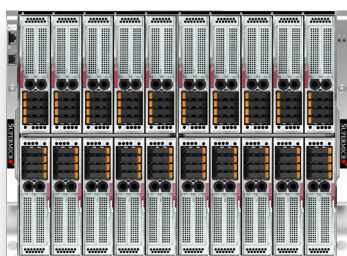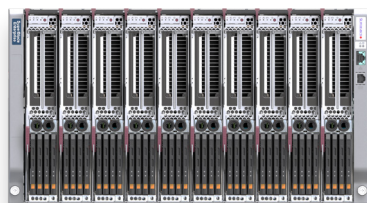# X14 SuperBlade®

Maximum Density Multi-Node Systems for AI, HPC, and Cloud

Optimized for Efficiency, Density and Advanced Networking

- **Up to 20 nodes in 8U or 10 nodes in 6U with integrated switches**
- **Single or dual processors in either Intel® Xeon® 6900/6700/6500 series processors with P-cores or Intel® Xeon® 6700 series processors with E-cores**
- **120 nodes per rack (Up to 17,280 CPU cores)**
- **Optional liquid cooling available for PUE as low as 1.05**
- **Up to 32 DIMM slots per node supporting DDR5-6400MT/s and MRDIMM up to 8800MT/s**
- **High-performance networking support with up to 400G IB or 25GbE Ethernet**
- **Up to 4 GPUs per node in a high-density, balanced architecture**
- **High-performance NVMe support in E3.S, E1.S, U.2 and M.2 form factors**

Resource-Saving Architecture

Supermicro's high-performance, density-optimized, and energy-efficient X14 SuperBlade can significantly reduce initial capital and operational expenses for many organizations. SuperBlade utilizes shared, redundant components, including cooling, networking, power and chassis management, to deliver the compute performance of an entire server rack in a much smaller physical footprint. These systems support GPU-enabled blades and are optimized for AI, Data Analytics, HPC, Cloud, and Enterprise workloads. Inside, Supermicro's Resource Saving Architecture reduces cabling by up to 95% compared to industry standard servers to lower costs and power consumption.

Built for High-Density, High-Performance Computing

SuperBlade is one of the most versatile HPC and Cloud solutions available, with a range of CPU, storage and networking configurations which can be customized for specific workloads. For accelerated computing requirements, PCIe GPU cards can also be installed, with up to 2 FHFL cards in double-width blades. SuperBlade powers some of the world's most complex and powerful HPC clusters and can be used for AI, machine learning, hybrid cloud, health sciences and financial applications.

Maximum Compute Density

With up to 20 nodes in an 8U chassis or 10 nodes in a 6U chassis and both air and liquid cooling options available, SuperBlade systems can be configured to maximize density and performance for a range of installation environments. In its maximum configuration of 20 single-width blades in an 8U enclosure, each node occupies just 0.4U of rack space, delivering unprecedented compute density. The 6U SuperBlade features a disaggregated design between the motherboard and I/O module, where each resource can be refreshed independently, allowing data centers to reduce refresh cycle costs and reuse components to reduce Total Cost to the Environment (TCE).
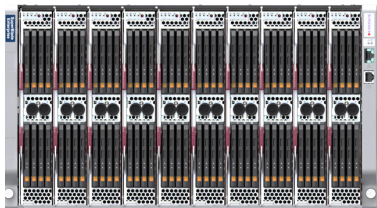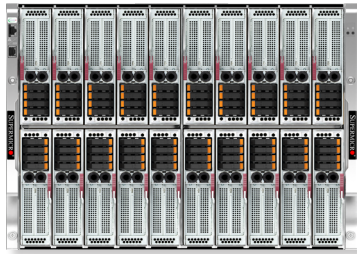
Optional Liquid Cooling for Enhanced Efficiency

X14 SuperBlade supports optional liquid cooling on several configurations to further improve thermal performance and efficiency, as well as facilitate maximum density for high-TDP processors included in the Intel Xeon 6 lineup. Supermicro offers complete, in-house developed liquid cooling solutions including CPU cold plates, Cooling Distribution Unit (CDU), Cooling Distribution Manifolds (CDM), tubing, connectors and even cooling towers which can be integrated at rack-scale to reduce TCO and TCE. With Supermicro X14 and complete liquid cooling solutions, data center liquid cooling can be free, with a bonus.

Powered by Intel® Xeon® 6 Processors

With more cores, flexible microarchitecture, additional memory bandwidth, and exceptional input/output (I/O), the Intel Xeon 6 processor family delivers new degrees of performance and

efficiency across a range of workloads. X14 SuperBlade family servers currently support both Intel Xeon 6900/6700/6500 series processors with P-cores or 6700 series processors with E-cores, bringing a new dimension of choice and workload customization.

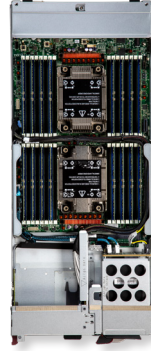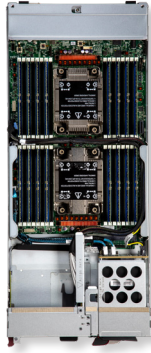| Enclosure	SBE-820 Series	SBE-610 Series
Blade Support	Up to 20 hot-swap, half-height, single-width blade servers Up to 10 hot-swap, half-height, double-width blade servers Mixed configuration supported	Up to 10 hot-swap, single-width blade servers Up to 5 hot-swap, double-width blade servers Mixed configuration supported
LED Indicator	Power LED, Fault LED	Power LED, Fault LED
Infiniband Switch	SBE-820H/H2 only: Single 200G HDR InfiniBand switch	N/A
Ethernet Switch/Pass-Through Module	SBE-820C/H/H2 only: Up to 2 hot-swap 25GbE Ethernet switches or pass-thru modules SBE-820J/J2 only: Up to 4 hot-swap 25GbE Ethernet switches or pass-thru modules SBE-820L only: Up to 2 hot-swap 25GbE Ethernet switches or pass-thru modules	SBE-610J/J2 only: Up to 4 hot-swap 25GbE Ethernet switches or pass-thru modeules.
Chassis Management Module (CMM)	Single/Redundant CMM for remote system management with software	Single/Redundant CMM for remote system management with software
Models	SBE-820C/J/J2/L/H-822: Up to 8 hot-swap 2200W Titanium (96% efficiency) power supplies SBE-820H2/J2-830: Up to 8 hot-swap 3000W Titanium (96% efficiency) power supplies	SBE-610J/610J2-822: Up to 8 hot-swap 2200W Titanium (96% efficiency) power supplies SBE-610J2-830: Up to 8 hot-swap 3000W Titanium (96% efficiency)
Rack Unit	8 RU	6 RU
Form Factor	356 x 447 x 813mm (14" x 17.6" x 32")	267 x 447 x 813mm (10.5" x 17.6" x 32")

July 2025

SUPERMICRO

SuperBlade	SBI-422B-1NE14	SBI-422B-5NE14
Server Nodes/ Enclosure	20	10
Processor Support	Dual Intel® Xeon® 6700 series processors with E-cores Up to 205W TDP (air cooled)†	Dual Intel® Xeon® 6700 series processors with E-cores Up to 330W TDP (air cooled)†
System Memory (Max.)	16 DIMM slots, DDR5-6400MT/s	16 DIMM slots, DDR5-6400MT/s
PCIe Expansion	2 OCP 3.0 (PCIe 5.0 x16)	2 OCP 3.0 (PCIe 5.0 x16)
Storage & RAID	4 M.2 NVMe with optional mezzanine card 1 M.2 NVMe drive 4 hot-swap E1.S NVMe drives	4 M.2 NVMe with optional mezzanine card 1 M.2 NVMe drive 4 hot-swap E1.S NVMe drives
Networking	Onboard dual 25GbE Ethernet 1 mezzanine expansion slot 2 OCP 3.0 network card Optional: Dual 25GbE Ethernet / 200G HDR / 400G NDR	Onboard dual 25GbE Ethernet 1 mezzanine expansion slot 2 OCP 3.0 network card Optional: Dual 25GbE Ethernet / 200G HDR / 400G NDR
LED Indicators	Fault LED, network activity LED, power LED, UID	Fault LED, network activity LED, power LED, UID
Form Factor	166 x 49.8 x 580mm (6.55" x 1.96" x 22.84")	165 x 88.9 x 597mm (6.5" x 3.5" x 23.5")
Enclosure	SBE-820H-822/622 SBE-820C/J/L-822/622/422 SBE-820J2-830/630/822/622/422 SBE-820H2-830/630/822/622	SBE-820J2-830/630/822/622/422 SBE-820H2-830/630/822/622

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

SUPERMICRO

SuperBlade	SBI-612B-1C2N	SBI-612B-1NE34	SBI-612B-5NE34
Server Nodes/ Enclosure	10	10	5
Processor Support	Single Intel® Xeon® 6700 series processors with E-cores Up to 250W TDP (air cooled)† Up to 330W TDP (liquid cooled)†	Single Intel® Xeon® 6700 series processors with E-cores Up to 250W TDP (air cooled)† Up to 330W TDP (liquid cooled)†	Single Intel® Xeon® 6700 series processor with E-cores Up to 330W TDP (air cooled)†
System Memory (Max.)	16 DIMM slots; DDR5-6400MT/s	16 DIMM slots; DDR5-6400MT/s	16 DIMM slots DDR5-6400MT/s
PCIe Expansion	Change to 2 PCIe Gen5 x16 slots Up to 1 FHFL DW GPU or 2 SW GPUs	2 PCIe Gen5 x16 slots Up to 1 FHFL DW GPU or 2 SW GPUs	4 PCIe 5.0 x16 FHFL slot(s) Up to 2 DW GPU or 4 SW PCIe cards
Storage & RAID	2 hot-swap U.2 NVMe/SAS drive bays 1 M.2 NVMe drive	4 hot-swap E3.S drive bays 1 M.2 NVMe drive	4 hot-swap E3.S drive bays 1 M.2 NVMe drive
Networking	Standard IB or GbE PCIe cards Mezzanine option for dual 25GbE dual 25GbE LOM	Standard IB or GbE PCIe cards Mezzanine option for dual 25GbE dual 25GbE LOM	Standard IB or GbE PCIe cards Mezzanine option for dual 25GbE dual 25GbE LOM
LED Indicators	Fault LED, network activity LED, power LED, UID	Fault LED, network activity LED, power LED, UID	Fault LED, network activity LED, power LED, UID
Form Factor	248 x 44.4 597mm (9.75" x 1.75" x 23.5")	248 x 44.4 597mm (9.75" x 1.75" x 23.5")	248 x 88.9 x 597mm (9.75" x 3.5" x 23.5")
Enclosure	SBE-610J-822/622/422 SBE-610J2-830/630/430/822/622/422	SBE-610J-822/622/422 SBE-610J2-830/630/430/822/622/422	SBE-610J2-830/630/430/822/622/422

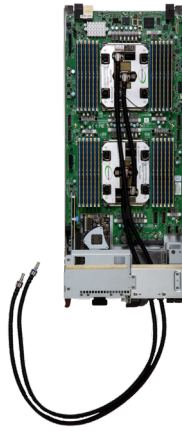† CPUs with high TDP supported under specific conditions. Contact Technical Support for details.

SUPERMICRO

SuperBlade	SBI-622B-1NE34	SBI-622B-1NE38
Server Nodes/ Enclosure	10	10
Processor Support	Dual Intel® Xeon® 6700 series processors with E-cores Up to 205W TDP (air cooled)† Up to 330W TDP (liquid cooled)†	Dual Intel® Xeon® 6700 series processor with E-cores Up to 250W TDP (air cooled)† Up to 330W TDP (liquid cooled)†
System Memory (Max.)	32 DIMM slots; DDR5-6400MT/s	32 DIMM slots; DDR5-6400MT/s
PCIe Expansion	Up to 2 PCIe 5.0 x16 slots (front I/O)	N/A
Storage & RAID	4 hot-swap E3.S drive bays 2 M.2 NVMe SSDs with optional adapter	8 hot-swap E3.S drive bays 2 M.2 NVMe SSDs with optional adapter
Networking	Dual port 25GbE LOM (LAN on Motherboard) 2 PCIe network cards (front I/O) Mezzanine option for dual 25GbE	Dual port 25GbE LOM (LAN on Motherboard) Mezzanine option for dual 25GbE
LED Indicators	Fault LED, network activity LED, power LED, UID	Fault LED, network activity LED, power LED, UID
Form Factor	248 x 44.4 x 617mm (9.75" x 1.75" x 24.5")	248 x 44.4 x 617mm (9.75" x 1.75" x 24.5")
Enclosure	SBE-610J/J2-422/622/822 SBE-610J2-430/630/830	SBE-610J2-430/630/830 SBE-610J/J2-422/622/820

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

SUPERMICRO

SuperBlade	SBI-612BA-1NE34	SBI-612BA-5NE34
Server Nodes/Enclosure	10	5
Processor Support	Dual Intel® Xeon® 6900 series processors with P-cores Up to 500W TDP (liquid cooled)	Dual Intel® Xeon® 6900 series processors with P-cores Up to 500W TDP (liquid cooled)[†]
System Memory (Max.)	12 DIMM slots; DDR5-6400MT/s and MRDIMM 8800MT/s	12 DIMM slots; DDR5-6400MT/s and MRDIMM 8800MT/s
PCIe Expansion	Up to 2 PCIe 5.0 x16 slots (front I/O); supports 1 DW GPU card or 2 SW PCIe cards	Up to 2 PCIe 5.0 x16 slots (front I/O); supports 1 DW GPU card or 2 SW PCIe cards
Storage & RAID	4 hot-swap E3.S drive bays 2 M.2 NVMe SSDs	4 hot-swap E3.S drive bays 2 M.2 NVMe SSD
Networking	Dual port 25GbE LOM (LAN on Motherboard) Additonal dual port 25GbE via mezz card	Dual port 25GbE LOM (LAN on Motherboard) Additonal dual port 25GbE via mezz card
LED Indicators	Fault LED, network activity LED, power LED, UID	Fault LED, network activity LED, power LED, UID
Form Factor	248 x 44.4 597mm (9.75" x 1.75" x 23.5")	248 x 44.4 597mm (9.75" x 1.75" x 23.5")
Enclosure	SBE-610J/J2-422/622/822 SBE-610J2-430/630/830	SBE-610J2-422/622/822 SBE-610J2-430/630/830

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

SUPERMICRO

SuperBlade	SBI-622BA-1NE12-LCC
Server Nodes/Enclosure	10
Processor Support	Dual Intel® Xeon® 6900 series processors with P-cores Up to 500W TDP (liquid cooled)
System Memory (Max.)	24 DIMM slots; DDR5-6400MT/s and MRDIMM 8800MT/s
PCIe Expansion	Up to 3 PCIe 5.0 x16 slots (front I/O); supports 1 FHHL card, one LP card, and one OCP 3.0 cards
Storage & RAID	2 hot-swap E1.S drive bays 2 M.2 NVMe drives
Networking	Dual port 25GbE LOM (LAN on Motherboard) Additonal dual port 25GbE via mezz card
LED Indicators	Fault LED, network activity LED, power LED, UID
Form Factor	248 x 44.4 597mm (9.75" x 1.75" x 23.5")
Enclosure	SBE-610J/J2-422/622/822 SBE-610J2-430/630/830

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

SUPERMICRO