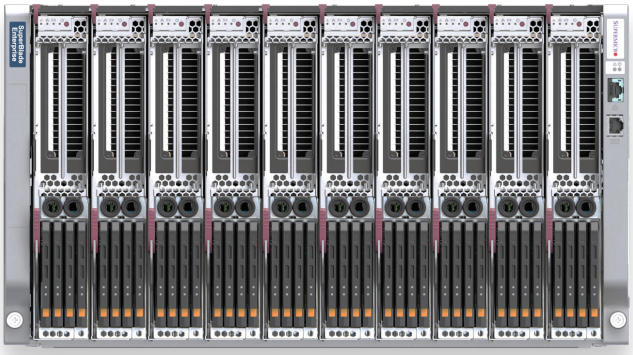
X14 SuperBlade®

Ultra High-Density Multi-Node Systems for Cloud Applications



Optimized for Efficiency, Density and Advanced Networking

- **Up to 20 nodes in 8U or 10 nodes in 6U with integrated switches**
- **Single or dual Intel® Xeon® 6700 series processors with E-cores**
- **X14 SuperBlade will also support Intel Xeon 6700 with P-cores in Q1'25**
- **120 servers per rack (Up to 34,560 CPU cores)**
- **Optional liquid cooling available for PUE as low as 1.05**
- **Up to 32 DIMM slots per node supporting DDR5-6400**
- **High-performance networking with 400G/200G InfiniBand and 100G/25G Ethernet support**
- **Up to 2 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

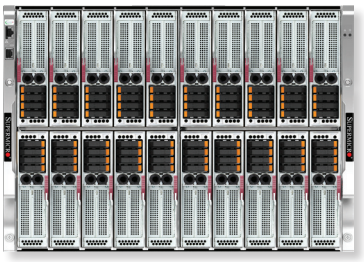
With up to 20 nodes in an 8U chassis and both air and liquid cooling options available, SuperBlade systems can be configured to maximize density and performance for a range of installation environments. In its maximum configuration of 20 single-width blades in an 8U enclosure, each node occupies just 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

SuperBlade's highly efficient shared cooling system supports free-air-cooling for CPUs up to 330W for single processor or double-width blade configurations. For even greater compute densities, dual-processor and single-width blade configurations can support the same 330W TDPs thanks to optional direct-to-chip liquid cooling. The use of liquid cooling in data centers not only allows components to run at higher performance levels, but also reduces the need for Computer Room Air Conditioning (CRAC) units and improves overall efficiency, lowering OPEX, TCO and TCE.

Powered by Intel® Xeon® 6 Processors

The new Intel Xeon 6700 series processors with E-cores bring up to 2.5x higher core density per rack compared to 4th Gen Intel Xeon and improved performance per watt. The industry-leading node density of Supermicro's X14 SuperBlade enables unprecendented core density per rack unit and full rack, significantly increasing compute capacity in a smaller physical footprint.



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 25G Ethernet switches or pass-thru modules SBE-820J/J2 only: Up to 4 hot-swap 25G Ethernet switches or pass-thru modules SBE-820L only: Up to 2 hot-swap 10G Ethernet switches or pass-thru modules	Up to 4 hot-swap 25G Ethernet switches, 10G Ethernet switches or pass-thru modules
Chassis Management Module (CMM)	Single/Redundant CMM for remote system management with software	Up to 2 hot-swap CMMs 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")

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 25G Ethernet 1 mezzanine expansion slot 2 OCP 3.0 network card Optional: Dual 25G Ethernet / 200G HDR / 400G NDR	Onboard dual 25G Ethernet 1 mezzanine expansion slot 2 OCP 3.0 network card Optional: Dual 25G 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-820C/J/L-422 SBE-820H/C/H2/J/J2/L-622/822 SBE-820H2/J2-630/830	SBE-820H2/J2-630/830 SBE-820H2/J2-622/822

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

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 330W TDP (air cooled)†	Single Intel® Xeon® 6700 series processors with E-cores Up to 330W TDP (air 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 1 SW GPUs	2 PCIe Gen5 x16 slots Up to 1 FHFL DW GPU or 1 SW GPUs	4 PCIe 5.0 x16 FHFL slot(s) Up to 2 DW GPU or 2 SW PCIe cards
Storage & RAID	2 hot-swap U.2 NVMe/SAS drive bays 1 M.2 2280/22110 NVMe/SATA3 drive	4 hot-swap E1.S drive bays 1 M.2 NVMe drives	4 hot-swap E1.S drive bays
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/J2-422/622/822 SBE-610J2-430/630/830	SBE-610J/J2-422/622/822 SBE-610J2-430/630/830	SBE-610J2-430/630/830 SBE-610J2-422/622/820

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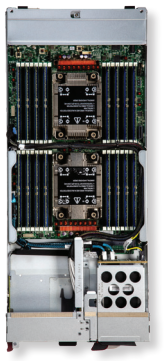
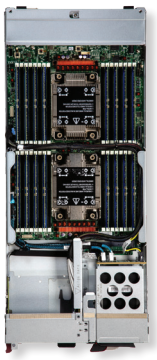
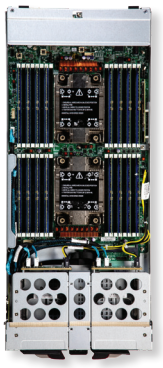
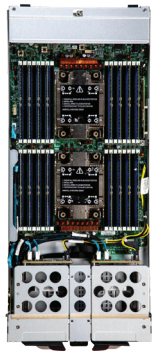

SuperBlade	SBI-622B-1NE34	SBI-622B-5NE34	SBI-622B-1NE38	SBI-622B-5NE38
Server Nodes/ Enclosure	10	5	10	5
Processor Support	Dual Intel® Xeon® 6700 series processors with E-cores	Dual Intel® Xeon® 6700 series processors with E-cores	Dual Intel® Xeon® 6700 series processor with E-cores	Dual Intel® Xeon® 6700 series processor with E-cores
System Memory (Max.)	32 DIMM slots; DDR5-6400MT/s	32 DIMM slots; DDR5-6400MT/s	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)	Up to 4 PCIe 5.0 x16 slots (front I/O)	N/A	N/A
Storage & RAID	4 hot-swap E3.S drive bays 2 M.2 NVMe SSDs with optional adapter	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	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 25GbE	Dual port 25GbE LOM (LAN on Motherboard) 2 PCIe network cards (front I/O) Mezzanine option for dual 25GbE dual 25GbE	Dual port 25GbE LOM (LAN on Motherboard) Mezzanine option for dual 25GbE dual 25GbE	Dual port 25GbE LOM (LAN on Motherboard) Mezzanine option for dual 25GbE dual 25GbE
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	Fault LED, network activity LED, power LED, UID
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