

# X13 BigTwin<sup>®</sup>

## Industry-leading Multi-node Architecture



### Highly Modular Multi-Node Systems with Tool-Less Design

Supermicro X13 BigTwin<sup>®</sup> systems provide maximum performance and serviceability in a multi-node architecture, with dual 5th Gen Intel<sup>®</sup> Xeon<sup>®</sup> 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 hot-swap 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 compute or storage density

- Dual socket architecture featuring 5th/4th Gen Intel<sup>®</sup> Xeon<sup>®</sup> 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 400G 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 InfiniBand networking are supported, with speeds of up to 400Gb per node.

## Powered by 5th Gen Intel Xeon Processors

BigTwin's dual-processor architecture is further enhanced by new 5th Gen Intel Xeon 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) offloads popular compression and cryptographic algorithms, increasing core workload capacity.



BigTwin	SYS-221BT-HNR/HNTR/HNC8R/HNC9R	SYS-221BT-DNTR/DNC8R
Processor Support (node)	Dual 5th/4th Gen Intel® Xeon® Scalable processors Up to 205W TDP (air cooled) <sup>†</sup> Up to 350W TDP (liquid cooled) <sup>†</sup>	Dual 5th/4th Gen Intel® Xeon® Scalable processors Up to 350W TDP (air cooled) <sup>†</sup> Up to 350W TDP (liquid cooled) <sup>†</sup>
Memory Slots & Capacity (node)	16 DIMM slots; up to 4TB DDR5-5600MT/s	16 DIMM slots; up to 4TB DDR5-5600MT/s
I/O Ports (node)	Networking via AIOM 1 VGA port 1 RJ45 dedicated BMC LAN port 2 USB 3.1 ports (rear)	Networking via AIOM 1 VGA port 1 RJ45 dedicated BMC LAN port 2 USB 3.1 ports (rear)
Motherboard (node)	X13DET-B	X13DET-B
Form Factor	2U Rackmount 730mm/28.75" depth	2U Rackmount 730mm/28.75" depth
Expansion Slots (node)	2 M.2 slots Up to 2 PCIe 5.0 x16 LP slots	2 M.2 slots 1 PCIe 5.0 x16 LP slot 2 PCIe x8 LP slots
Drive Bays (node)	6 hot-swap 2.5" NVMe Gen5 drive bays (SYS-221BT-HNR) 6 hot-swap 2.5" NVMe/SATA drive bays; RAID support via Intel® PCH (SYS-221BT-HNTR) 6 hot-swap 2.5" NVMe/SAS drive bays; HBA support via SAS3808 adapter (SYS-221BT-HNC8R) 6 hot-swap 2.5" NVMe/SAS drive bays; optional RAID support via Broadcom® 3908 AOC (SYS-221BT-HNC9R)	12 hot-swap 2.5" NVMe/SATA drive bays; RAID support via Intel® PCH (SYS-221BT-DNTR) 12 hot-swap 2.5" NVMe/SAS drive bays; optional HBA support via SAS3816 AOC (SYS-221BT-DNC8R)
Cooling	4 16K RPM 8cm counter-rotating fans	4 heavy duty 16.5K RPM 8cm fans
Power	Redundant 3000W Titanium level (96%)	Redundant 2200W Titanium level (96%)

<sup>†</sup> CPUs with high TDP supported under specific conditions. Contact Technical Support for details.



BigTwin	SYS-621BT-HNTR/HNC8R	SYS-621BT-DNTR/DNC8R
Processor Support (node)	Dual Socket 5th/4th Gen Intel® Xeon® Scalable processors Up to 185W TDP (air cooled) <sup>†</sup> Up to 350W TDP (liquid cooled) <sup>†</sup>	Dual 5th/4th Gen Intel® Xeon® Scalable processors Up to 300W TDP (air cooled) <sup>†</sup> Up to 350W TDP (liquid cooled) <sup>†</sup>
Memory Slots & Capacity (node)	16 DIMM slots; up to 4TB DDR5-5600MT/s	16 DIMM slots; up to 4TB DDR5-5600MT/s
I/O Ports (node)	Networking via AIOM 1 VGA port 1 RJ45 dedicated BMC LAN port 2 USB 3.1 ports (rear)	Networking via AIOM 1 VGA port 1 RJ45 dedicated BMC LAN port 2 USB 3.1 ports (rear)
Motherboard (node)	X13DET-B	X13DET-B
Form Factor	2U Rackmount 730mm/28.75" depth	2U Rackmount 730mm/28.75" depth
Expansion Slots (node)	2 M.2 slots 2 PCIe 5.0 x16 LP slots	2 M.2 slots 1 PCIe 5.0 x16 LP slot 2 PCIe x8 LP slots
Drive Bays (node)	3 hot-swap 3.5" NVMe/SATA drive bays; RAID support via Intel® PCH (SYS-621BT-HNTR) 3 hot-swap 3.5" NVMe/SAS drive bays; HBA support via SAS3808 adapter (SYS-621BT-HNC8R)	6 hot-swap 3.5" NVMe/SATA drive bays; RAID support via Intel® PCH (SYS-621BT-DNTR) 6 hot-swap 3.5" NVMe/SAS drive bays; HBA support via SAS3808 adapter (SYS-621BT-DNC8R)
Cooling	4 heavy duty 14.9K RPM 8cm fans	4 heavy duty 14.9K RPM 8cm fans
Power	Redundant 3000W Titanium level (96%)	Redundant 2200W Titanium level (96%)

<sup>†</sup> CPUs with high TDP supported under specific conditions. Contact Technical Support for details.