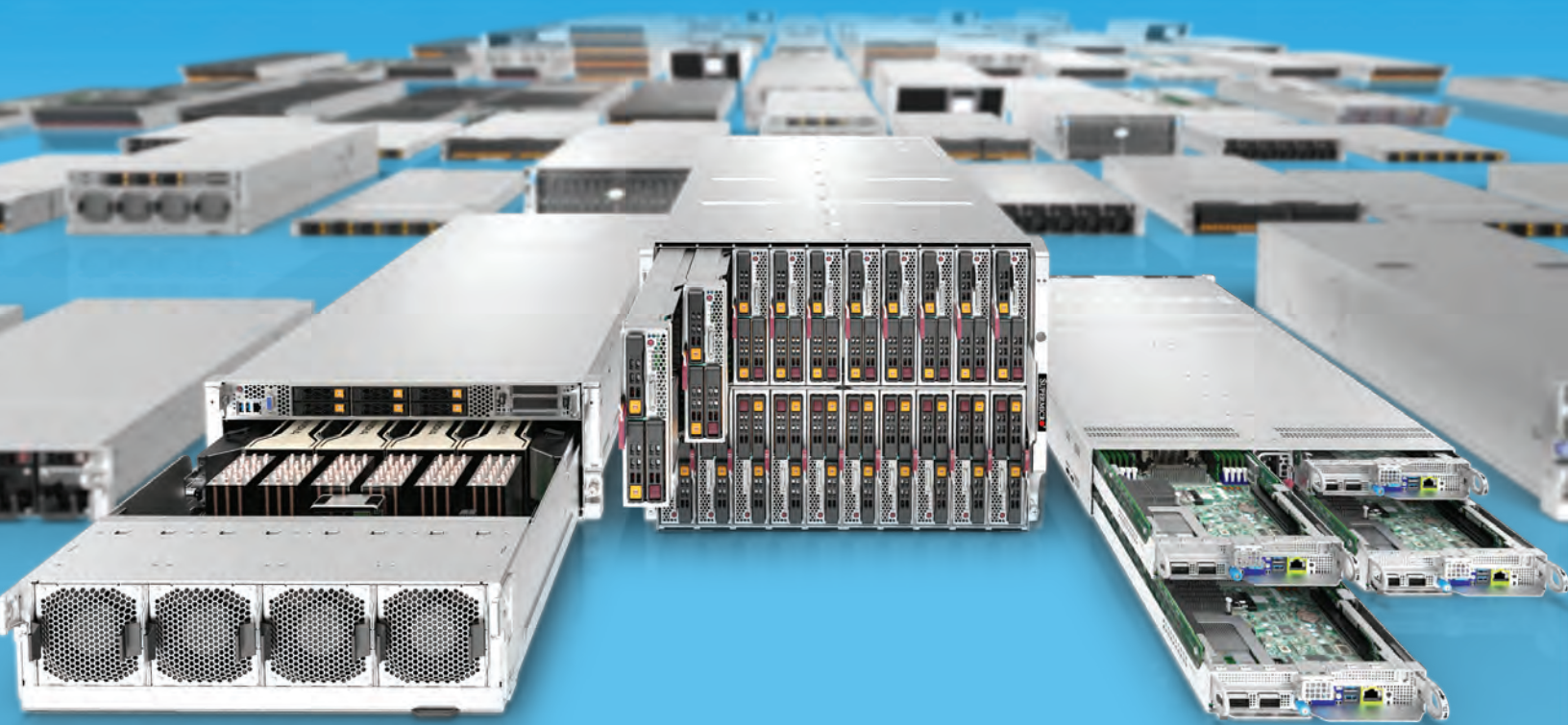




# X12 Server Solutions

Supporting 3<sup>rd</sup> Gen Intel® Xeon® Scalable Processors  
*(Ice Lake)*



May 2022, Ver 2



# INTRODUCING SUPERMICRO X12 GENERATION



## Better

Better Performance  
Per Watt and Per Dollar

## Faster

40%–60% Better Performance  
on Cloud Workloads

## Greener

Reduced Environmental  
Impact & Lower TCO



### OPTIMIZED SYSTEMS FOR YOUR WORKLOAD

- Over 100 Building Block Optimized Designs
- Maximum Processor, Memory and I/O Performance
- Max Performance, High Volume Cloud, High Efficiency Multi- Node, Mainstream

### OPEN ARCHITECTURES

- OpenBMC, OCP v3.0 SFF Cards
- New Supermicro AIOM Cards Provide I/O Flexibility with OCP Superset

### SECURE

- Enhanced Security with Hardware Root of Trust, Total Memory Encryption, Software Guard Extension

### MANAGEABLE & SERVICEABLE

- New Web Management Interface
- Tool-less Designs
- Global Service & Support
- Performance, High Volume Cloud, High Efficiency Multi- Node, Mainstream

### FIRST-TO-MARKET WITH MAXIMUM PERFORMANCE

- Thermal Capacity Supports Highest Clock Speeds
- Support for Full Memory Configuration and Bandwidth

### CPU & MEMORY

- On Average 62% Better Performance on Network and 5G Workloads
- Web (Crypto) Acceleration
- DDR4-3200MHz
- 1.6x Memory Bandwidth
- 2.66x Memory Capacity

### I/O

- PCI-E 4.0
- 2x I/O Bandwidth

### SUPERBLADE®:

- Advanced Networking with 200G InfiniBand Switch, and up to 4x 25GbE Switches

### BEST-IN-CLASS WORKLOAD PERFORMANCE

- Market-Leading GPU Servers for AI/ML and HPC

### MAXIMUM POWER EFFICIENCY

- Both Free Air and Water Cooled
- Titanium-Level (96%) Power Supplies

### MULTI-NODE SYSTEMS

- 15-20% Lower Power Costs with Optimized Shared Resource Designs

### LONGEVITY

- Multi-Generation Infrastructure for up to 65% CAPEX Savings

### SYSTEM REFRESH

- Modular Upgrades for Maximum Performance and Efficiency
- Select Component Refresh Reduces e-Waste

# Supermicro X12 Comprehensive Server, Storage and Networking Product Lines Optimized for IT, Data Center, Embedded, HPC and Cloud Computing



## X12 GrandTwin®

Overview ..... 4  
Specifications ..... 24



## X12 BigTwin®

Overview ..... 5  
Specifications ..... 25-27



## X12 Ultra & Ultra-E

Overview ..... 6  
Specifications ..... 28-29



## X12 CloudDC

Overview ..... 7  
Specifications ..... 30-31



## X12 SuperBlade®

Overview ..... 8  
Specifications ..... 32-34



## X12 GPU

Overview ..... 9-11  
Specifications ..... 35-36



## X12 SuperStorage®

Overview ..... 12  
Specifications ..... 37-42



## X12 Mainstream

Overview ..... 13  
Specifications ..... 43-45  
Motherboards ..... 59



## X12 Hyper & Hyper-E

Overview ..... 14  
Specifications ..... 46-47



## X12 SuperEdge

Overview ..... 17  
Specifications ..... 48



## X12 FatTwin®

Overview ..... 15  
Specifications ..... 49



## X12 TwinPro®

Overview ..... 16  
Specifications ..... 50-52



## X12 MP

Overview ..... 18  
Specifications ..... 53



## X12 SuperWorkstations

Overview ..... 19  
Specifications ..... 54



## X12 WIO

Overview ..... 20  
Specifications ..... 55-56  
Motherboards ..... 60, 62



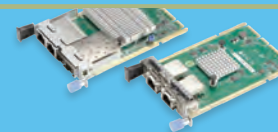
## X12 IoT/Embedded

Overview ..... 21  
Specifications ..... 57-58



## Motherboards

DP Motherboards ..... 59-60  
DP/UP Motherboards ..... 61-64



## Software / AIOM

System Management Software ..... 22  
AIOM Networking Cards ..... 23

# X12 GRANDTWIN<sup>®</sup>

## Multi-node Architecture with Front I/O

### 2U 4-Node

Purpose-built single-socket architecture with 3rd Gen Intel<sup>®</sup> Xeon<sup>®</sup> Scalable processors

16 DIMM slots per node for maximum memory footprint

Flexible configuration designed for better cost savings

Field serviceable from front/cold aisle to reduce downtime for higher availability

Flexible front I/O configuration designed to help reduce cable complexities



SYS-210GT-HNTF (Front View)

**AIOM**  
Ready

2U 4-Node Front I/O GrandTwin<sup>®</sup>



SYS-210GT-HNTF

Up to 4 NVMe/SATA drives per node



SYS-210GT-HNC8F

Up to 4 SATA/SAS drives per node

### Highly Configurable Single Processor Systems with Front I/O

GrandTwin<sup>®</sup> is an all-new architecture purpose-built for single-processor performance. The design maximizes compute, memory and efficiency to deliver maximum density. Powered by Intel<sup>®</sup> Xeon<sup>®</sup> Scalable processors, GrandTwin's flexible modular design can be easily adapted for a wide range of applications, with the ability to add or remove components as required, reducing cost.

All I/O and node trays are fully accessible from the cold aisle, simplifying installation and servicing in space-constrained environments. Flexible storage and networking options are available via front AIOM modules, allowing countless custom configurations.

### Key Applications

- MEC (Multi-Access Edge Computing)
- HPC
- Cloud Gaming
- Multi-Purpose CDN (Content Delivery Network)
- High-Availability Cache Cluster
- Telco Edge Cloud
- EDA (Electronic Design Automation)
- Mission-Critical Web Applications

# X12 BIGTWIN<sup>®</sup>

## Leading Multi-node Architectures

### 2U 4-Node

Highly configurable 2U 4-node and 2U 2-node systems

3rd Gen Intel<sup>®</sup> Xeon<sup>®</sup> Scalable processors, 2 per node, up to 270W TDP

All-hybrid hot-swappable drive bays - NVMe, SAS or SATA (2.5" or 3.5" drives) - Up to 12 NVMe drives per node.

16 DIMMs + 4 Intel Optane Persistent Memory 200 series per node

PCI-E 4.0 AIOM (OCP 3.0 compliant) networking - 1 per node



**AIOM**  
Ready

(Rear View)  
SYS-220BT-H Series

2U 4-Node BigTwin



**SYS-620BT-H Series**  
3x 3.5" NVMe/SAS/SATA per node

2U 4-Node BigTwin



**SYS-220BT-H Series**  
6x 2.5" NVMe/SAS/SATA per node

2U 2-Node BigTwin



**SYS-620BT-D Series**  
6x 3.5" NVMe/SAS/SATA (per node)

2U 2-Node BigTwin



**SYS-220BT-D Series**  
12x 2.5" NVMe/SAS/SATA per node

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

Supermicro<sup>®</sup> X12 BigTwin<sup>®</sup> systems provide superior performance and serviceability with dual 3rd Gen Intel Xeon Scalable processors per node and hot swappable tool-less design.

Superior modular mid-plane design with PCI-E Next Gen Storage Controller Options.

Multi-node BigTwins with shared components can be more cost effective than standard 1U servers.

### Key Applications

- HCI
- HPC
- CDN
- Hybrid Cloud, Container-as-a-Service
- Cloud Computing
- Big Data Analytics
- Back-up and recovery
- Scale-Out Storage

# X12 ULTRA AND ULTRA-E

High Performance & Flexibility Enterprise Applications Rackmount System

Optimized for highest processor TDPs

Up to 22 hybrid NVMe

Up to 3 double width GPUs

PCI-E 4.0 support with 64 lanes per socket;  
Total 128 lanes

Dual 3rd Gen Intel® Xeon® Scalable  
processors up to 270W and 32 DIMM slots  
for maximum memory capacity

## 2U Ultra-E

Optimized for 5G and Telco



SYS-220U-MTNR

2U Ultra-E



SYS-220U-MTNR  
6x 2.5" NVMe/SAS/SATA

2U Ultra



SYS-220U-TNR  
22x 2.5" NVMe/SAS/SATA +  
2x 2.5" SAS/SATA

2U Ultra



SYS-620U-TNR  
12x 3.5" NVMe/SAS/SATA

1U Ultra



SYS-120U-TNR  
12x 2.5" NVMe/SAS/SATA

1U Ultra



SYS-610U-TNR  
4x 3.5" NVMe/SAS/SATA

## Highest Performance X12 Ultra and Ultra-E Servers

Supermicro X12 Ultra system are designed to deliver the highest performance, flexibility, scalability and serviceability to demanding IT environments, and to power mission-critical Enterprise workloads, including support for 3rd Gen Intel Xeon Scalable processors.

Best-in-class server features including all NVMe, hybrid storage and low latency optimization.

Uncompromised performance design with 2 CPU sockets and 32 DIMMs optimized for supporting the highest processor TDPs.

Best-in-class server features including all NVMe, hybrid storage and low latency optimizations

## Key Applications

- Enterprise Server
- Hyper-converged Storage
- Virtualization
- AI Training/Inferencing
- Big Data Analytic
- Cloud Computing
- CDN
- In-memory Database

# X12 CLOUDDC

All-in-one Rackmount Platform for Cloud Data Centers

## 2U CloudDC High Density Cloud Storage

Tool-less design, configurable I/O and 16 DDR4-3200MHz DIMMs up to 4TB

Dual AIOM slots (OCP 3.0 compliant) for flexible networking plus 4-12 SATA/SAS drive bays with optional full NVMe support in selected SKUs

Highly versatile and compact 2U system that supports up to two double-width GPUs in a 25.5" (648 mm) chassis

Rich security features with TPM1 1.2/2.0, silicon root of trust, secured boot and Runtime FW Protection



SYS-620C-TN12R  
12x 3.5" NVMe/SAS/SATA

**AIOM**  
Ready

High Density Cloud Storage

Compact Cloud Compute

General Purpose Balanced

Compact Storage Optimized



SYS-620C-TN12R  
2U CloudDC with  
12x 3.5" NVMe/SAS/SATA drives



SYS-120C-TN10R  
1U CloudDC with  
10x 2.5" NVMe/SAS/SATA drives



SYS-120C-TR  
1U CloudDC with  
8x 2.5" SAS/SATA drives



SYS-610C-TR  
1U CloudDC with  
4x 3.5" SAS/SATA drives

## Tool-less Mechanical Design for Rapid Cloud Deployment and Easy Maintenance

Ultimate flexibility on I/O and storage with 2 or 4 PCI-E 4.0 x16 slots and dual AIOM slots (OCP 3.0 compliant) slots for maximum data throughput, X12 CloudDC is designed to have great serviceability with tool-less brackets, hot-swap drive trays and redundant power supplies that ensure a rapid deployment and more efficient maintenance in data centers.

Redundant high-efficiency Platinum/Titanium Level power supplies for resiliency and lower carbon footprint.

Rich Security Features: TPM 1.2/2.0, signed firmware, Silicon Root of Trust, Secure Boot, System Erase, Runtime FW protection, FIPS Compliance, Trusted Execution Environment.

## Key Applications

- Cloud Computing
- Web Servers
- Hyper-converged Storage
- Virtualization
- File Servers
- Head-node Computing
- 5G Telco AI Inferencing

# X12 SUPERBLADE®

Highest Density x86 Multi-Node Server for Enterprise Cloud, HPC Applications

## 8U SuperBlade®



SBE-820H/C/J/L-822/622/422

- Up to 20 hot-pluggable nodes in 8U
- Optimized for performance and advanced networking
- Integrated 200G HDR InfiniBand with non-blocking switch

## 6U SuperBlade®



SBE-610J-822/622/422

- Up to 10 hot-pluggable nodes in 6U
- Performance and memory optimized architecture

## 4U SuperBlade®



SBE-414J-422/222

- Up to 14 hot-pluggable nodes in 4U
- Optimized for performance, density and value

### 8U SuperBlade®/ 20 DP Nodes in 8U



SBI-420P-1C2N

2 SAS/NVMe

SBI-420P-1T3N

3 SATA or 2 NVMe

OEM SKU\*  
with liquid cooling option

2 SATA/NVMe

### 6U SuperBlade®/ 10 Nodes in 6U



SBI-610P-1C2N

2 SAS/NVMe

SBI-610P-1T2N

2 SATA/NVMe

SBI-620P-1C3N

3 SAS or 2 NVMe

SBI-620P-1T3N

3 SATA/NVMe

### 4U SuperBlade®/ 14 DP Nodes in 4U



SBI-420P-4T2N

2 SATA/NVMe

## Resource Saving Architecture

A shared cooling, power and networking infrastructure is key to the high density and server efficiency offered by blade solutions. Supermicro's high performance, density optimized, and energy-efficient SuperBlade® can significantly reduce initial capital and operational expenses for many organizations.

In particular, Supermicro's new generation blade product portfolio has been designed to optimize the TCO of key components for today's data centers, such as free-air cooling, power efficiency, node density and networking management.

## Key Applications

- HPC
- Hybrid Cloud
- EDA
- Virtualization
- Health
- Financial Services

\* Contact Supermicro for more information



# X12 UNIVERSAL GPU

Multi-Architecture Flexibility, Future Proof Open-Standards Based Design

Dual socket Intel® Xeon® Scalable processors up to 270W

32 DIMM slots per node supporting DDR4-3200MHz and Intel® Optane™ 200-series persistent memory

Flexible storage configuration with 10 hot-swap 2.5" U.2 NVMe drives

4U chassis with optional 1U expansion module for improved thermal capacity (up to 700W GPUs) and 2x AIOMs for networking

Modular design for flexibility/future-proofing

Supports NVIDIA HGX® A100-4 GPUs

Optimized thermal capability for 500W/700W GPUs

## 4U 4-GPU



## 5U 4-GPU



**AIOM**  
Ready

SYS-420GU-TNXR

## Open, Modular, Standards Based Universal GPU System

Supermicro's Universal GPU System is the industry's most advanced and flexible GPU server platform. Designed to deliver maximum compute power for large-scale AI deep learning and HPC workloads, this modular, open-standards based platform supports the industry's most popular GPU technologies in a variety of form factors and combinations both today and into the future.

### Key Applications

- AI/ML
- HPC

# X12 GPU WITH PCI-E

High Performance and Flexibility for AI/ML and HPC Applications

High performance AI/ML and HPC-optimized solution

Optimized for graphics and rendering applications

Double the CPU to GPU throughput with PCI-E 4.0

Dual socket Intel® Xeon® Scalable processors up to 270W

NVIDIA GPUs supported

NVIDIA certified system

## 4U 10-GPU



SYS-420GP-TNR

**AIOM**  
Ready

1U 4-GPU



SYS-120GQ-TNRT  
Highest Density, PCI-E GPU

2U 6-GPU



SYS-220GP-TNR  
Balanced Solution, PCI-E GPU

4U 4-GPU



SYS-740GP-TNRT  
Flexible Solution, PCI-E GPU

4U 10-GPU



SYS-420GP-TNR  
Dual Root Configuration, PCI-E GPU

### Flexible Root Configuration, PCI-E GPU System

High density systems for double-width, full length PCI-E GPUs.

- 1U: support up to four PCI-E GPUs
- 2U: supporting up to six PCI-E GPUs
- 4U: supporting up to ten PCI-E GPUs

NVMe for lower latency with higher throughput.

New level of compute performance with Intel Xeon Scalable processors.

### Key Applications

- AI/ML
- Deep Learning Training and Inference
- High-performance Computing (HPC)
- Rendering Platform for High-end Professional Graphics
- Best-in-Class VDI Infrastructure Platform

# X12 GPU WITH HGX

High Performance and Flexibility for AI/ML and HPC Applications

## 4U HGX A100 8-GPU

Integrated Performance

Dense and scalable multi-GPU powerhouse supports the latest HGX A100 8 SXM4 GPUs

Next generation of NVIDIA NVLink™, with double the GPU-to-GPU direct bandwidth, almost 10X higher than PCI-E 4.0

New NVIDIA NVSwitch that is 2X faster than the previous generation

Networking up to 200G, GPUDirect RDMA and GPUDirect Storage

AIOM slot (OCP 3.0 compliant) support

NVIDIA certified system



SYS-420GP-TNAR(+)

AIOM  
Ready



Up to 640 GB Total GPU Memory



600 GB/s GPU-to-GPU Bi-directional Bandwidth

### Maximum Acceleration X12 GPU System

With Supermicro's advanced architecture and thermal design, including liquid cooling and custom heatsinks, our 4U GPU system drive NVIDIA's latest HGX A100 8-GPU baseboard, can deliver up to 6x AI training performance and 7x inference workload capacity and highest density in a flexible 4U system.

Supermicro's unique AIOM slots (OCP 3.0 compliant) and a slew of PCI-E 4.0 slots of these systems enhance the multi-GPU communication and high-speed data flow between systems at a large scale.

The X12 GPU systems feature the latest technology stacks such as 200G networking, NVIDIA NVLink and NVSwitch, 1:1 GPUDirect RDMA, GPUDirect Storage, and NVMe-oF on InfiniBand.

### Key Applications

- AI/ML
- Deep Learning Training and Inference
- High-performance Computing (HPC)
- Building Block for Scalable AI Infrastructure

# X12 SUPERSTORAGE

## Application-optimized High-Performance Storage Solution

New generation top-loading server optimized for field serviceability and field replacement

PCI-E 4.0 storage controller with hardware RAID and IT mode

Tool-less hot-swappable drive bays supporting 3.5 and 2.5" media

Flexible mix of hybrid HDD and SSD drive bays for best performance and TCO

Superior pullout drive drawer design

Hot swappable nodes, expanders, drives, power supplies and fans

### Adaptable Dense Storage Architectures for Cloud



### Three Families of Storage Servers

#### Enterprise Optimized:

- Open standards based x86 systems

#### Cloud Density:

- Highest density 3.5" servers with up to 90x HDDs and dual server nodes

#### Petascale:

- All Flash servers with up to 32 NVMe supporting U.2 and EDSFF form factor media

These powerful yet cost-effective systems provide excellent flexibility and value at entry-level price points. X12 server are optimized for data availability with a new drawer design and hot swappable drivers, power supplies and fans. Designed for ease of deployment maintenance with data center operations in mind.

### Key Applications

- Object Storage
- Data Intensive HPC/AI
- Private & Hybrid Cloud
- Backup & Active Archive

# X12 MAINSTREAM

## Versatile Entry Level and Volume Servers for Enterprise Applications

Highly versatile servers to enable a wide variety of enterprise server applications.

Choices of multiple form factors including rackmount and tower

A rich selection of storage and memory speed support

4 PCI-E 4.0 x16 and 2 PCI-E 4.0 x8 expansion slots

On-board networking options 2x 10G or 1x 1G Ethernet for networking

Dual 3rd Gen Intel® Xeon® Scalable processors up to 270W and 32 DIMMs slots for maximum memory capacity

### 4U/Tower High Density Cloud Storage



SYS-740P-TR(T)

2U Mainstream 2.5"  
General Purpose Server& Storage



SYS-220P-C9R(T)  
8x 2.5" SAS3, 8x 2.5" SATA3, 5x PCI-E slots

2U Mainstream 3.5"  
Entry Level, Cost Optimized Storage



SYS-620P-TR(T)  
8x 3.5" SATA, 6x PCI-E slots

4U/Tower  
High Density Cloud Storage



SYS-740P-TR(T)  
8x 3.5" SATA3, 6x PCI-E slots

### Mainstream Application Optimized

The X12 Mainstream Application Optimized product family from Supermicro is a series of servers designed for entry level or volume selections. Enterprise IT managers can choose the exact model for their applications, with a precise set of integrated features needed for their applications.

These powerful yet cost-effective systems provide excellent flexibility and value at entry-level price points.

### Key Applications

- SMB
- Virtualization
- Web Server
- AI - Inferencing
- Cloud Computing
- Head-node Computing

# X12 HYPER-E AND HYPER

## Best-in-class Performance and Flexibility Rackmount Server

High performance 1U & 2U systems with rear I/O and front I/O configurations to meet today's data center requirements

Dual 3rd Gen Intel® Xeon® Scalable processors up to 270W and 32 DIMM slots for maximum memory capacity

Lightning-fast storage with the latest generation PCI-E 4.0 NVMe SSDs and networking flexibility with AIOM (OCP 3.0 compliant) NIC support

Tool-less system design features intended to simplify field serviceability and lower maintenance time

### 2U Hyper-E Optimized for 5G and Telco



SYS-220HE-FTNRD

**AIOM**  
Ready

2U Hyper-E  
Optimized for 5G and Telco



SYS-220HE-FTNRD

6x 2.5" NVMe/SAS/SATA drives,  
Short-Depth, Front I/O,  
NEBS Level 3, DC -48V redundant  
power (shown), AC also available.

2U Hyper-E  
Optimized for 5G and Telco



SYS-220HE-FTNR

6x 2.5" NVMe/SAS/SATA drives,  
Short-Depth, Front I/O,  
with DC power options

2U Hyper  
Optimized for Storage Performance



SYS-220H-TN24R

24x 2.5" NVMe/SAS/SATA drives

2U Hyper  
Optimized for Storage Capacity



SYS-620H-TN12R

12x 3.5" NVMe/SAS/SATA drives

1U Hyper  
Compute & Storage Powerhouse



SYS-120H-TNR

12x 2.5" NVMe/SAS/SATA drives

### Ultimate Configurability for Enterprise and Telco Applications

The all-new Hyper series represents the latest generation of Supermicro rackmount servers built with the highest performance features to take on the most demanding workloads along with the storage & I/O flexibility that provide a custom fit to your application needs.

Telco optimized configurations include short depth, carrier grade (NEBS Level 3) Hyper-E servers with AC & DC power options.

Maintenance-friendly design innovations to eliminate the need for tools when servicing the system.

### Key Applications

- 5G Core and Edge
- Telecom Micro Data Center
- Enterprise Server
- Cloud Computing
- Big Data Analytics
- Hyperconverged Storage
- AI Inference and Machine Learning
- Network Function Virtualization

# X12 FATTWIN®

Advanced Multi-node 4U Twin Architecture with 8 and 4 Nodes

Highly configurable 4U 8 node and 4 node systems

Front accessible service design for cold-aisle serviceability

Hot-swappable drive bays – interchangeable NVMe, SAS or SATA

Better thermal with new optimized airflow designs for up to 165W processors

Dual 3rd Gen Intel® Xeon® Scalable processors up to 270W and 16 DIMM slots for maximum memory capacity

## 4U 8-Node Optimized for High Density Compute



SYS-F610P2-RTN

AIOM  
Ready

4U 8-Node  
Optimized for High Density Compute



SYS-F610P2-RTN

4U 4-Node  
Optimized for High Density Compute



SYS-F620P3-RTBN

### Innovative Twin Architecture to Maximize Serviceability and Reliability

The FatTwin® architecture provides flexibility and system accessibility for unique data center requirements.

Unique one-half width nodes provides for 2 nodes per rack unit, which allows for modularized left and right nodes with redundant power supplies for maximum reliability.

Highly modular multi-node systems with tool-less design.

Each node supports dual 3rd Gen Intel Xeon Scalable processors for improved performance.

### Key Applications

- Hyperscale / Hyperconverged
- Cloud Optimized Servers
- Data Center Enterprise Applications
- Scale out of Storage expansion
- Telecom Data Center & ETSI certified
- Virtualization Server

# X12 TWINPRO®

## Cost-effective 2U Multi-node Platforms

### 4 DP Nodes in 2U

Dual socket supported. TDP up to 185W,  
2 UPI

16 DIMM slots. Up to 4TB ECC RDIMM/  
LRDIMM DDR4-3200MHz

Support up to 6 hot-swappable SAS/SATA  
and 2 internal M.2 NVMe SSDs per node

Onboard dual 10GbE RJ45 ports with  
Intel® X710-AT2 controller

2 PCI-E 4.0 x16 LP expansion slots  
and 1 PCI-E 4.0 x8 (M.2)

2 Redundant 2200W Titanium  
Level (96%) power supplies



2U 4-Node



SYS-220TP-HTTR / HCOTR / HC1TR

6x 2.5" SAS/SATA and 2x M.2 NVMe drive bays per node

2U 4-Node



SYS-620TP-HTTR / HCOTR / HC1TR

3x 3.5" SAS/SATA and 2x M.2 NVMe drive bays per node

### Cost-Effective 2U 4-Node Rackmount Server

TwinPro® systems are designed for simplified deployment and maintenance, and assembled with the highest quality to ensure continuous operation even at maximum capacity.

Optimized thermal design for maximum power efficiency.

### Key Applications

- Enterprise Mission-critical Applications
- Data Center Cloud Computing
- HPC
- Virtualization
- Big Data
- Financial Analysis



# X12 SUPEREDGE

## High-Density Computing and Flexibility at the Intelligent Edge

### 2U, Short-depth, 3-Node

2U Short-depth, 3-Node System

Single 3rd Gen Intel® Xeon® Scalable processor per node

8 DIMMs per node, 8TB DRAM or 12TB DRAM with Intel® Optane™ PMem)

3 PCI-E 4.0 x16 slots per node

Operating temperatures from -5°C to 55°C



SYS-210SE-31A

### 2U, Short-depth, 3-Node, AC



SYS-210SE-31A

3rd Gen Intel® Xeon® Scalable processor  
with 2000W redundant AC power supply

### 2U, Short-depth, 3-Node, DC



SYS-210SE-31D

3rd Gen Intel® Xeon® Scalable processor  
with 2000W redundant DC power supply

## Data Center Class Performance and Expandability at the Edge

Supermicro's SuperEdge is designed to handle increasing compute and I/O density requirements of modern edge applications. With 3 customizable nodes, each outfitted with a 3rd Gen Intel Xeon Scalable Processor, SuperEdge delivers high-class performance in a 2U, short-depth form factor. Each node is hot-swappable and offers front access I/O, making the system ideal for remote IoT, Edge, or Telco deployments.

## Key Applications

- Telecom
- ORAN
- IoT/Intelligent Edge

# X12 MP 4-WAY SERVER

Highest Performance and Flexibility for Enterprise Applications

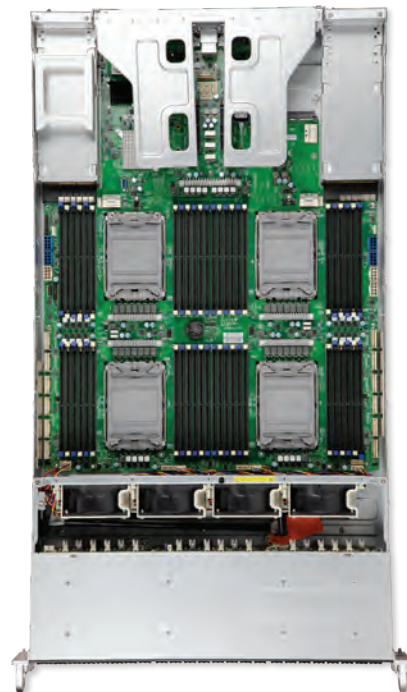
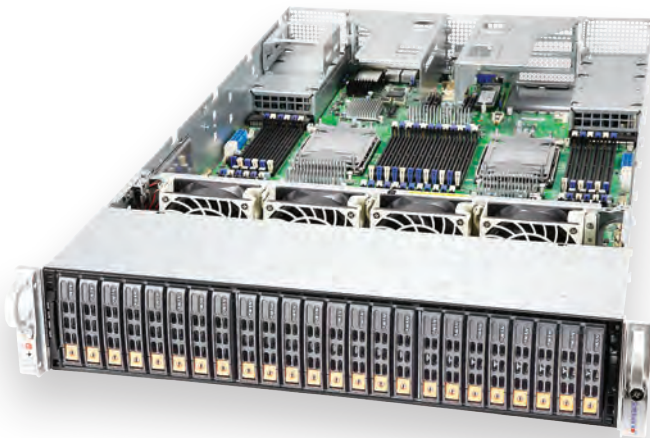
Large memory footprint for up to 18TB

All hybrid hot-swappable drive bay - NVMe, SAS, or SATA

Supports 3rd Gen Intel® Xeon® Scalable (Cooper Lake) processors

Support for PCI-E 3.0 for network interface cards

SAP HANA Certified System – SAP HANA 1.0 SPS 12,  
SAP HANA 2.0



SYS-240P-TNRT  
24x 2.5" NVMe/SAS3/SATA3 drive bays, 48 DIMM slots, up to 18TB

## Highest Performance and Flexibility

New levels of compute performance and flexibility with support of 3rd Gen Intel® Xeon® Scalable processors.

Dynamic storage with platforms that support direct-attached full-hybrid all NVMe for lower latency with higher throughput and IOPS up to 24x 2.5" hybrid NVMe/SAS3/SATA3 drive bays.

Flexible on-board network with up to dual 10GBase-T and dual SFP+ ports allows for cost-effective solutions for data communications.

## Key Applications

- Artificial Intelligence (AI)
- Business Intelligence
- ERP
- CRM
- Scientific Virtualization
- In-Memory Database
- HCI
- SAP HANA

# X12 SUPERWORKSTATIONS

## Workstations for High Performance Workloads

Mid-tower and 4U tower with support for 3rd Gen Intel® Xeon® Scalable processors

Mid-tower with up to 4 internal 3.5" SATA drives and 2 onboard M.2 slots, optional 4x 2.5" drive carrier (for total of 8 drives) and optional NVMe drive support

4U tower with 8 hot-swappable 3.5"/2.5" SATA drive bays and 2 onboard M2 slots, optional SAS and NVMe drive support.

**4U Tower**



**SYS-740A-T**  
8x 3.5"/2.5" SATA drives

**Mid-Tower Compact Powerhouse**



**SYS-730A-i**  
4x 3.5" drives

### Server-grade workstations for high-performance workloads

Supermicro's SuperWorkstations are optimized for applications requiring powerful compute and graphics capabilities.

Supporting the latest Intel® Xeon® Scalable processors and multiple NVIDIA GPUs to boost productivity and creativity for professional artists, designers, and engineers across industries such as manufacturing, media and entertainment, and energy.

Available server-grade features include hot-swap storage bays, IPMI, and redundant Titanium-level power supplies.

### Key Applications

- Rendering
- CAD
- Multimedia Digital Content Creation
- Engineering/Scientific Research

# X12 WIO

## Industry's Widest Variety of I/O Optimized Servers

Cost-effective systems supporting up to 6 PCI-E 4.0 devices

Hot-swappable 2.5" or 3.5" SATA3 storage

Onboard networking dual 10 Gigabit Ethernet

Up to 4 NVMe hybrid storage supported optionally

3rd Gen Intel® Xeon® Scalable processors up to 270W and 8 DIMM slots for maximum memory capacity

### 2U UP WIO



2U UP WIO



SYS-520P-WTR

2U 8x 3.5" SATA / option for 2 NVMe drives / Redundant power

1U UP WIO



SYS-110P-WTR

1U 10x 2.5" SATA / option for NVMe drives

1U UP WIO



SYS-510P-WT

1U 4x 3.5" SATA / option for 4 NVMe drives

1U UP WIO



SYS-510P-WTR

1U 4x 3.5" SATA / option for 4 NVMe drives / Redundant power

### Supermicro WIO SuperServer®

Supermicro WIO systems offer a wide range of I/O options to deliver truly optimized systems for specific requirements. Users can optimize the storage and networking alternatives to accelerate performance, increase efficiency and find the perfect fit for their applications.

In addition to enabling customizable configurations and optimization for multiple application requirements, Supermicro WIO SuperServers® also provide attractive cost advantages and investment protection.

### Key Applications

- Enterprise Applications
- Networking Appliance
- Firewall / Security Appliances
- General Purpose Computing
- Cloud Computing
- Media Entertainment

# X12 IOT/EMBEDDED

High-efficiency, High-performance Portfolio with Compact Form Factors and Long Life Cycle

High-density processing power at the edge

Connecting the intelligent world from devices to the cloud

Low-power high-efficiency computing

Long life cycle

Compact form factors

UP Short-Depth, Front I/O



2U Compact



**SYS-210P-FRDN6T**  
Ultra short depth,  
2U Front I/O,  
2x 2.5" drives

1U Embedded



**SYS-110P-FDWTR**  
1U Front I/O,  
Front DC PSU,  
2x Internal 2.5" drives,  
2 PCI-E 4.0 x16 FHFL, 1 PCIe 4.0 x16 LP

1U Embedded



**SYS-110P-FRDN2T**  
1U Front I/O,  
Rear DC PSU,  
2x Internal 2.5" drives,  
2 PCI-E 4.0 x16 FHFL

1U Embedded



**SYS-110P-FRN2T**  
1U Front I/O,  
Rear AC PSU,  
2x Internal 2.5" drives  
2 PCI-E 4.0 x16 FHFL

## Expanding our Product Portfolio to address 5G, Edge Computing, and Emerging IoT Systems

Supermicro provides innovative and first-to-market technologies that are the building blocks for today's embedded computing platforms. Rapid growth in embedded markets and open standards are driving the need for higher levels of product integration and optimization through virtualization, AI inferencing, network connectivity, remote management, mobile communication, expanded I/O, and device-to-device communications using space and power efficient configurations.

Supermicro's family of high-performance embedded products are optimized for a wide range of applications and solutions.

Supermicro offers many flexible and customized solutions for critical OEM projects, as well as advanced designs for stringent environments, firmware customization, BOM enhancements, and a wide range of legacy IO support.

## Key Applications

- Cloud Computing
- 5G Core and Edge
- Network Function Virtualization

# SYSTEM MANAGEMENT SOFTWARE

## Leverage Supermicro's Management Software Suite to Meet Your IT Infrastructure Challenges

With a comprehensive range of high-end software solutions, Supermicro gives IT administrators the tools to optimize the management of IT systems and increase the utilization of computing and storage infrastructure. Whether you are looking to manage individual systems, optimize server lifecycle processes, or streamline operations for an entire data center, Supermicro has the right software to help you accomplish your goals.



- Obtain valuable insights in your infrastructure
- Monitor the health of servers and critical components
- Get proactive alerts



- Maintain system uptime to meet SLAs
- Early symptom detection to prevent component failure
- Remote management and troubleshooting



- Protect your IT infrastructure from external threats
- Centralized patch and BIOS management
- Extensive security features

## System Management Software Suite Bundles

Supermicro's System Management Software Suite consists of a set of specialized applications. These are available in the following bundles.

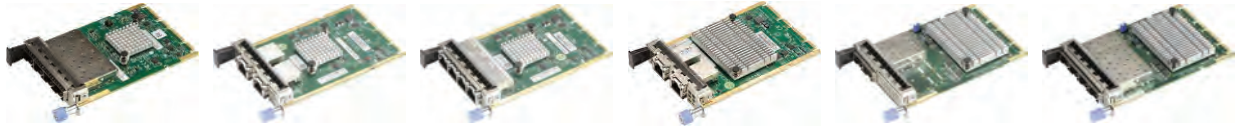
| Suite Bundle         | Standard  | Basic   | Advanced  | Enterprise  |
|----------------------|---|---|---|---|
| <b>Description</b>   | Covers all core functionality to effectively set up, manage, and monitor your Supermicro systems. These features are available to all Supermicro users.   | Extends the core functionality and makes system management easier with additional features, such as remote BIOS management and system updates.  | Delivers a broad set of tools to help administrators improve the performance, up-time, and monitoring of Supermicro systems.  | Offers an extensive platform to manage large data centers and coordinate automated lifecycle management, software-defined infrastructure, and more in a single pane of glass.   |
| <b>License</b>       | <ul style="list-style-type: none"> <li>• No license required</li> </ul>   | <ul style="list-style-type: none"> <li>• SFT-OOB-LIC</li> </ul>   | <ul style="list-style-type: none"> <li>• SFT-DCMS-SINGLE</li> </ul>   | <ul style="list-style-type: none"> <li>• SFT-DCMS-SINGLE +</li> <li>• SFT-SDDC-SINGLE</li> </ul>  |
| <b>Key Features*</b> | <ul style="list-style-type: none"> <li>• Secure remote console (KVM/HTML5)</li> <li>• System temperature monitoring</li> <li>• System power thresholds &amp; alerts</li> <li>• Component monitoring</li> <li>• Email alerting</li> <li>• Remote configuration</li> <li>• Offline diagnostics</li> <li>• Crash dump</li> <li>• License management</li> </ul> | <ul style="list-style-type: none"> <li>• Remote BMC management</li> <li>• Remote BIOS management</li> <li>• Out-of-Band systems checks</li> <li>• TPM Provisioning</li> <li>• Mount/Unmount ISO images from Samba/HTTP</li> <li>• Basic Redfish APIs</li> <li>• CIM management</li> <li>• SysLog</li> </ul> | <ul style="list-style-type: none"> <li>• Remote OS deployment</li> <li>• Auto-discovery</li> <li>• Power capping</li> <li>• RAID monitoring and configuration</li> <li>• HDD monitoring</li> <li>• Advanced Redfish APIs</li> <li>• FW update policy</li> <li>• System lock down</li> <li>• Crash screen/video capture</li> </ul> | <ul style="list-style-type: none"> <li>• 3rd Party vendor support</li> <li>• POD &amp; Rack-level management</li> <li>• SDI Lifecycle management</li> <li>• Manage Composable Dissagregated Infrastructure</li> <li>• Zero-touch provisioning for network configuration</li> <li>• Single pane of glass for data center deployment</li> <li>• Rich analytics &amp; telemetry</li> <li>• User defined role-based access control</li> </ul> |

\* For detailed information, please check with your Supermicro sales representative or refer to Supermicro website: <https://www.supermicro.com/en/solutions/management-software>

# X12 AIOM NETWORKING

New Supermicro Advanced I/O Module (AIOM) Cards Provide I/O Flexibility with OCP Superset

Optimized Shared Resources for up to 50% Reduction in Power and Cooling TCO



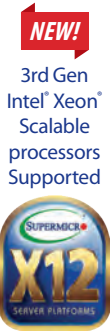
| Model              | AOC-AG-i4SM     | AOC-AG-i2M      | AOC-AG-i4M      | AOC-ATG-i2TM    | AOC-ATG-i2SM    | AOC-ATG-i4SM     |
|--------------------|-----------------|-----------------|-----------------|-----------------|-----------------|------------------|
| <b>Description</b> | Quad-Port GbE   | Dual-Port GbE   | Quad-Port GbE   | Dual-Port 10GbE | Dual-Port 10GbE | Quad-Port 10GbE  |
| <b>Port</b>        | 4x SFP          | 2xRJ45          | 4xRJ45          | 2x RJ45         | 2x SFP+         | 4x SFP+          |
| <b>Speed</b>       | 1Gbps           | 1Gbps           | 1Gbps           | 10Gbps          | 10Gbps          | 10Gbps           |
| <b>Controller</b>  | Intel® i350-AM4 | Intel® i350-AM2 | Intel® i350-AM4 | Intel® X550-AT2 | Intel® X710-BM2 | Intel® XL710-BM1 |
| <b>PCI-E</b>       | PCI-E 2.1 x4    | PCI-E 2.1 x4    | PCI-E 2.1 x4    | PCI-E 3.0 x4    | PCI-E 3.0 x8    | PCI-E 3.0 x8     |
| <b>Power</b>       | 4.4W            | 3.7W            | 4.4W            | 13W             | 6.2W            | 7W               |
| <b>Status</b>      | Released        | Released        | Released        | Released        | Q2 2021         | Q2 2021          |



| Model              | AOC-ATG-i2T2SM     | AOC-ATGC-i2TM   | AOC-A25G-b2SM      | AOC-AH25G-m2S2TM                              | AOC-A25G-m2SM     | AOC-A100G-b2CM     | AOC-A100G-m2CM          |
|--------------------|--------------------|-----------------|--------------------|---|-------------------|--------------------|-------------------------|
| <b>Description</b> | Quad-Port 10GbE    | Dual-Port 10GbE | Dual-Port 25GbE    | 2-Port 25GbE & 2-Port 10GbE                   | Dual-Port 25GbE   | Dual-Port 100GbE   | Dual-Port 100GbE        |
| <b>Port</b>        | 2x RJ45<br>2x SFP+ | 2x RJ45         | 2x SFP28           | 2x SFP28<br>2x RJ45                           | 2x SFP28          | 2x QSFP28          | 2x QSFP28               |
| <b>Speed</b>       | 10Gbps             | 10Gbps          | 25Gbps             | 25Gbps / 10Gbps                               | 25Gbps            | 100Gbps            | 100Gbps                 |
| <b>Controller</b>  | Intel® X710-TM4    | Intel® X710-AT2 | Broadcom® BCM57414 | Mellanox® ConnectX-4 Lx EN<br>Intel® X550-AT2 | Mellanox® CX-6 LX | Broadcom® BCM57508 | Mellanox® ConnectX-6 DX |
| <b>PCI-E</b>       | PCI-E 3.0 x8       | PCI-E 3.0 x8    | PCI-E 3.0 x8       | PCI-E 3.0 x8<br>PCI-E 3.0 x4                  | PCI-E 4.0/3.0 x8  | PCI-E 4.0 x16      | PCI-E 4.0 x16           |
| <b>Power</b>       | 10W                | 10W             | 7.7W               | 25W   | 12.5W             | 20W                | 20W                     |
| <b>Status</b>      | Released           | Q2 2021         | Released           | Released                                      | Q2 2021           | Q2 2021            | Q2 2021                 |

# X12 GRANDTWIN®

(For Complete System Only)



Four hot-pluggable nodes in 2U



Four hot-pluggable nodes in 2U

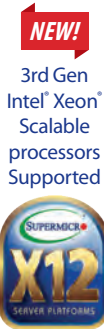


| MODEL                      | SYS-210GT-HNTF  | SYS-210GT-HNC8F  |
|----------------------------|---|--|
| Processor Support          | 3rd Gen Intel® Xeon® Scalable processors. Single Socket LGA 4189 (Socket P+) supported; TDP up to 270W  | 3rd Gen Intel® Xeon® Scalable processors. Single Socket LGA 4189 (Socket P+) supported; TDP up to 270W   |
| Key Applications           | <ul style="list-style-type: none"> <li>Mission Critical Web Applications</li> <li>EDA (Electric Design Automation)</li> <li>Telco Edge Cloud</li> <li>High-availability Cache Cluster</li> <li>Multi-Purpose CDN</li> <li>Four hot-pluggable systems (nodes) in a 2U form factor</li> </ul>   | <ul style="list-style-type: none"> <li>HPC</li> <li>High-availability Cache Cluster</li> <li>Multi-Purpose CDN</li> <li>MEC (Multi-Access Edge Computing)</li> <li>Cloud Gaming</li> <li>Four hot-pluggable systems (nodes) in a 2U form factor</li> </ul>   |
| Outstanding Features       | <ul style="list-style-type: none"> <li>Single-Socket, 3rd Gen Intel® Xeon® Scalable processors up to 270W TDP</li> <li>Up to 16 DIMM Slots or 4TB (with Intel® Optane™ Persistent Memory support)</li> <li>Optional: AIOM PCI-E 4.0 x16 LP (OCP 3.0 compliant)</li> <li>Integrated GrandTwin® I/O Module with BMC, 2x USB, VGA and 2x 10GbE or 2x 25GbE</li> <li>Up to 4 Hot-swap 2.5" NVMe/SATA drives per node</li> <li>2x cooling fans per 2U enclosure, 16.5K RPM Heavy Duty; Shared Cooling Design</li> <li>2200W Redundant Power Supplies Titanium Level (96%+); Shared Power Design</li> </ul> | <ul style="list-style-type: none"> <li>Single-Socket, 3rd Gen Intel® Xeon® Scalable processors up to 270W TDP</li> <li>Up to 16 DIMM Slots or 4TB (with Intel® Optane™ Persistent Memory support)</li> <li>Optional: AIOM PCI-E 4.0 x16 LP (OCP 3.0 compliant)</li> <li>Integrated GrandTwin® I/O Module with BMC, 2x USB, VGA and 2x 10GbE or 2x 25GbE</li> <li>Up to 4 Hot-swap 2.5" SAS/SATA drives per node</li> <li>2x cooling fans per 2U enclosure, 16.5K RPM Heavy Duty; Shared Cooling Design</li> <li>2200W Redundant Power Supplies Titanium Level (96%+); Shared Power Design</li> <li>Built-in SAS3 Support via Broadcom 3808; IT Mode</li> </ul> |
| Serverboard                | SUPER● X12SPT-G   | SUPER● X12SPT-GC   |
| Chipset                    | Intel® C621A  | Intel® C621A   |
| System Memory (Max.)       | 16 DIMM slots (16 DRAM + 4 PMem)<br>Up to 4TB: 16x 256GB DRAM<br>Up to 6TB: 8x 256GB DRAM and 8x 512GB Intel® Optane™ Persistent Memory   | 16 DIMM slots (16 DRAM + 4 PMem)<br>Up to 4TB: 16x 256GB DRAM<br>Up to 6TB: 8x 256GB DRAM and 8x 512GB Intel® Optane™ Persistent Memory  |
| Expansion Slots            | PCI-E 4.0 x16 LP slot(s)  | PCI-E 4.0 x16 LP slot(s)   |
| Onboard Storage Controller | Intel® SATA   | Intel® SATA<br>Broadcom® 3808  |
| Connectivity               | via AIOM  | via AIOM   |
| VGA/Audio                  | 1 onboard VGA port  | 1 onboard VGA port   |
| Management                 | Supermicro Server Mgmt (Redfish® API), Supermicro Intelligent Mgmt (BMC Resources), Supermicro IPMI Utilities, Supermicro Diagnostics Offline (SDO), Supermicro Thin-Agent Service (TAS), SuperDoctor® 5 (SD5), SPM, SUM, SSM, SuperCloud Composer  | Supermicro Server Mgmt (Redfish® API), Supermicro Intelligent Mgmt (BMC Resources), Supermicro IPMI Utilities, Supermicro Diagnostics Offline (SDO), Supermicro Thin-Agent Service (TAS), SuperDoctor® 5 (SD5), SPM, SUM, SSM, SuperCloud Composer   |
| Drive Bays                 | 4x 2.5" hot-swap NVMe/SATA drive bays; 4x 2.5" NVMe dedicated; Optional RAID support via Intel® PCH   | 4x 2.5" hot-swap NVMe/SATA/SAS drive bays; 4x 2.5" NVMe dedicated; Optional RAID support via Broadcom® 3808 AOC  |
| Peripheral Bays            | None  | None   |
| Power Supply               | Redundant 2200W Titanium level (96%)  | Redundant 2200W Titanium level (96%)   |
| Cooling System             | 2x 8cm heavy duty fan(s)  | 2x 8cm heavy duty fan(s)   |
| Form Factor                | 2U Rackmount<br>Enclosure: 449 x 88 x 711.2mm (17.67" x 3.46" x 28")<br>Package: 626 x 248 x 1150mm (24.65" x 9.76" x 45.28")   | 2U Rackmount<br>Enclosure: 449 x 88 x 711.2mm (17.67" x 3.46" x 28")<br>Package: 626 x 248 x 1150mm (24.65" x 9.76" x 45.28")  |



# X12 BIGTWIN®

(For Complete System Only)



6x 2.5" drives/node x 4 Nodes



6x 2.5" drives/node x 4 Nodes



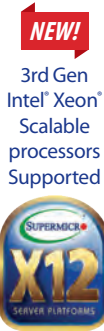
6x 2.5" drives/node x 4 Nodes



| MODEL                      | SYS-220BT-HNC8R   | SYS-220BT-HNC9R   | SYS-220BT-HNTR  |
|----------------------------|---|---|---|
| Processor Support          | 3rd Gen Intel® Xeon® Scalable processors<br>Dual Socket LGA 4189 (Socket P+) supported<br>TDP up to 205W;   | 3rd Gen Intel® Xeon® Scalable processors<br>Dual Socket LGA 4189 (Socket P+) supported<br>TDP up to 205W;   | 3rd Gen Intel® Xeon® Scalable processors<br>Dual Socket LGA 4189 (Socket P+) supported<br>TDP up to 205W;   |
| Key Applications           | <ul style="list-style-type: none"> <li>All-Flash Hyperconverged Infrastructure</li> <li>Diskless HPC Clusters</li> <li>Container-as-a-Service; Application Accelerator</li> </ul>   | <ul style="list-style-type: none"> <li>High-Density Storage RAID Array</li> <li>Virtualized Big Data Analytics</li> <li>Mission Critical HPC</li> </ul>   | <ul style="list-style-type: none"> <li>Diskless HPC Clusters</li> <li>High-Performance File System</li> <li>Container-as-a-Service; Application Accelerator</li> <li>All-Flash NVMe Hyperconverged Infrastructure</li> </ul>  |
| Outstanding Features       | <ul style="list-style-type: none"> <li>Up to 2 Nvidia T4 GPU support, with limited CPU selection</li> <li>Tool-less support for swapping AOC cards</li> <li>Supports NVMe/SATA/SAS storage devices</li> <li>Liquid Cooling Support</li> <li>HW Boot Controller for NVMe M.2 drives</li> <li>4 Hot-Swap Nodes in 2U, Shared Power and Cooling Design</li> <li>20 Memory slots (16 DIMM + 4 Intel® Optane™ Persistent Memory)</li> <li>1 AIOM card support (PCI-E 4.0)</li> </ul> | <ul style="list-style-type: none"> <li>Tool-less support for swapping AOC cards</li> <li>Supports NVMe/SATA/SAS storage devices</li> <li>Liquid Cooling Support</li> <li>HW RAID Support for Hot-Swappable SAS/SATA Drives</li> <li>HW Boot Controller for NVMe M.2 drives</li> <li>4 Hot-Swap Nodes in 2U, Shared Power and Cooling Design</li> <li>20 Memory slots (16 DIMM + 4 Intel® Optane™ Persistent Memory)</li> <li>1 AIOM card support (PCI-E 4.0)</li> </ul> | <ul style="list-style-type: none"> <li>Up to 2 Nvidia T4 GPU support, with limited CPU selection</li> <li>Tool-less support for swapping AOC cards</li> <li>Liquid Cooling Support</li> <li>HW Boot Controller for NVMe M.2 drives</li> <li>4 Hot-Swap Nodes in 2U, Shared Power and Cooling Design</li> <li>20 Memory slots (16 DIMM + 4 Intel® Optane™ Persistent Memory)</li> <li>1 AIOM card support (PCI-E 4.0)</li> </ul> |
| Serverboard                | SUPERMICRO® X12DPT-B6   | SUPERMICRO® X12DPT-B6   | SUPERMICRO® X12DPT-B6   |
| Chipset                    | Intel® C621A  | Intel® C621A  | Intel® C621A  |
| System Memory (Max.)       | 16 DIMM slots (16 DRAM + 4 PMem)<br>Up to 4TB: 16x 256GB DRAM<br>Up to 6TB: 8x 256GB DRAM and 8x 512GB Intel® Optane™ Persistent Memory   | 16 DIMM slots (16 DRAM + 4 PMem)<br>Up to 4TB: 16x 256GB DRAM<br>Up to 6TB: 8x 256GB DRAM and 8x 512GB Intel® Optane™ Persistent Memory   | 16 DIMM slots (16 DRAM + 4 PMem)<br>Up to 4TB: 16x 256GB DRAM<br>Up to 6TB: 8x 256GB DRAM and 8x 512GB Intel® Optane™ Persistent Memory   |
| Expansion Slots            | M.2 slot(s)<br>2 PCI-E 4.0 x16 LP slot(s)   | M.2 slot(s)<br>PCI-E 4.0 x16 LP slot(s)   | M.2 slot(s)<br>2 PCI-E 4.0 x16 LP slot(s)   |
| Onboard Storage Controller | Intel® SATA<br>Broadcom® 3808   | Intel® SATA<br>Broadcom® 3908   | Intel® SATA   |
| Connectivity               | via AIOM  | via AIOM  | via AIOM  |
| VGA/Audio                  | 1 onboard VGA port  | 1 onboard VGA port  | 1 onboard VGA port  |
| Management                 | Intel® Node Manager; IPMI 2.0; KVM with dedicated LAN; SPM; SSM; SUM; Supemicro Out of Band (OOB) License; SuperCloud Composer; SuperDoctor® 5; Watch Dog   | Intel® Node Manager; IPMI 2.0; KVM with dedicated LAN; SPM; SSM; SUM; Supemicro Out of Band (OOB) License; SuperCloud Composer; SuperDoctor® 5; Watch Dog   | Intel® Node Manager; IPMI 2.0; KVM with dedicated LAN; SPM; SSM; SUM; Supemicro Out of Band (OOB) License; SuperCloud Composer; SuperDoctor® 5; Watch Dog   |
| Drive Bays                 | 6x 2.5" hot-swap NVMe/SATA/SAS drive bays;<br>6x 2.5" NVMe hybrid;<br>Optional HBA support via SAS3808 Adapter  | 6x 2.5" hot-swap NVMe/SATA/SAS drive bays;<br>6x 2.5" NVMe hybrid;<br>Optional RAID support via Broadcom® 3908 AOC  | 6x 2.5" hot-swap NVMe/SATA drive bays; 6x 2.5" NVMe hybrid;<br>Optional RAID support via Intel® PCH   |
| Peripheral Bays            | None  | None  | None  |
| Power Supply               | Redundant 2600W Titanium level (96%)  | Redundant 2600W Titanium level (96%)  | Redundant 2600W Titanium level (96%)  |
| Cooling System             | 4x 16.5K RPM Heavy Duty 8cm Fan(s)  | 4x 16.5K RPM Heavy Duty 8cm Fan(s)  | 4x 16.5K RPM Heavy Duty 8cm Fan(s)  |
| Form Factor                | 2U Rackmount<br>Enclosure: 449 x 88 x 730mm (17.68" x 3.47" x 28.75")<br>Package: 626 x 248 x 1150mm (24.65" x 9.76" x 45.28")  | 2U Rackmount<br>Enclosure: 449 x 88 x 730mm (17.68" x 3.47" x 28.75")<br>Package: 626 x 248 x 1150mm (24.65" x 9.76" x 45.28")  | 2U Rackmount<br>Enclosure: 449 x 88 x 730mm (17.68" x 3.47" x 28.75")<br>Package: 626 x 248 x 1150mm (24.65" x 9.76" x 45.28")  |

# X12 BIGTWIN®

(For Complete System Only)



3x 3.5" drives/node x 4 Nodes



3x 3.5" drives/node x 4 Nodes



12x 2.5" drives/node x 2 Nodes



| MODEL                      | SYS-620BT-HNC8R  | SYS-620BT-HNTR   | SYS-220BT-DNC8R   |
|----------------------------|--|--|---|
| Processor Support          | 3rd Gen Intel® Xeon® Scalable processors<br>Dual Socket LGA 4189 (Socket P+) supported<br>TDP up to 185W;  | 3rd Gen Intel® Xeon® Scalable processors<br>Dual Socket LGA 4189 (Socket P+) supported<br>TDP up to 185W;  | 3rd Gen Intel® Xeon® Scalable processors<br>Dual Socket LGA 4189 (Socket P+) supported<br>TDP up to 270W;   |
| Key Applications           | <ul style="list-style-type: none"> <li>Container Storage</li> <li>Scale-Out File Storage</li> <li>Hyperconverged Infrastructure</li> </ul>   | <ul style="list-style-type: none"> <li>Scale-Out File Server</li> <li>Container Storage</li> <li>Hyperconverged Infrastructure</li> </ul>  | <ul style="list-style-type: none"> <li>All-Flash Object Storage</li> <li>All-Flash Storage Area Network</li> <li>All-Flash Hyperconverged Infrastructure</li> </ul>   |
| Outstanding Features       | <ul style="list-style-type: none"> <li>Tool-less support for swapping AOC cards</li> <li>Supports NVMe/SATA/SAS storage devices</li> <li>Liquid Cooling Support</li> <li>HW Boot Controller for NVMe M.2 drives</li> <li>4 Hot-Swap Nodes in 2U, Shared Power and Cooling Design</li> <li>20 Memory slots (16 DIMM + 4 Intel® Optane™ Persistent Memory)</li> <li>1 AIOM card support (PCI-E 4.0)</li> </ul> | <ul style="list-style-type: none"> <li>Tool-less support for swapping AOC cards</li> <li>Liquid Cooling Support</li> <li>HW Boot Controller for NVMe M.2 drives</li> <li>4 Hot-Swap Nodes in 2U, Shared Power and Cooling Design</li> <li>20 Memory slots (16 DIMM + 4 Intel® Optane™ Persistent Memory)</li> <li>1 AIOM card support (PCI-E 4.0)</li> </ul> | <ul style="list-style-type: none"> <li>Tool-less support for swapping AOC cards</li> <li>Supports NVMe/SATA/SAS storage devices</li> <li>Liquid Cooling Support</li> <li>HW Boot Controller for NVMe M.2 drives</li> <li>Balanced IO performance for up to 12 NVMe Gen4 drives</li> <li>20 Memory slots (16 DIMM + 4 Intel® Optane™ Persistent Memory)</li> <li>2 Hot-Swap Nodes in 2U, Shared Power and Dedicated Cooling Per Node</li> <li>1 AIOM card support (PCI-E 4.0)</li> </ul> |
| Serverboard                | SUPER® X12DPT-B6   | SUPER® X12DPT-B6   | SUPER® X12DPT-B6  |
| Chipset                    | Intel® C621A   | Intel® C621A   | Intel® C621A  |
| System Memory (Max.)       | 16 DIMM slots (16 DRAM + 4 PMem)<br>Up to 4TB: 16x 256GB DRAM<br>Up to 6TB: 8x 256GB DRAM and 8x 512GB Intel® Optane™ Persistent Memory  | 16 DIMM slots (16 DRAM + 4 PMem)<br>Up to 4TB: 16x 256GB DRAM<br>Up to 6TB: 8x 256GB DRAM and 8x 512GB Intel® Optane™ Persistent Memory  | 16 DIMM slots (16 DRAM + 4 PMem)<br>Up to 4TB: 16x 256GB DRAM<br>Up to 6TB: 8x 256GB DRAM and 8x 512GB Intel® Optane™ Persistent Memory   |
| Expansion Slots            | M.2 slot(s)<br>2 PCI-E 4.0 x16 LP slot(s)  | M.2 slot(s)<br>2 PCI-E 4.0 x16 LP slot(s)  | M.2 slot(s)<br>PCI-E 4.0 x16 LP slot(s)<br>PCI-E 4.0 x8 LP slot(s)  |
| Onboard Storage Controller | Intel® SATA<br>Broadcom® 3808  | Intel® SATA  | Intel® SATA<br>Broadcom® 3816   |
| Connectivity               | via AIOM   | via AIOM   | via AIOM  |
| VGA/Audio                  | 1 onboard VGA port   | 1 onboard VGA port   | 1 onboard VGA port  |
| Management                 | Intel® Node Manager; IPMI 2.0; KVM with dedicated LAN; SPM; SSM; SUM; Supemicro Out of Band (OOB) License; SuperCloud Composer; SuperDoctor® 5; Watch Dog  | Intel® Node Manager; IPMI 2.0; KVM with dedicated LAN; SPM; SSM; SUM; Supemicro Out of Band (OOB) License; SuperCloud Composer; SuperDoctor® 5; Watch Dog  | Intel® Node Manager; IPMI 2.0; KVM with dedicated LAN; SPM; SSM; SUM; Supemicro Out of Band (OOB) License; SuperCloud Composer; SuperDoctor® 5; Watch Dog   |
| Drive Bays                 | 3x 3.5" hot-swap NVMe/SATA/SAS drive bays; 3x 3.5" NVMe hybrid; 3x 2.5" NVMe hybrid; Optional HBA support via SAS3808 Adapter  | 3x 3.5" hot-swap NVMe/SATA drive bays; 3x 3.5" NVMe hybrid; 3x 2.5" NVMe hybrid; Optional RAID support via Intel® PCH  | 12x 2.5" hot-swap NVMe/SATA/SAS drive bays; 12x 2.5" NVMe hybrid; Optional HBA support via SAS3816 AOC  |
| Peripheral Bays            | None   | None   | None  |
| Power Supply               | Redundant 2600W Titanium level (96%)   | Redundant 2600W Titanium level (96%)   | Redundant 2200W Titanium level (96%)  |
| Cooling System             | 4x 14.9K RPM Heavy Duty 8cm Fan(s)   | 4x 14.9K RPM Heavy Duty 8cm Fan(s)   | 4x 16.5K RPM Heavy Duty 8cm Fan(s)  |
| Form Factor                | <ul style="list-style-type: none"> <li>2U Rackmount</li> <li>Enclosure: 449 x 88 x 774mm (17.68" x 3.47" x 30.5")</li> <li>Package: 626 x 248 x 1150mm (24.65" x 9.76" x 45.28")</li> </ul>  | <ul style="list-style-type: none"> <li>2U Rackmount</li> <li>Enclosure: 449 x 88 x 774mm (17.68" x 3.47" x 30.5")</li> <li>Package: 626 x 248 x 1150mm (24.65" x 9.76" x 45.28")</li> </ul>  | <ul style="list-style-type: none"> <li>2U Rackmount</li> <li>Enclosure: 449 x 88 x 730mm (17.68" x 3.47" x 28.75")</li> <li>Package: 626 x 248 x 1150mm (24.65" x 9.76" x 45.28")</li> </ul>  |

# X12 BIGTWIN®

(For Complete System Only)



12x 2.5" Drives/Node x 2 Nodes



6x 3.5" Drives/Node x 2 Nodes



6x 3.5" Drives/Node x 2 Nodes



| MODEL                      | SYS-220BT-DNTR   | SYS-620BT-DNTR   | SYS-620BT-DNC8R  |
|----------------------------|--|--|--|
| Processor Support          | 3rd Gen Intel® Xeon® Scalable processors<br>Dual Socket LGA 4189 (Socket P+) supported<br>TDP up to 270W;  | 3rd Gen Intel® Xeon® Scalable processors<br>Dual Socket LGA 4189 (Socket P+) supported<br>TDP up to 250W;  | 3rd Gen Intel® Xeon® Scalable processors<br>Dual Socket LGA 4189 (Socket P+) supported<br>TDP up to 250W;  |
| Key Applications           | <ul style="list-style-type: none"> <li>• Big Data Analytics and AI</li> <li>• Scale Out All-Flash NVMe Storage</li> <li>• Diskless HPC Clusters</li> <li>• High-Performance File System</li> </ul>   | <ul style="list-style-type: none"> <li>• Back-up &amp; Recovery</li> <li>• Scale-Out Object Storage</li> <li>• Hyperconverged Infrastructure</li> </ul>  | <ul style="list-style-type: none"> <li>• Back-up &amp; Recovery</li> <li>• Scale-Out Object Storage</li> <li>• Hyperconverged Infrastructure</li> </ul>  |
| Outstanding Features       | <ul style="list-style-type: none"> <li>• Up to 2 Nvidia T4 GPU support, with limited CPU selection</li> <li>• Tool-less support for swapping AOC cards</li> <li>• Supports NVMe/SATA/SAS storage devices</li> <li>• Liquid Cooling Support</li> <li>• HW Boot Controller for NVMe M.2 drives</li> <li>• Balanced IO performance for up to 12 NVMe Gen4 drives</li> <li>• 20 Memory slots (16 DIMM + 4 Intel® Optane™ Persistent Memory)</li> <li>• 2 Hot-Swap Nodes in 2U, Shared Power and Dedicated Cooling Per Node</li> <li>• 1 AIOM card support (PCI-E 4.0)</li> </ul> | <ul style="list-style-type: none"> <li>• Tool-less support for swapping AOC cards</li> <li>• Liquid Cooling Support</li> <li>• HW Boot Controller for NVMe M.2 drives</li> <li>• 20 Memory slots (16 DIMM + 4 Intel® Optane™ Persistent Memory)</li> <li>• 2 Hot-Swap Nodes in 2U, Shared Power and Dedicated Cooling Per Node</li> <li>• 1 AIOM card support (PCI-E 4.0)</li> </ul> | <ul style="list-style-type: none"> <li>• Tool-less support for swapping AOC cards</li> <li>• Liquid Cooling Support</li> <li>• HW Boot Controller for NVMe M.2 drives</li> <li>• 20 Memory slots (16 DIMM + 4 Intel® Optane™ Persistent Memory)</li> <li>• 2 Hot-Swap Nodes in 2U, Shared Power and Dedicated Cooling Per Node</li> <li>• 1 AIOM card support (PCI-E 4.0)</li> </ul> |
| Serverboard                | SUPER® X12DPT-B6   | SUPER® X12DPT-B6   | SUPER® X12DPT-B6   |
| Chipset                    | Intel® C621A   | Intel® C621A   | Intel® C621A   |
| System Memory (Max.)       | 16 DIMM slots (16 DRAM + 4 PMem)<br>Up to 4TB: 16x 256GB DRAM<br>Up to 6TB: 8x 256GB DRAM and 8x 512GB Intel® Optane™ Persistent Memory  | 16 DIMM slots (16 DRAM + 4 PMem)<br>Up to 4TB: 16x 256GB DRAM<br>Up to 6TB: 8x 256GB DRAM and 8x 512GB Intel® Optane™ Persistent Memory  | 16 DIMM slots (16 DRAM + 4 PMem)<br>Up to 4TB: 16x 256GB DRAM<br>Up to 6TB: 8x 256GB DRAM and 8x 512GB Intel® Optane™ Persistent Memory  |
| Expansion Slots            | M.2 slot(s)<br>PCI-E 4.0 x16 LP slot(s)<br>2 PCI-E 4.0 x8 LP slot(s)   | M.2 slot(s)<br>PCI-E 4.0 x16 LP slot(s)<br>2 PCI-E 4.0 x8 LP slot(s)   | M.2 slot(s)<br>PCI-E 4.0 x16 LP slot(s)<br>2 PCI-E 4.0 x8 LP slot(s)   |
| Onboard Storage Controller | Intel® SATA  | Intel® SATA  | Intel® SATA<br>Broadcom® 3808  |
| Connectivity               | via AIOM   | via AIOM   | via AIOM   |
| VGA/Audio                  | 1 onboard VGA port   | 1 onboard VGA port   | 1 onboard VGA port   |
| Management                 | Intel® Node Manager; IPMI 2.0; KVM with dedicated LAN; SPM; SSM; SUM; Supermicro Out of Band (OOB) License; SuperCloud Composer; SuperDoctor® 5; Watch Dog   | Intel® Node Manager; IPMI 2.0; KVM with dedicated LAN; SPM; SSM; SUM; Supermicro Out of Band (OOB) License; SuperCloud Composer; SuperDoctor® 5; Watch Dog   | Intel® Node Manager; IPMI 2.0; KVM with dedicated LAN; SPM; SSM; SUM; Supermicro Out of Band (OOB) License; SuperCloud Composer; SuperDoctor® 5; Watch Dog   |
| Drive Bays                 | 12x 2.5" hot-swap NVMe/SATA drive bays; 12x 2.5" NVMe hybrid;<br>Optional RAID support via Intel® PCH  | 6x 3.5" hot-swap NVMe/SATA drive bays; 6x 3.5" NVMe hybrid; 6x 2.5" NVMe hybrid;<br>Optional RAID support via Intel® PCH   | 6x 3.5" hot-swap NVMe/SATA/SAS drive bays; 6x 3.5" NVMe hybrid; 6x 2.5" NVMe hybrid;<br>Optional HBA support via SAS3808 Adapter   |
| Peripheral Bays            | None   | None   | None   |
| Power Supply               | Redundant 2200W Titanium level (96%)   | Redundant 2200W Titanium level (96%)   | Redundant 2200W Titanium level (96%)   |
| Cooling System             | 4x 16.5K RPM Heavy Duty 8cm Fan(s)   | 4x 14.9K RPM Heavy Duty 8cm Fan(s)   | 4x 14.9K RPM Heavy Duty 8cm Fan(s)   |
| Form Factor                | 2U Rackmount<br>Enclosure: 449 x 88 x 730mm (17.68" x 3.47" x 28.75")<br>Package: 626 x 248 x 1150mm (24.65" x 9.76" x 45.28")   | 2U Rackmount<br>Enclosure: 449 x 88 x 774mm (17.68" x 3.47" x 30.5")<br>Package: 626 x 248 x 1150mm (24.65" x 9.76" x 45.28")  | 2U Rackmount<br>Enclosure: 449 x 88 x 774mm (17.68" x 3.47" x 30.5")<br>Package: 626 x 248 x 1150mm (24.65" x 9.76" x 45.28")  |

# X12 ULTRA-E

(For Complete System Only)

# X12 ULTRA

(For Complete System Only)

**NEW!**

3rd Gen Intel® Xeon® Scalable processors Supported



| MODEL                      | SYS-220U-MTNR   | SYS-620U-TNR  |
|----------------------------|---|---|
| Processor Support          | 3rd Gen Intel® Xeon® Scalable processors<br>Dual Socket LGA-4189 (Socket P+) supported<br>TDP up to 270W; 3 UPI   | 3rd Gen Intel® Xeon® Scalable processors<br>Dual Socket LGA-4189 (Socket P+) supported<br>TDP up to 270W; 3 UPI   |
| Key Applications           | <ul style="list-style-type: none"> <li>• HPC</li> <li>• Virtualization</li> <li>• 5G/Telco</li> <li>• Application Tier Service Provider</li> <li>• Software Defined Storage</li> <li>• High End Enterprise Server</li> <li>• Cloud Computing</li> </ul>   | <ul style="list-style-type: none"> <li>• HPC</li> <li>• Virtualization</li> <li>• 5G/Telco</li> <li>• Application Tier Service Provider</li> <li>• Software Defined Storage</li> <li>• High End Enterprise Server</li> <li>• Cloud Computing</li> </ul>   |
| Outstanding Features       | <ul style="list-style-type: none"> <li>• Up to 8TB Intel® Optane™ Persistent Memory (up to 12TB with DRAM)</li> <li>• Short-depth model (22.6") optimized for 5G and Telco Markets</li> <li>• Optimized cooling with support up to 270W TDP processors</li> <li>• Modular Components for Building Application-Optimized Solutions</li> <li>• Hot-swappable hybrid drive bays supporting NVMe, SATA or SAS</li> <li>• Flexible onboard networking options</li> <li>• Dual Socket P+ (LGA-4189) 3rd Gen Intel® Xeon® Scalable Processors</li> <li>• Configurable number of PCI-E 4.0 expansion slots with support for double-width GPUs and FPGAs.</li> </ul> | <ul style="list-style-type: none"> <li>• Up to 8TB Intel® Optane™ Persistent Memory (up to 12TB with DRAM)</li> <li>• Optimized cooling with support up to 270W TDP processors</li> <li>• Modular Components for Building Application-Optimized Solutions</li> <li>• Hot-swappable hybrid drive bays supporting NVMe, SATA or SAS</li> <li>• Flexible onboard networking options</li> <li>• Dual Socket P+ (LGA-4189) 3rd Gen Intel® Xeon® Scalable Processors</li> <li>• Configurable number of PCI-E 4.0 expansion slots with support for double-width GPUs and FPGAs.</li> </ul> |
| Serverboard                | SUPER● X12DPU-6   | SUPER● X12DPU-6   |
| Chipset                    | Intel® C621A  | Intel® C621A  |
| System Memory (Max.)       |   |   |
| Expansion Slots            | 1 PCI-E 4.0 x16 FH, 10.5"L slot<br>1 PCI-E 4.0 x16 LP slot<br>5 PCI-E 4.0 x8 FH, 10.5"L slots (PCI-E 4.0 x16 options available)<br>1 PCI-E 4.0 x8 internal LP slot  | 1 PCI-E 4.0 x16 FH, 10.5"L slot<br>1 PCI-E 4.0 x16 LP slot<br>5 PCI-E 4.0 x8 FH, 10.5"L slots (PCI-E 4.0 x16 options available)<br>1 PCI-E 4.0 x8 internal LP slot  |
| Onboard Storage Controller | Intel® SATA   | Intel® SATA   |
| Connectivity               | 2x 10GbE RJ45 and 2x 10GbE SFP+ with Intel® X710-TM4 (optional)<br>2x 10GbE RJ45 with Intel® X710-AT2 (optional)  | 2x 10GbE RJ45 and 2x 10GbE SFP+ with Intel® X710-TM4 (optional)<br>2x 10GbE RJ45 with Intel® X710-AT2 (optional)  |
| VGA/Audio                  | 1 VGA port  | 1 VGA port  |
| Management                 | Intel® Node Manager; IPMI 2.0; KVM with dedicated LAN; NMI; Redfish API; SUM; SuperDoctor® 5; Supermicro Out of Band (OOB) License; Watch Dog   | Intel® Node Manager; IPMI 2.0; KVM with dedicated LAN; NMI; Redfish API; SUM; SuperDoctor® 5; Supermicro Out of Band (OOB) License; Watch Dog   |
| Drive Bays                 | 6x 2.5" hot-swap NVMe/SATA/SAS drive bays; 6x 2.5" NVMe hybrid; Optional RAID support via RAID controller AOC   | 12x 3.5" hot-swap NVMe/SATA/SAS drive bays; 12x 2.5" NVMe hybrid; Optional RAID support via RAID controller AOC   |
| Peripheral Bays            | None  | None  |
| Power Supply               | Redundant 1600W Titanium level (96%)  | Redundant 1200W Titanium level (96%)  |
| Cooling System             | 6x 6cm heavy duty fan(s)  | 4x 8cm heavy duty fan(s)  |
| Form Factor                | 2U Rackmount<br>Enclosure: 437 x 89 x 574mm (17.2" x 3.5" x 22.6")<br>Package: 625 x 253 x 1154mm (24.6" x 9.96" x 45.43")  | 2U Rackmount<br>Enclosure: 437 x 89 x 737.9mm (17.2" x 3.5" x 29.05")<br>Package: 605 x 256 x 947mm (23.81" x 10.07" x 37.28")  |

# X12 ULTRA

(For Complete System Only)



12x 2.5" Drives



4x 3.5" Drives



24x 2.5" Drives



| MODEL                      | SYS-120U-TNR  | SYS-610U-TNR  | SYS-220U-TNR  |
|----------------------------|---|---|---|
| Processor Support          | 3rd Gen Intel® Xeon® Scalable processors<br>Dual Socket LGA-4189 (Socket P+) supported<br>TDP up to 270W; 3 UPI   | 3rd Gen Intel® Xeon® Scalable processors<br>Dual Socket LGA-4189 (Socket P+) supported<br>TDP up to 270W; 3 UPI   | 3rd Gen Intel® Xeon® Scalable processors<br>Dual Socket LGA-4189 (Socket P+) supported<br>TDP up to 270W; 3 UPI   |
| Key Applications           | <ul style="list-style-type: none"> <li>HPC</li> <li>Virtualization</li> <li>5G/Telco</li> <li>Application Tier Service Provider</li> <li>Software Defined Storage</li> <li>High End Enterprise Server</li> <li>Cloud Computing</li> </ul>   | <ul style="list-style-type: none"> <li>HPC</li> <li>Virtualization</li> <li>5G/Telco</li> <li>Application Tier Service Provider</li> <li>Software Defined Storage</li> <li>High End Enterprise Server</li> <li>Cloud Computing</li> </ul>   | <ul style="list-style-type: none"> <li>HPC</li> <li>Virtualization</li> <li>5G/Telco</li> <li>Application Tier Service Provider</li> <li>Software Defined Storage</li> <li>High End Enterprise Server</li> <li>Cloud Computing</li> </ul>   |
| Outstanding Features       | <ul style="list-style-type: none"> <li>Up to 8TB Intel® Optane™ Persistent Memory (up to 12TB with DRAM)</li> <li>Optimized cooling with support up to 270W TDP processors</li> <li>Modular Components for Building Application-Optimized Solutions</li> <li>Hot-swappable hybrid drive bays supporting NVMe, SATA or SAS</li> <li>Flexible onboard networking options</li> <li>Dual Socket P+ (LGA-4189) 3rd Gen Intel® Xeon® Scalable Processors</li> <li>Configurable number of PCI-E 4.0 expansion slots with support for double-width GPUs and FPGAs.</li> </ul> | <ul style="list-style-type: none"> <li>Up to 8TB Intel® Optane™ Persistent Memory (up to 12TB with DRAM)</li> <li>Optimized cooling with support up to 270W TDP processors</li> <li>Modular Components for Building Application-Optimized Solutions</li> <li>Hot-swappable hybrid drive bays supporting NVMe, SATA or SAS</li> <li>Flexible onboard networking options</li> <li>Dual Socket P+ (LGA-4189) 3rd Gen Intel® Xeon® Scalable Processors</li> <li>Configurable number of PCI-E 4.0 expansion slots with support for double-width GPUs and FPGAs.</li> </ul> | <ul style="list-style-type: none"> <li>Up to 8TB Intel® Optane™ Persistent Memory (up to 12TB with DRAM)</li> <li>Optimized cooling with support up to 270W TDP processors</li> <li>Modular Components for Building Application-Optimized Solutions</li> <li>Hot-swappable hybrid drive bays supporting NVMe, SATA or SAS</li> <li>Flexible onboard networking options</li> <li>Dual Socket P+ (LGA-4189) 3rd Gen Intel® Xeon® Scalable Processors</li> <li>Configurable number of PCI-E 4.0 expansion slots with support for double-width GPUs and FPGAs.</li> </ul> |
| Serverboard                | SUPER● X12DPU-6   | SUPER● X12DPU-6   | SUPER● X12DPU-6   |
| Chipset                    | Intel® C621A  | Intel® C621A  | Intel® C621A  |
| System Memory (Max.)       |   |   |   |
| Expansion Slots            | 2 PCI-E 4.0 x16 FH, 10.5"L slots<br>1 PCI-E 4.0 x16 LP slot<br>1 PCI-E 4.0 x16 Internal LP slot   | 2 PCI-E 4.0 x16 FH, 10.5"L slots<br>1 PCI-E 4.0 x16 LP slot<br>1 PCI-E 4.0 x16 Internal LP slot   | 1 PCI-E 4.0 x16 FH, 10.5"L slot<br>1 PCI-E 4.0 x16 LP slot<br>5 PCI-E 4.0 x8 FH, 10.5"L slots (PCI-E 4.0 x16 options available)<br>1 PCI-E 4.0 x8 internal LP slot  |
| Onboard Storage Controller | Intel® SATA   | Intel® SATA   | Intel® SATA   |
| Connectivity               | 2x 10GbE RJ45 and 2x 10GbE SFP+ with Intel® X710-TM4 (optional)<br>2x 10GbE RJ45 with Intel® X710-AT2 (optional)  | 2x 10GbE RJ45 and 2x 10GbE SFP+ with Intel® X710-TM4 (optional)<br>2x 10GbE RJ45 with Intel® X710-AT2 (optional)  | 2x 10GbE RJ45 and 2x 10GbE SFP+ with Intel® X710-TM4 (optional)<br>2x 10GbE RJ45 with Intel® X710-AT2 (optional)  |
| VGA/Audio                  | 1 VGA port  | 1 VGA port  | 1 VGA port  |
| Management                 | Intel® Node Manager; IPMI 2.0; KVM with dedicated LAN; NMI; Redfish API; SUM; SuperDoctor® 5; Supermicro Out of Band (OOB) License; Watch Dog   | Intel® Node Manager; IPMI 2.0; KVM with dedicated LAN; NMI; Redfish API; SUM; SuperDoctor® 5; Supermicro Out of Band (OOB) License; Watch Dog   | Intel® Node Manager; IPMI 2.0; KVM with dedicated LAN; NMI; Redfish API; SUM; SuperDoctor® 5; Supermicro Out of Band (OOB) License; Watch Dog   |
| Drive Bays                 | 12x 2.5" hot-swap NVMe/SATA/SAS drive bays; 12x 2.5" NVMe hybrid; Optional RAID support via RAID controller AOC   | 4x 3.5" hot-swap NVMe/SATA/SAS drive bays; 4x 2.5" NVMe hybrid; Optional RAID support via RAID controller AOC   | 24x 2.5" hot-swap NVMe/SATA/SAS drive bays; 22x 2.5" NVMe hybrid; Optional RAID support via RAID controller AOC   |
| Peripheral Bays            | None  | None  | None  |
| Power Supply               | Redundant 1200W Titanium level (96%)  | Redundant 1200W Titanium level (96%)  | Redundant 1600W Titanium level (96%)  |
| Cooling System             | 8x 4cm heavy duty fan(s)  | 8x 4cm heavy duty fan(s)  | 4x 8cm heavy duty fan(s)  |
| Form Factor                | 1U Rackmount<br>Enclosure: 437 x 43 x 739mm (17.2" x 1.7" x 29.1")<br>Package: 605 x 203 x 950mm (23.81" x 7.99" x 37.4")   | 1U Rackmount<br>Enclosure: 437 x 43 x 754mm (17.2" x 1.7" x 29.7")<br>Package: 605 x 203 x 950mm (23.81" x 7.99" x 37.4")   | 2U Rackmount<br>Enclosure: 437 x 89 x 717.2mm (17.2" x 3.5" x 28.2")<br>Package: 625 x 253 x 1154mm (24.6" x 9.96" x 45.43")  |

# X12 CLOUDDC

(For Complete System Only)

**NEW!**

3rd Gen Intel® Xeon® Scalable processors Supported



12x 3.5" NVMe/SAS/SATA Drives



4x 3.5" SAS/SATA Drives



| MODEL                      | SYS-620C-TN12R   | SYS-610C-TR  |
|----------------------------|--|--|
| Processor Support          | 3rd Gen Intel® Xeon® Scalable processors<br>Dual Socket LGA-4189 (Socket P+) supported<br>TDP up to 270W; 3 UPI  | 3rd Gen Intel® Xeon® Scalable processors<br>Dual Socket LGA-4189 (Socket P+) supported<br>TDP up to 270W; 3 UPI  |
| Key Applications           | <ul style="list-style-type: none"> <li>• CDN, Edge Nodes</li> <li>• DNS &amp; Gateway Servers, Firewall Application</li> <li>• Cloud Computing, Compact Server</li> <li>• Data Center Optimized, Value IaaS</li> <li>• Web Server, Firewall Application</li> </ul>   | <ul style="list-style-type: none"> <li>• CDN, Edge Nodes</li> <li>• DNS &amp; Gateway Servers, Firewall Application</li> <li>• Cloud Computing, Compact Server</li> <li>• Data Center Optimized, Value IaaS</li> <li>• Web Server, Firewall Application</li> </ul>   |
| Outstanding Features       | <ul style="list-style-type: none"> <li>• Up to 12x NVMe/SATA/SAS hybrid tool-less drive bays</li> <li>• Optional hot-swappable 2.5" rear drive bays</li> <li>• Flexible expansion with up to 2x PCI-E 4.0 x16 and 4x PCI-E 4.0 x8 (convertible to 2x PCI-E 4.0 x16) slots</li> <li>• Dual sockets up to 76 cores and 270W TDP</li> <li>• Dual NVMe M.2 (2280)</li> <li>• Dual FHFLDW PCI-E 4.0 GPU support</li> <li>• Dual AIOM with NCSI (OCP 3.0 NIC)</li> <li>• Compact server with tool-less drive trays</li> <li>• Balanced architecture in compact chassis (25.6")</li> <li>• 3.5" tool-less drive trays also support 2.5" drives</li> </ul> | <ul style="list-style-type: none"> <li>• Up to 4x SATA/SAS tool-less drive bays</li> <li>• Optional fixed 2.5" 7 mm drive bays</li> <li>• Flexible expansion with up to 2x PCI-E 5.0 x16 slots</li> <li>• Flexible expansion with up to 2x PCI-E 4.0 x16 slots</li> <li>• Dual sockets up to 76 cores and 270W TDP</li> <li>• Dual NVMe M.2 (2280)</li> <li>• Dual AIOM with NCSI (OCP 3.0 NIC)</li> <li>• Compact server with tool-less drive trays</li> <li>• Balanced architecture in compact chassis (25.6")</li> <li>• 3.5" tool-less drive trays also support 2.5" drives</li> </ul> |
| Serverboard                | SUPER● X12DDW-A6   | SUPER● X12DDW-A6   |
| Chipset                    | Intel® C621A   | Intel® C621A   |
| System Memory (Max.)       | 16 DIMM slots<br>Up to 4 TB Intel® DCPMM, DDR4-3200MHz<br>Up to 4 TB ECC LRDIMM, DDR4-3200MHz<br>Up to 4 TB ECC RDIMM, DDR4-3200MHz  | 16 DIMM slots<br>Up to 4 TB Intel® DCPMM, DDR4-3200MHz<br>Up to 4 TB ECC LRDIMM, DDR4-3200MHz<br>Up to 4 TB ECC RDIMM, DDR4-3200MHz  |
| Expansion Slots            | 2 PCI-E 4.0 x16 FHHL slot(s)<br>4 PCI-E 4.0 x16 FHFL slot(s)   | 2 PCI-E 4.0 x16 FHHL slot(s)   |
| Onboard Storage Controller | Intel® SATA  | Intel® SATA  |
| Connectivity               | via AIOM   | via AIOM   |
| VGA/Audio                  | 1 VGA port   | 1 VGA port   |
| Management                 | Intel® Node Manager; IPMI 2.0; KVM with dedicated LAN; NMI; Redfish API; SCC; SPM; SSM; SUM; SuperDoctor® 5; Watch Dog   | Intel® Node Manager; IPMI 2.0; KVM with dedicated LAN; NMI; Redfish API; SCC; SPM; SSM; SUM; SuperDoctor® 5; Watch Dog   |
| Drive Bays                 | 12x 3.5" hot-swap NVMe/SATA/SAS hybrid drive bays;<br>Optional RAID support via RAID controller AOC  | 4x 3.5" hot-swap SATA/SAS hybrid drive bays;<br>Optional RAID support via RAID controller AOC  |
| Peripheral Bays            | None   | 2x 2.5" (optional)   |
| Power Supply               | Redundant 1200W Titanium level (96%)   | Redundant 860W Platinum level (94%)  |
| Cooling System             | 3x 8cm heavy duty fan(s)   | 6x 4cm heavy duty fan(s)   |
| Form Factor                | 2U rackmount<br>Enclosure: 437 x 89 x 648mm (17.2" x 3.5" x 25.5")   | 1U rackmount<br>Enclosure: 437 x 43 x 650mm (17.2" x 1.7" x 25.6")   |

# X12 CLOUDDC

(For Complete System Only)

10x 2.5" NVMe/SAS/SATA Drives

8x 2.5" SAS/SATA Drives



**NEW!**

3rd Gen Intel® Xeon® Scalable processors Supported



| MODEL                      | SYS-120C-TN10R  | SYS-120C-TR  |
|----------------------------|---|--|
| Processor Support          | 3rd Gen Intel® Xeon® Scalable processors<br>Dual Socket LGA-4189 (Socket P+) supported<br>TDP up to 270W; 3 UPI   | 3rd Gen Intel® Xeon® Scalable processors<br>Dual Socket LGA-4189 (Socket P+) supported<br>TDP up to 270W; 3 UPI  |
| Key Applications           | <ul style="list-style-type: none"> <li>• CDN, Edge Nodes</li> <li>• DNS &amp; Gateway Servers, Firewall Application</li> <li>• Cloud Computing, Compact Server</li> <li>• Data Center Optimized, Value IaaS</li> <li>• Web Server, Firewall Application</li> </ul>  | <ul style="list-style-type: none"> <li>• CDN, Edge Nodes</li> <li>• DNS &amp; Gateway Servers, Firewall Application</li> <li>• Cloud Computing, Compact Server</li> <li>• Data Center Optimized, Value IaaS</li> <li>• Web Server, Firewall Application</li> </ul>   |
| Outstanding Features       | <ul style="list-style-type: none"> <li>• Up to 10x NVMe/SATA/SAS hybrid tool-less drive bays</li> <li>• Flexible expansion with up to 2x PCI-E 5.0 x16 slots</li> <li>• Flexible expansion with up to 2x PCI-E 4.0 x16 slots</li> <li>• Dual sockets up to 76 cores and 270W TDP</li> <li>• Dual NVMe M.2 (2280)</li> <li>• Dual AIOM with NCSI (OCP 3.0 NIC)</li> <li>• Compact server with tool-less drive trays</li> <li>• Balanced architecture in compact chassis (23.5")</li> </ul> | <ul style="list-style-type: none"> <li>• Up to 8x SATA/SAS tool-less drive bays</li> <li>• Optional DVD ROM support</li> <li>• Flexible expansion with up to 2x PCI-E 5.0 x16 slots</li> <li>• Flexible expansion with up to 2x PCI-E 4.0 x16 slots</li> <li>• Dual NVMe M.2 (2280)</li> <li>• Dual AIOM with NCSI (OCP 3.0 NIC)</li> <li>• Compact server with tool-less drive trays</li> <li>• Balanced architecture in compact chassis (23.5")</li> </ul> |
| Serverboard                | SUPER● X12DDW-A6  | SUPER● X12DDW-A6   |
| Chipset                    | Intel® C621A  | Intel® C621A   |
| System Memory (Max.)       | 16 DIMM slots<br>Up to 4 TB Intel® DCPMM, DDR4-3200MHz<br>Up to 4 TB ECC LRDIMM, DDR4-3200MHz<br>Up to 4 TB ECC RDIMM, DDR4-3200MHz   | 16 DIMM slots<br>Up to 4 TB Intel® DCPMM, DDR4-3200MHz<br>Up to 4 TB ECC LRDIMM, DDR4-3200MHz<br>Up to 4 TB ECC RDIMM, DDR4-3200MHz  |
| Expansion Slots            | 2 PCI-E 4.0 x16 FHHL slot(s)  | 2 PCI-E 4.0 x16 FHHL slot(s)   |
| Onboard Storage Controller | Intel® SATA   | Intel® SATA  |
| Connectivity               | via AIOM  | via AIOM   |
| VGA/Audio                  | 1 VGA port  | 1 VGA port   |
| Management                 | Intel® Node Manager; IPMI 2.0; KVM with dedicated LAN; NMI; Redfish API; SCC; SPM; SSM; SUM; SuperDoctor® 5; Watch Dog  | Intel® Node Manager; IPMI 2.0; KVM with dedicated LAN; NMI; Redfish API; SCC; SPM; SSM; SUM; SuperDoctor® 5; Watch Dog   |
| Drive Bays                 | 10x 2.5" hot-swap NVMe/SATA/SAS hybrid drive bays;<br>Optional RAID support via RAID controller AOC   | 8x 2.5" hot-swap SATA/SAS drive bays;<br>Optional RAID support via RAID controller AOC   |
| Peripheral Bays            | None  | 1x DVD-ROM (optional)  |
| Power Supply               | Redundant 860W Platinum level (94%)   | Redundant 860W Platinum level (94%)  |
| Cooling System             | 6x 4cm heavy duty fan(s)  | 6x 4cm heavy duty fan(s)   |
| Form Factor                | 1U rackmount<br>Enclosure: 437 x 43 x 597mm (17.2" x 1.7" x 23.5")  | 1U rackmount<br>Enclosure: 437 x 43 x 597mm (17.2" x 1.7" x 23.5")   |

# X12 SUPERBLADE®



8U SuperBlade®



6U SuperBlade®



4U SuperBlade®



| Enclosure                       | SBE-820H/C/J/L-822/622/422   | SBE-610J-822/622/422   | SBE-414J-422/222   |
|---------------------------------|--|--|--|
| Processor Blade                 | Up to 20 hot-pluggable half-height 1-socket or 2-socket blade servers<br>Up to 10 hot-pluggable full-height 4-socket blade servers<br>Mixing of blade servers in a single enclosure allowed  | Up to 10 hot-pluggable 1-socket or 2-socket blade servers  | Up to 14 hot-pluggable 2-socket blade servers  |
| LED                             | Power LED, Fault LED   | Power LED, Fault LED   | Power LED, Fault LED   |
| InfiniBand Switch               | SBE-820H only<br>• Single 200G HDR InfiniBand switch with add-on card<br>SBE-820C/CB only<br>• Single 100G EDR InfiniBand or Intel Omni-Path switch with add-on card   | N/A  | N/A  |
| Ethernet Switch                 | SBE-820J/JB only<br>Up to 4 switches, 2 hot-pluggable 25G Ethernet switches and 2 hot-pluggable 25G Ethernet switches with add-on card<br>SBE-820H/C/CB only<br>Up to 2 hot-pluggable 25G Ethernet switches<br>SBE-820L only<br>Up to 2 hot-pluggable 10G Ethernet switches  | Up to 4 hot-pluggable 25G/10G/1G Ethernet switches   | Up to 2 hot-pluggable 25G/10G/1G Ethernet switches   |
| Chassis Management Module (CMM) | Up to 2 CMM for remote system management with software   | Up to 2 CMM for remote system management with software   | Single CMM for remote system management with software  |
| Available Models                | SBE-820H/C/J/L-822<br>8x 2200W Titanium power supplies<br>SBE-820H/C/J/L-622<br>6x 2200W Titanium power supplies<br>SBE-820H/C/J/L-422<br>4x 2200W Titanium power supplies<br>SBE-820H/C/J/L-622S<br>6x 2200W Platinum long-life power supplies + 2 long-life cooling fans<br>SBE-820H/C/J/L-820D<br>8x 2000W DC power supplies<br>SBE-820H/C/J/L-820D<br>4x 2000W DC power supplies + 4 cooling fans<br>SBE-820CB/JB-422<br>4x 2200W Titanium power supplies + 4x 1200W BBP modules | SBE-610J-822<br>8x 2200W Titanium power supplies<br>SBE-610J-622<br>6x 2200W Titanium power supplies<br>SBE-610J-422<br>4x 2200W Titanium power supplies<br>SBE-610J-622S<br>6x 2200W Platinum long-life power supplies + 2 long-life cooling fans<br>SBE-610JB-422<br>4x 2200W Titanium power supplies + 4x 1200W BBP modules | SBE-414J-422<br>4x 2200W Titanium power supplies<br>SBE-414J-222<br>2x 2200W Titanium power supplies |
| Rack Unit                       | 8U   | 6U   | 4U   |
| Dimensions (H x W x D)          | 356 x 447 x 813mm (14" x 17.6" x 32")  | 267 x 447 x 813mm (10.5" x 17.6" x 32")  | 178 x 447 x 813mm (7" x 17.6" x 32")   |



# X12 SUPERBLADE®

(For Complete System Only)

8U/20-Blade w/ 3 SATA or 2 NVMe

8U/20-Blade w/2 SATA/NVMe

8U/20-Blade w/ 2 SAS/NVMe

4U/14-Blade w/ 2 SATA/NVMe



| MODEL                      | SBI-420P-1T3N   | Liquid Cooling (OEM SKU*)   | SBI-420P-1C2N   | SBI-420P-4T2N  |
|----------------------------|---|---|---|--|
| Processor Support          | 3rd Gen Intel® Xeon® Scalable processors;<br>Dual Socket supported<br>TDP up to 220W; 3 UPI   | 3rd Gen Intel® Xeon® Scalable processors;<br>Dual Socket supported<br>TDP up to 270W; 3 UPI   | 3rd Gen Intel® Xeon® Scalable processors;<br>Dual Socket supported<br>TDP up to 220W; 3 UPI   | 3rd Gen Intel® Xeon® Scalable processors;<br>Dual Socket supported<br>TDP up to 165W; 3 UPI            |
| Key Applications           | • HPC, Hybrid Cloud, EDA, Virtualization, Health, Financial Services  | • HPC, Hybrid Cloud, EDA, Virtualization, Health, Financial Services  | • HPC, Hybrid Cloud, EDA, Virtualization, Health, Financial Services  | • HPC, Hybrid Cloud, EDA, Virtualization, Health, Financial Services                                   |
| Outstanding Features       | • Air cooling<br>• Advanced networking (InfiniBand, OmniPath)   | • Direct liquid cooling<br>• Advanced networking (InfiniBand, OmniPath)   | • High performance, high density<br>• Advanced networking (InfiniBand, OmniPath)<br>• SAS with hardware RAID 1                      | • Value and density optimized<br>• High performance  |
| Serverboard                | SUPER® B12DPT-6   | SUPER® B12DPT-6   | SUPER® B12DPT-6   | SUPER® B12DPT-6  |
| Chipset                    | Intel® C621A  | Intel® C621A  | Intel® C621A  | Intel® C621A   |
| System Memory (Max.)       | 16 DIMM slots<br>Up to 4 TB ECC RDIMM, DDR4-3200MHz<br>Up to 4 TB ECC LRDIMM, DDR4-3200MHz<br>Up to 2 TB Intel® DCPMM, DDR4-3200MHz | 16 DIMM slots<br>Up to 4 TB ECC RDIMM, DDR4-3200MHz<br>Up to 4 TB ECC LRDIMM, DDR4-3200MHz<br>Up to 2 TB Intel® DCPMM, DDR4-3200MHz | 16 DIMM slots<br>Up to 4 TB ECC RDIMM, DDR4-3200MHz<br>Up to 4 TB ECC LRDIMM, DDR4-3200MHz<br>Up to 2 TB Intel® DCPMM, DDR4-3200MHz | 16 DIMM slots<br>Up to 512GB VLP RDIMM, DDR4-3200MHz   |
| Expansion Slots            | 1 PCI-E 4.0 x16 slot for mezzanine option   | 1 PCI-E 4.0 x16 slot for mezzanine option   | 1 PCI-E 4.0 x16 slot for mezzanine option   | N/A  |
| Onboard Storage Controller | Intel® PCH 3.0 SATA Controller  | Intel® PCH 3.0 SATA Controller  | Broadcom® 3108 SAS Controller   | Intel PCH 3.0 SATA Controller  |
| Connectivity               | Dual-port 25GbE LOM<br>Mezzanine option for 2x25GbE, 200G/100G InfiniBand   | Dual-port 25GbE LOM<br>Mezzanine option for 2x25GbE, 200G/100G InfiniBand   | Dual-port 25GbE LOM<br>Mezzanine option for 2x25GbE, 200G/100G InfiniBand   | Dual-port 25GbE LOM  |
| VGA/Audio                  | One VGA connector and one COM port on KVM dongle  | One VGA connector and one COM port on KVM dongle  | One VGA connector and one COM port on KVM dongle  | KVM over IP, Virtual Media over LAN  |
| Management                 | Redundant Chassis Management Modules, Blade Network Manager, Open Industry Standard IPMI, Redfish APIs                              | Redundant Chassis Management Modules, Blade Network Manager, Open Industry Standard IPMI, Redfish APIs                              | Redundant Chassis Management Modules, Blade Network Manager, Open Industry Standard IPMI, Redfish APIs                              | Redundant Chassis Management Modules, Blade Network Manager, Open Industry Standard IPMI, Redfish APIs |
| Drive Bays                 | 1x M.2 NVMe<br>2x U.2 NVMe/SATA and 1x SATA<br>Optional mezzanine 4x M.2 NVMe   | 1x M.2 NVMe<br>2x U.2 NVMe/SATA<br>Optional mezzanine 4x M.2 NVMe   | 1x M.2 NVMe<br>2x U.2 NVMe/SAS/SATA<br>Optional mezzanine 4x M.2 NVMe   | 1x M.2 NVMe<br>2x U.2 NVMe/SATA  |
| Peripheral Bays            | N/A   | N/A   | N/A   | N/A  |
| Power Supply               | Up to 8x 2200W Titanium Level power supplies  | Up to 8x 2200W Titanium Level power supplies  | Up to 8x 2200W Titanium Level power supplies  | Up to 4x 2200W Titanium Level power supplies   |
| Cooling System             | Up to 8x fans<br>3x System fan modules (optional)   | Up to 8x fans<br>3x System fan modules  | Up to 8x fans<br>3x System fan modules (optional)   | 4x PSU fans<br>3x System fan modules   |
| Form Factor                | 8U Enclosure<br>Up to 20x half-height blades  | 8U Enclosure<br>Up to 20x half-height blades  | 8U Enclosure<br>Up to 20x half-height blades  | 4U Enclosure<br>Up to 14x blades   |

\* Contact Supermicro for more information

# X12 SUPERBLADE®

(For Complete System Only)

6U/10-Blade w/ 2 SAS/NVMe

6U/10-Blade w/ 2 SATA/NVMe

6U/10-Blade w/ 3 SAS or 2 NVMe

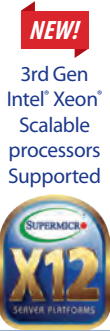
6U/10-Blade w/ 3 SATA/NVMe



| MODEL                      | SBI-610P-1C2N   | SBI-610P-1T2N  | SBI-620P-1C3N  | SBI-620P-1T3N  |
|----------------------------|---|--|--|--|
| Processor Support          | 3rd Gen Intel® Xeon® Scalable processor;<br>Single Socket supported;<br>TDP up to 270W  | 3rd Gen Intel® Xeon® Scalable processor;<br>Single Socket supported;<br>TDP up to 270W   | 3rd Gen Intel® Xeon® Scalable processors;<br>Dual Socket supported;<br>TDP up to 270W; 3UPI  | 3rd Gen Intel® Xeon® Scalable processors;<br>Dual Socket supported;<br>TDP up to 270W; 3UPI  |
| Key Applications           | • HPC, Hybrid Cloud, EDA, Virtualization, Health, Financial Services  | • HPC, Hybrid Cloud, EDA, Virtualization, Health, Financial Services   | • HPC, Hybrid Cloud, EDA, Virtualization, Health, Financial Services   | • HPC, Hybrid Cloud, EDA, Virtualization, Health, Financial Services   |
| Outstanding Features       | <ul style="list-style-type: none"> <li>• High performance 1S with max memory footprint</li> <li>• 2 PCI-E 4.0 x16 slots for GPUs, or industry-standard PCI-E cards</li> <li>• SAS with hardware RAID 1</li> </ul> | <ul style="list-style-type: none"> <li>• High performance 1S with max memory footprint</li> <li>• 2 PCI-E 4.0 x16 slots for GPUs, or industry-standard PCI-E cards</li> <li>• Support up to 4x 25GbE networks</li> </ul> | <ul style="list-style-type: none"> <li>• High performance 2S with max memory footprint</li> <li>• Support up to 4x 25GbE networks</li> <li>• SAS with hardware RAID 0/1/5</li> </ul> | <ul style="list-style-type: none"> <li>• High performance 2S with max memory footprint</li> <li>• Support up to 4x 25GbE networks</li> </ul> |
| Serverboard                | SUPER® B12SPE   | SUPER® B12SPE  | SUPER® B12DPE  | SUPER® B12DPE  |
| Chipset                    | Intel C621A   | Intel C621A  | Intel C621A  | Intel C621A  |
| System Memory (Max.)       | 16 DIMM slots;<br>Up to 4TB Intel® DCPMM, DDR4-3200MHz;<br>Up to 4TB ECC LRDIMM, DDR4-3200MHz;<br>Up to 4TB ECC RDIMM, DDR4-3200MHz   | 16 DIMM slots;<br>Up to 4TB Intel® DCPMM, DDR4-3200MHz;<br>Up to 4TB ECC LRDIMM, DDR4-3200MHz;<br>Up to 4TB ECC RDIMM, DDR4-3200MHz  | 32 DIMM slots;<br>Up to 8TB Intel® DCPMM, DDR4-3200MHz;<br>Up to 8TB ECC LRDIMM, DDR4-3200MHz;<br>Up to 8TB ECC RDIMM, DDR4-3200MHz  | 32 DIMM slots;<br>Up to 8TB Intel® DCPMM, DDR4-3200MHz;<br>Up to 8TB ECC LRDIMM, DDR4-3200MHz;<br>Up to 8TB ECC RDIMM, DDR4-3200MHz          |
| Expansion Slots            | 2 PCI-E 4.0 x16 slots<br>1 PCI-E 4.0 x16 slot for high-speed networking mezzanine connector   | 2 PCI-E 4.0 x16 slots<br>1 PCI-E 4.0 x16 slot for high-speed networking mezzanine connector  | 1 PCI-E 4.0 x16 slot for high-speed networking mezzanine connector   | 1 PCI-E 4.0 x16 slot for high-speed networking mezzanine connector   |
| Onboard Storage Controller | Broadcom 3108 SAS Controller  | Intel PCH 3.0 SATA Controller  | Broadcom 3108 SAS Controller   | Intel PCH 3.0 SATA Controller  |
| Connectivity               | Dual-port 25GbE LOM<br>Mezzanine option for 2x25GbE   | Dual-port 25GbE LOM<br>Mezzanine option for 2x25GbE  | Dual-port 25GbE LOM<br>Mezzanine option for 2x25GbE  | Dual-port 25GbE LOM<br>Mezzanine option for 2x25GbE  |
| VGA/Audio                  | KVM over IP, Virtual Media over LAN   | KVM over IP, Virtual Media over LAN  | KVM over IP, Virtual Media over LAN  | KVM over IP, Virtual Media over LAN  |
| Management                 | Redundant Chassis Management Modules, Blade Network Manager, Open Industry Standard IPMI, Redfish APIs  | Redundant Chassis Management Modules, Blade Network Manager, Open Industry Standard IPMI, Redfish APIs   | Redundant Chassis Management Modules, Blade Network Manager, Open Industry Standard IPMI, Redfish APIs   | Redundant Chassis Management Modules, Blade Network Manager, Open Industry Standard IPMI, Redfish APIs                                       |
| Drive Bays                 | 2x U.2 NVMe/SAS/SATA<br>1x M.2 NVMe/SATA  | 2x U.2 NVMe/SATA<br>1x M.2 NVMe/SATA<br>2x M.2 NVMe  | 2x U.2 NVMe/SAS/SATA<br>1x U.2 SAS/SATA  | 3x U.2 NVMe/SATA   |
| Peripheral Bays            | N/A   | N/A  | N/A  | N/A  |
| Power Supply               | Up to 8x 2200W Titanium Level power supplies  | Up to 8x 2200W Titanium Level power supplies   | Up to 8x 2200W Titanium Level power supplies   | Up to 8x 2200W Titanium Level power supplies   |
| Cooling System             | Up to 8x fans   | Up to 8x fans  | Up to 8x fans  | Up to 8x fans  |
| Form Factor                | 6U Enclosure<br>Up to 10x blades  | 6U Enclosure<br>Up to 10x blades   | 6U Enclosure<br>Up to 10x blades   | 6U Enclosure<br>Up to 10x blades   |

# X12 GPU

(For Complete System Only)



Universal 4U GPU System



4U HGX A100 8-GPU



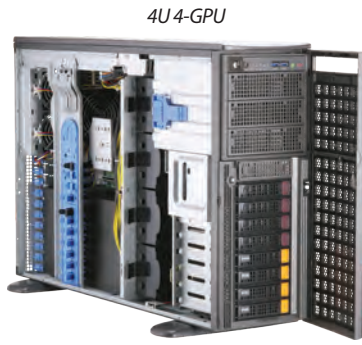
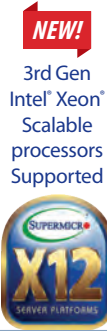
4U 10-GPU



| MODEL                      | SYS-420GU-TNXR  | SYS-420GP-TNAR<br>SYS-420GP-TNAR+   | SYS-420GP-TNR   |
|----------------------------|---|---|---|
| Processor Support          | 3rd Gen Intel® Xeon® Scalable processors<br>Dual Socket LGA-4189 (Socket P+) supported<br>TDP up to 270W; 3 UPI   | 3rd Gen Intel® Xeon® Scalable processors<br>Dual Socket LGA-4189 (Socket P+) supported<br>TDP up to 270W; 3 UPI   | 3rd Gen Intel® Xeon® Scalable processors<br>Dual Socket LGA-4189 (Socket P+) supported<br>TDP up to 270W; 3 UPI   |
| Key Applications           | <ul style="list-style-type: none"> <li>AI/Deep Learning Training</li> <li>High Performance Computing</li> </ul>   | <ul style="list-style-type: none"> <li>AI/Deep Learning Training</li> <li>High Performance Computing</li> </ul>   | <ul style="list-style-type: none"> <li>AI/Deep Learning Training</li> <li>VDI</li> <li>Rendering</li> <li>High Performance Computing</li> </ul>   |
| Outstanding Features       | .   | <ul style="list-style-type: none"> <li>Highest GPU communication using NVIDIA® NVLINK™ + NVIDIA® NVSwitch™</li> <li>High density 4U system with NVIDIA® HGX™ A100 8-GPU</li> <li>AIOM / OCP 3.0 Support</li> <li>8 NIC for GPU direct RDMA (1:1 GPU Ratio)</li> <li>4 NVMe for GPU direct storage</li> <li>2 M.2 NVMe and SATA for boot drive only</li> </ul> | <ul style="list-style-type: none"> <li>Up to 10 double width, full length GPUs</li> <li>Thermal performance with separate GPU &amp; CPU Zones</li> <li>Flexible GPU support: active &amp; passive GPUs</li> <li>AIOM / OCP 3.0 Support</li> <li>2x USB 3.0</li> <li>2 M.2 NVMe for boot drive only</li> </ul> |
| Serverboard                | SUPER® X12DGU   | SUPER® X12DGO-6   | SUPER® X12DPG-OA6   |
| Chipset                    | Intel® C621A  | Intel® C621A  | Intel® C621A  |
| System Memory (Max.)       | 32 DIMM slots<br>Up to 8TB ECC LRDIMM, DDR4-3200MHz   | 32 DIMM slots<br>Up to 8TB ECC LRDIMM, DDR4-3200MHz   | 32 DIMM slots<br>Up to 8TB ECC LRDIMM, DDR4-3200MHz   |
| Expansion Slots            | 10 PCI-E 4.0 X16 LP Slots   | 10 PCI-E 4.0 X16 LP Slots   | 12 PCI-E 4.0 X16 Slots  |
| Onboard Storage Controller | Intel® SATA   | Intel® SATA   | Intel® SATA   |
| Connectivity               | 2x 10GbE RJ45 port(s) with Intel® Ethernet Controller X550-AT2  | 2x 10GbE RJ45 with Intel® X550-AT2 (optional)   | 2x 1GbE RJ45 port(s) with Intel® Ethernet Controller I350   |
| VGA/Audio                  | 1 VGA port  | 1 VGA port  | 1 VGA port  |
| Management                 | Intel® Node Manager; IPMI 2.0; KVM with dedicated LAN; NMI; OOB Management Package (SFT-OOB-LIC); Redfish API; SPM; SSM; SUM; SuperDoctor® 5; Watch Dog | Intel® Node Manager; IPMI 2.0; KVM with dedicated LAN; NMI; OOB Management Package (SFT-OOB-LIC); Redfish API; SPM; SSM; SUM; SuperDoctor® 5; Watch Dog   | Intel® Node Manager; IPMI 2.0; KVM with dedicated LAN; NMI; OOB Management Package (SFT-OOB-LIC); Redfish API; SPM; SSM; SUM; SuperDoctor® 5; Watch Dog   |
| Drive Bays                 | 10x 2.5" hot-swap NVMe/SATA/SAS drive bays;   | 6x 2.5" hot-swap NVMe/SATA/SAS drive bays;<br>6x 2.5" NVMe hybrid; 4x 2.5" NVMe dedicated;  | 24x 2.5" hot-swap NVMe/SATA/SAS drive bays;<br>8x 2.5" NVMe dedicated;  |
| Peripheral Bays            | None  | None  | None  |
| Power Supply               | Redundant 3000W Titanium level (96%)  | -TNAR: Redundant 2200W Titanium level (96%)<br>-TNAR+: Redundant 3000W Titanium level (96%)   | Redundant 2000W Titanium level (80%)  |
| Cooling System             | 5 heavy duty fan(s)   | 4 heavy duty fan(s)   | 8 heavy duty fan(s)   |
| Form Factor                | 4U Rackmount<br>Enclosure: 449 x 175.6 x 833mm (17.67" x 6.91" x 32.79")<br>Package: 700 x 370 x 1260mm (27.55" x 14.57" x 49.6")                       | 4U Rackmount<br>Enclosure: 446 x 174 x 900mm (17.6" x 6.9" x 35.4")<br>Package: 695 x 750 x 1140mm (27.4" x 29.5" x 44.9")  | 4U Rackmount<br>Enclosure: 437 x 178 x 737mm (17.2" x 7" x 29")<br>Package: (27" x 26.57" x 41")  |

# X12 GPU

(For Complete System Only)



4U 4-GPU



2U 6-GPU



1U 4-GPU

| MODEL                      | SYS-740GP-TNRT   | SYS-220GP-TNR  | SYS-120GQ-TNRT   |
|----------------------------|--|--|--|
| Processor Support          | 3rd Gen Intel® Xeon® Scalable processors<br>Dual Socket LGA-4189 (Socket P+) supported<br>TDP up to 270W; 3 UPI  | 3rd Gen Intel® Xeon® Scalable processors<br>Dual Socket LGA-4189 (Socket P+) supported<br>TDP up to 270W; 3 UPI  | 3rd Gen Intel® Xeon® Scalable processors<br>Dual Socket LGA-4189 (Socket P+) supported<br>TDP up to 270W; 3 UPI  |
| Key Applications           | <ul style="list-style-type: none"> <li>AI/Deep Learning Training</li> <li>Rendering</li> <li>High Performance Computing</li> <li>Scientific Virtualization</li> </ul>  | <ul style="list-style-type: none"> <li>AI/Deep Learning Training</li> <li>VDI</li> <li>High Performance Computing</li> <li>Scientific Virtualization</li> </ul>  | <ul style="list-style-type: none"> <li>AI/Deep Learning Training</li> <li>Rendering</li> <li>High Performance Computing</li> <li>Scientific Virtualization</li> </ul>                              |
| Outstanding Features       | <ul style="list-style-type: none"> <li>Up to 4 double width GPUs</li> <li>Flexible I/O support: 7 PCI-E slots</li> <li>Flexible GPU support: active &amp; passive GPUs</li> <li>2 M.2 NVMe and SATA for boot drive only</li> </ul> | <ul style="list-style-type: none"> <li>Up to 6 double width GPUs</li> <li>Flexible I/O support: 8 PCI-E Slots &amp; AIOM Support</li> <li>AIOM / OCP 3.0 Support</li> <li>2xM.2 with internal adaptor for boot drive only</li> <li>2x Front USB 3.0</li> </ul> | <ul style="list-style-type: none"> <li>Up to 4 double width GPUs</li> <li>Highest density GPU system</li> <li>Flexible GPU support: active &amp; passive GPUs</li> <li>2x Front USB 3.0</li> </ul> |
| Serverboard                | SUPER® X12DPG-QT6  | SUPER® X12DPG-AR   | SUPER® X12DGQ-R  |
| Chipset                    | Intel® C621A   | Intel® C621A   | Intel® C621A   |
| System Memory (Max.)       | 16 DIMM slots<br>Up to 4TB ECC LRDIMM, DDR4-3200MHz  | 16 DIMM slots<br>Up to 4TB ECC LRDIMM, DDR4-3200MHz<br>Up to 4TB ECC RDIMM, DDR4-3200MHz   | 16 DIMM slots<br>Up to 4TB ECC LRDIMM, DDR4-3200MHz<br>Up to 4TB ECC RDIMM, DDR4-3200MHz   |
| Expansion Slots            | 6 PCI-E 4.0 X16 FHFL Slots, 1 PCI-E 4.0 X 8 LP Slots   | 6 PCIe 4.0 x16 FHFL, 2 PCIe 4.0 x8 FH  | 4 PCI-E 4.0 x16 (FHFL), 1 PCI-E 4.0 x16 (LP)   |
| Onboard Storage Controller | Intel® SATA  | Intel® SATA  | Intel® SATA  |
| Connectivity               | 2x 10GbE RJ45 port(s)  | via AIOM   | 2x 10GbE RJ45 port(s)  |
| VGA/Audio                  | 1 VGA port   | 1 VGA port   | 1 VGA port   |
| Management                 | Intel® Node Manager; IPMI 2.0; KVM with dedicated LAN; NMI; OOB Management Package (SFT-OOB-LIC); Redfish API; SPM; SSM; SUM; SuperDoctor® 5; Watch Dog  | Intel® Node Manager; IPMI 2.0; KVM with dedicated LAN; NMI; OOB Management Package (SFT-OOB-LIC); Redfish API; SPM; SSM; SUM; SuperDoctor® 5; Watch Dog  | Intel® Node Manager; IPMI 2.0; KVM with dedicated LAN; NMI; OOB Management Package (SFT-OOB-LIC); Redfish API; SPM; SSM; SUM; SuperDoctor® 5; Watch Dog  |
| Drive Bays                 | 8x 3.5" hot-swap NVMe/SATA/SAS Support drive bays; 10x 2.5" NVMe dedicated;  | 10x 2.5" hot-swap NVMe/SATA/SAS drive bays; 2x 2.5" NVMe dedicated;  | 4x 2.5" hot-swap NVMe/SATA/SAS drive bays; 2x 2.5" NVMe dedicated;   |
| Peripheral Bays            | None   | None   | None   |
| Power Supply               | 2200W Titanium level (96%)   | 2600W Redundant Power Supplies with PMBus  | 2000W Redundant Power Supplies with PMBus  |
| Cooling System             | 4 heavy duty fan(s)  | 5 heavy duty fan(s)  | 9 heavy duty fan(s)  |
| Form Factor                | Full-Tower Rackmount<br>Enclosure: 178 x 460 x 673mm (7" x 18.1" x 26.5")<br>Package: 685.8 x 322.6 x 952.5mm (27" x 12.7" x 37.5")  | 2U Rackmount<br>Enclosure: 440.7 x 88 x 766.8mm (17.35" x 3.46" x 30.18")<br>Package: 673 x 279 x 1130mm (26.5" x 11" x 44.5")   | 1U Rackmount<br>Enclosure: 437 x 43 x 894mm (17.2" x 1.7" x 35.2")<br>Package: 609.6 x 203.2 x 1168.4mm (24" x 8" x 46")   |

# X12 STORAGE

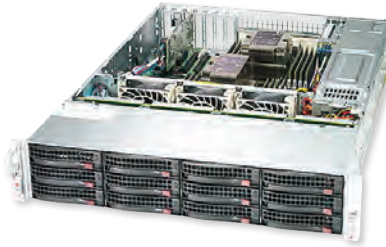
(For Complete System Only)



1U 12x Drives



2U 12x Drives



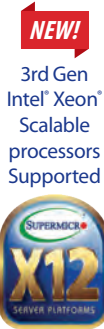
2U 16x Drives



| MODEL                      | SSG-610P-ACR12N4H<br>SSG-610P-ACR12N4L  | SSG-620P-ACR12H<br>SSG-620P-ACR12L   | SSG-620P-ACR16H<br>SSG-620P-ACR16L  |
|----------------------------|---|--|---|
| Processor Support          | 3rd Gen Intel® Xeon® Scalable processors<br>Dual Socket LGA-4189 (Socket P+) supported<br>TDP up to 205W;   | 3rd Gen Intel® Xeon® Scalable processors<br>Dual Socket LGA-4189 (Socket P+) supported<br>TDP up to 270W; 3 UPI  | 3rd Gen Intel® Xeon® Scalable processors<br>Dual Socket LGA-4189 (Socket P+) supported<br>TDP up to 270W; 3 UPI   |
| Key Applications           | <ul style="list-style-type: none"> <li>Database Applications</li> <li>Scale-out NAS</li> <li>Hadoop &amp; Ceph storage solutions</li> <li>Scale-Out Density</li> <li>Big Data Analytics</li> <li>Object Storage</li> <li>Hyperscale Data Center</li> </ul>  | <ul style="list-style-type: none"> <li>Appliance Optimized Storage Building Blocks</li> <li>Enterprise Database Applications</li> <li>Big Data Analytic and HPC</li> <li>On Premise Converged Infrastructure</li> </ul>  | <ul style="list-style-type: none"> <li>Appliance Optimized Storage Building Blocks</li> <li>Enterprise Database Applications</li> <li>Big Data Analytic and HPC</li> <li>On Premise Converged Infrastructure</li> </ul>   |
| Outstanding Features       | <ul style="list-style-type: none"> <li>Server remote management: IPMI 2.0/KVM over LAN/Media over LAN</li> <li>Dual socket 3rd Gen Intel® Xeon® Scalable processors, up to 72 Cores</li> <li>4 Front EDSFF Short Slots + 2 SATA NVMe Slots</li> <li>2 x 25G SFP+ onboard</li> <li>2 PCI-E 4.0 X16 Slots + 1 PCI-E 4.0 x8 Slots</li> <li>16 ECC DDR4-3200:LRDIMM/RDIMM;</li> <li>12 Hot-swap 3.5" SAS3/SATA3 drive bays</li> <li>1 PCI-E 4.0 x8 AIOM slot</li> </ul> | <ul style="list-style-type: none"> <li>Server remote management: IPMI 2.0/KVM over LAN/Media over LAN</li> <li>Onboard 1 M.2 NVMe/SATA</li> <li>Dual socket 3rd Gen Intel® Xeon® Scalable processors, up to 72 Cores</li> <li>4 PCI-E 4.0 x16 Slots + 2 PCI-E 4.0 x8 Slots</li> <li>16 ECC DDR4-3200:LRDIMM/RDIMM; +2 Intel® DCPMM</li> <li>12 Hot-swap 3.5" NVMe/SAS3/SATA3 drive bays</li> </ul> | <ul style="list-style-type: none"> <li>Dual socket 3rd Gen Intel® Xeon® Scalable processors, up to 72 Cores</li> <li>16 ECC DDR4-3200:LRDIMM/RDIMM; +2 DCPMM</li> <li>4 PCI-E 4.0 X16 Slots + 2 PCI-E 4.0 x8 Slots</li> <li>Server remote management: IPMI 2.0/KVM over LAN/Media over LAN</li> <li>3 Hot-swap 8cm redundant PWM fans</li> <li>2x 10GBase-T LAN ports with X710-TM4</li> <li>1600W Redundant Power Supplies Titanium Level (96%)</li> <li>12 Hot-swap 3.5" Hybrid NVMe/SAS3/SATA3 drive bays+ 4 SAS3/SATA3 Drive Bays; on board 1 M.2 NVMe</li> <li>- ACR16H: Broadcom 3916 Controller</li> <li>- ACR16L: Broadcom 3816 Controller</li> </ul> |
| Serverboard Chipset        | SUPERMICRO X12DPD-A6M25<br>Intel® C621A   | SUPERMICRO X12DPI-NT6<br>Intel® C621A  | SUPERMICRO X12DPI-NT6<br>Intel® C621A   |
| System Memory (Max.)       | 16 DIMM slots<br>Up to 4TB ECC RDIMM/LRDIMM, DDR4-3200MHz   | 16 DIMM slots<br>Up to 18TB Intel® DCPMM, DDR4-2666MHz<br>Up to 4TB ECC RDIMM/LRDIMM, DDR4-3200MHz   | 16 DIMM slots<br>Up to 18TB Intel® DCPMM, DDR4-2666MHz<br>Up to 4TB ECC RDIMM/LRDIMM, DDR4-3200MHz  |
| Expansion Slots            | PCI-E 4.0 x16 AIOM slot(s)<br>PCI-E 4.0 x8 LP slot(s)<br>2 PCI-E 4.0 x16 LP slot(s)   | PCI-E 4.0 x8 LP slot(s)<br>4 PCI-E 4.0 x16 LP slot(s)  | PCI-E 4.0 x8 LP slot(s)<br>4 PCI-E 4.0 x16 LP slot(s)   |
| Onboard Storage Controller | -ACR12N4H:<br>-ACR12N4L:  | -ACR12H: Intel® SATA<br>Broadcom® AOC-S3916L-H161R-32DD-O<br>-ACR12L: Intel® SATA<br>Broadcom® AOC-S3816L-L161T  | -ACR16H: Intel® SATA<br>Broadcom® AOC-S3916L-H161R-32DD-O<br>-ACR16L: Intel® SATA<br>Broadcom® AOC-S3816L-L161T   |
| Connectivity               | 2x 25GbE SFP28 port(s) with Mellanox  | 2x 10GbE RJ45 port(s) with Intel® Ethernet Controller X550   | 2x 10GbE RJ45 port(s) with Intel® Ethernet Controller X550  |
| VGA/Audio Management       | 1 VGA port<br>IPMI 2.0; NMI; SUM; SuperDoctor® 5; Watch Dog   | 1 VGA port<br>IPMI 2.0; NMI; SUM; SuperDoctor® 5; Watch Dog  | 1 VGA port<br>IPMI 2.0; NMI; SUM; SuperDoctor® 5; Watch Dog   |
| Drive Bays                 | 12x 3.5" hot-swap SATA3/SAS3 drive bays;<br>2x 2.5" 7mm drive bays  | 12x 3.5" hot-swap SATA3/SAS3 drive bays; 4x 3.5" NVMe hybrid; 4x 2.5" NVMe hybrid;<br>Optional RAID support via RAID/HBA controller AOC  | 16x 3.5" hot-swap SATA3/SAS3 drive bays; 4x 3.5" NVMe hybrid;<br>Optional RAID support via RAID/HBA controller AOC  |
| Peripheral Bays            | None  | None   | None  |
| Power Supply               | Redundant 800W Platinum level (94%)   | Redundant 1200W Titanium level (96%)   | Redundant 1600W Titanium level (96%)  |
| Cooling System             | 6x 4cm heavy duty fan(s)  | 3x 8cm heavy duty fan(s)   | 4x 8cm heavy duty fan(s)  |
| Form Factor                | 1U Rackmount<br>Enclosure: (17.6" x 1.7" x 37")<br>Package: (27" x 12" x 53.15")  | 2U Rackmount<br>Enclosure: (17.3" x 3.5" x 25.5")<br>Package: (27" x 12" x 35")  | 2U Rackmount<br>Enclosure: 437 x 89 x 705mm (17.2" x 3.5" x 27.75")<br>Package: 658 x 274 x 998mm (25.9" x 10.8" x 39.3")   |

# X12 STORAGE

(For Complete System Only)



2U Simply Double, 24x Drives



4U 24x Drives



4U 36x Drives



| MODEL                      | SSG-620P-E1CR24H<br>SSG-620P-E1CR24L  | SSG-640P-E1CR24H<br>SSG-640P-E1CR24L   | SSG-640P-E1CR36H<br>SSG-640P-E1CR36L  |
|----------------------------|---|--|---|
| Processor Support          | 3rd Gen Intel® Xeon® Scalable processors<br>Dual Socket LGA-4189 (Socket P+) supported<br>TDP up to 205W; 3 UPI   | 3rd Gen Intel® Xeon® Scalable processors<br>Dual Socket LGA-4189 (Socket P+) supported<br>TDP up to 270W; 3 UPI  | 3rd Gen Intel® Xeon® Scalable processors<br>Dual Socket LGA-4189 (Socket P+) supported<br>TDP up to 270W; 3 UPI   |
| Key Applications           | <ul style="list-style-type: none"> <li>Appliance Optimized Storage Building Blocks</li> <li>Corporate Database</li> <li>Database Processing &amp; Storage</li> <li>HPC, Data Center</li> <li>iSCSI SAN</li> <li>Enterprise Server</li> </ul>  | <ul style="list-style-type: none"> <li>Appliance Optimized Storage Building Blocks</li> <li>Corporate Database</li> <li>Database Processing &amp; Storage</li> <li>HPC, Data Center</li> <li>iSCSI SAN</li> <li>Enterprise Server</li> </ul>   | <ul style="list-style-type: none"> <li>Corporate Database</li> <li>Database Processing &amp; Storage</li> <li>HPC, Data Center</li> <li>iSCSI SAN</li> <li>Enterprise Server</li> </ul>   |
| Outstanding Features       | <ul style="list-style-type: none"> <li>Support dual Intel® Xeon Scalable CPUs</li> <li>Server remote management: IPMI 2.0/KVM over LAN/Media over LAN</li> <li>High Density platform in 2U rack size</li> <li>Flexible storage media and controller configurations, and support tiering storage...</li> </ul> | <ul style="list-style-type: none"> <li>Server remote management: IPMI 2.0/KVM over LAN/Media over LAN</li> <li>On board 1 M.2 NVMe/SATA</li> <li>Dual socket 3rd Gen Intel® Xeon® Scalable processors, up to 72 Cores</li> <li>4 PCI-E 4.0 x16 Slots + 2 PCI-E 4.0 x8 Slots</li> <li>24 Hot-swap 3.5" SAS3/SATA3 drive bays</li> <li>16 ECC DDR4-3200:LRDIMM/RDIMM; +2 Intel® DCPMM</li> </ul> | <ul style="list-style-type: none"> <li>Server remote management: IPMI 2.0/KVM over LAN/Media over LAN</li> <li>Onboard 1 M.2 NVMe/SATA</li> <li>Dual socket 3rd Gen Intel® Xeon® Scalable processors, up to 72 Cores</li> <li>4 PCI-E 4.0 x16 Slots + 2 PCI-E 4.0 x8 Slots</li> <li>32 Hot-swap 3.5" SAS3/SATA3 drive bays + 4 NVMe/ SAS3/SATA3 Drive Bays</li> <li>16 ECC DDR4-3200:LRDIMM/RDIMM; +2 Intel® DCPMM</li> </ul> |
| Serverboard                | SUPER® X12DSC-A6  | SUPER® X12DPI-NT6  | SUPER® X12DPI-NT6   |
| Chipset                    | Intel® C621A  | Intel® C621A   | Intel® C621A  |
| System Memory (Max.)       | 16 DIMM slots<br>Up to 4TB ECC RDIMM/LRDIMM, DDR4-3200MHz   | 16 DIMM slots<br>Up to 18TB Intel® DCPMM, DDR4-2666MHz<br>Up to 4TB ECC RDIMM/LRDIMM, DDR4-3200MHz   | 16 DIMM slots<br>Up to 18TB Intel® DCPMM, DDR4-2666MHz<br>Up to 4TB ECC RDIMM/LRDIMM, DDR4-3200MHz  |
| Expansion Slots            | PCI-E 4.0 x16 AIOM slot(s)<br>2 PCI-E 4.0 x16 LP slot(s)  | PCI-E 4.0 x8 LP slot(s)<br>3 PCI-E 4.0 x16 LP slot(s)  | PCI-E 4.0 x8 LP slot(s)<br>3 PCI-E 4.0 x16 LP slot(s)   |
| Onboard Storage Controller | -E1CR24H: Intel® SATA<br>Broadcom® AOC-S3916L-H16IR-32DD-O<br>-E1CR24L: Intel® SATA<br>Broadcom® AOC-S3816L-L16IT   | -E1CR24H: Intel® SATA<br>Broadcom® AOC-S3908L-H8IR<br>-E1CR24L: Intel® SATA<br>Broadcom® AOC-S3808L-L8IT   | -E1CR36H: Intel® SATA<br>Broadcom® AOC-S3908L-H8IR<br>-E1CR36L: Intel® SATA<br>Broadcom® AOC-S3808L-L8IT  |
| Connectivity               | 2x 10GbE RJ45 port(s) with Intel® Ethernet Controller X550  | 2x 10GbE RJ45 port(s) with Intel® Ethernet Controller X550   | 2x 10GbE RJ45 port(s) with Intel® Ethernet Controller X550  |
| VGA/Audio                  | 1 VGA port  | 1 VGA port   | 1 VGA port  |
| Management                 | IPMI 2.0; NMI; SUM; SuperDoctor® 5; Watch Dog   | IPMI 2.0; NMI; SUM; SuperDoctor® 5; Watch Dog  | IPMI 2.0; NMI; SUM; SuperDoctor® 5; Watch Dog   |
| Drive Bays                 | 24x 3.5" hot-swap SATA3/SAS2 drive bays;<br>Optional RAID support via RAID/HBA Controller AOC   | 24x 3.5" hot-swap SATA3/SAS3 drive bays;<br>Optional RAID support via RAID/HBA controller AOC  | 36x 3.5" hot-swap SATA3/SAS3 drive bays; 4x 3.5" NVMe hybrid;<br>Optional RAID support via RAID/HBA controller AOC  |
| Peripheral Bays            | None  | None   | None  |
| Power Supply               | Redundant 1600W Titanium level (96%)  | Redundant 1200W Titanium level (96%)   | 1600W Redundant Power Supplies with PMBus   |
| Cooling System             | 5x 8cm heavy duty fan(s)  | 5x 8cm heavy duty fan(s)   | 7x 8cm heavy duty fan(s)  |
| Form Factor                | 2U Rackmount<br>Enclosure: (17.2" x 3.5" x 34")<br>Package: (29" x 12" x 52")   | 4U Rackmount<br>Enclosure: 437 x 178 x 660mm (17.2" x 7" x 26")<br>Package: 871 x 673 x 343mm (34.3" x 26.5" x 13.5")  | 4U Rackmount<br>Enclosure: (17.2" x 7" x 27.5")<br>Package: (27" x 15" x 39")   |

# X12 STORAGE

(For Complete System Only)

4U 60x Top-loading



4U 90x Top-loading



| MODEL                      | SSG-640SP-E1CR60  | SSG-640SP-E1CR90  |
|----------------------------|---|---|
| Processor Support          | 3rd Gen Intel® Xeon® Scalable processors<br>Dual Socket LGA-4189 (Socket P+) supported<br>TDP up to 205W; 3 UPI   | 3rd Gen Intel® Xeon® Scalable processors<br>Dual Socket LGA-4189 (Socket P+) supported<br>TDP up to 205W; 3 UPI   |
| Key Applications           | <ul style="list-style-type: none"> <li>Government Data Protection</li> <li>Content Repositories</li> <li>Financial Services &amp; Healthcare Image Archives</li> <li>Telco &amp; Cloud Service Providers</li> <li>HPC and AI/ML Workloads</li> <li>Big Data &amp; Analytics, Data Lake</li> </ul>   | <ul style="list-style-type: none"> <li>Government Data Protection</li> <li>Content Repositories</li> <li>Financial Services &amp; Healthcare Image Archives</li> <li>Telco &amp; Cloud Service Providers</li> <li>HPC and AI/ML Workloads</li> <li>Big Data &amp; Analytics, Data Lake</li> </ul> |
| Outstanding Features       | <ul style="list-style-type: none"> <li>Single Node with High Density in 4U rack space</li> <li>Server remote management: IPMI 2.0 / KVM over LAN / Media over LAN</li> <li>Optional 4 NVMe SSD drives for caching</li> <li>Excellent Serviceability with Modular Design</li> <li>Drive Controller support via Broadcom® 3916 HW RAID or 3616 IT Mode</li> </ul> | <ul style="list-style-type: none"> <li>Server remote management: IPMI 2.0 / KVM over LAN / Media over LAN</li> <li>Excellent Serviceability with Modular Design</li> <li>Drive Controller support via Broadcom® 3916 HW RAID or 3616 IT Mode</li> </ul>   |
| Serverboard                | SUPERMICRO® X12DSC-6  | SUPERMICRO® X12DSC-6  |
| Chipset                    | Intel® C621A  | Intel® C621A  |
| System Memory (Max.)       | 16 DIMM slots<br>Up to 4TB ECC RDIMM/LRDIMM, DDR4-3200MHz   | 16 DIMM slots<br>Up to 4TB ECC RDIMM/LRDIMM, DDR4-3200MHz   |
| Expansion Slots            | 3 PCI-E 4.0 x16 LP slot(s)  | 3 PCI-E 4.0 x16 LP slot(s)  |
| Onboard Storage Controller | Intel® SATA   | Intel® SATA   |
| Connectivity               | 2x 10GbE RJ45 port(s) with X550   | 2x 10GbE RJ45 port(s) with X550   |
| VGA/Audio                  | 1 VGA port  | 1 VGA port  |
| Management                 | IPMI 2.0; NMI; SUM; SuperDoctor® 5; Watch Dog   | IPMI 2.0; NMI; SUM; SuperDoctor® 5; Watch Dog   |
| Drive Bays                 | 60x 3.5" hot-swap SATA3/SAS3 drive bays; 4x 2.5" NVMe dedicated;<br>Optional RAID support via RAID/HBA controller AOC<br>2x 2.5" 7mm drive bays   | 90x 3.5" hot-swap SATA3/SAS3 drive bays; 4x 2.5" NVMe dedicated;<br>Optional RAID support via RAID/HBA controller AOC<br>2x 2.5" 7mm drive bays   |
| Peripheral Bays            | None  | None  |
| Power Supply               | 2000W Redundant Power Supplies with PMBus   | 2600W Redundant Power Supplies with PMBus   |
| Cooling System             | 6x 8cm heavy duty fan(s)  | 6x 8cm heavy duty fan(s)  |
| Form Factor                | 4U Rackmount<br>Enclosure: (17.6" x 7" x 34.1")<br>Package: (31.89" x 29.92" x 44.88")  | 4U Rackmount<br>Enclosure: (17.6" x 7" x 42.1")<br>Package: (35.82" x 29.92" x 53.15")  |

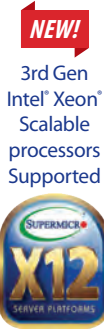
# X12 STORAGE

(For Complete System Only)

4U 60x Top-loading



4U 90x Top-loading



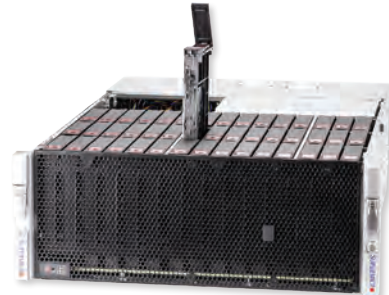
| MODEL                      | SSG-640SP-DE1CR60<br>SSG-640SP-DE2CR60   | SSG-640SP-DE1CR90<br>SSG-640SP-DE2CR90  |
|----------------------------|--|---|
| Processor Support          | 3rd Gen Intel® Xeon® Scalable processors<br>Dual Socket LGA-4189 (Socket P+) supported<br>TDP up to 205W; 3 UPI  | 3rd Gen Intel® Xeon® Scalable processors<br>Dual Socket LGA-4189 (Socket P+) supported<br>TDP up to 205W; 3 UPI   |
| Key Applications           | <ul style="list-style-type: none"> <li>Government Data Protection</li> <li>Content Repositories</li> <li>Financial Services &amp; Healthcare Image Archives</li> <li>Telco &amp; Cloud Service Providers</li> <li>HPC and AI/ML Workloads</li> <li>Big Data &amp; Analytics, Data Lake</li> </ul>  | <ul style="list-style-type: none"> <li>Government Data Protection</li> <li>Content Repositories</li> <li>Financial Services &amp; Healthcare Image Archives</li> <li>Telco &amp; Cloud Service Providers</li> <li>HPC and AI/ML Workloads</li> <li>Big Data &amp; Analytics, Data Lake</li> </ul>   |
| Outstanding Features       | <ul style="list-style-type: none"> <li>Server remote management: IPMI 2.0 / KVM over LAN / Media over LAN</li> <li>Excellent Serviceability with Modular Node Design</li> <li>Dual Node Twin Architecture, 2x the Compute (Each node controls 30 drives)</li> <li>Drive Controller support via Broadcom® 3916 HW RAID or 3616 IT Mode</li> </ul> | <ul style="list-style-type: none"> <li>Server remote management: IPMI 2.0 / KVM over LAN / Media over LAN</li> <li>Excellent Serviceability with Modular Node Design</li> <li>Dual Node (HA), Enterprise High Availability (SBB) Architecture (shared storage); 2 Hot Pluggable Nodes</li> <li>Drive Controller support via Broadcom® 3616 IT Mode</li> </ul> |
| Serverboard                | SUPERMICRO® X12DSC-6   | SUPERMICRO® X12DSC-6  |
| Chipset                    | Intel® C621A   | Intel® C621A  |
| System Memory (Max.)       | 16 DIMM slots<br>Up to 4TB ECC RDIMM/LRDIMM, DDR4-3200MHz  | 16 DIMM slots<br>Up to 4TB ECC RDIMM/LRDIMM, DDR4-3200MHz   |
| Expansion Slots            | 3 PCI-E 4.0 x16 LP slot(s)   | 3 PCI-E 4.0 x16 LP slot(s)  |
| Onboard Storage Controller | -DE1CR60: Intel® SATA Broadcom® 3916<br>-DE2CR60: Intel® SATA Broadcom® 3816   | -DE1CR90: Intel® SATA Broadcom® 3916<br>-DE2CR90: Intel® SATA Broadcom® 3816  |
| Connectivity               | 2x 10GbE RJ45 port(s) with X550  | 2x 10GbE RJ45 port(s) with X550   |
| VGA/Audio                  | 1 VGA port   | 1 VGA port  |
| Management                 | IPMI 2.0; NMI; SUM; SuperDoctor® 5; Watch Dog  | IPMI 2.0; NMI; SUM; SuperDoctor® 5; Watch Dog   |
| Drive Bays                 | 60x 3.5" hot-swap SATA3/SAS3 drive bays;<br>Optional RAID support via RAID/HBA controller AOC<br>2x 2.5" 7mm drive bays  | 90x 3.5" hot-swap SATA3/SAS3 drive bays;<br>Optional RAID support via HBA controller AOC<br>2x 2.5" 7mm drive bays  |
| Peripheral Bays            | None   | None  |
| Power Supply               | 2600W Redundant Power Supplies with PMBus  | 2600W Redundant Power Supplies with PMBus   |
| Cooling System             | 6x 8cm heavy duty fan(s)   | 6x 8cm heavy duty fan(s)  |
| Form Factor                | 4U Rackmount<br>Enclosure: (17.6" x 7" x 34.1")<br>Package: (31.89" x 29.92" x 44.88")   | 4U Rackmount<br>Enclosure: (17.6" x 7" x 42.1")<br>Package: (35.82" x 29.92" x 53.15")  |



# X12 STORAGE

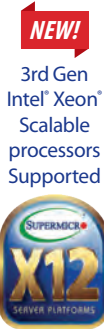
4U UP 36x Drives

4U UP 45x Drives  
(For Complete System Only)



| MODEL                      | SSG-540P-E1CTR36H<br>SSG-540P-E1CTR36L   | SSG-540P-E1CTR45H<br>SSG-540P-E1CTR45L   |
|----------------------------|--|--|
| Processor Support          | Support Intel® 3rd Gen Xeon® Scalable Processors<br>Single Socket LGA 4189 (Socket P+) supported<br>TDP up to 270W;  | Support Intel® 3rd Gen Xeon® Scalable Processors<br>Single Socket LGA 4189 (Socket P+) supported<br>TDP up to 270W;  |
| Key Applications           | <ul style="list-style-type: none"> <li>• Appliance Optimized Storage</li> <li>• Database Processing &amp; Storage</li> <li>• Enterprise Server</li> </ul>  | <ul style="list-style-type: none"> <li>• Database Applications</li> <li>• Data Warehousing, Archiving</li> <li>• Backup Storage, Cold Storage</li> </ul>   |
| Outstanding Features       | <ul style="list-style-type: none"> <li>• Expander chip and JBOD support, up to 36x SATA/SAS drives with PCI-E 4.0 SAS Controller</li> <li>• 4U 36 Bay High Density Storage</li> <li>• 2x optional Gen 4 NVMe drives; onboard 1x M.2 NVMe/SATA</li> </ul> | <ul style="list-style-type: none"> <li>• Top Loading with expander chip, up to 45x SATA/SAS drives with PCI-E 4.0 SAS Controller</li> <li>• 5 Hot-Swap 8cm redundant PWM fans</li> <li>• 2x optional Gen 4 NVMe drives + 2 rear Hot-swap 2.5" SATA drive bays; onboard 1x M.2 NVMe/SATA</li> </ul> |
| Serverboard                | SUPERMICRO® X12SPI-TF  | SUPERMICRO® X12SPI-TF  |
| Chipset                    | Intel® C621A   | Intel® C621A   |
| System Memory (Max.)       | 8 DIMM slots<br>Intel® DCPMM, DDR4-3200MHz<br>ECC LRDIMM, DDR4-3200MHz<br>ECC RDIMM, DDR4-3200MHz  | 8 DIMM slots<br>Intel® DCPMM, DDR4-3200MHz<br>ECC LRDIMM, DDR4-3200MHz<br>ECC RDIMM, DDR4-3200MHz  |
| Expansion Slots            | 2 PCI-E 4.0 x16 LP slot(s)<br>2 PCI-E 4.0 x8 LP slot(s)  | 2 PCI-E 4.0 x16 LP slot(s)<br>2 PCI-E 4.0 x8 LP slot(s)  |
| Onboard Storage Controller | -E1CTR36H: Broadcom® 3908<br>-E1CTR36L: Broadcom® 3808   | -E1CTR45H: Broadcom® 3908<br>-E1CTR45L: Broadcom® 3808   |
| Connectivity               | 2x 10GbE RJ45 port(s) with Intel® Ethernet Controller X550   | 2x 10GbE RJ45 port(s) with Intel® Ethernet Controller X550   |
| VGA/Audio                  | 1 onboard VGA port   | 1 onboard VGA port   |
| Management                 | Intel® Node Manager; IPMI2.0; KVM with dedicated LAN; NMI; Redfish API; SPM; SSM; SUM  | Intel® Node Manager; IPMI2.0; KVM with dedicated LAN; NMI; Redfish API; SPM; SSM; SUM  |
| Drive Bays                 | 36x 3.5" hot-swap SATA/SAS drive bays;   | 2x 2.5" hot-swap SATA/SAS drive bays;  |
| Peripheral Bays            | 2x 2.5" SATA or NVMe (optional)  | 2x 2.5" SATA   |
| Power Supply               | Redundant 1200W Titanium level (96%)   | Redundant 1600W Platinum level (94%)   |
| Cooling System             | 7x (8cm x 8cm x 3.8cm) heavy duty fan(s)   | 5x (8cm x 8cm x 3.8cm) heavy duty fan(s)   |
| Form Factor                | 4U Rackmount<br>Enclosure: 437 x 178 x 699mm (17.2" x 7" x 27.5")<br>Package: 656 x 445 x 1003mm (27" x 17.5" x 39.5")   | 4U Rackmount<br>Enclosure: 437 x 178 x 660mm (17.2" x 7" x 26")<br>Package: 711 x 559 x 1067mm (28" x 22" x 42")   |

# X12 STORAGE



1U UP 10x NVMe  
(For Complete System Only)



2U UP 12x Drives



| MODEL                      | SSG-110P-NTR10   | SSG-520P-ACR12H<br>SSG-520P-ACR12L  |
|----------------------------|--|---|
| Processor Support          | Support Intel® 3rd Gen Xeon® Scalable Processors<br>Single Socket LGA 4189 (Socket P+) supported<br>TDP up to 270W;  | Support Intel® 3rd Gen Xeon® Scalable Processors<br>Single Socket LGA 4189 (Socket P+) supported<br>TDP up to 270W;   |
| Key Applications           | <ul style="list-style-type: none"> <li>Virtualization</li> <li>CDN Optimized</li> <li>All Flash Storage</li> <li>Cloud Computing</li> </ul>  | <ul style="list-style-type: none"> <li>Appliance Optimized Storage</li> <li>Database Processing &amp; Storage</li> <li>Enterprise Server</li> </ul>   |
| Outstanding Features       | <ul style="list-style-type: none"> <li>Optimized Cooling with support up to 270W TDP processor</li> <li>2x NVMe/SATA M.2 supported</li> <li>10x NVMe tool-less drive bays</li> </ul> | <ul style="list-style-type: none"> <li>Server remote management: IPMI 2.0/KVM over LAN/Media over LAN</li> <li>Direct-attached 12x 3.5" hot-swap SATA/SAS drive bays with PCI-E 4.0 SAS Controller</li> <li>Cost-effective 2U rackmount storage</li> <li>2x optional Gen 4 NVMe drives; onboard 1x M.2 NVMe/SATA</li> </ul> |
| Serverboard                | SUPERMICRO® X12SPO-NTF   | SUPERMICRO® X12SPI-TF   |
| Chipset                    | Intel® C621A   | Intel® C621A  |
| System Memory (Max.)       | 8 DIMM slots<br>Intel® DCPMM, DDR4-3200MHz<br>ECC LRDIMM, DDR4-3200MHz<br>ECC RDIMM, DDR4-3200MHz  | 8 DIMM slots<br>Intel® DCPMM, DDR4-3200MHz<br>ECC LRDIMM, DDR4-3200MHz<br>ECC RDIMM, DDR4-3200MHz   |
| Expansion Slots            | 1 PCI-E 4.0 x16 FHHL slot(s)   | 2 PCI-E 4.0 x16 LP slot(s)<br>2 PCI-E 4.0 x8 LP slot(s)   |
| Onboard Storage Controller | NVMe   | -ACTR12H: Broadcom® 3916<br>-ACTR12L: Broadcom® 3816  |
| Connectivity               | 2x 10GbE RJ45 port(s) with Intel® Ethernet Controller X550   | 2x 10GbE RJ45 port(s) with Intel® Ethernet Controller X550  |
| VGA/Audio                  | 1 onboard VGA port   | 1 onboard VGA port  |
| Management                 | Intel® Node Manager; IPMI2.0; KVM with dedicated LAN; NMI; Redfish API; SPM; SSM; SUM  | Intel® Node Manager; IPMI2.0; KVM with dedicated LAN; NMI; Redfish API; SPM; SSM; SUM   |
| Drive Bays                 | 10x 2.5" hot-swap NVMe drive bays;   | 12x 3.5" hot-swap SATA/SAS drive bays;  |
| Peripheral Bays            | None   | 2x 2.5" SATA or NVMe (optional)   |
| Power Supply               | Redundant 860W Platinum level (94%)  | Redundant 800W Titanium level (96%)   |
| Cooling System             | 6x (4cm x 4cm x 5.6cm) heavy duty fan(s)   | 3x (8cm x 8cm x 3.8cm) heavy duty fan(s)  |
| Form Factor                | 1U Rackmount<br>Enclosure: 437 x 43 x 597mm (17.2" x 1.7" x 23.5")<br>Package: 610 x 203 x 813mm (24" x 8" x 32")  | 2U Rackmount<br>Enclosure: 437 x 89 x 650mm (17.2" x 3.5" x 25.6")<br>Package: 673 x 292 x 864mm (26.5" x 11.5" x 34")  |

# X12 MAINSTREAM

**NEW!**

3rd Gen Intel® Xeon® Scalable processors Supported



| MODEL                      | SYS-220P-C9R  | SYS-220P-C9RT   | SYS-620P-TR  |
|----------------------------|---|---|--|
| Processor Support          | 3rd Gen Intel® Xeon® Scalable processors<br>Dual Socket LGA-4189 (Socket P+) supported<br>TDP up to 270W;   | 3rd Gen Intel® Xeon® Scalable processors<br>Dual Socket LGA-4189 (Socket P+) supported<br>TDP up to 270W;   | 3rd Gen Intel® Xeon® Scalable processors<br>Dual Socket LGA-4189 (Socket P+) supported<br>TDP up to 270W;  |
| Key Applications           | <ul style="list-style-type: none"> <li>Application-Optimized Solutions</li> <li>Database Processing and High Density Storage</li> <li>Data Center Optimized</li> <li>Enterprise Server</li> <li>High Performance Computing</li> </ul> | <ul style="list-style-type: none"> <li>Application-Optimized Solutions</li> <li>Database Processing and High Density Storage</li> <li>Data Center Optimized</li> <li>Enterprise Server</li> <li>High Performance Computing</li> </ul> | <ul style="list-style-type: none"> <li>Virtualization</li> <li>Compute Intensive Applications</li> <li>Model analysis</li> <li>Application and data serving</li> <li>Data Center Optimized</li> <li>Enterprise Server</li> </ul> |
| Outstanding Features       | <ul style="list-style-type: none"> <li>High end all-purpose 2U rackmount server</li> </ul>  | <ul style="list-style-type: none"> <li>High end all-purpose 2U rackmount server</li> </ul>  | <ul style="list-style-type: none"> <li>Cost effective all-purpose 2U rackmount server</li> </ul>   |
| Serverboard                | SUPERMICRO® X12DPI-N6   | SUPERMICRO® X12DPI-NT6  | SUPERMICRO® X12DPI-N6  |
| Chipset                    | Intel® C621A  | Intel® C621A  | Intel® C621A   |
| System Memory (Max.)       |   |   |  |
| Expansion Slots            | 4x PCI-E 4.0 x16 LP slot(s); 1x PCI-E 4.0 x8 LP slot(s)   | 4x PCI-E 4.0 x16 LP slot(s); 1x PCI-E 4.0 x8 LP slot(s)   | 4x PCI-E 4.0 x16 LP slot(s); 2x PCI-E 4.0 x8 LP slot(s)  |
| Onboard Storage Controller | Intel® C621A<br>Broadcom® 3908  | Intel® C621A<br>Broadcom® 3908  | Intel® C621A   |
| Connectivity               | 2x 1GbE port(s)   | 2x 10GbE port(s)  | 2x 1GbE port(s)  |
| VGA/Audio                  | 1 VGA port  | 1 VGA port  | 1 VGA port   |
| Management                 | Intel® Node Manager; IPMI2.0; KVM with dedicated LAN; NMI; Redfish API; SPM; SSM; SUM; Supermicro Out of Band (OOB) License   | Intel® Node Manager; IPMI2.0; KVM with dedicated LAN; NMI; Redfish API; SPM; SSM; SUM; Supermicro Out of Band (OOB) License   | Intel® Node Manager; IPMI2.0; KVM with dedicated LAN; NMI; Redfish API; SPM; SSM; SUM; Supermicro Out of Band (OOB) License  |
| Drive Bays                 | 6x 2.5" hot-swap drive bays;<br>4x 2.5" NVMe optional   | 6x 2.5" hot-swap drive bays;<br>4x 2.5" NVMe optional   | 8x 3.5" hot-swap drive bays;<br>2x 2.5" NVMe fixed drives optional   |
| Peripheral Bays            | 1x (slim or 5.25") DVD (optional)   | 1x (slim or 5.25") DVD (optional)   | 1x slim DVD (optional)   |
| Power Supply               | Redundant 1200W Titanium level (96%)  | Redundant 1200W Titanium level (96%)  | Redundant 1200W Titanium level (96%)   |
| Cooling System             | 3 heavy duty fan(s)   | 3 heavy duty fan(s)   | 3 heavy duty fan(s)  |
| Form Factor                | 2U rackmount<br>Enclosure: 437 x 89 x 630mm (17.2" x 3.5" x 24.8")  | 2U rackmount<br>Enclosure: 437 x 89 x 630mm (17.2" x 3.5" x 24.8")  | 2U rackmount<br>Enclosure: 437 x 89 x 647mm (17.2" x 3.5" x 25.5")   |

# X12 MAINSTREAM



DP Mainstream



UP Mainstream



UP Mainstream



| MODEL                      | SYS-620P-TRT   | SYS-510P-M   | SYS-510P-MR  |
|----------------------------|--|--|--|
| Processor Support          | 3rd Gen Intel® Xeon® Scalable processors<br>Dual Socket LGA-4189 (Socket P+) supported<br>TDP up to 270W;  | Support Intel® 3rd Gen Xeon® Scalable<br>Processors<br>Single Socket LGA 4189 (Socket P+) supported<br>TDP up to 220W;                 | Support Intel® 3rd Gen Xeon® Scalable<br>Processors<br>Single Socket LGA 4189 (Socket P+) supported<br>TDP up to 220W;                 |
| Key Applications           | <ul style="list-style-type: none"> <li>Virtualization</li> <li>Compute Intensive Applications</li> <li>Model analysis</li> <li>Application and data serving</li> <li>Data Center Optimized</li> <li>Enterprise Server</li> </ul> | <ul style="list-style-type: none"> <li>Email/Firewall/Print Server</li> <li>Web/Hosting Application</li> <li>Small Business</li> </ul> | <ul style="list-style-type: none"> <li>Email/Firewall/Print Server</li> <li>Web/Hosting Application</li> <li>Small Business</li> </ul> |
| Outstanding Features       | <ul style="list-style-type: none"> <li>Cost effective all-purpose 2U rackmount server</li> </ul>   | <ul style="list-style-type: none"> <li>Short Depth</li> <li>Cost Effective</li> <li>2x NVMe/SATA M.2 supported</li> </ul>              | <ul style="list-style-type: none"> <li>Short Depth.</li> <li>Cost Effective.</li> <li>2x NVMe/SATA M.2 supported.</li> </ul>           |
| Serverboard                | SUPERMICRO X12DPI-NT6  | SUPERMICRO X12SPO-F  | SUPERMICRO X12SPO-F  |
| Chipset                    | Intel® C621A   | Intel® C621A   | Intel® C621A   |
| System Memory (Max.)       |  | 8 DIMM slots<br>Intel® DCPMM, DDR4-3200MHz<br>ECC LRDIMM, DDR4-3200MHz<br>ECC RDIMM, DDR4-3200MHz                                      | 8 DIMM slots<br>Intel® DCPMM, DDR4-3200MHz<br>ECC LRDIMM, DDR4-3200MHz<br>ECC RDIMM, DDR4-3200MHz                                      |
| Expansion Slots            | 4x PCI-E 4.0 x16 LP slot(s); 2x PCI-E 4.0 x8 LP slot(s)  | 1 PCI-E 4.0 x16 FHHL slot(s)   | 1 PCI-E 4.0 x16 FHHL slot(s)   |
| Onboard Storage Controller | Intel® C621A   | Intel® SATA  | Intel® SATA  |
| Connectivity               | 2x 10GbE port(s)   | 2x 1GbE RJ45 port(s) with Intel® Ethernet Controller i350  | 2x 1GbE RJ45 port(s) with Intel® Ethernet Controller i350  |
| VGA/Audio                  | 1 VGA port   | 1 onboard VGA port   | 1 onboard VGA port   |
| Management                 | Intel® Node Manager; IPMI2.0; KVM with dedicated LAN; NMI; Redfish API; SPM; SSM; SUM; Supermicro Out of Band (OOB) License  | Intel® Node Manager; IPMI2.0; KVM with dedicated LAN; NMI; Redfish API; SPM; SSM; SUM  | Intel® Node Manager; IPMI2.0; KVM with dedicated LAN; NMI; Redfish API; SPM; SSM; SUM  |
| Drive Bays                 | 8x 3.5" hot-swap drive bays;<br>2x 2.5" NVMe fixed drives optional   | 4x 3.5" NVMe/SATA drive bays; 4x 3.5" NVMe hybrid;   | 4x 3.5" NVMe/SATA drive bays; 4x 3.5" NVMe hybrid;   |
| Peripheral Bays            | 1x slim DVD (optional)   | 2x 2.5"  | 2x 2.5"  |
| Power Supply               | Redundant 1200W Titanium level (96%)   | 500W Platinum level (94%)  | Redundant 400W Platinum level (94%)  |
| Cooling System             | 3 heavy duty fan(s)  | 4x (4cm x 4cm x 2.8cm) heavy duty fan(s)   | 4x (4cm x 4cm x 2.8cm) heavy duty fan(s)   |
| Form Factor                | 2U rackmount<br>Enclosure: 437 x 89 x 647mm (17.2" x 3.5" x 25.5")   | 1U Rackmount<br>Enclosure: 437 x 43 x 507mm (17.2" x 1.7" x 19.98")<br>Package: 609.6 x 215.9 x 749.3mm (24" x 8.5" x 29.5")           | 1U Rackmount<br>Enclosure: 437 x 43 x 507mm (17.2" x 1.7" x 19.98")<br>Package: 609.6 x 215.9 x 749.3mm (24" x 8.5" x 29.5")           |

# X12 MAINSTREAM

**NEW!**

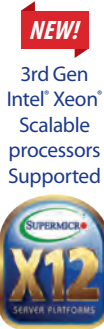
3rd Gen Intel® Xeon® Scalable processors Supported



| MODEL                      | SYS-740P-TR   | SYS-740P-TRT  |
|----------------------------|---|---|
| Processor Support          | 3rd Gen Intel® Xeon® Scalable processors<br>Dual Socket LGA-4189 (Socket P+) supported<br>TDP up to 270W;   | 3rd Gen Intel® Xeon® Scalable processors<br>Dual Socket LGA-4189 (Socket P+) supported<br>TDP up to 270W;   |
| Key Applications           | <ul style="list-style-type: none"> <li>• Office environment</li> <li>• Compute Intensive Applications</li> <li>• Model analysis</li> <li>• Application and data serving</li> <li>• Enterprise Server</li> </ul> | <ul style="list-style-type: none"> <li>• Office environment</li> <li>• Compute Intensive Applications</li> <li>• Model analysis</li> <li>• Application and data serving</li> <li>• Enterprise Server</li> </ul> |
| Outstanding Features       | <ul style="list-style-type: none"> <li>• Cost-effective all-purpose tower server</li> </ul>   | <ul style="list-style-type: none"> <li>• Cost-effective all-purpose tower server</li> </ul>   |
| Serverboard                | SUPER® X12DPI-N6  | SUPER® X12DPI-NT6   |
| Chipset                    | Intel® C621A  | Intel® C621A  |
| System Memory (Max.)       |   |   |
| Expansion Slots            | 4 PCI-E 4.0 x16 Full-height slot(s); 2 PCI-E 4.0 x8 Full-height slot(s)   | 4 PCI-E 4.0 x16 Full-height slot(s); 2 PCI-E 4.0 x8 Full-height slot(s)   |
| Onboard Storage Controller | Intel® C621A  | Intel® C621A  |
| Connectivity               | 2x 1GbE port(s)   | 2x 10GbE port(s)  |
| VGA/Audio                  | 1 VGA port  | 1 VGA port  |
| Management                 | Intel® Node Manager; IPMI2.0; KVM with dedicated LAN; NMI; Redfish API; SPM; SSM; SUM; Supermicro Out of Band (OOB) License   | Intel® Node Manager; IPMI2.0; KVM with dedicated LAN; NMI; Redfish API; SPM; SSM; SUM; Supermicro Out of Band (OOB) License   |
| Drive Bays                 | 8x 3.5" hot-swap drive bays;<br>2x 2.5" NVMe hybrid;<br>2.5" NVMe fixed drives optional   | 8x 3.5" hot-swap drive bays;<br>2x 2.5" NVMe hybrid;<br>2.5" NVMe fixed drives optional   |
| Peripheral Bays            | 1x 5.25" DVD (optional)   | 1x 5.25" DVD (optional)   |
| Power Supply               | Redundant 1200W Titanium level (96%)  | Redundant 1200W Titanium level (96%)  |
| Cooling System             | 3 (middle) and 2 (rear) heavy duty fans   | 3 (middle) and 2 (rear) heavy duty fans   |
| Form Factor                | Tower/4U rackmount<br>Enclosure: 178 x 452 x 648mm (7" x 17.8" x 25.5")   | Tower/4U rackmount<br>Enclosure: 178 x 452 x 648mm (7" x 17.8" x 25.5")   |

# X12 HYPER-E

(For Complete System Only)



Front I/O, DC Power  
Optimized for 5G and Telco



Front I/O, AC Power  
Optimized for 5G and Telco



| MODEL                      | SYS-220HE-FTNRD  | SYS-220HE-FTNR   |
|----------------------------|--|--|
| Processor Support          | Dual Socket supported<br>TDP up to 270W; 3 UPI   | Dual Socket supported<br>TDP up to 270W; 3 UPI   |
| Key Applications           | •  | •  |
| Outstanding Features       | • Front I/O, tool-less design  | • Front I/O, tool-less design  |
| Serverboard                | SUPER <sup>®</sup> X12DHM-6  | SUPER <sup>®</sup> X12DHM-6  |
| Chipset                    | Intel <sup>®</sup> C621A   | Intel <sup>®</sup> C621A   |
| System Memory (Max.)       |  |  |
| Expansion Slots            | 3 PCI-E 4.0 x16 DW FHFL or 6 x8 SW FHFL slot(s)<br>PCI-E 4.0 x16 SW FHHL or 2 x8 SW FHHL slot(s)   | 3 PCI-E 4.0 x16 DW FHFL or 6 x8 SW FHFL slot(s)<br>PCI-E 4.0 x16 SW FHHL or 2 x8 SW FHHL slot(s)   |
| Onboard Storage Controller | Intel <sup>®</sup> SATA  | Intel <sup>®</sup> SATA  |
| Connectivity               | 2x 100GbE QSFP28 with Broadcom <sup>®</sup> BCM57508 (optional)<br>2x 10GbE RJ45 with Intel <sup>®</sup> X550-AT2 (optional)<br>2x 10GbE SFP+ with Intel <sup>®</sup> X710-BM2 (optional)<br>2x 1GbE RJ45 with Intel <sup>®</sup> i350-AM2 (optional)<br>2x 25GbE SFP28 with Broadcom <sup>®</sup> BCM57414 (optional)<br>4x 10GbE RJ45/SFP+ with Intel <sup>®</sup> X710-TM4 (optional)<br>4x 10GbE SFP+ with Intel <sup>®</sup> XL710-BM1 (optional)<br>4x 1GbE SFP or 4x 1GbE RJ45 with Intel <sup>®</sup> i350-AM4 (optional)<br>4x 25GbE RJ45/SFP28 with Mellanox <sup>®</sup> CX-4 Lx EN Intel <sup>®</sup> X550-AT2 (optional) via AIOM | 2x 100GbE QSFP28 with Broadcom <sup>®</sup> BCM57508 (optional)<br>2x 10GbE RJ45 with Intel <sup>®</sup> X550-AT2 (optional)<br>2x 10GbE SFP+ with Intel <sup>®</sup> X710-BM2 (optional)<br>2x 1GbE RJ45 with Intel <sup>®</sup> i350-AM2 (optional)<br>2x 25GbE SFP28 with Broadcom <sup>®</sup> BCM57414 (optional)<br>4x 10GbE RJ45/SFP+ with Intel <sup>®</sup> X710-TM4 (optional)<br>4x 10GbE SFP+ with Intel <sup>®</sup> XL710-BM1 (optional)<br>4x 1GbE SFP or 4x 1GbE RJ45 with Intel <sup>®</sup> i350-AM4 (optional)<br>4x 25GbE RJ45/SFP28 with Mellanox <sup>®</sup> CX-4 Lx EN Intel <sup>®</sup> X550-AT2 (optional) via AIOM |
| VGA/Audio                  | 1 VGA port   | 1 VGA port   |
| Management                 |  |  |
| Drive Bays                 | 6x 2.5" hot-swap NVMe/SATA drive bays; 6x 2.5" NVMe hybrid;<br>Optional RAID support via RAID Controller AOC   | 6x 2.5" hot-swap NVMe/SATA drive bays; 6x 2.5" NVMe hybrid;<br>Optional RAID support via RAID Controller AOC   |
| Peripheral Bays            | None   | None   |
| Power Supply               | 1300W DC -48V redundant (typical 92%)  | 2000W or 1200W AC redundant Titanium Level (typical 96%)   |
| Cooling System             | 6x 6cm heavy duty fan(s)   | 6x 6cm heavy duty fan(s)   |
| Form Factor                | 2U Rackmount<br>Enclosure: 436.88 x 88.9 x 574mm (17.2" x 3.5" x 22.6")<br>Package: 598 x 247 x 938mm (23.5" x 9.7" x 36.9")   | 2U Rackmount<br>Enclosure: 436.88 x 88.9 x 574mm (17.2" x 3.5" x 22.6")<br>Package: 598 x 247 x 938mm (23.5" x 9.7" x 36.9")   |

# X12 HYPER

(For Complete System Only)

Optimized for 5G and Telco



Coming Soon!



Coming Soon!



| MODEL                      | SYS-220H-TN24R   | SYS-620H-TN12R   | SYS-120H-TNR   |
|----------------------------|--|--|--|
| Processor Support          | 3rd Gen Intel® Xeon® Scalable processors<br>Dual Socket LGA-4189 (Socket P+) supported<br>TDP up to 270W; 3 UPI  | 3rd Gen Intel® Xeon® Scalable processors<br>Dual Socket LGA-4189 (Socket P+) supported<br>TDP up to 270W; 3 UPI  | 3rd Gen Intel® Xeon® Scalable processors<br>Dual Socket LGA-4189 (Socket P+) supported<br>TDP up to 270W; 3 UPI  |
| Key Applications           | <ul style="list-style-type: none"> <li>Software-defined Storage</li> <li>Virtualization</li> <li>Enterprise Server</li> <li>Cloud Computing</li> <li>AI Inference and Machine Learning</li> </ul>  | <ul style="list-style-type: none"> <li>Software-defined Storage</li> <li>Virtualization</li> <li>Enterprise Server</li> <li>Cloud Computing</li> <li>AI Inference and Machine Learning</li> </ul>  | <ul style="list-style-type: none"> <li>Software-defined Storage</li> <li>Virtualization</li> <li>Enterprise Server</li> <li>Cloud Computing</li> <li>AI Inference and Machine Learning</li> </ul>  |
| Outstanding Features       | <ul style="list-style-type: none"> <li>Tool-less system design for easy maintenance</li> <li>Flexible networking options with AIOM/OCN NIC 3.0 support</li> <li>24x 2.5" hot-swap NVMe/SATA/SAS drive bays</li> </ul>  | <ul style="list-style-type: none"> <li>Tool-less system design for easy maintenance</li> <li>Flexible networking options with AIOM/OCN NIC 3.0 support</li> <li>12x 3.5"/2.5" hot-swap NVMe/SATA/SAS drive bays</li> </ul>   | <ul style="list-style-type: none"> <li>Tool-less system design for easy maintenance</li> <li>Storage configurations up to 12x 2.5" hot-swap NVMe/SATA/SAS drive bays</li> <li>Flexible networking options with AIOM/OCN NIC 3.0 support</li> </ul>   |
| Serverboard                | SUPER <sup>®</sup> X12DHM-6  | SUPER <sup>®</sup> X12DHM-6  | SUPER <sup>®</sup> X12DHM-6  |
| Chipset                    | Intel® C621A   | Intel® C621A   | Intel® C621A   |
| System Memory (Max.)       | 32 DIMM slots<br>Up to 8TB Intel® DCPMM, DDR4-3200MHz<br>Up to 8TB ECC LRDIMM, DDR4-3200MHz<br>Up to 8TB ECC RDIMM, DDR4-3200MHz   | 32 DIMM slots<br>Up to 8TB Intel® DCPMM, DDR4-3200MHz<br>Up to 8TB ECC LRDIMM, DDR4-3200MHz<br>Up to 8TB ECC RDIMM, DDR4-3200MHz   | 32 DIMM slots<br>Up to 8TB Intel® DCPMM, DDR4-3200MHz<br>Up to 8TB ECC LRDIMM, DDR4-3200MHz<br>Up to 8TB ECC RDIMM, DDR4-3200MHz   |
| Expansion Slots            | Configurable PCI-E slot options up to 8 PCI-E 4.0 x8 or 4 PCI-E 4.0 x16 FH, 10.5"L   | Configurable PCI-E slot options up to 8 PCI-E 4.0 x8 or 4 PCI-E 4.0 x16 FH, 10.5"L   | 3 PCI-E 4.0 x16 FH, 10.5"L   |
| Onboard Storage Controller | Intel® SATA  | Intel® SATA  | Intel® SATA  |
| Connectivity               | 2x 100GbE QSFP28 with Broadcom® BCM57508 (optional)<br>2x 10GbE RJ45 with Intel® X550-AT2 (optional)<br>2x 10GbE SFP+ with Intel® X710-BM2 (optional)<br>2x 1GbE RJ45 with Intel® i350-AM2 (optional)<br>2x 25GbE SFP28 with Broadcom® BCM57414 (optional)<br>4x 10GbE RJ45/SFP+ with Intel® X710-TM4 (optional)<br>4x 10GbE SFP+ with Intel® XL710-BM1 (optional)<br>4x 1GbE SFP or 4x 1GbE RJ45 with Intel® i350-AM4 (optional)<br>4x 25GbE RJ45/SFP28 with Mellanox® CX-4 Lx EN Intel® X550-AT2 (optional) via AIOM | 2x 100GbE QSFP28 with Broadcom® BCM57508 (optional)<br>2x 10GbE RJ45 with Intel® X550-AT2 (optional)<br>2x 10GbE SFP+ with Intel® X710-BM2 (optional)<br>2x 1GbE RJ45 with Intel® i350-AM2 (optional)<br>2x 25GbE SFP28 with Broadcom® BCM57414 (optional)<br>4x 10GbE RJ45/SFP+ with Intel® X710-TM4 (optional)<br>4x 10GbE SFP+ with Intel® XL710-BM1 (optional)<br>4x 1GbE SFP or 4x 1GbE RJ45 with Intel® i350-AM4 (optional)<br>4x 25GbE RJ45/SFP28 with Mellanox® CX-4 Lx EN Intel® X550-AT2 (optional) via AIOM | 2x 100GbE QSFP28 with Broadcom® BCM57508 (optional)<br>2x 10GbE RJ45 with Intel® X550-AT2 (optional)<br>2x 10GbE SFP+ with Intel® X710-BM2 (optional)<br>2x 1GbE RJ45 with Intel® i350-AM2 (optional)<br>2x 25GbE SFP28 with Broadcom® BCM57414 (optional)<br>4x 10GbE RJ45/SFP+ with Intel® X710-TM4 (optional)<br>4x 10GbE SFP+ with Intel® XL710-BM1 (optional)<br>4x 1GbE SFP or 4x 1GbE RJ45 with Intel® i350-AM4 (optional)<br>4x 25GbE RJ45/SFP28 with Mellanox® CX-4 Lx EN Intel® X550-AT2 (optional) via AIOM |
| VGA/Audio                  | 1 VGA port   | None   | 1 VGA port   |
| 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  |
| Drive Bays                 | 24x 2.5" hot-swap NVMe/SATA/SAS drive bays; 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; 8x 2.5" NVMe hybrid; Optional RAID support via RAID Controller AOC  |
| Peripheral Bays            | None   | None   | None   |
| Power Supply               | Redundant 1600W Titanium level (96%)   | Redundant 1200W Titanium level (96%)   | Redundant 1200W Titanium level (96%)   |
| Cooling System             | 4x 8cm heavy duty fan(s)   | 4x 8cm heavy duty fan(s)   | 8x 4cm heavy duty fan(s)   |
| Form Factor                | 2U Rackmount<br>Enclosure: 436.88 x 88.9 x 760mm (17.2" x 3.5" x 29.9")<br>Package: 625 x 253 x 1154mm (24.6" x 9.96" x 45.43")  | 2U Rackmount<br>Enclosure: 436.88 x 88.9 x 803mm (17.2" x 3.5" x 31.6")<br>Package: 605 x 256 x 947mm (23.81" x 10.07" x 37.28")   | 1U Rackmount<br>Enclosure: 437 x 43 x 746mm (17.2" x 1.7" x 29.36")<br>Package: 605 x 205 x 1025mm (23.81" x 7.99" x 37.4")  |

# X12 SUPEREDGE

(For Complete System Only)

3 hot-pluggable systems (nodes) in 2U



3 hot-pluggable systems (nodes) in 2U



| MODEL                      | SYS-210SE-31A   | SYS-210SE-31D   |
|----------------------------|---|---|
| Processor Support          | 3rd Gen Intel® Xeon® Scalable processors<br>Single Socket LGA-4189 (Socket P+) supported<br>TDP up to 205W;   | 3rd Gen Intel® Xeon® Scalable processors<br>Single Socket LGA-4189 (Socket P+) supported<br>TDP up to 205W;   |
| Key Applications           | <ul style="list-style-type: none"> <li>Enterprise Edge Computing</li> <li>Telecom DRAN, CRAN, and Edge Core Application</li> <li>Flex-RAN, Open-RAN vBBU</li> <li>Multi-Access Edge Computing</li> </ul>                      | <ul style="list-style-type: none"> <li>Enterprise Edge Computing</li> <li>Telecom DRAN, CRAN, and Edge Core Application</li> <li>Flex-RAN, Open-RAN vBBU</li> <li>Multi-Access Edge Computing</li> </ul>                      |
| Outstanding Features       | <ul style="list-style-type: none"> <li>Three front hot-swappable nodes with single CPU socket and 8 DIMM design</li> <li>Front access IO design, and tool less serviceability</li> <li>16.9" (430mm) chassis depth</li> </ul> | <ul style="list-style-type: none"> <li>Three front hot-swappable nodes with single CPU socket and 8 DIMM design</li> <li>Front access IO design, and tool less serviceability</li> <li>16.9" (430mm) chassis depth</li> </ul> |
| Serverboard                | SUPER® X12SPED-F  | SUPER® X12SPED-F  |
| Chipset                    | Intel® C621A  | Intel® C621A  |
| System Memory (Max.)       | 8 DIMM slots<br>Up to 2TB ECC RDIMM/LRDIMM, DDR4-3200MHz  | 8 DIMM slots<br>Up to 2TB ECC RDIMM/LRDIMM, DDR4-3200MHz  |
| Expansion Slots            | 2 PCIe 4.0 x16 FHHL, PCIe 4.0 x16 LP  | 2 PCIe 4.0 x16 FHHL, PCIe 4.0 x16 LP  |
| Onboard Storage Controller | Intel® SATA   | Intel® SATA   |
| Connectivity               |   |   |
| VGA/Audio                  | 1 VGA port  | 1 VGA port  |
| Management                 | IPMI 2.0; SuperDoctor® 5  | IPMI 2.0; SuperDoctor® 5  |
| Drive Bays                 | 0x NVMe drive bays;   | 0x NVMe drive bays;   |
| Peripheral Bays            | None  | None  |
| Power Supply               | 2000W AC Redundant PSU  | 2000W DC Redundant PSU  |
| Cooling System             | 4 heavy duty fan(s)   | 4 heavy duty fan(s)   |
| Form Factor                | 2U Rackmount<br>Enclosure: 449 x 88 x 430mm (17.7" x 3.5" x 16.9")<br>Package: 750 x 240 x 590mm (29.5" x 9.5" x 23.2")   | 2U Rackmount<br>Enclosure: 449 x 88 x 430mm (17.7" x 3.5" x 16.9")<br>Package: 750 x 240 x 590mm (29.5" x 9.5" x 23.2")   |



# X12 FATTWIN®

(For Complete System Only)



8 Nodes, Rear IO



4 Nodes, Rear IO



| MODEL                      | SYS-F610P2-RTN  | SYS-F620P3-RTBN   |
|----------------------------|---|---|
| Processor Support          | 3rd Gen Intel® Xeon® Scalable processors<br>Dual Socket LGA-4189 (Socket P+) supported<br>TDP up to 185W; 3 UPI   | 3rd Gen Intel® Xeon® Scalable processors<br>Dual Socket LGA-4189 (Socket P+) supported<br>TDP up to 205W; 3 UPI   |
| Key Applications           | <ul style="list-style-type: none"> <li>Hyperscale / Hyperconverged</li> <li>Virtualization Server</li> <li>Scale-Out Storage</li> <li>Telco Data Center and ETSI certified</li> <li>Data Center Enterprise Applications</li> <li>HPC and Big Data</li> </ul>  | <ul style="list-style-type: none"> <li>Hyperscale / Hyperconverged</li> <li>Virtualization Server (VSAN)</li> <li>High Capacity and Ultra Dense Storage</li> <li>Telco Data Center and ETSI certified</li> <li>Data Center Enterprise Applications</li> <li>HPC and Big Data</li> </ul>   |
| Outstanding Features       | <ul style="list-style-type: none"> <li>Shared power architecture for best efficiency</li> <li>Redundant cooling and power configurations for high availability</li> <li>Optimized designs for storage and compute density</li> <li>HDD hot-swap capability</li> <li>4U 8-node architecture with front serviceability from cold aisle for all nodes</li> </ul> | <ul style="list-style-type: none"> <li>Shared power architecture for best efficiency</li> <li>Redundant cooling and power configurations for high availability</li> <li>Optional 2x Additional Internal SSDs</li> <li>Optimized designs for storage and compute density</li> <li>HDD hot-swap capability</li> <li>4U 4-node architecture with front serviceability from cold aisle for all nodes</li> </ul> |
| Serverboard                | SUPERMIC® X12DPFR-AN6   | SUPERMIC® X12DPFR-AN6   |
| Chipset                    | Intel® C621A  | Intel® C621A  |
| System Memory (Max.)       | 16 DIMM slots<br>Up to 2TB RDIMM/LRDIMM, DDR4-3200MHz<br>Up to 4TB Intel® Optane™ Persistent Memory, DDR4-3200MHz   | 16 DIMM slots<br>Up to 2TB RDIMM/LRDIMM, DDR4-3200MHz<br>Up to 4TB Intel® Optane™ Persistent Memory, DDR4-3200MHz   |
| Expansion Slots            | M.2 slot(s)<br>PCI-E 4.0 x8 LP slot(s)  | AIOM slot(s)<br>HBA slot(s)<br>PCI-E 4.0 x16 LP slot(s)   |
| Onboard Storage Controller | Intel® SATA   | Intel® SATA   |
| Connectivity               | 1x 1GbE RJ45 (BMC) port(s) via AIOM   | 1x 1GbE RJ45 (BMC) port(s) via AIOM   |
| VGA/Audio                  | 1 VGA port, Aspeed AST2600 BMC  | 1 VGA port, Aspeed AST2600 BMC  |
| Management                 | Intel® Node Manager; IPMI 2.0; KVM with dedicated LAN; SPM; SSM; SUM; SuperDoctor® 5; Watch Dog   | Intel® Node Manager; IPMI 2.0; KVM with dedicated LAN; SPM; SSM; SUM; SuperDoctor® 5; Watch Dog   |
| Drive Bays                 | 6x 2.5" hot-swap NVMe/SATA/SAS drive bays; 6x 2.5" NVMe hybrid; 6x 2.5" 7mm drive bays  | 8x 3.5" hot-swap SATA/SAS drive bays; 8x 2.5" NVMe hybrid; 8x 2.5" 7mm drive bays   |
| Peripheral Bays            | None  | None  |
| Power Supply               | 2200W Titanium level (96%)  | 2200W Titanium level (96%)  |
| Cooling System             | 3x 4cm heavy duty fan(s)  | 2x 8cm heavy duty fan(s)  |
| Form Factor                | 4U Rackmount<br>Enclosure: 448 x 177 x 737mm (17.63" x 6.96" x 29")<br>Package: (28.3" x 15" x 42.4")   | 4U Rackmount<br>Enclosure: 448 x 177 x 737mm (17.63" x 6.96" x 29")<br>Package: (28.3" x 15" x 42.4")   |

# X12TWINPRO®

(For Complete System Only)



1U, 2 Nodes, 4x 2.5" Drives/Node



1U, 2 Nodes, 4x 2.5" Drives/Node



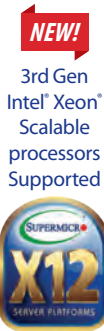
1U, 2 Nodes, 4x 2.5" Drives/Node



| MODEL                      | SYS-120TP-DTTR   | SYS-120TP-DC8TR  | SYS-120TP-DC9TR  |
|----------------------------|--|--|--|
| Processor Support          | 3rd Gen Intel® Xeon® Scalable processors<br>Dual Socket LGA 4189 (Socket P+) supported<br>TDP up to 185W; 2 UPI  | 3rd Gen Intel® Xeon® Scalable processors<br>Dual Socket LGA 4189 (Socket P+) supported<br>TDP up to 185W; 2 UPI  | 3rd Gen Intel® Xeon® Scalable processors<br>Dual Socket LGA 4189 (Socket P+) supported<br>TDP up to 185W; 2 UPI  |
| Key Applications           | <ul style="list-style-type: none"> <li>• Big Data / Big Science</li> <li>• Hyper-Converged Infrastructure</li> <li>• High Performance Computing</li> </ul>           | <ul style="list-style-type: none"> <li>• Big Data / Big Science Hyper-Converged Infrastructure High Performance Computing</li> </ul>                                 | <ul style="list-style-type: none"> <li>• Big Data / Big Science Hyper-Converged Infrastructure High Performance Computing</li> </ul>                                 |
| Outstanding Features       | <ul style="list-style-type: none"> <li>• The most cost optimized 1U, 2 node solution</li> </ul>  | <ul style="list-style-type: none"> <li>• The most cost optimized 1U, 2 node solution</li> </ul>  | <ul style="list-style-type: none"> <li>• The most cost optimized 1U, 2 node solution</li> </ul>  |
| Serverboard                | SUPER® X12DPT-PT6  | SUPER® X12DPT-PT6  | SUPER® X12DPT-PT6  |
| Chipset                    | Intel® C621A   | Intel® C621A   | Intel® C621A   |
| System Memory (Max.)       | 16 DIMM slots<br>Up to 4TB ECC RDIMM, DDR4-3200MHz   | 16 DIMM slots Up to 4TB ECC RDIMM, DDR4-3200MHz  | 16 DIMM slots Up to 4TB ECC RDIMM, DDR4-3200MHz  |
| Expansion Slots            | M.2 slot(s)<br>2 PCI-E 4.0 x16 LP slot(s)  | M.2 slot(s) PCI-E 4.0 x16 LP slot(s)   | M.2 slot(s) PCI-E 4.0 x16 LP slot(s)   |
| Onboard Storage Controller | Intel® SATA  | Broadcom® AOC-S3808L-L8IT  | Broadcom® AOC-S3908L-H8IR-16DD   |
| Connectivity               |  |  |  |
| VGA/Audio                  | 1 VGA port   | 1 VGA port   | 1 VGA port   |
| Management                 | Intel® Node Manager; IPMI 2.0; KVM with dedicated LAN; NMI; Redfish API; SPM; SSM; SUM; SuperDoctor® 5; Supermicro Out of Band (OOB) Software License Key; Watch Dog | Intel® Node Manager; IPMI 2.0; KVM with dedicated LAN; NMI; Redfish API; SPM; SSM; SUM; SuperDoctor® 5; Supermicro Out of Band (OOB) Software License Key; Watch Dog | Intel® Node Manager; IPMI 2.0; KVM with dedicated LAN; NMI; Redfish API; SPM; SSM; SUM; SuperDoctor® 5; Supermicro Out of Band (OOB) Software License Key; Watch Dog |
| Drive Bays                 | 4x 2.5" hot-swap SATA drive bays;  | 4x 2.5" hot-swap SATA/SAS drive bays;  | 4x 2.5" hot-swap SATA/SAS drive bays;  |
| Peripheral Bays            | None   | None   | None   |
| Power Supply               | 1000W Titanium level (96%)   | 1000W Titanium level (96%)   | 1000W Titanium level (96%)   |
| Cooling System             | 6x 4cm heavy duty fan(s)   | 6x 4cm heavy duty fan(s)   | 6x 4cm heavy duty fan(s)   |
| Form Factor                | 1U Rackmount<br>Enclosure: 438 x 43 x 718mm (17.25" x 1.7" x 28.25")<br>Package: 752 x 203 x 975mm (29.6" x 8" x 38.4")  | 1U Rackmount Enclosure: 438 x 43 x 718mm (17.25" x 1.7" x 28.25")<br>Package: 752 x 203 x 975mm (29.6" x 8" x 38.4")   | 1U Rackmount Enclosure: 438 x 43 x 718mm (17.25" x 1.7" x 28.25")<br>Package: 752 x 203 x 975mm (29.6" x 8" x 38.4")   |

# X12 TWINPRO®

(For Complete System Only)



2U, 4 Nodes, 6x 2.5" Drives/Node



2U, 4 Nodes, 6x 2.5" Drives/Node



2U, 4 Nodes, 6x 2.5" Drives/Node



| MODEL                      | SYS-220TP-HTTR   | SYS-220TP-HC8TR  | SYS-220TP-HC9TR  |
|----------------------------|--|--|--|
| Processor Support          | 3rd Gen Intel® Xeon® Scalable processors<br>Dual Socket LGA 4189 (Socket P+) supported<br>TDP up to 185W; 2 UPI  | 3rd Gen Intel® Xeon® Scalable processors<br>Dual Socket LGA 4189 (Socket P+) supported<br>TDP up to 185W; 2 UPI  | 3rd Gen Intel® Xeon® Scalable processors<br>Dual Socket LGA 4189 (Socket P+) supported<br>TDP up to 185W; 2 UPI  |
| Key Applications           | <ul style="list-style-type: none"> <li>• Big Data / Big Science</li> <li>• Hyper-Converged Infrastructure</li> <li>• High Performance Computing</li> </ul>           | <ul style="list-style-type: none"> <li>• Big Data / Big Science Hyper-Converged Infrastructure High Performance Computing</li> </ul>                                 | <ul style="list-style-type: none"> <li>• Big Data / Big Science Hyper-Converged Infrastructure High Performance Computing</li> </ul>                                 |
| Outstanding Features       | <ul style="list-style-type: none"> <li>• The most cost optimized 2U, 4 node solution</li> </ul>  | <ul style="list-style-type: none"> <li>• The most cost optimized 2U, 4 node solution</li> </ul>  | <ul style="list-style-type: none"> <li>• The most cost optimized 2U, 4 node solution</li> </ul>  |
| Serverboard                | SUPER® X12DPT-PT6  | SUPER® X12DPT-PT6  | SUPER® X12DPT-PT6  |
| Chipset                    | Intel® C621A   | Intel® C621A   | Intel® C621A   |
| System Memory (Max.)       | 16 DIMM slots<br>Up to 4TB ECC RDIMM, DDR4-3200MHz   | 16 DIMM slots Up to 4TB ECC RDIMM, DDR4-3200MHz  | 16 DIMM slots Up to 4TB ECC RDIMM, DDR4-3200MHz  |
| Expansion Slots            | M.2 slot(s)<br>2 PCI-E 4.0 x16 LP slot(s)  | M.2 slot(s) PCI-E 4.0 x16 LP slot(s)   | M.2 slot(s) PCI-E 4.0 x16 LP slot(s)   |
| Onboard Storage Controller | Intel® SATA  | Broadcom® AOC-S3808L-L8IT  | Broadcom® AOC-S3908L-H8IR  |
| Connectivity               | 2x 10GbE RJ45 port(s) with Intel® Ethernet Controller X710-AT2   |  |  |
| VGA/Audio                  | 1 VGA port   | 1 VGA port   | 1 VGA port   |
| Management                 | Intel® Node Manager; IPMI 2.0; KVM with dedicated LAN; NMI; Redfish API; SPM; SSM; SUM; SuperDoctor® 5; Supermicro Out of Band (OOB) Software License Key; Watch Dog | Intel® Node Manager; IPMI 2.0; KVM with dedicated LAN; NMI; Redfish API; SPM; SSM; SUM; SuperDoctor® 5; Supermicro Out of Band (OOB) Software License Key; Watch Dog | Intel® Node Manager; IPMI 2.0; KVM with dedicated LAN; NMI; Redfish API; SPM; SSM; SUM; SuperDoctor® 5; Supermicro Out of Band (OOB) Software License Key; Watch Dog |
| Drive Bays                 | 6x 2.5" hot-swap SATA drive bays;  | 6x 2.5" hot-swap SATA/SAS drive bays;  | 6x 2.5" hot-swap SATA/SAS drive bays;  |
| Peripheral Bays            | None   | None   | None   |
| Power Supply               | 2200W Titanium level (96%)   | 2200W Titanium level (96%)   | 2200W Titanium level (96%)   |
| Cooling System             | 4x 8cm heavy duty fan(s)   | 4x 8cm heavy duty fan(s)   | 4x 8cm heavy duty fan(s)   |
| Form Factor                | 2U Rackmount<br>Enclosure: 438 x 88 x 730mm (17.25" x 3.47" x 28.75")<br>Package: 622 x 254 x 1143mm (24.5" x 10" x 45")   | 2U Rackmount Enclosure: 438 x 88 x 730mm (17.25" x 3.47" x 28.75")<br>Package: 622 x 254 x 1143mm (24.5" x 10" x 45")  | 2U Rackmount Enclosure: 438 x 88 x 730mm (17.25" x 3.47" x 28.75")<br>Package: 622 x 254 x 1143mm (24.5" x 10" x 45")  |

# X12 TWINPRO®

(For Complete System Only)



2U, 4 Nodes, 3x 3.5" Drives/Node



2U, 4 Nodes, 3x 3.5" Drives/Node



2U, 4 Nodes, 3x 3.5" Drives/Node



| MODEL                      | SYS-620TP-HTTR   | SYS-620TP-HC8TR  | SYS-620TP-HC9TR  |
|----------------------------|--|--|--|
| Processor Support          | 3rd Gen Intel® Xeon® Scalable processors<br>Dual Socket LGA 4189 (Socket P+) supported<br>TDP up to 185W; 2 UPI  | 3rd Gen Intel® Xeon® Scalable processors<br>Dual Socket LGA 4189 (Socket P+) supported<br>TDP up to 185W; 2 UPI  | 3rd Gen Intel® Xeon® Scalable processors<br>Dual Socket LGA 4189 (Socket P+) supported<br>TDP up to 185W; 2 UPI  |
| Key Applications           | <ul style="list-style-type: none"> <li>• Big Data / Big Science</li> <li>• Hyper-Converged Infrastructure</li> <li>• High Performance Computing</li> </ul>           | <ul style="list-style-type: none"> <li>• Big Data / Big Science</li> <li>• Hyper-Converged Infrastructure</li> <li>• High Performance Computing</li> </ul>           | <ul style="list-style-type: none"> <li>• Big Data / Big Science</li> <li>• Hyper-Converged Infrastructure</li> <li>• High Performance Computing</li> </ul>           |
| Outstanding Features       | <ul style="list-style-type: none"> <li>• The most cost optimized 2U, 4 node solution</li> </ul>  | <ul style="list-style-type: none"> <li>• The most cost optimized 2U, 4 node solution</li> </ul>  | <ul style="list-style-type: none"> <li>• The most cost optimized 2U, 4 node solution</li> </ul>  |
| Serverboard                | SUPER® X12DPT-PT6  | SUPER® X12DPT-PT6  | SUPER® X12DPT-PT6  |
| Chipset                    | Intel® C621A   | Intel® C621A   | Intel® C621A   |
| System Memory (Max.)       | 16 DIMM slots<br>Up to 4TB ECC RDIMM, DDR4-3200MHz   | 16 DIMM slots<br>Up to 4TB ECC RDIMM, DDR4-3200MHz   | 16 DIMM slots<br>Up to 4TB ECC RDIMM, DDR4-3200MHz   |
| Expansion Slots            | M.2 slot(s)<br>2 PCI-E 4.0 x16 LP slot(s)  | M.2 slot(s)<br>PCI-E 4.0 x16 LP slot(s)  | M.2 slot(s)<br>PCI-E 4.0 x16 LP slot(s)  |
| Onboard Storage Controller | Intel® SATA  | Broadcom® AOC-S3808L-L8IT  | Broadcom® AOC-S3908L-H8IR  |
| Connectivity               | 2x 10GbE RJ45 port(s) with Intel® Ethernet Controller X710-AT2   |  |  |
| VGA/Audio                  | 1 VGA port   | 1 VGA port   | 1 VGA port   |
| Management                 | Intel® Node Manager; IPMI 2.0; KVM with dedicated LAN; NMI; Redfish API; SPM; SSM; SUM; SuperDoctor® 5; Supermicro Out of Band (OOB) Software License Key; Watch Dog | Intel® Node Manager; IPMI 2.0; KVM with dedicated LAN; NMI; Redfish API; SPM; SSM; SUM; SuperDoctor® 5; Supermicro Out of Band (OOB) Software License Key; Watch Dog | Intel® Node Manager; IPMI 2.0; KVM with dedicated LAN; NMI; Redfish API; SPM; SSM; SUM; SuperDoctor® 5; Supermicro Out of Band (OOB) Software License Key; Watch Dog |
| Drive Bays                 | 3x 3.5" hot-swap SATA drive bays;  | 3x 3.5" hot-swap SATA/SAS drive bays;  | 3x 3.5" hot-swap SATA/SAS drive bays;  |
| Peripheral Bays            | None   | None   | None   |
| Power Supply               | 2200W Titanium level (96%)   | 2200W Titanium level (96%)   | 2200W Titanium level (96%)   |
| Cooling System             | 4x 8cm heavy duty fan(s)   | 4x 8cm heavy duty fan(s)   | 4x 8cm heavy duty fan(s)   |
| Form Factor                | 2U Rackmount<br>Enclosure: 438 x 88 x 774mm (17.25" x 3.47" x 30.5")<br>Package: 622 x 254 x 1143mm (24.5" x 10" x 45")  | 2U Rackmount<br>Enclosure: 438 x 88 x 774mm (17.25" x 3.47" x 30.5")<br>Package: 622 x 254 x 1143mm (24.5" x 10" x 45")  | 2U Rackmount<br>Enclosure: 438 x 88 x 774mm (17.25" x 3.47" x 30.5")<br>Package: 622 x 254 x 1143mm (24.5" x 10" x 45")  |

# X12 MP

(For Complete System Only)



**NEW!**

3rd Gen Intel® Xeon® Scalable processors Supported



| MODEL                      | SYS-240P-TNRT   |
|----------------------------|---|
| Processor Support          | 3rd Gen Intel® Xeon® Scalable processors<br>Quad Socket LGA-4189 (Socket P+) supported<br>TDP up to 250W; 6 UPI up to 10.4GT/s  |
| Key Applications           | <ul style="list-style-type: none"> <li>• SAP HANA</li> <li>• HCI</li> <li>• In-Memory Database</li> <li>• Scientific Virtualization</li> <li>• ERP, CRM</li> <li>• Business Intelligence</li> <li>• Artificial Intelligence (AI)</li> </ul>   |
| Outstanding Features       | <ul style="list-style-type: none"> <li>• Large memory footprint for up to 18TB</li> <li>• Flexible onboard networking options up to dual 10G Ethernet &amp; dual SFP+</li> <li>• Flexible networking options with AIOM/OCP NIC 3.0 support</li> <li>• 24x 2.5" hybrid hot-swappable NVMe/SAS/SATA drive bays</li> </ul> |
| Serverboard                | SUPERMICRO® X12QCH+   |
| Chipset                    | Intel® C621   |
| System Memory (Max.)       | 48 DIMM slots<br>Up to 12TB ECC LRDIMM, DDR4-3200MHz<br>Up to 12TB ECC RDIMM, DDR4-3200MHz<br>Up to 18TB Intel® DCPMM, DDR4-2666MHz   |
| Expansion Slots            | 2 PCI-E 3.0 x16 FHFL slot(s)<br>2 PCI-E 3.0 x16 FHHL slot(s)<br>2 PCI-E 3.0 x8 FHFL slot(s)<br>4 PCI-E 3.0 x8 LP slot(s)  |
| Onboard Storage Controller | Intel® SATA   |
| Connectivity               | 2x 10GbE RJ45 and 2x 10GbE SFP+ port(s) with Intel® Ethernet Controller X710-TM4<br>100Gb QSFP 28 with AIOM (optional)  |
| VGA/Audio                  | 1 VGA port  |
| Management                 | IPMI 2.0; NMI; SUM; SuperDoctor® 5; Watch Dog   |
| Drive Bays                 | 24x 2.5" hot-swap NVMe/SAS3/SATA3 drive bays; 24x 2.5" NVMe hybrid;<br>Optional RAID support via RAID controller AOC  |
| Peripheral Bays            | None  |
| Power Supply               | Redundant 2000W Titanium level (80%)  |
| Cooling System             | 4x 8cm heavy duty fan(s)  |
| Form Factor                | 2U Rackmount<br>Enclosure: 439.5 x 89 x 803mm (17.3" x 3.5" x 31.6")<br>Package: 672 x 250 x 1100mm (26.5" x 9.75" x 43.5")   |

# X12 SUPERWORKSTATIONS

(For Complete System Only)

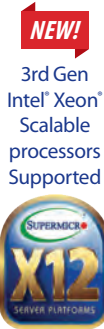
DP Workstation, 2-GPU Supported



DP Workstation, 2-GPU Supported



UP Workstation



| MODEL                      | SYS-740A-T  | SYS-730A-I  | SYS-540A-TR  |
|----------------------------|---|---|--|
| Processor Support          | 3rd Gen Intel® Xeon® Scalable processors<br>Dual Socket LGA-4189 (Socket P+) supported<br>TDP up to 270W; 3 UPI   | 3rd Gen Intel® Xeon® Scalable processors<br>Dual Socket LGA-4189 (Socket P+) supported<br>TDP up to 270W; 3 UPI   | 3rd Gen Intel® Xeon® Scalable processors<br>Single Socket LGA-4189 (Socket P+) supported<br>TDP up to 270W;<br>Intel® Xeon® W-3300 processors<br>Single Socket LGA-4189 (Socket P+) supported<br>TDP up to 270W;   |
| Key Applications           | <ul style="list-style-type: none"> <li>Engineering/scientific research</li> <li>Multimedia/Digital Content creation</li> <li>CAD</li> <li>Rendering</li> </ul>        | <ul style="list-style-type: none"> <li>Engineering/scientific research</li> <li>Multimedia/Digital Content creation</li> <li>CAD</li> <li>Rendering</li> </ul>                              | <ul style="list-style-type: none"> <li>Deep Learning/AI/Machine Learning Development</li> </ul>  |
| Outstanding Features       | <ul style="list-style-type: none"> <li>Supports up to two double width active GPUs</li> <li>Front accessible storage with 8x 3.5"/2.5" hot-swap drive bays</li> </ul> | <ul style="list-style-type: none"> <li>Supports up to two double width active GPUs</li> <li>New front bezel with keylock for added security</li> <li>Compact and quiet operation</li> </ul> | <ul style="list-style-type: none"> <li>Versatile: Full Tower or 4U Rack mount form factor</li> <li>Robust: Features 7 PCI-E Gen 4 slots</li> <li>Powerful: Up to 4 double-width GPUs</li> <li>Flexible: Supports either active &amp; passive GPUs</li> </ul> |
| Serverboard                | SUPER● X12DAI-N6  | SUPER● X12DAI-N6  | SUPER● X12SPA-TF   |
| Chipset                    | Intel® C621A  | Intel® C621A  | Intel® C621A   |
| System Memory (Max.)       | 16 DIMM slots<br>Up to 4 TB ECC LRDIMM, DDR4-3200MHz<br>Up to 4 TB ECC RDIMM, DDR4-3200MHz<br>Up to 512GB Intel® DCPMM, DDR4-3200MHz                                  | 16 DIMM slots<br>Up to 4 TB ECC LRDIMM, DDR4-3200MHz<br>Up to 4 TB ECC RDIMM, DDR4-3200MHz<br>Up to 512GB Intel® DCPMM, DDR4-3200MHz  | 16 DIMM slots<br>Up to 4TB ECC LRDIMM, DDR4-3200MHz  |
| Expansion Slots            | PCI-E 4.0 x8 FHHL slot(s)<br>5 PCI-E 4.0 x16 FHFL slot(s)   | PCI-E 4.0 x8 FHHL slot(s)<br>5 PCI-E 4.0 x16 FHFL slot(s)   | 7 PCI-E 3.0 x16 FHFL slot(s)   |
| Onboard Storage Controller | Intel® SATA   | Intel® SATA   | Intel® C621A   |
| Connectivity               | 2x 1GbE port(s)   | 2x 1GbE port(s)   | 1x 10GbE RJ45 port(s) with Marvell AQC113<br>1x 1GbE RJ45 port(s) with Intel® Ethernet Controller I210-AT<br>1x 1GbE RJ45 port(s) with Realtek RTL8211F PHY (dedicated IPMI)   |
| VGA/Audio                  | 1 VGA port  | 1 VGA port  | 1 VGA port   |
| Management                 | IPMI 2.0; KVM with dedicated LAN; NMI; Redfish API; SPM; SSM; SUM; SuperDoctor® 5; Watch Dog  | IPMI 2.0; KVM with dedicated LAN; NMI; Redfish API; SPM; SSM; SUM; SuperDoctor® 5; Watch Dog  | IPMI 2.0; KVM with dedicated LAN; SPM; SUM; SuperDoctor 5; Watch Dog   |
| Drive Bays                 | 8x 3.5" hot-swap SATA (SAS/NVMe optional) drive bays; 4x 2.5" NVMe hybrid; Optional RAID support via RAID controller AOC  | 4x 3.5" NVMe/SATA drive bays  | 8x 3.5" hot-swap SATA drive bays   |
| Peripheral Bays            | 3x 5.25" (optional)   | 2x 5.25" (optional)   | 3x 5.25"   |
| Power Supply               | Redundant 1200W Titanium level (96%)  | 1200W Platinum level (92%)  | Redundant 2200W Titanium level (96%)   |
| Cooling System             | 2x 8cm heavy duty fan(s)  | 2x 12cm heavy duty fan(s)   | 4x 92mm hot-swap fans; 2x 80mm rear hot-swap exhaust PWM fans  |
| Form Factor                | 4U Tower Rackmount<br>Enclosure: 178 x 452 x 647mm (7" x 17.8" x 25.5")<br>Package: 356 x 625 x 795mm (14" x 24.6" x 31.3")   | Mid-Tower Rackmount<br>Enclosure: 193 x 424 x 525.3mm (7.6" x 16.7" x 20.68")<br>Package: 304 x 543 x 642mm (11.97" x 21.38" x 25.28")  | Full-Tower Rackmount<br>Enclosure: 178 x 460 x 673mm (7" x 18.1" x 26.5")<br>Package: 685.8 x 322.6 x 952.5mm (27" x 12.7" x 37.5")  |

# X12 WIO

**NEW!**

3rd Gen  
Intel® Xeon®  
Scalable  
processors  
Supported



2U UP WIO



1U UP WIO



| MODEL                      | SYS-520P-WTR  | SYS-110P-WTR   |
|----------------------------|---|--|
| Processor Support          | Support Intel® 3rd Gen Xeon® Scalable Processors<br>Single Socket LGA 4189 (Socket P+) supported<br>TDP up to 270W;                               | Support Intel® 3rd Gen Xeon® Scalable Processors<br>Single Socket LGA 4189 (Socket P+) supported<br>TDP up to 270W;  |
| Key Applications           | <ul style="list-style-type: none"> <li>• Network Appliance</li> <li>• Database Processing and Storage</li> <li>• Data Center Optimized</li> </ul> | <ul style="list-style-type: none"> <li>• Virtualization</li> <li>• Database Processing and Storage</li> <li>• Data Center Optimized</li> <li>• Enterprise Server</li> <li>• Cloud Computing</li> </ul> |
| Outstanding Features       | <ul style="list-style-type: none"> <li>• Up to 6 expansion slots with optional riser card.</li> <li>• Flexible I/O expansion.</li> </ul>          | <ul style="list-style-type: none"> <li>• Maximum I/O. Support 3 x16 expansion slots in 1U form factor.</li> <li>• 4x Gen4 NVMe drives supported in 1U Form Factor.</li> </ul>                          |
| Serverboard                | SUPERMICRO® X12SPW-TF   | SUPERMICRO® X12SPW-TF  |
| Chipset                    | Intel® C621A  | Intel® C621A   |
| System Memory (Max.)       | 8 DIMM slots<br>Intel® DCPMM, DDR4-3200MHz<br>ECC LRDIMM, DDR4-3200MHz<br>ECC RDIMM, DDR4-3200MHz   | 8 DIMM slots<br>Intel® DCPMM, DDR4-3200MHz<br>ECC LRDIMM, DDR4-3200MHz<br>ECC RDIMM, DDR4-3200MHz  |
| Expansion Slots            | 2 PCI-E 4.0 x16 FHFL slot(s)<br>2 PCI-E 4.0 x8 LP slot(s)   | 1 PCI-E 4.0 x16 LP slot(s)<br>2 PCI-E 4.0 x16 FHFL slot(s)   |
| Onboard Storage Controller | Intel® SATA   | Intel® SATA  |
| Connectivity               | 2x 10GbE RJ45 port(s) with Intel® Ethernet Controller X550  | 2x 10GbE RJ45 port(s) with Intel® Ethernet Controller X550   |
| VGA/Audio                  | 1 VGA port  | 1 VGA port   |
| Management                 | Intel® Node Manager; IPMI2.0; KVM with dedicated LAN; NMI; Redfish API; SPM; SSM; SUM   | Intel® Node Manager; IPMI2.0; KVM with dedicated LAN; NMI; Redfish API; SPM; SSM; SUM  |
| Drive Bays                 | 8x 3.5" SATA drive bays; 2x 2.5" NVMe dedicated;  | 10x 2.5" SATA drive bays; 4x 2.5" NVMe hybrid;   |
| Peripheral Bays            | 2x 2.5"   | None   |
| Power Supply               | Redundant 650W Platinum level (94%)   | Redundant 750W Platinum level (94%)  |
| Cooling System             | 3x (8cm x 8cm x 3.8cm) heavy duty fan(s)  | 5x (4cm x 4cm x 5.6cm) heavy duty fan(s)   |
| Form Factor                | 2U Rackmount<br>Enclosure: 437 x 89 x 647mm (17.2" x 3.5" x 25.5")<br>Package: 673.1 x 279.4 x 863.6mm (26.5" x 11" x 34")                        | 1U Rackmount<br>Enclosure: 437 x 43 x 597mm (17.2" x 1.7" x 23.5")<br>Package: 609.6 x 203.2 x 812.8mm (24" x 8" x 32")  |

# X12 WIO

1U UP WIO

1U UP WIO



| MODEL                      | SYS-510P-WT  | SYS-510P-WTR   |
|----------------------------|--|--|
| Processor Support          | Support Intel® 3rd Gen Xeon® Scalable Processors<br>Single Socket LGA 4189 (Socket P+) supported<br>TDP up to 270W;  | Support Intel® 3rd Gen Xeon® Scalable Processors<br>Single Socket LGA 4189 (Socket P+) supported<br>TDP up to 270W;  |
| Key Applications           | <ul style="list-style-type: none"> <li>Virtualization</li> <li>Data Center Optimized</li> <li>Enterprise Server</li> <li>Cloud Computing</li> </ul>  | <ul style="list-style-type: none"> <li>Virtualization</li> <li>Data Center Optimized</li> <li>Enterprise Server</li> <li>Cloud Computing</li> </ul>                  |
| Outstanding Features       | <ul style="list-style-type: none"> <li>Maximum I/O. Support 3 x16 expansion slots in 1U form factor.</li> <li>Cost Effective</li> <li>4x NVMe drives supported in 1U Form Factor.</li> </ul> | <ul style="list-style-type: none"> <li>Maximum I/O. Support 3 x16 expansion slots in 1U form factor.</li> <li>4x NVMe drives supported in 1U Form Factor.</li> </ul> |
| Serverboard                | SUPERMICRO® X12SPW-TF  | SUPERMICRO® X12SPW-TF  |
| Chipset                    | Intel® C621A   | Intel® C621A   |
| System Memory (Max.)       | 8 DIMM slots<br>Intel® DCPMM, DDR4-3200MHz<br>ECC LRDIMM, DDR4-3200MHz<br>ECC RDIMM, DDR4-3200MHz  | 8 DIMM slots<br>Intel® DCPMM, DDR4-3200MHz<br>ECC LRDIMM, DDR4-3200MHz<br>ECC RDIMM, DDR4-3200MHz  |
| Expansion Slots            | 1 PCI-E 4.0 x16 LP slot(s)<br>2 PCI-E 4.0 x16 FHFL slot(s)   | 1 PCI-E 4.0 x16 LP slot(s)<br>2 PCI-E 4.0 x16 FHFL slot(s)   |
| Onboard Storage Controller | Intel® SATA  | Intel® SATA  |
| Connectivity               | 2x 10GbE RJ45 port(s) with Intel® Ethernet Controller X550   | 2x 10GbE RJ45 port(s) with Intel® Ethernet Controller X550   |
| VGA/Audio                  | 1 VGA port   | 1 VGA port   |
| Management                 | Intel® Node Manager; IPMI2.0; KVM with dedicated LAN; NMI; Redfish API; SPM; SSM; SUM  | Intel® Node Manager; IPMI2.0; KVM with dedicated LAN; NMI; Redfish API; SPM; SSM; SUM  |
| Drive Bays                 | 4x 3.5" NVMe/SATA drive bays; 4x 3.5" NVMe hybrid;   | 4x 3.5" NVMe/SATA drive bays; 4x 3.5" NVMe hybrid;   |
| Peripheral Bays            | 2x 2.5"  | 2x 2.5"  |
| Power Supply               | 600W Platinum level (94%)  | Redundant 500W Platinum level (94%)  |
| Cooling System             | 5x (4cm x 4cm x 5.6cm) heavy duty fan(s)   | 5x (4cm x 4cm x 5.6cm) heavy duty fan(s)   |
| Form Factor                | 1U Rackmount<br>Enclosure: 437 x 43 x 650mm (17.2" x 1.7" x 25.6")<br>Package: 596.9 x 215.9 x 855.98mm (23.5" x 8.5" x 33.7")   | 1U Rackmount<br>Enclosure: 437 x 43 x 650mm (17.2" x 1.7" x 25.6")<br>Package: 596.9 x 215.9 x 855.98mm (23.5" x 8.5" x 33.7")                                       |



# X12 IoT/EMBEDDED

(For Complete System Only)

**NEW!**

3rd Gen Intel® Xeon® Scalable processors Supported



Front I/O, Front DC PSU



Front I/O, Rear DC PSU



| MODEL                      | SYS-110P-FDWTR  | SYS-110P-FRDN2T  |
|----------------------------|---|--|
| Processor Support          | 3rd Gen Intel® Xeon® Scalable processors<br>Single Socket LGA-4189 (Socket P+) supported, CPU up to 38 cores and 205W TDP   | 3rd Gen Intel® Xeon® Scalable processors<br>Single Socket LGA-4189 (Socket P+) supported, CPU up to 38 cores and 205W TDP  |
| Key Applications           | <ul style="list-style-type: none"> <li>• Telecom, Storage, GPU, DL/AI/ML</li> </ul>   | <ul style="list-style-type: none"> <li>• 5G BBU DU applications, Telecom</li> </ul>  |
| Outstanding Features       | <ul style="list-style-type: none"> <li>• 8-DIMM, DDR4 -3200MHz, ECC, RDIMM(3DS), LRDIMM(3DS)</li> <li>• 2x PCI-E 4.0 x16 FHFL slots, 1x PCI-E 4.0 x16 low profile slot</li> <li>• 600W DC Redundant power supplies</li> <li>• 2x 10G Based-T LAN Ports</li> </ul> | <ul style="list-style-type: none"> <li>• 8-DIMM, DDR4 -3200MHz, ECC, RDIMM(3DS), LRDIMM(3DS)</li> <li>• 2x PCI-E 4.0 x16 FHFL slots</li> <li>• 600W DC Redundant power supplies</li> <li>• 2x 10G Based-T LAN Ports</li> </ul> |
| Serverboard                | SUPER● X12SPW-TF  | SUPER● X12SPW-TF   |
| Chipset                    | Intel® C621A  | Intel® C621A   |
| System Memory (Max.)       | 8-DIMM, DDR4 -3200MHz, ECC, RDIMM(3DS), LRDIMM(3DS)   | 8-DIMM, DDR4 -3200MHz, ECC, RDIMM(3DS), LRDIMM(3DS)  |
| Expansion Slots            | 2x PCI-E 4.0 x16 FHFL slots<br>1x PCI-E 4.0 x16 low profile slot  | 2x PCI-E 4.0 x16 FHFL slots  |
| Onboard Storage Controller | Intel SATA  | Intel SATA   |
| Connectivity               | 2x 10G Based-T LAN Ports  | 2x 10G Based-T LAN Ports   |
| VGA/Audio                  | 1x onboard VGA port   | 1x onboard VGA port  |
| Management                 | KVM with dedicated LAN, Super Doctor, Watch Dog, Redfish API  | KVM with dedicated LAN, Super Doctor, Watch Dog, Redfish API   |
| Drive Bays                 | 2x Internal 2.5" SATA drive bays  | 2x Internal 2.5" SATA drive bays   |
| Peripheral Bays            | N/A   | N/A  |
| Power Supply               | 600W DC Redundant power supplies  | 600W DC Redundant power supplies   |
| Cooling System             | 6x (40x40x56 mm) cooling fans   | 5x (40x40x56 mm) cooling fans  |
| Form Factor                | 1U rackmount (Front I/O)<br>Enclosure: 437 x 429 x 43mm<br>(17.2" x 16.9" x 1.7")   | 1U rackmount (Front I/O)<br>Enclosure: 437 x 399 x 43mm<br>(17.2" x 15.7" x 1.7")  |

# X12 IoT/EMBEDDED

(For Complete System Only)

**NEW!**

3rd Gen Intel® Xeon® Scalable processors Supported



Front I/O, Rear AC Power



2U Compact Rackmount

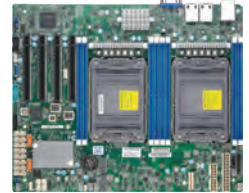
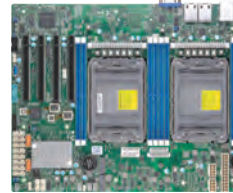


| MODEL                      | SYS-110P-FRN2T   | SYS-210P-FRDN6T  |
|----------------------------|--|--|
| Processor Support          | 3rd Gen Intel® Xeon® Scalable processors<br>Single Socket LGA-4189 (Socket P+) supported, CPU up to 38 cores and 205W TDP  | Single Socket supported<br>TDP up to 270W;   |
| Key Applications           | <ul style="list-style-type: none"> <li>5G BBU DU applications, Telecom</li> </ul>  | <ul style="list-style-type: none"> <li>Cloud Computing</li> <li>Network Function Virtualization</li> <li>AI Inference and Machine Learning</li> <li>5G Core and Edge</li> </ul>                      |
| Outstanding Features       | <ul style="list-style-type: none"> <li>8-DIMM, DDR4 -3200MHz, ECC, RDIMM(3DS), LRDIMM(3DS)</li> <li>2x PCI-E 4.0 x16 FHFL slots</li> <li>800W AC Redundant power supplies</li> <li>2x 10G Based-T LAN Ports</li> </ul> | <ul style="list-style-type: none"> <li></li> </ul>   |
| Serverboard                | SUPER® X12SPW-TF   | SUPER® X12SPM-LN6TF  |
| Chipset                    | Intel® C621A   | Intel® C621A   |
| System Memory (Max.)       | 8-DIMM, DDR4 -3200MHz, ECC, RDIMM(3DS), LRDIMM(3DS)  | 8 DIMM slots<br>Up to 2TB ECC LRDIMM, DDR4-3200MHz<br>Up to 2TB ECC RDIMM, DDR4-3200MHz  |
| Expansion Slots            | 2x PCI-E 4.0 x16 FHFL slots  | 2 PCI-E 4.0 x16 FHHL slot(s)<br>PCI-E 4.0 x16 FHHL in certain configurations slot(s)<br>PCI-E 4.0 x16 Low Profile or 2 x8 Low Profile slot(s)<br>PCI-E 4.0 x8 FHHL in certain configurations slot(s) |
| Onboard Storage Controller | Intel SATA   | Intel® SATA  |
| Connectivity               | 2x 10G Based-T LAN Ports   | 2x 1/10GbE and 4x 1GbE port(s)   |
| VGA/Audio                  | 1x onboard VGA port  | 1 VGA port   |
| Management                 | KVM with dedicated LAN, Super Doctor, Watch Dog, Redfish API   | Intel® Node Manager; IPMI 2.0; KVM with dedicated LAN; NMI; Redfish API; SPM; SSM; SUM; SuperDoctor® 5; Watch Dog  |
| Drive Bays                 | 2x Internal 2.5" SATA drive bays   | 2x 2.5" hot-swap SATA drive bays;  |
| Peripheral Bays            | N/A  | None   |
| Power Supply               | 800W AC Redundant power supplies   | 600W DC Redundant PSU  |
| Cooling System             | 5x (40x40x56 mm) cooling fans  | 4 heavy duty fan(s)  |
| Form Factor                | 1U rackmount (Front I/O)<br>Enclosure: 437 x 399 x 43mm (17.2" x 15.7" x 1.7")   | 2U Rackmount<br>Enclosure: 436.88 x 88.9 x 298.8mm (17.2" x 3.5" x 11.8")<br>Package: 490 x 188 x 590mm (19.3" x 7.4" x 23.3")   |

# X12 MAINSTREAM

**NEW!**

3rd Gen Intel® Xeon® Scalable processors Supported

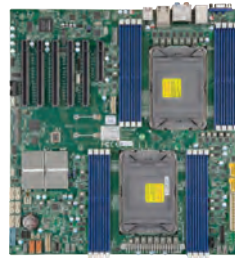


| MODEL                     | X12DPi-N6  | X12DPi-NT6   | X12DPL-i6  | X12DPL-NT6   |
|---------------------------|--|--|--|--|
| Processor                 | 3rd Gen Intel® Xeon® Scalable processors<br>Dual Socket LGA-4189 (Socket P+) supported, CPU TDP supports Up to 270W TDP, 3 UPI up to 11.2 GT/s   | 3rd Gen Intel® Xeon® Scalable processors<br>Dual Socket LGA-4189 (Socket P+) supported, CPU TDP supports Up to 270W TDP, 3 UPI up to 11.2 GT/s   | 3rd Gen Intel® Xeon® Scalable processors<br>Dual Socket LGA-4189 (Socket P+) supported, CPU TDP supports Up to 185W TDP, 2 UPI up to 11.2 GT/s   | 3rd Gen Intel® Xeon® Scalable processors<br>Dual Socket LGA-4189 (Socket P+) supported, CPU TDP supports Up to 185W TDP, 2 UPI up to 11.2 GT/s   |
| Chipset                   | Intel® C621A   | Intel® C621A   | Intel® C621A   | Intel® C621A   |
| Form Factor               | E-ATX,<br>12" x 13" (30.48cm x 33.02cm)  | E-ATX,<br>12" x 13" (30.48cm x 33.02cm)  | ATX,<br>12.23" x 10" (31.06cm x 25.4cm)  | ATX,<br>12.23" x 10" (31.06cm x 25.4cm)  |
| Memory Capacity & Slots   | Up to 4TB Intel® Optane™ Persistent Memory, DDR4-3200MHz, in 18 DIMM slots P1-DIMMB2 and P2-DIMMB2 are reserved for Intel Optane Persistent Memory 200 Series only.  | Up to 4TB Intel® Optane™ Persistent Memory, DDR4-3200MHz, in 18 DIMM slots P1-DIMMB2 and P2-DIMMB2 are reserved for Intel Optane Persistent Memory 200 series only.  | Up to 2TB RDIMM, DDR4-3200MHz; Up to 2TB 3DS ECC LRDIMM, DDR4-3200MHz, in 8 DIMM slots   | Up to 2TB RDIMM, DDR4-3200MHz; Up to 2TB 3DS ECC LRDIMM, DDR4-3200MHz, in 8 DIMM slots   |
| Expansion Slots           | 2 PCI-E 4.0 x8,<br>4 PCI-E 4.0 x16,<br>2 PCI-E 4.0 NVMe x8 Internal Port(s)<br><b>M.2 Interface:</b> 1 PCI-E 4.0 x4<br><b>M.2 Form Factor:</b> 2280/22110<br><b>M.2 Key:</b> M-Key   | 2 PCI-E 4.0 x8,<br>4 PCI-E 4.0 x16,<br>2 PCI-E 4.0 NVMe x8 Internal Port(s)<br><b>M.2 Interface:</b> 1 PCI-E 4.0 x4<br><b>M.2 Form Factor:</b> 2280/22110<br><b>M.2 Key:</b> M-Key   | 4 PCI-E 4.0 x16<br><b>M.2 Interface:</b> 2 PCI-E 4.0 x4<br><b>M.2 Form Factor:</b> 2280/22110, 2280<br><b>M.2 Key:</b> M-Key   | 4 PCI-E 4.0 x16,<br>1 PCI-E 4.0 NVMe x8 Internal Port(s)<br><b>M.2 Interface:</b> 2 PCI-E 4.0 x4<br><b>M.2 Form Factor:</b> 2280/22110, 2280<br><b>M.2 Key:</b> M-Key  |
| Onboard RAID Controller   | Intel® C621A controller for 14 SATA3 (6 Gbps) ports; RAID 0,1,5,10   | Intel® C621A controller for 14 SATA3 (6 Gbps) ports; RAID 0,1,5,10   | Intel® C621A controller for 12 SATA3 (6 Gbps) ports; RAID 0,1,5,10   | Intel® C621A controller for 12 SATA3 (6 Gbps) ports; RAID 0,1,5,10   |
| Onboard LAN               | Dual LAN with Intel® i350 Gigabit Ethernet Controller  | Dual LAN with 10GBase-T with Intel® X550   | Dual LAN with Intel® i210 Gigabit Ethernet Controller  | Dual LAN with Intel® X550 10GBase-T Ethernet Controller  |
| Onboard VGA               | 2 VGA (1 rear bezel, 1 front panel) ports,   | 2 VGA (1 rear bezel, 1 front panel) ports,   | 1 VGA port,<br>ASPEED AST2600 BMC  | 1 VGA port,<br>ASPEED AST2600 BMC  |
| USB Ports                 | 2 USB 2.0 ports (2 via headers)<br>7 USB 3.2 Gen1 ports (4 rear + 2 via headers + 1 Type A)  | 2 USB 2.0 ports (2 via headers)<br>7 USB 3.2 Gen1 ports (4 rear + 2 via headers + 1 Type A)  | 5 USB 3.2 Gen1 ports (2 rear + 2 via headers + 1 Type A)   | 5 USB 3.2 Gen1 ports (2 rear + 2 via headers + 1 Type A)   |
| Other Onboard I/O Devices | TPM 2.0 Header<br>2 COM Ports (1 rear, 1 header)   | TPM 2.0 Header<br>2 COM Ports (1 rear, 1 header)   | 2 ports SuperDOM<br>TPM 2.0 Header<br>1 COM Port (1 header)  | 2 ports SuperDOM<br>TPM 2.0 Header<br>1 COM Port (1 header)  |
| Manageability             | Intel® Node Manager, IPMI2.0, KVM with dedicated LAN, SPM, SSM, SUM, SuperDoctor® 5, Watchdog  | Intel® Node Manager, IPMI2.0, KVM with dedicated LAN, SPM, SSM, SUM, SuperDoctor® 5, Watchdog  | Intel® Node Manager, IPMI2.0, KVM with dedicated LAN, NMI, SPM, SSM, SUM, SuperDoctor® 5, Watchdog   | Intel® Node Manager, IPMI2.0, KVM with dedicated LAN, NMI, SPM, SSM, SUM, SuperDoctor® 5, Watchdog   |
| PC Health Monitoring      | +12V, +3.3V, +5V, +5V standby, 3.3V standby, 8 -fan status, Chassis intrusion header, CPU temperature, LAN temperature, Memory temperature, Memory Voltages, Monitors CPU voltages, PCH temperature, System temperature, VBAT, VRM temperature                 | +12V, +3.3V, +5V, +5V standby, 3.3V standby, 8 -fan status, Chassis intrusion header, CPU temperature, LAN temperature, Memory temperature, Memory Voltages, Monitors CPU voltages, PCH temperature, System temperature, VBAT, VRM temperature                 | +12V, +3.3V, +5V, +5V standby, 3.3V standby, 8 -fan status, Chassis intrusion header, Monitors CPU voltages, Supports system management utility  | +12V, +3.3V, +5V, +5V standby, 3.3V standby, 8 -fan status, Chassis intrusion header, Monitors CPU voltages, Supports system management utility  |
| Other Features            | ACPI power management, ATX Power connector, Chassis intrusion header, Control of power-on for recovery from AC power loss, CPU thermal trip support for processor protection, Dual Cooling Zones, NCSI header, Node Manager Support, RoHS, RoT, SDDC, UID, WOL | ACPI power management, ATX Power connector, Chassis intrusion header, Control of power-on for recovery from AC power loss, CPU thermal trip support for processor protection, Dual Cooling Zones, NCSI header, Node Manager Support, RoHS, RoT, SDDC, UID, WOL | ACPI power management, ATX Power connector, Chassis intrusion detection, Chassis intrusion header, Control of power-on for recovery from AC power loss, CPU thermal trip support for processor protection, Dual Cooling Zones, NCSI header, Node Manager Support, RoT, UID | ACPI power management, ATX Power connector, Chassis intrusion detection, Chassis intrusion header, Control of power-on for recovery from AC power loss, CPU thermal trip support for processor protection, Dual Cooling Zones, NCSI header, Node Manager Support, RoT, UID |
| BIOS                      | AMI UEFI   | AMI UEFI   | AMI UEFI   | AMI UEFI   |

# X12 DP SERVERBOARDS



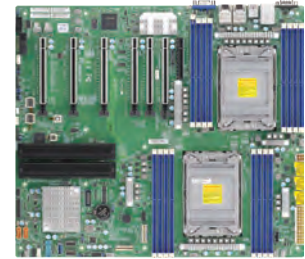
Workstation



WIO



4 GPUs



| MODEL                        | X12DAI-N6  | X12DDW-A6   | X12DPG-QT6   |
|------------------------------|--|---|--|
| Processor                    | 3rd Gen Intel® Xeon® Scalable processors<br>Dual Socket LGA-4189 (Socket P+) supported,<br>CPU TDP supports Up to 270W TDP, 3 UPI up to<br>11.2 GT/s   | 3rd Gen Intel® Xeon® Scalable processors<br>Dual Socket LGA-4189 (Socket P+) supported,<br>CPU TDP supports Up to 270W TDP, 3 UPI up to<br>11.2 GT/s  | 3rd Gen Intel® Xeon® Scalable processors<br>Dual Socket LGA-4189 (Socket P+) supported,<br>CPU TDP supports Up to 270W TDP, 3 UPI up to<br>11.2 GT/s   |
| Chipset                      | Intel® C621A   | Intel® C621A  | Intel® C621A   |
| Form Factor                  | E-ATX, 12" x 13" (30.48cm x 33.02cm)   | Proprietary WIO, 12.288" x 13.404" (31.21cm x<br>34.05cm)   | Proprietary, 15.12" x 13.2" (38.4cm x 33.53cm)   |
| Memory Capacity<br>& Slots   | Up to 4TB 3DS ECC RDIMM, DDR4-3200MHz; Up<br>to 4TB 3DS ECC LRDIMM, DDR4-3200MHz<br>Up to 6TB Intel® Optane™ Persistent Memory,<br>DDR4-3200MHz, in 16 DIMM slots;<br>Up to 6TB Intel® Optane™ DC Persistent<br>Memory in memory mode. | Up to 4TB RDIMM, DDR4-3200MHz; Up to 4TB<br>LRDIMM, DDR4-3200MHz<br>Up to 4TB Intel® Optane™ Persistent Memory,<br>DDR4-3200MHz (OC), in 16 DIMM slots  | Up to 4TB 3DS ECC RDIMM, DDR4-3200MHz; Up<br>to 4TB 3DS ECC LRDIMM, DDR4-3200MHz<br>Up to 6TB Intel® Optane™ Persistent Memory, in<br>16 DIMM slots;<br>Up to 6TB Intel® Optane™ DC Persistent<br>Memory in memory mode. |
| Expansion Slots              | 5 PCI-E 4.0 x16,<br>1 PCI-E 4.0 x8,<br>4 PCI-E 4.0 NVMe x4 Internal Port(s)<br><b>M.2 Interface:</b> 2 PCI-E 4.0 x4, RAID 0 & 1<br><b>M.2 Form Factor:</b> 2280/22110<br><b>M.2 Key:</b> M-Key   | 1 PCI-E 4.0 x16 Left Riser Slot,<br>1 PCI-E 4.0 x16 Right Riser Slot,<br>2 PCI-E 4.0 x16 Center Right Hand Slot,<br>8 PCI-E 4.0 NVMe Internal Port(s)<br><b>M.2 Interface:</b> 2 PCI-E 2.0 x1<br><b>M.2 Form Factor:</b> 2260/2280<br><b>M.2 Key:</b> M-Key<br>2 PCI-E 4.0 x16, AIOM slots Superset of OCP 3.0<br>Expansion | 6 PCI-E 4.0 x16,<br>1 PCI-E 4.0 x8<br><b>M.2 Interface:</b> 2 PCI-E 4.0 x4, RAID 0 & 1<br><b>M.2 Form Factor:</b> 2242/2260/2280/22110<br><b>M.2 Key:</b> M-Key  |
| Onboard RAID<br>Controller   | Intel® C621A controller for 8 SATA3 (6 Gbps)<br>ports; RAID 0,1,5,10   | Intel® C621A controller for 10 SATA3 (6 Gbps)<br>ports; RAID 0,1,5,10   | Intel® C621A controller for 10 SATA3 (6 Gbps)<br>ports; RAID 0,1,5,10  |
| Onboard LAN                  | Dual LAN with Intel® i210 Gigabit Ethernet<br>Controller   | AIOM for LAN  | Dual LAN with Intel® X550 10GBase-T Ethernet<br>Controller   |
| Onboard VGA                  | 1 VGA D-Sub Connector port,<br>ASPEED AST2600 BMC  | 1 VGA D-Sub Connector port,<br>ASPEED AST2600 BMC   | 1 VGA D-Sub Connector port,<br>ASPEED AST2600 BMC  |
| USB Ports                    | 6 USB 3.2 Gen1 ports (4 rear + 2 via headers)2<br>USB 3.2 Gen2 ports (1 Rear Type A)   | 4 USB 3.1 Gen1 ports(2 rears, 2 via headers)  | 2 USB 2.0 ports (2 via headers)<br>6 USB 3.1 Gen1 ports (3 Rears Type A + 1 Rear<br>Type C, 1 via header, 1 via header, 1 Type A)<br>6 USB 3.2 Gen1 ports (4 rear + 1 via header + 1<br>Type A)                          |
| Other Onboard I/O<br>Devices | 7.1 HD Audio<br>TPM 2.0 Header<br>1 COM Port (1 header)  | TPM Header<br>1 COM Port (1 header)   | 2 ports SuperDOM<br>7.1 HD Audio Header<br>TPM 2.0 Header<br>2 COM Ports (1 rear, 1 header)  |
| Manageability                | Intel® Node Manager, IPMI (Intelligent Platform<br>Management Interface) v2.0 with KVM support,<br>SPM, SSM, SUM, SuperDoctor® 5, Watchdog   | Intel® Node Manager, IPMI (Intelligent Platform<br>Management Interface) v2.0 with KVM support,<br>IPMI2.0, KVM with dedicated LAN, NMI, SPM,<br>SSM, SUM, SuperDoctor® 5, SuperDoctor® III,<br>vPro, Watchdog  | Intel® Node Manager, IPMI2.0, KVM with<br>dedicated LAN, NMI, SPM, SSM, SUM,<br>SuperDoctor® 5, Watchdog   |
| PC Health<br>Monitoring      | +12V, +3.3V, +5V, +5V standby, 8 -fan status,<br>CPU, CPU temperature, Memory temperature,<br>Memory Voltages, Monitors CPU voltages, PCH<br>temperature, System temperature, VBAT, VRM<br>temperature                                 | +1.8V PCH, +12V, +5V standby, 6 -fan status,<br>Chassis intrusion header, CPU temperature,<br>CPU thermal trip support, Memory Voltages,<br>Monitors CPU voltages, PCH temperature  | +1.8V, +12V, +3.3V, +5V, +5V standby, 10 -fan<br>status, 5+1 Phase-switching voltage regulator,<br>Chassis intrusion header, HT, Supports system<br>management utility, VBAT   |
| Other Features               | ACPI power management, ATX Power<br>connector, Chassis intrusion detection, Chassis<br>intrusion header, CPU thermal trip support<br>for processor protection, NCSI header, Node<br>Manager Support, RoHS, RoT, UID, WOL               | ACPI power management, ATX Power<br>connector, Chassis intrusion detection, NCSI<br>header, Node Manager Support, RoHS, RoT,<br>UID, WOL  | Chassis intrusion detection, CPU thermal<br>trip support for processor protection, Node<br>Manager Support, RoHS   |
| BIOS                         | AMI UEFI   | AMI UEFI  | AMI UEFI   |

# X12 UP SERVERBOARDS



1U Optimized

1U Optimized

Embedded, High Performance  
Quad 1GbE LAN

Embedded, High Performance  
Dual 25G SFP28

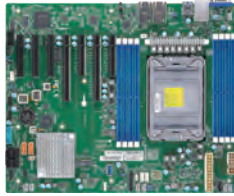


| MODEL                     | X12SPO-F   | X12SPO-NTF   | X12SPZ-LN4F   | X12SPZ-SPLN6F   |
|---------------------------|--|--|---|---|
| Processor                 | 3rd Gen Intel® Xeon® Scalable processors<br>Single Socket LGA-4189 (Socket P+) supported, CPU TDP supports Up to 270W TDP  | 3rd Gen Intel® Xeon® Scalable processors<br>Single Socket LGA-4189 (Socket P+) supported, CPU TDP supports Up to 270W TDP  | 3rd Gen Intel® Xeon® Scalable processors<br>Single Socket LGA-4189 (Socket P+) supported, CPU TDP supports Up to 270W TDP   | 3rd Gen Intel® Xeon® Scalable processors<br>Single Socket LGA-4189 (Socket P+) supported, CPU TDP supports Up to 270W TDP   |
| Chipset                   | Intel® C621A   | Intel® C621A   | Intel® C621A  | Intel® C621A  |
| Form Factor               | ATX,<br>12" x 10" (30.48cm x 25.4cm)   | ATX,<br>12" x 10" (30.48cm x 25.4cm)   | Micro-ATX,<br>9.6" x 9.6" (24.38cm x 24.38cm)   | Micro-ATX,<br>9.6" x 9.6" (24.38cm x 24.38cm)   |
| Memory Capacity & Slots   | Up to 2TB 3DS ECC RDIMM, DDR4-3200MHz; Up to 2TB 3DS ECC LRDIMM, DDR4-3200MHz<br>Up to 2TB Intel® Optane™ Persistent Memory, in 8 DIMM slots                         | Up to 2TB 3DS ECC RDIMM, DDR4-3200MHz; Up to 2TB 3DS ECC LRDIMM, DDR4-3200MHz<br>Up to 2TB Intel® Optane™ Persistent Memory, in 8 DIMM slots                         | Up to 2TB 3DS ECC RDIMM, DDR4-3200MHz; Up to 2TB 3DS ECC LRDIMM, DDR4-3200MHz<br>Up to 2TB Intel® Optane™ Persistent Memory 200 Series, in 8 DIMM slots   | Up to 2TB 3DS ECC RDIMM, DDR4-3200MHz; Up to 2TB 3DS ECC LRDIMM, DDR4-3200MHz<br>Up to 2TB Intel® Optane™ Persistent Memory, in 8 DIMM slots  |
| Expansion Slots           | 1 PCI-E 4.0 x16,<br>2 PCI-E 4.0 NVMe x8 Internal Port(s)<br><b>M.2 Interface:</b> 2 SATA/PCI-E 3.0 x4<br><b>M.2 Form Factor:</b> 2280/22110<br><b>M.2 Key:</b> M-Key | 1 PCI-E 4.0 x16,<br>5 PCI-E 4.0 NVMe x8 Internal Port(s)<br><b>M.2 Interface:</b> 2 SATA/PCI-E 3.0 x4<br><b>M.2 Form Factor:</b> 2280/22110<br><b>M.2 Key:</b> M-Key | 2 PCI-E 4.0 x16,<br>1 PCI-E 4.0 NVMe x8 SlimSAS Internal Port(s),<br>1 PCI-E 4.0 NVMe x4 Internal Port(s),<br>1 PCI-E 3.0 NVMe x4 Internal Port(s)<br>1 M.2 M-Key SATA/PCI-E 3.0 x4,<br>2242/2280 | 2 PCI-E 4.0 x16,<br>1 PCI-E 4.0 NVMe x8 SlimSAS Internal Port(s),<br>1 PCI-E 4.0 NVMe x4 Internal Port(s),<br>1 PCI-E 3.0 NVMe x4 Internal Port(s)<br>1 M.2 M-Key SATA/PCI-E 3.0 x4,<br>2242/2280 |
| Onboard RAID Controller   | Intel® C621A controller for 10 SATA3 (6 Gbps) ports; RAID 0,1,5,10   | Intel® C621A controller for 10 SATA3 (6 Gbps) ports; RAID 0,1,5,10   | Intel® C621A controller for 6 SATA3 (6 Gbps) ports;<br>4 SATA ports via OCUlink; RAID 0,1,5,10  | Intel® C621A controller for 6 SATA3 (6 Gbps) ports;<br>4 SATA ports via OCUlink; RAID 0,1,5,10  |
| Onboard LAN               | Dual LAN with Intel® i350 Gigabit Ethernet Controller  | Dual LAN with Intel® X550 10GBase-T Ethernet Controller  | Quad LAN with 1GbE with Intel® I350-AM4   | Quad LAN with 1GbE with Intel® I350-AM4<br>Dual LAN with Broadcom BCM57414 25G SFP28<br>1 VGA port,   |
| Onboard VGA               | 1 VGA port,<br>ASPEED AST2600 BMC  | 1 VGA port,<br>ASPEED AST2600 BMC  | 1 VGA port,   | 1 VGA port,   |
| USB Ports                 | 6 USB 2.0 ports (2 rear + 4 via headers)<br>5 USB 3.2 Gen1 ports (2 rear + 2 via headers + 1 Type A)   | 6 USB 2.0 ports (2 rear + 4 via headers)<br>5 USB 3.2 Gen1 ports (2 rear + 2 via headers + 1 Type A)   | 4 USB 2.0 ports (4 via headers)<br>4 USB 3.2 Gen1 ports (2 rear + 2 via headers)  | 4 USB 2.0 ports (4 via headers)<br>4 USB 3.2 Gen1 ports (2 rear + 2 via headers)  |
| Other Onboard I/O Devices | TPM Header<br>2 COM Ports (1 rear, 1 header)   | TPM Header<br>2 COM Ports (1 rear, 1 header)   | TPM Header & Chip both<br>1 COM Port (1 header)   | TPM Header & Chip both<br>1 COM Port (1 header)   |
| Manageability             | Intel® Node Manager, IPMI2.0, KVM with dedicated LAN, SPM, SSM, SUM, SuperDoctor® 5, Watchdog  | Intel® Node Manager, IPMI2.0, KVM with dedicated LAN, SPM, SSM, SUM, SuperDoctor® 5, Watchdog  | Intel® Node Manager, IPMI (Intelligent Platform Management Interface) v2.0 with KVM support, KVM with dedicated LAN, NMI, SPM, SSM, SUM, SuperDoctor® 5, Watchdog                                 | Intel® Node Manager, IPMI (Intelligent Platform Management Interface) v2.0 with KVM support, KVM with dedicated LAN, NMI, SPM, SSM, SUM, SuperDoctor® 5, Watchdog                                 |
| PC Health Monitoring      | +1.8V, +12V, +3.3V, +5V, +5V standby, 3.3V standby, 7-fan status, Chassis intrusion header, HT, Monitors CPU voltages, System temperature, VBAT                      | +1.8V, +12V, +3.3V, +5V, +5V standby, 3.3V standby, 7-fan status, Chassis intrusion header, HT, Monitors CPU voltages, System temperature, VBAT                      | +1.8V, +12V, +3.3V, +5V, +5V standby, 3.3V standby, 6-fan status, Chassis intrusion header, Monitors CPU voltages, Supports system management utility, VBAT                                       | +1.8V, +12V, +3.3V, +5V, +5V standby, 3.3V standby, 6-fan status, Chassis intrusion header, Monitors CPU voltages, Supports system management utility, VBAT                                       |
| Other Features            | ACPI power management, ATX Power connector, Chassis intrusion detection, Chassis intrusion header, RoHS, RoT, UID, WOL   | ACPI power management, ATX Power connector, Chassis intrusion detection, Chassis intrusion header, RoHS, RoT, UID, WOL   | ACPI power management, Control of power-on for recovery from AC power loss, CPU thermal trip support for processor protection, Dual Cooling Zones, M.2 NGFF connector, Node Manager Support, RoHS | ACPI power management, Control of power-on for recovery from AC power loss, CPU thermal trip support for processor protection, Dual Cooling Zones, M.2 NGFF connector, Node Manager Support, RoHS |
| BIOS                      | AMI UEFI   | AMI UEFI   | 256Mb SPI Flash with AMI BIOS   | 256Mb SPI Flash with AMI BIOS   |

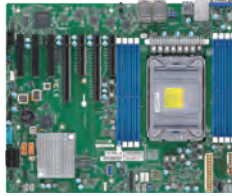
# X12 UP SERVERBOARDS



Cost-optimized  
I/O Intensive, Dual 1 GbE



Cost-optimized  
I/O Intensive, Quad 1 GbE



W/O,  
3 AOC in 1U, Dual 1 GbE



W/O,  
3 AOC in 1U, Dual 10 GbE



| MODEL                     | X12SPL-F  | X12SPL-LN4F   | X12SPW-F   | X12SPW-TF  |
|---------------------------|---|---|--|--|
| Processor                 | 3rd Gen Intel® Xeon® Scalable processors<br>Single Socket LGA-4189 (Socket P+) supported, CPU TDP supports Up to 270W TDP   | 3rd Gen Intel® Xeon® Scalable processors<br>Single Socket LGA-4189 (Socket P+) supported, CPU TDP supports Up to 270W TDP   | 3rd Gen Intel® Xeon® Scalable processors<br>Single Socket LGA-4189 (Socket P+) supported, CPU TDP supports Up to 270W TDP  | 3rd Gen Intel® Xeon® Scalable processors<br>Single Socket LGA-4189 (Socket P+) supported, CPU TDP supports Up to 270W TDP  |
| Chipset                   | Intel® C621A  | Intel® C621A  | Intel® C621A   | Intel® C621A   |
| Form Factor               | ATX,<br>12.1" x 10" (30.73cm x 25.4cm)  | ATX,<br>12.1" x 10" (30.73cm x 25.4cm)  | Proprietary WIO,<br>8" x 13" (20.32cm x 33.02cm)   | Proprietary WIO,<br>8" x 13" (20.32cm x 33.02cm)   |
| Memory Capacity & Slots   | Up to 2TB 3DS ECC RDIMM, DDR4-3200MHz; Up to 2TB 3DS ECC LRDIMM, DDR4-3200MHz<br>Up to 2TB Intel® Optane™ Persistent Memory, in 8 DIMM slots  | Up to 2TB 3DS ECC RDIMM, DDR4-3200MHz; Up to 2TB 3DS ECC LRDIMM, DDR4-3200MHz<br>Up to 2TB Intel® Optane™ Persistent Memory, in 8 DIMM slots  | Up to 2TB 3DS ECC RDIMM, DDR4-3200MHz; Up to 2TB 3DS ECC LRDIMM, DDR4-3200MHz<br>Up to 2TB Intel® Optane™ Persistent Memory, in 8 DIMM slots   | Up to 2TB 3DS ECC RDIMM, DDR4-3200MHz; Up to 2TB 3DS ECC LRDIMM, DDR4-3200MHz<br>Up to 2TB Intel® Optane™ Persistent Memory, in 8 DIMM slots   |
| Expansion Slots           | 2 PCI-E 4.0 x8,<br>1 PCI-E 4.0 x16,<br>1 PCI-E 4.0 x8 (in x16 slot)<br>3 PCI-E 3.0 x8<br><b>M.2 Interface:</b> 1 SATA/PCI-E 3.0 x4<br><b>M.2 Form Factor:</b> 2280/22110<br><b>M.2 Key:</b> M-Key | 2 PCI-E 4.0 x8,<br>1 PCI-E 4.0 x16,<br>1 PCI-E 4.0 x8 (in x16 slot)<br>3 PCI-E 3.0 x8<br><b>M.2 Interface:</b> 1 SATA/PCI-E 3.0 x4<br><b>M.2 Form Factor:</b> 2280/22110<br><b>M.2 Key:</b> M-Key | 1 PCI-E 4.0 x16 Right Riser Slot,<br>1 PCI-E 4.0 x32 Left Riser Slot,<br>4 PCI-E 4.0 NVMe x4 Internal Port(s)<br><b>M.2 Interface:</b> PCI-E 3.0 x4 and SATA<br><b>M.2 Form Factor:</b> 2280, 22110<br><b>M.2 Key:</b> M-Key | 1 PCI-E 4.0 x16 Right Riser Slot,<br>1 PCI-E 4.0 x32 Left Riser Slot,<br>4 PCI-E 4.0 NVMe x4 Internal Port(s)<br><b>M.2 Interface:</b> PCI-E 3.0 x4 and SATA<br><b>M.2 Form Factor:</b> 2280, 22110<br><b>M.2 Key:</b> M-Key |
| Onboard RAID Controller   | Intel® C621A controller for 10 SATA3 (6 Gbps) ports; RAID 0,1,5,10  | Intel® C621A controller for 10 SATA3 (6 Gbps) ports; RAID 0,1,5,10  | Intel® C621A controller for 10 SATA3 (6 Gbps) ports; RAID 0,1,5,10   | Intel® C621A controller for 10 SATA3 (6 Gbps) ports; RAID 0,1,5,10   |
| Onboard LAN               | Dual LAN with Intel® i210 Gigabit Ethernet Controller   | Quad LAN with Intel® i210 Gigabit Ethernet Controller   | Dual LAN with 1GbE with Intel® I210  | Dual LAN with 10GBase-T with Intel® X550   |
| Onboard VGA               | 1 VGA port,<br>ASPEED AST2600 BMC   | 1 VGA port,<br>ASPEED AST2600 BMC   | 1 VGA port,<br>ASPEED AST2600 BMC  | 1 VGA port,<br>ASPEED AST2600 BMC  |
| USB Ports                 | 6 USB 2.0 ports (2 rear + 4 via headers)<br>5 USB 3.2 Gen1 ports (2 rear + 2 via headers + 1 Type A)  | 6 USB 2.0 ports (2 rear + 4 via headers)<br>5 USB 3.2 Gen1 ports (2 rear + 2 via headers + 1 Type A)  | 4 USB 2.0 ports (2 rear + 2 via headers)<br>5 USB 3.2 Gen1 ports (2 rear + 2 via headers + 1 Type A)   | 4 USB 2.0 ports (2 rear + 2 via headers)<br>5 USB 3.2 Gen1 ports (2 rear + 2 via headers + 1 Type A)   |
| Other Onboard I/O Devices | TPM Header<br>1 COM Port (1 header)   | TPM Header<br>1 COM Port (1 header)   | 2 ports SuperDOM<br>TPM Header<br>2 COM Ports (1 rear, 1 header)   | 2 ports SuperDOM<br>TPM Header<br>2 COM Ports (1 rear, 1 header)   |
| Manageability             | Intel® Node Manager, IPMI2.0, KVM with dedicated LAN, SPM, SSM, SUM, SuperDoctor® 5, Watchdog   | Intel® Node Manager, IPMI2.0, KVM with dedicated LAN, SPM, SSM, SUM, SuperDoctor® 5, Watchdog   | Intel® Node Manager, IPMI2.0, KVM with dedicated LAN, NMI, SPM, SUM, SuperDoctor® 5, Watchdog  | Intel® Node Manager, IPMI2.0, KVM with dedicated LAN, NMI, SPM, SUM, SuperDoctor® 5, Watchdog  |
| PC Health Monitoring      | +1.8V, +12V, +3.3V, +5V, +5V standby, 3.3V standby, 7-fan status, Chassis intrusion header, HT, Monitors CPU voltages, System temperature, VBAT   | +1.8V, +12V, +3.3V, +5V, +5V standby, 3.3V standby, 7-fan status, Chassis intrusion header, HT, Monitors CPU voltages, System temperature, VBAT   | +1.8V, +12V, +3.3V, +5V, +5V standby, 3.3V standby, 7-fan status, Chassis intrusion header, HT, Monitors CPU voltages, Supports system management utility, VBAT  | +1.8V, +12V, +3.3V, +5V, +5V standby, 3.3V standby, 7-fan status, Chassis intrusion header, HT, Monitors CPU voltages, Supports system management utility, VBAT  |
| Other Features            | ACPI power management, ATX Power connector, Chassis intrusion detection, Chassis intrusion header, RoHS, RoT, UID, WOL  | ACPI power management, ATX Power connector, Chassis intrusion detection, Chassis intrusion header, RoHS, RoT, UID, WOL  | ACPI power management, Control of power-on for recovery from AC power loss, RoHS, UID, WOL   | ACPI power management, Control of power-on for recovery from AC power loss, RoHS, UID, WOL   |
| BIOS                      | AMI UEFI  | AMI UEFI  | AMI UEFI   | AMI UEFI   |

# X12 UP SERVERBOARDS



Embedded Ready  
Quad 1GbE



Embedded Ready  
Dual 10GbE + Quad 1GbE



Embedded Ready  
Dual 10GbE



| MODEL                     | X12SPM-LN4F  | X12SPM-LN6TF   | X12SPM-TF  |
|---------------------------|--|--|--|
| Processor                 | 3rd Gen Intel® Xeon® Scalable Processors; Single Socket LGA-4189 (Socket P+) supported, CPU TDP support up to 270W TDP   | 3rd Gen Intel® Xeon® Scalable Processors; Single Socket LGA-4189 (Socket P+) supported, CPU TDP support up to 270W TDP   | 3rd Gen Intel® Xeon® Scalable Processors; Single Socket LGA-4189 (Socket P+) supported, CPU TDP support up to 270W TDP   |
| Chipset                   | Intel® C621A   | Intel® C621A   | Intel® C621A   |
| Form Factor               | microATX<br>9.6" x 9.6" (24.38cm x 24.38cm)  | microATX,<br>9.6" x 9.6" (24.38cm x 24.38cm)   | microATX,<br>9.6" x 9.6" (24.38cm x 24.38cm)   |
| Memory Capacity & Slots   | Up to 2TB 3DS ECC RDIMM, DDR4-3200MHz; Up to 2TB 3DS ECC LRDIMM, DDR4-3200MHz<br>Up to 2TB Intel® Optane™ Persistent Memory, in 8 DIMM slots   | Up to 2TB 3DS ECC RDIMM, DDR4-3200MHz; Up to 2TB 3DS ECC LRDIMM, DDR4-3200MHz<br>Up to 2TB Intel® Optane™ Persistent Memory, in 8 DIMM slots   | Up to 2TB 3DS ECC RDIMM, DDR4-3200MHz; Up to 2TB 3DS ECC LRDIMM, DDR4-3200MHz<br>Up to 2TB Intel® Optane™ Persistent Memory, in 8 DIMM slots   |
| Expansion Slots           | 1 PCI-E 4.0 x8,<br>2 PCI-E 4.0 x16,<br>4 PCI-E 4.0 NVMe x4 Internal Port(s)<br><b>M.2 Interface:</b> 1 SATA/PCI-E 3.0 x4<br><b>M.2 Form Factor:</b> 2280, 22110<br><b>M.2 Key:</b> M-Key | 1 PCI-E 4.0 x8,<br>2 PCI-E 4.0 x16,<br>4 PCI-E 4.0 NVMe x4 Internal Port(s)<br><b>M.2 Interface:</b> 1 SATA/PCI-E 3.0 x4<br><b>M.2 Form Factor:</b> 2280, 22110<br><b>M.2 Key:</b> M-Key | 1 PCI-E 4.0 x8,<br>2 PCI-E 4.0 x16,<br>4 PCI-E 4.0 NVMe x4 Internal Port(s)<br><b>M.2 Interface:</b> 1 SATA/PCI-E 3.0 x4<br><b>M.2 Form Factor:</b> 2280, 22110<br><b>M.2 Key:</b> M-Key |
| Onboard RAID Controller   | Intel® C621A controller for 10 SATA3 (6 Gbps) ports; RAID 0,1,5,10   | Intel® C621A controller for 10 SATA3 (6 Gbps) ports; RAID 0,1,5,10   | Intel® C621A controller for 10 SATA3 (6 Gbps) ports; RAID 0,1,5,10   |
| Onboard LAN               | Quad LAN with 1GbE with Intel® I350-AM4  | Quad LAN with 1GbE with Intel® I350-AM4<br>Dual LAN with 10GBase-T with Intel® X550  | Dual LAN with 10GBase-T with Intel® X550   |
| Onboard VGA               | 1 VGA port<br>ASPEED AST2600 BMC   | 1 VGA port,<br>ASPEED AST2600 BMC  | 1 VGA port,<br>ASPEED AST2600 BMC  |
| USB Ports                 | 6 USB 2.0 ports (2 rear + 4 via headers)<br>5 USB 3.2 Gen1 ports (2 rear + 2 via headers + 1 Type A)   | 6 USB 2.0 ports (2 rear + 4 via headers)<br>5 USB 3.2 Gen1 ports (2 rear + 2 via headers + 1 Type A)   | 6 USB 2.0 ports (2 rear + 4 via headers)<br>5 USB 3.2 Gen1 ports (2 rear + 2 via headers + 1 Type A)   |
| Other Onboard I/O Devices | 2 ports SuperDOM<br>TPM Header<br>1 COM Port (1 header)  | 2 ports SuperDOM<br>TPM Header<br>1 COM Port (1 header)  | 2 ports SuperDOM<br>TPM Header<br>1 COM Port (1 header)  |
| Manageability             | Intel® Node Manager, IPMI2.0, KVM with dedicated LAN, NMI, SPM, SUM, SuperDoctor® 5, Watchdog  | Intel® Node Manager, IPMI2.0, KVM with dedicated LAN, NMI, SPM, SUM, SuperDoctor® 5, Watchdog  | Intel® Node Manager, IPMI2.0, KVM with dedicated LAN, NMI, SPM, SUM, SuperDoctor® 5, Watchdog  |
| PC Health Monitoring      | +1.8V, +12V, +3.3V, +5V, +5V standby, 3.3V standby, 5 -fan status, Chassis intrusion header, Monitors CPU voltages, Supports system management utility, VBAT                             | +1.8V, +12V, +3.3V, +5V, +5V standby, 3.3V standby, 5 -fan status, Chassis intrusion header, Monitors CPU voltages, Supports system management utility, VBAT                             | +1.8V, +12V, +3.3V, +5V, +5V standby, 3.3V standby, 5 -fan status, Chassis intrusion header, Monitors CPU voltages, Supports system management utility, VBAT                             |
| Other Features            | ACPI power management, Control of power-on for recovery from AC power loss, CPU thermal trip support for processor protection, M.2 NGFF connector, RoHS, UID, WOL                        | ACPI power management, Control of power-on for recovery from AC power loss, CPU thermal trip support for processor protection, M.2 NGFF connector, RoHS, UID, WOL                        | ACPI power management, Control of power-on for recovery from AC power loss, CPU thermal trip support for processor protection, M.2 NGFF connector, RoHS, UID, WOL                        |
| BIOS                      | AMI UEFI   | AMI UEFI   | AMI UEFI   |

# X12 UP SERVERBOARDS

**NEW!**

3rd Gen Intel® Xeon® Scalable processors Supported



High Performance



Workstation



| MODEL                     | X12SPi-TF  | X12SPA-TF  |
|---------------------------|--|--|
| Processor                 | 3rd Gen Intel® Xeon® Scalable processors<br>Single Socket LGA-4189 (Socket P+) supported, CPU TDP supports Up to 270W TDP  | 3rd Gen Intel® Xeon® Scalable processors, Intel® Xeon® W-3300 Processor<br>Single Socket LGA-4189 (Socket P+) supported, CPU TDP supports Up to 270W TDP   |
| Chipset                   | Intel® C621A   | Intel® C621A   |
| Form Factor               | ATX,<br>12.1" x 10" (30.73cm x 25.4cm)   | E-ATX,<br>13" x 12" (33.02cm x 30.48cm)  |
| Memory Capacity & Slots   | Up to 2TB RDIMM, DDR4-3200MHz; Up to 2TB LRDIMM, DDR4-3200MHz<br>Up to 2TB Intel® Optane™ Persistent Memory, in 8 DIMM slots   | Up to 4TB 3DS ECC RDIMM, DDR4-3200MHz; Up to 4TB 3DS ECC LRDIMM, DDR4-3200MHz<br>Up to 4TB Intel® Optane™ Persistent Memory, DDR4-3200MHz, in 16 DIMM slots  |
| Expansion Slots           | 2 PCI-E 4.0 x16,<br>2 PCI-E 4.0 x8,<br>1 PCI-E 4.0 x8 (in x16 slot),<br>1 PCI-E 4.0 NVMe x8 Internal Port(s)<br><b>M.2 Interface:</b> 1 SATA/PCI-E 3.0 x4<br><b>M.2 Form Factor:</b> 2280/22110<br><b>M.2 Key:</b> M-Key | 4 PCI-E 4.0 x16,<br>3 PCI-E 4.0 x8 (in x16 slot)<br><b>M.2 Interface:</b> 4 PCI-E 4.0 x4<br><b>M.2 Form Factor:</b> 2260/2280/22110<br><b>M.2 Key:</b> M-Key<br>M.2 support to RAID 0,1, 5, 10, VROC key is required for RAID. |
| Onboard RAID Controller   | Intel® C621A controller for 10 SATA3 (6 Gbps) ports; RAID 0,1,5,10   | Intel® C621A controller for 8 SATA3 (6 Gbps) ports; RAID 0,1,5,10  |
| Onboard LAN               | Dual LAN with 10GBase-T with Intel® X550   | Single LAN with Intel® Ethernet Controller I210-AT<br>Single LAN with Marvell AQC113<br>Single LAN with Realtek RTL8211F PHY (dedicated IPMI)  |
| Onboard VGA               | 1 VGA D-Sub Connector port,<br>ASPEED AST2600 BMC  | 1 VGA port,<br>VGA connector is dedicated for IPMI.,<br>ASPEED AST2500 BMC   |
| USB Ports                 | 4 USB 2.0 ports (2 rear + 2 via headers)<br>5 USB 3.2 Gen1 ports (2 rear + 2 via headers + 1 Type A)   | 4 USB 2.0 ports (2 rear + 2 via headers)<br>6 USB 3.2 Gen1 ports (4 rear + 2 via headers)<br>2 USB 3.2 Gen2 ports (1 Type A, 1 Type C)<br>1 USB 3.2 Gen2x2 ports (1 Type C); USB 3.2 Gen2 (1 Type A Vertical, 1 Type C header) |
| Other Onboard I/O Devices | TPM Header<br>1 COM Port (1 header)  | ALC 888S HD Audio<br>TPM 2.0 Header<br>2 COM Ports (1 rear, 1 header)  |
| Manageability             | Intel® Node Manager, IPMI2.0, KVM with dedicated LAN, SPM, SSM, SUM, SuperDoctor® 5, Watchdog  | IPMI (Intelligent Platform Management Interface) v2.0 with KVM support, SPM, SUM, SuperDoctor® 5, Watchdog   |
| PC Health Monitoring      | +1.8V, +12V, +3.3V, +5V, +5V standby, 3.3V standby, 7-fan status, Chassis intrusion header, HT, Monitors CPU voltages, System temperature, VBAT  | +1.8V, +12V, +3.3V, +5V, +5V standby, 10 -fan status, 3.3V standby, HT, Memory, VBAT   |
| Other Features            | ACPI power management, ATX Power connector, Chassis intrusion detection, Dual Cooling Zones, NCSI header, RoHS, RoT, UID   | N/A  |
| BIOS                      | AMI UEFI   | 256Mb SPI Flash with AMI BIOS  |





# Global Expansion

Providing Greater Economies of Scale and Accelerated Support to Data Center, Cloud Computing, AI, Enterprise IT, HPC, 5G, Hyperscale, and Embedded Solutions Customers Worldwide



**Worldwide Headquarters**  
San Jose, California, USA



**America**

- Supermicro's Headquarters expansion: Over 1.5 million square foot **Green Computing Park** in San Jose, California signals the company's increasing leadership in the IT industry
- One of the largest high-tech R&D, manufacturing, and business hubs in Silicon Valley
- East Coast Sales and Service Office



**APAC**

Supermicro's **Asia Science and Technology Park** is a key milestone in the company's growth as a true global leader in the development of advanced, power saving computing technologies



**Silicon Valley**

Expanded manufacturing, command center



**EMEA**

Supermicro's system integration facility and services in The Netherlands serves the dynamic, rapidly growing EMEA market with localized supply and time-to-market advantages

## Supermicro Worldwide

### Worldwide Headquarters

Super Micro Computer, Inc.  
980 Rock Avenue, San Jose, CA 95131 USA  
Tel: +1-408-503-8000  
Fax: +1-408-503-8008  
General Info: [Marketing@Supermicro.com](mailto:Marketing@Supermicro.com)  
Tech Support: [Support@Supermicro.com](mailto:Support@Supermicro.com)  
Webmaster: [Webmaster@Supermicro.com](mailto:Webmaster@Supermicro.com)

### European Branch

Super Micro Computer, B.V.  
Het Sterrenbeeld 12, 5215 ML,  
's-Hertogenbosch, The Netherlands  
Tel: +31-73-640-0390  
Fax: +31-73-641-6525  
General Info: [sales\\_europe@supermicro.com](mailto:sales_europe@supermicro.com)  
Support: [Support@Supermicro.com](mailto:Support_Europe@supermicro.com)

### Taiwan Office

Super Micro Computer, Inc.  
3F., No.150, Jian 1st Rd., Zhonghe Dist.,  
New Taipei City 235, Taiwan (R.O.C.)  
Tel: +886-2-8226-3990  
Fax: +886-2-8226-3992  
Support: [Support@Supermicro.com.tw](mailto:Support@Supermicro.com.tw)

### Beijing, China Office

Supermicro Technology (Beijing) Co., Ltd  
Suite 1208, Tower D, Jiahua Building,  
No. 9, Shangdi 3rd Street,  
Haidian District, Beijing,  
P.R. CHINA 100085  
Tel: +86-10-62969165  
E-mail: [Sales-CN@supermicro.com](mailto:Sales-CN@supermicro.com)

### Japan Office

Super Micro Japan  
21F Shibuya Infoss Tower, 20-1,  
Sakuragaoka-cho, Shibuya-Ku, Tokyo,  
150-0031 Japan  
Tel: +81-3-5728-5196  
Tel: +81-3-5728-5197  
Sales Inquiry: [Sales\\_Inquiry\\_JP@Supermicro.com](mailto:Sales_Inquiry_JP@Supermicro.com)  
Tech Support: [Support\\_Japan@Supermicro.com](mailto:Support_Japan@Supermicro.com)

### U.S. East Coast Office

Super Micro Computer, Inc.  
525 Washington Blvd, 20th Floor  
Jersey City, NJ 07310 USA  
General Info: [Marketing@Supermicro.com](mailto:Marketing@Supermicro.com)

### U.K. Sales Office

Super Micro Computer, B.V.  
77 New Cavendish Street,  
The Harley Building,  
London, W1W 6XB  
Tel: +31-73-640-0390 Ext. 2800  
General Info: [Sales@Supermicro.nl](mailto:Sales@Supermicro.nl)  
Support: [Support@Supermicro.com](mailto:Support_Europe@supermicro.com)

### Supermicro Science & Technology Park

Super Micro Computer, Inc.  
No.1899, Xingfeng Rd., Bade Dist.,  
Taoyuan City 334, Taiwan (R.O.C.)  
Tel: +886-2-8226-3990  
Fax: +886-3-362-8266  
Support: [Support@Supermicro.com.tw](mailto:Support@Supermicro.com.tw)

### Shanghai, China Office

Super Micro Computer, Inc.  
Room 1604, No 398, North Caoxi Road,  
HuiZhi Building, Xuhui District,  
Shanghai, China 200030  
Tel: +86-21-61152558  
Tech Support: +86-21-61152556  
E-mail: [Sales-CN@supermicro.com](mailto:Sales-CN@supermicro.com)  
Support: [support-cn@supermicro.com](mailto:support-cn@supermicro.com)

### Korea Office

Super Micro Computer Holding B.V.  
#1001, Trade Tower, 511, Yeongdong-daero,  
Gangnam-gu, Seoul, Korea, 06164  
Tel: +82-2-554-0045  
Fax: +82-2-554-0146  
Sales Inquiry: [Sales-Asia@supermicro.com.tw](mailto:Sales-Asia@supermicro.com.tw)

# Better

Better Performance  
Per Watt and Per Dollar



# Faster

First-to-Market Innovation with the  
Highest Performance Server Designs



# Greener

Reduced Environmental  
Impact and Lower TCO



## Worldwide Headquarters

Super Micro Computer, Inc.  
980 Rock Ave.  
San Jose, CA 95131, USA  
Tel: +1-408-503-8000  
Fax: +1-408-503-8008  
E-mail: [Marketing@Supermicro.com](mailto:Marketing@Supermicro.com)

## EMEA Headquarters

Super Micro Computer, B.V.  
Het Sterrenbeeld 28, 5215 ML,  
's-Hertogenbosch, The Netherlands  
Tel: +31-73-640-0390  
Fax: +31-73-641-6525  
E-mail: [Sales\\_Europe@supermicro.com](mailto:Sales_Europe@supermicro.com)

## APAC Headquarters

Super Micro Computer, Taiwan Inc.  
3F, No. 150, Jian 1st Rd., Zhonghe Dist.,  
New Taipei City 235, Taiwan  
Tel: +886-2-8226-3990  
Fax: +886-2-8226-3991  
E-mail: [Marketing@Supermicro.com.tw](mailto:Marketing@Supermicro.com.tw)

[www.supermicro.com](http://www.supermicro.com)

©Super Micro Computer, Inc. Specifications subject to change without notice. All other brands and names are the property of their respective owners. All logos, brand names, campaign statements and product images contained herein are copyrighted and may not be reprinted and/or reproduced, in whole or in part, without express written permission by Supermicro Corporate Marketing.

MKT-0002-05/2022-R41

