with high TDP supported under specific conditions. Contact Technical Support for details.

^{††} Supports up to 300W TDP CPUs (Aircooled). CPUs with high TDP supported under specific conditions. Contact Technical Support for details.