X12 Server Solutions

Supporting 3rd Gen Intel® Xeon® Scalable Processors

(Ice Lake)

April 2021

INTRODUCING
SUPERMICRO X12 GENERATION

intel. XEON PLATINUM

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 BigTwin®

X12 Ultra & Ultra-E

X12 CloudDC

X12 SuperBlade®

X12 GPU & GPU HGX

X12 SuperStorage®

X12 Mainstream

X12 Hyper & Hyper-E

X12 FatTwin®

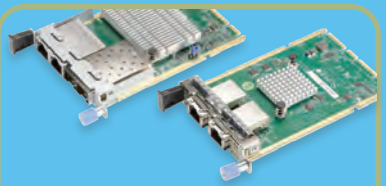
X12 TwinPro®

X12 MP

X12 SuperWorkstations

X12 WIO

X12 IoT/Embedded



SuperCloud Composer / AIOM

X12 BIGTWIN®
Leading Multi-node Architectures

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

3rd Gen Intel® Xeon® 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

2U 4-Node

(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 ® X12 BigTwin ® 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 TPMI 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

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

Compact Cloud Compute

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

General Purpose Balanced

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

Compact Storage Optimized

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	SBI-420P-1T3N	OEM SKU* with liquid cooling option
2 SAS/NVMe	*3 SATA or 2 NVMe*	*2 SATA/NVMe*

6U SuperBlade® / 10 21 Nodes in 6U

SBI-610P-1C2N	SBI-610P-1T2N	SBI-620P-1C3N	SBI-620P-1T3N
2 SAS/NVMe	*2 SATA/NVMe*	*3 SAS or 2 NVMe*	*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 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

1U 12x Drives	2U 12x Drives	2U 16x Drives	2U Simply Double, 24x Drives	4U 24x Drives	4U 36x Drives	4U 60x Top-loading
SSG-610P-ACR12N4H/L	SSG-620P-ACR12H/L	SSG-620P-ACR16H/L	SSG-620P-EICR24H/L	SSG-640P-E1CR24H/L	SSG-640P-E1CR36H/L	SSG-640SP-E1CR60

4U 90x Top-loading	4U 60x Top-loading	4U 90x Top-loading	1U UP 10 NVMe	2U UP 12x Drives	4U UP 36x Drives	4U UP 45x Drives
SSG-640SP-E1CR90	SSG-640SP-DE1CR60 SSG-640SP-DE2CR60	SSG-640SP-DE1CR90 SSG-640SP-DE2CR90	SSG-110P-NTR10	SSG-520P-ACTR12H SSG-520P-ACTR12L	SSG-540P-E1CTR36H SSG-540P-E1CTR36L	SSG-540P-E1CTR45H SSG-540P-E1CTR45L

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

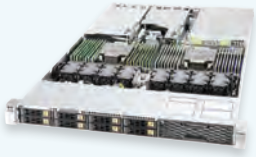
24x 2.5" NVMe/SAS/SATA drives

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

4U 8-Node

Optimized for High Density Compute

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

SYS-F610P2-RTN

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
- Telcom 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 MP 4-Way Server

Highest Performance and Flexibility for Enterprise Applications

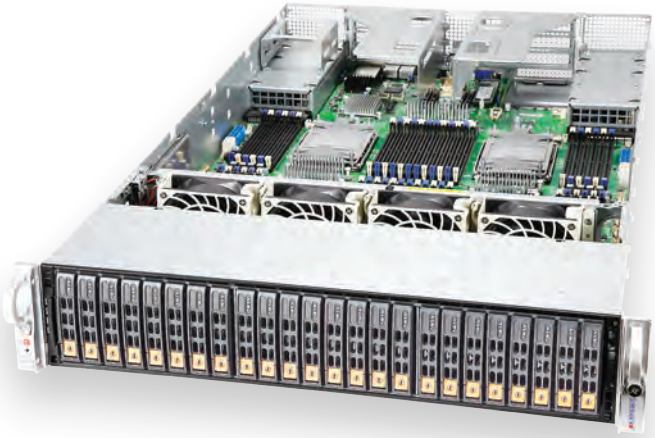
Large memory footprint for up to 18TB

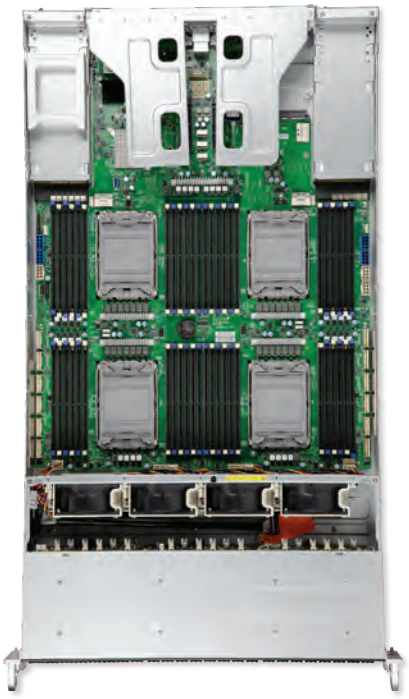
All hybrid hot-swappable drive bay - NVMe, SAS, or SATA

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

SUPERCLOUD COMPOSER

Your Gateway to Compose Disaggregated Infrastructure Quickly and Effortlessly

SuperCloud Composer is a composable cloud management platform that provides a unified dashboard to administer software-defined data centers.

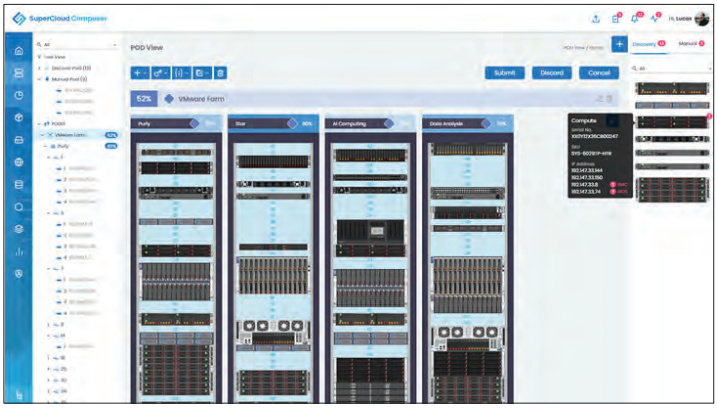
Supermicro's cloud infrastructure management software brings speed, agility, and simplicity to IT administration by integrating data center tasks into a single intelligent management solution.

Our robust composer engine can orchestrate cloud workloads through a streamlined industry standard Redfish API.

SuperCloud Composer monitors and manages the broad portfolio of multi-generation Supermicro servers and third-party systems through its data center lifecycle management feature set from a single unified console.

Benefits	Features
Cost Savings - Capital Expenditure (CapEx), Operating Expense (OPEX)	• Expands on optimized Supermicro building block solutions • Third Party Vendor Support
Intelligent Data Center Management	• Call Home Management • POD & Rack-level Management (including ToR switch) • Asset Management (Monitoring, Updates)
Frictionless Deployments	• Zero Touch Provisioning for Network Configuration • Hardware Life Cycle Management for Software Define Data Center • Northbound Redfish APIs provides seamless Integration
Dynamically Configured Servers	• Zero Touch OS Deployment in Seconds
Device Scaling of Resources	• Monitor/Manage Resource Pools in a Composable Disaggregated Infrastructure • Software Defined Node Composer • Expands storage and accelerators capacities to existing compute nodes • Support for 3rd party devices expands available resource selection
Unified End User Experience Data Driven Decisions	• Single Pane of Glass for Data Center Deployment • Rich Analytics & Telemetry
Compliance & Governance	• (SoT) Manage Silicon Root of Trust • SSL Security Compliance • User Define Role Based Access Control

Dashboard aggregates the view of POD health, visualized system data analytics, activity event timeline tracking, providing at-a-glance awareness of data center operations, as well as detailed system status, composed node status, and allocated storage



The POD View's rack management solution provides flexibility to organize data center requirements based on common workloads assigned to a rack deployment either at the edge or physical appliances with a Data Center that are miles away

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
Description	Quad-Port GbE	Dual-Port GbE	Quad-Port GbE	Dual-Port 10GbE	Dual-Port 10GbE	Quad-Port 10GbE
Port	4x SFP	2xRJ45	4xRJ45	2x RJ45	2x SFP+	4x SFP+
Speed	1Gbps	1Gbps	1Gbps	10Gbps	10Gbps	10Gbps
Controller	Intel® i350-AM4	Intel® i350-AM2	Intel® i350-AM4	Intel® X550-AT2	Intel® X710-BM2	Intel® XL710-BM1
PCI-E	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
Power	4.4W	3.7W	4.4W	13W	6.2W	7W
Status	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
Description	Quad-Port 10GbE	Dual-Port 10GbE	Dual-Port 25GbE	2-Port25GbE & 2-Port 10GbE	Dual-Port 25GbE	Dual-Port 100GbE	Dual-Port 100GbE
Port	2x RJ45 2x SFP+	2x RJ45	2x SFP28	2x SFP28 2x RJ45	2x SFP28	2x QSFP28	2x QSFP28
Speed	10Gbps	10Gbps	25Gbps	25Gbps / 10Gbps	25Gbps	100Gbps	100Gbps
Controller	Intel® X710-TM4	Intel® X710-AT2	Broadcom® BCM57414	Mellanox® ConnectX-4 Lx EN Intel® X550-AT2	Mellanox®CX-6 LX	Broadcom® BCM57508	Mellanox® ConnectX-6 DX
PCI-E	PCI-E 3.0 x8	PCI-E 3.0 x8	PCI-E 3.0 x8	PCI-E 3.0 x8 PCI-E 3.0 x4	PCI-E 4.0/3.0 x8	PCI-E 4.0 x16	PCI-E 4.0 x16
Power	10W	10W	7.7W	25W	12.5W	20W	20W
Status	Released	Q2 2021	Released	Released	Q2 2021	Q2 2021	Q2 2021

X12 BIGTWIN®

(For Complete System Only)

NEW!

3rd Gen Intel® Xeon® Scalable processors Supported

	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 Dual Socket LGA 4189 (Socket P+) supported TDP up to 205W;	3rd Gen Intel® Xeon® Scalable processors Dual Socket LGA 4189 (Socket P+) supported TDP up to 205W;	3rd Gen Intel® Xeon® Scalable processors Dual Socket LGA 4189 (Socket P+) supported TDP up to 205W;
Key Applications	• Diskless HPC Clusters • Container-as-a-Service; Application Accelerator • Hyperconverged Infrastructure	• High-Performance File System; Big Data Analytics and AI • High-Density NVMe Storage Array • Hyperconverged Infrastructure	• Diskless HPC Clusters • Container-as-a-Service; Application Accelerator • High-Performance File System; Big Data Analytics and AI • High-Density NVMe Storage Array
Outstanding Features	• Up to 2 Nvidia T4 GPU support, with limited CPU selection • Tool-less support for swapping AOC cards • Supports NVMe/SATA/SAS storage devices • Liquid Cooling Support • HW Boot Controller for NVMe M.2 drives • 4 Hot-Swap Nodes in 2U • 20 Memory slots (16 DIMM + 4 Intel® Optane™ Persistent Memory) • 2 low-profile PCI-E 4.0 slots • 1 AIOM card support (PCI-E 4.0)	• Tool-less support for swapping AOC cards • Supports NVMe/SATA/SAS storage devices • Liquid Cooling Support • HW RAID Support for Hot-Swappable SAS/SATA Drives • HW Boot Controller for NVMe M.2 drives • 4 Hot-Swap Nodes in 2U, Shared Power and Cooling Design • 20 Memory slots (16 DIMM + 4 Intel® Optane™ Persistent Memory) • 2 low-profile PCI-E 4.0 slots • 1 AIOM card support (PCI-E 4.0)	• Up to 2 Nvidia T4 GPU support, with limited CPU selection • Tool-less support for swapping AOC cards • Liquid Cooling Support • HW Boot Controller for NVMe M.2 drives • 4 Hot-Swap Nodes in 2U, Shared Power and Cooling Design • 20 Memory slots (16 DIMM + 4 Intel® Optane™ Persistent Memory) • 2 low-profile PCI-E 4.0 slots • 1 AIOM card support (PCI-E 4.0)
Serverboard	SUPER® X12DPT-B6	SUPER® X12DPT-B6	SUPER® X12DPT-B6
Chipset	Intel® C621A	Intel® C621A	Intel® C621A
System Memory (Max.)	20 DIMM slots (16 DRAM + 4 PMem) UP to 4TB: 16x 256GB DRAM UP to 6TB: 8x 256GB DRAM and 8x 512GB Intel® Optane™ Persistent Memory	20 DIMM slots (16 DRAM + 4 PMem) UP to 4TB: 16x 256GB DRAM UP to 6TB: 8x 256GB DRAM and 8x 512GB Intel® Optane™ Persistent Memory	20 DIMM slots (16 DRAM + 4 PMem) UP to 4TB: 16x 256GB DRAM UP to 6TB: 8x 256GB DRAM and 8x 512GB Intel® Optane™ Persistent Memory
Expansion Slots	M.2 slot(s) 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) 2 PCI-E 4.0 x16 LP slot(s)
Onboard Storage Controller	Intel® SATA Broadcom® 3808	Intel® SATA 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; SuperDoctor® 5; Watch Dog; SUM; SPM; SSM; SuperCloud Composer	Intel® Node Manager; IPMI 2.0; KVM with dedicated LAN; SuperDoctor® 5; Watch Dog; SUM; SPM; SSM; SuperCloud Composer	Intel® Node Manager; IPMI 2.0; KVM with dedicated LAN; SuperDoctor® 5; Watch Dog; SUM; SPM; SSM; SuperCloud Composer
Drive Bays	6x 2.5" hot-swap NVMe/SATA/SAS drive bays; 6x 2.5" NVMe hybrid; Optional HBA support via SAS3808 Adapter	6x 2.5" hot-swap NVMe/SATA/SAS drive bays; 6x 2.5" NVMe hybrid; Optional RAID support via Broadcom® 3908 AOC	6x 2.5" hot-swap NVMe/SATA drive bays; 6x 2.5" NVMe hybrid; 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 8cm heavy duty fan(s)	4x 8cm heavy duty fan(s)	4x 8cm heavy duty fan(s)
Form Factor	2U Rackmount Enclosure: 449 x 88 x 730mm (17.68" x 3.47" x 28.75") Package: 626 x 248 x 1150mm (24.65" x 9.76" x 45.28")	2U Rackmount Enclosure: 449 x 88 x 730mm (17.68" x 3.47" x 28.75") Package: 626 x 248 x 1150mm (24.65" x 9.76" x 45.28")	2U Rackmount Enclosure: 449 x 88 x 730mm (17.68" x 3.47" x 28.75") Package: 626 x 248 x 1150mm (24.65" x 9.76" x 45.28")

X12 BIGTWIN®

(For Complete System Only)

NEW!

3rd Gen Intel® Xeon® Scalable processors Supported

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 Dual Socket LGA 4189 (Socket P+) supported TDP up to 185W;	3rd Gen Intel® Xeon® Scalable processors Dual Socket LGA 4189 (Socket P+) supported TDP up to 185W;	3rd Gen Intel® Xeon® Scalable processors Dual Socket LGA 4189 (Socket P+) supported TDP up to 270W;
Key Applications	• Warm Storage • Hyperconverged Infrastructure	• Warm Storage • Hyperconverged Infrastructure	• Hyperconverged Infrastructure • High-Performance Ceph; Software-Defined Storage
Outstanding Features	• Tool-less support for swapping AOC cards • Supports NVMe/SATA/SAS storage devices • Liquid Cooling Support • HW Boot Controller for NVMe M.2 drives • 4 Hot-Swap Nodes in 2U, Shared Power and Cooling Design • 20 Memory slots (16 DIMM + 4 Intel® Optane™ Persistent Memory) • 2 low-profile PCI-E 4.0 slots • 1 AIOM card support (PCI-E 4.0)	• Tool-less support for swapping AOC cards • Liquid Cooling Support • HW Boot Controller for NVMe M.2 drives • 4 Hot-Swap Nodes in 2U, Shared Power and Cooling Design • 20 Memory slots (16 DIMM + 4 Intel® Optane™ Persistent Memory) • 2 low-profile PCI-E 4.0 slots • 1 AIOM card support (PCI-E 4.0)	• Tool-less support for swapping AOC cards • Supports NVMe/SATA/SAS storage devices • Liquid Cooling Support • HW Boot Controller for NVMe M.2 drives • Balanced IO performance for up to 12 NVMe Gen4 drives • 3 low-profile PCI-E 4.0 slots • 20 Memory slots (16 DIMM + 4 Intel® Optane™ Persistent Memory) • 2 Hot-Swap Nodes in 2U, Shared Power and Dedicated Cooling Per Node • 1 AIOM card support (PCI-E 4.0)
Serverboard	SUPER● X12DPT-B6	SUPER● X12DPT-B6	SUPER● X12DPT-B6
Chipset	Intel® C621A	Intel® C621A	Intel® C621A
System Memory (Max.)	20 DIMM slots (16 DRAM + 4 PMem) UP to 4TB: 16x 256GB DRAM UP to 6TB: 8x 256GB DRAM and 8x 512GB Intel® Optane™ Persistent Memory	20 DIMM slots (16 DRAM + 4 PMem) UP to 4TB: 16x 256GB DRAM UP to 6TB: 8x 256GB DRAM and 8x 512GB Intel® Optane™ Persistent Memory	20 DIMM slots (16 DRAM + 4 PMem) UP to 4TB: 16x 256GB DRAM UP to 6TB: 8x 256GB DRAM and 8x 512GB Intel® Optane™ Persistent Memory
Expansion Slots	M.2 slot(s) 2 PCI-E 4.0 x16 LP slot(s)	M.2 slot(s) 2 PCI-E 4.0 x16 LP slot(s)	M.2 slot(s) PCI-E 4.0 x16 LP slot(s) PCI-E 4.0 x8 LP slot(s)
Onboard Storage Controller	Intel® SATA Broadcom® 3808	Intel® SATA	Intel® SATA 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; SuperDoctor® 5; Watch Dog; SUM; SPM; SSM; SuperCloud Composer	Intel® Node Manager; IPMI 2.0; KVM with dedicated LAN; SuperDoctor® 5; Watch Dog; SUM; SPM; SSM; SuperCloud Composer	Intel® Node Manager; IPMI 2.0; KVM with dedicated LAN; SuperDoctor® 5; Watch Dog; SUM; SPM; SSM; SuperCloud Composer
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 8cm heavy duty fan(s)	4x 8cm heavy duty fan(s)	4x 8cm heavy duty fan(s)
Form Factor	2U Rackmount Enclosure: 449 x 88 x 774mm (17.68" x 3.47" x 30.5") Package: 626 x 248 x 1150mm (24.65" x 9.76" x 45.28")	2U Rackmount Enclosure: 449 x 88 x 774mm (17.68" x 3.47" x 30.5") Package: 626 x 248 x 1150mm (24.65" x 9.76" x 45.28")	2U Rackmount Enclosure: 449 x 88 x 730mm (17.68" x 3.47" x 28.75") Package: 626 x 248 x 1150mm (24.65" x 9.76" x 45.28")

X12 BIGTWIN®

(For Complete System Only)

NEW!

3rd Gen Intel® Xeon® Scalable processors Supported

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 Dual Socket LGA 4189 (Socket P+) supported TDP up to 270W;	3rd Gen Intel® Xeon® Scalable processors Dual Socket LGA 4189 (Socket P+) supported TDP up to 250W;	3rd Gen Intel® Xeon® Scalable processors Dual Socket LGA 4189 (Socket P+) supported TDP up to 250W;
Key Applications	• Diskless HPC Clusters • High-Performance File System; Big Data Analytics and AI • High-Density NVMe Storage Array	• Back-up & Recovery • Hyperconverged Infrastructure • Object Storage	• Back-up & Recovery • Hyperconverged Infrastructure • Object Storage
Outstanding Features	• Up to 2 Nvidia T4 GPU support, with limited CPU selection • Tool-less support for swapping AOC cards • Supports NVMe/SATA/SAS storage devices • Liquid Cooling Support • HW Boot Controller for NVMe M.2 drives • Balanced IO performance for up to 12 NVMe Gen4 drives • 3 low-profile PCI-E 4.0 slots • 20 Memory slots (16 DIMM + 4 Intel® Optane™ Persistent Memory) • 2 Hot-Swap Nodes in 2U, Shared Power and Dedicated Cooling Per Node • 1 AIOM card support (PCI-E 4.0)	• Tool-less support for swapping AOC cards • Liquid Cooling Support • HW Boot Controller for NVMe M.2 drives • 3 low-profile PCI-E 4.0 slots • 20 Memory slots (16 DIMM + 4 Intel® Optane™ Persistent Memory) • 2 Hot-Swap Nodes in 2U, Shared Power and Dedicated Cooling Per Node • 1 AIOM card support (PCI-E 4.0)	• Tool-less support for swapping AOC cards • Liquid Cooling Support • HW Boot Controller for NVMe M.2 drives • 3 low-profile PCI-E 4.0 slots • 20 Memory slots (16 DIMM + 4 Intel® Optane™ Persistent Memory) • 2 Hot-Swap Nodes in 2U, Shared Power and Dedicated Cooling Per Node • 1 AIOM card support (PCI-E 4.0)
Serverboard	SUPER® X12DPT-B6	SUPER® X12DPT-B6	SUPER® X12DPT-B6
Chipset	Intel® C621A	Intel® C621A	Intel® C621A
System Memory (Max.)	20 DIMM slots (16 DRAM + 4 PMem) UP to 4TB: 16x 256GB DRAM UP to 6TB: 8x 256GB DRAM and 8x 512GB Intel® Optane™ Persistent Memory	20 DIMM slots (16 DRAM + 4 PMem) UP to 4TB: 16x 256GB DRAM UP to 6TB: 8x 256GB DRAM and 8x 512GB Intel® Optane™ Persistent Memory	20 DIMM slots (16 DRAM + 4 PMem) UP to 4TB: 16x 256GB DRAM UP to 6TB: 8x 256GB DRAM and 8x 512GB Intel® Optane™ Persistent Memory
Expansion Slots	M.2 slot(s) PCI-E 4.0 x16 LP slot(s) 2 PCI-E 4.0 x8 LP slot(s)	M.2 slot(s) PCI-E 4.0 x16 LP slot(s) 2 PCI-E 4.0 x8 LP slot(s)	M.2 slot(s) PCI-E 4.0 x16 LP slot(s) 2 PCI-E 4.0 x8 LP slot(s)
Onboard Storage Controller	Intel® SATA	Intel® SATA	Intel® SATA 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; SuperDoctor® 5; Watch Dog; SUM; SPM; SSM; SuperCloud Composer	Intel® Node Manager; IPMI 2.0; KVM with dedicated LAN; SuperDoctor® 5; Watch Dog; SUM; SPM; SSM; SuperCloud Composer	Intel® Node Manager; IPMI 2.0; KVM with dedicated LAN; SuperDoctor® 5; Watch Dog; SUM; SPM; SSM; SuperCloud Composer
Drive Bays	12x 2.5" hot-swap NVMe/SATA drive bays; 12x 2.5" NVMe hybrid; 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; 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; 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 8cm heavy duty fan(s)	4x 8cm heavy duty fan(s)	4x 8cm heavy duty fan(s)
Form Factor	2U Rackmount Enclosure: 449 x 88 x 730mm (17.68" x 3.47" x 28.75") Package: 626 x 248 x 1150mm (24.65" x 9.76" x 45.28")	2U Rackmount Enclosure: 449 x 88 x 774mm (17.68" x 3.47" x 30.5") Package: 626 x 248 x 1150mm (24.65" x 9.76" x 45.28")	2U Rackmount Enclosure: 449 x 88 x 774mm (17.68" x 3.47" x 30.5") 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 Dual Socket LGA-4189 (Socket P+) supported TDP up to 270W; 3 UPI up to 11.2GT/s	3rd Gen Intel® Xeon® Scalable processors Dual Socket LGA-4189 (Socket P+) supported TDP up to 270W; 3 UPI up to 11.2GT/s
Key Applications	• 5G/Telco • Application Tier Service Provider • HPC • Software Defined Storage • Virtualization • High End Enterprise Server • Cloud Computing	• 5G/Telco • Application Tier Service Provider • HPC • Software Defined Storage • Virtualization • High End Enterprise Server • Cloud Computing
Outstanding Features	• Up to 8TB Intel® Optane™ Persistent Memory (up to 12TB with DRAM) • Short-Depth Model (22.6") Optimized for 5G and Telco Markets • Optimized Cooling with Support up to 270W TDP processors • Modular Components for Building Application-Optimized Solutions • Hot-swappable hybrid drive bays supporting NVMe, SATA or SAS • Flexible onboard networking options • Dual Socket P+ (LGA-4189) 3rd Gen Intel® Xeon® Scalable Processors • Configurable number of PCI-E 4.0 expansion slots with support for double-width GPUs and FPGAs.	• Up to 8TB Intel® Optane™ Persistent Memory (up to 12TB with DRAM) • Optimized Cooling with Support up to 270W TDP processors • Modular Components for Building Application-Optimized Solutions • Hot-swappable hybrid drive bays supporting NVMe, SATA or SAS • Flexible onboard networking options • Dual Socket P+ (LGA-4189) 3rd Gen Intel® Xeon® Scalable Processors • Configurable number of PCI-E 4.0 expansion slots with support for double-width GPUs and FPGAs.
Serverboard	SUPER® X12DPU-6	SUPER® X12DPU-6
Chipset	Intel® C621A	Intel® C621A
System Memory (Max.)	32 DIMM slots UP to 8TB: 32x 256GB DRAM UP to 12TB: 16x 256GB DRAM and 16x 512GB PMem Intel® Optane™ persistent memory 200 series	32 DIMM slots UP to 8TB: 32x 256GB DRAM UP to 12TB: 16x 256GB DRAM and 16x 512GB PMem Intel® Optane™ persistent memory 200 series
Expansion Slots	1 PCI-E 4.0 x16 FH, 10.5"L slot 1 PCI-E 4.0 x16 LP slot 5 PCI-E 4.0 x8 FH, 10.5"L slots (PCI-E 4.0 x16 options available) 1 PCI-E 4.0 x8 internal LP slot	1 PCI-E 4.0 x16 FH, 10.5"L slot 1 PCI-E 4.0 x16 LP slot 5 PCI-E 4.0 x8 FH, 10.5"L slots (PCI-E 4.0 x16 options available) 1 PCI-E 4.0 x8 internal LP slot
Onboard Storage Controller	Intel® SATA	Intel® SATA
Connectivity	2x 10GbE RJ45 with Intel® X710-AT2 (optional) 2x 10GbE RJ45 and 2x 10GbE SFP+ with Intel® X710-TM4 (optional)	2x 10GbE RJ45 with Intel® X710-AT2 (optional) 2x 10GbE RJ45 and 2x 10GbE SFP+ with Intel® X710-TM4 (optional)
VGA/Audio	1 VGA port	1 VGA port
Management	Intel® Node Manager; KVM with dedicated LAN; SuperDoctor® 5; Watch Dog; NMI; IPMI 2.0; SPM; SSM; SUM; Redfish API	Intel® Node Manager; KVM with dedicated LAN; SuperDoctor® 5; Watch Dog; NMI; IPMI 2.0; SPM; SSM; SUM; Redfish API
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 Enclosure: 437 x 89 x 574mm (17.2" x 3.5" x 22.6") Package: 625 x 253 x 1154mm (24.6" x 9.96" x 45.43")	2U Rackmount Enclosure: 437 x 89 x 723mm (17.2" x 3.5" x 28.46") Package: 605 x 256 x 947mm (23.81" x 10.07" x 37.28")

X12 ULTRA

(For Complete System Only)

NEW!

3rd Gen Intel® Xeon® Scalable processors Supported

	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 Dual Socket LGA-4189 (Socket P+) supported TDP up to 270W; 3 UPI up to 11.2GT/s	3rd Gen Intel® Xeon® Scalable processors Dual Socket LGA-4189 (Socket P+) supported TDP up to 270W; 3 UPI up to 11.2GT/s	3rd Gen Intel® Xeon® Scalable processors Dual Socket LGA-4189 (Socket P+) supported TDP up to 270W; 3 UPI up to 11.2GT/s
Key Applications	• 5G/Telco • Application Tier Service Provider • HPC • Software Defined Storage • Virtualization • High End Enterprise Server • Cloud Computing	• 5G/Telco • Application Tier Service Provider • HPC • Software Defined Storage • Virtualization • High End Enterprise Server • Cloud Computing	• 5G/Telco • Application Tier Service Provider • HPC • Software Defined Storage • Virtualization • High End Enterprise Server • Cloud Computing
Outstanding Features	• Up to 8TB Intel® Optane™ Persistent Memory (up to 12TB with DRAM) • Optimized Cooling with Support up to 270W TDP processors • Modular Components for Building Application-Optimized Solutions • Hot-swappable hybrid drive bays supporting NVMe, SATA or SAS • Flexible onboard networking options • Dual Socket P+ (LGA-4189) 3rd Gen Intel® Xeon® Scalable Processors • Configurable number of PCI-E 4.0 expansion slots with support for double-width GPUs and FPGAs.	• Up to 8TB Intel® Optane™ Persistent Memory (up to 12TB with DRAM) • Optimized Cooling with Support up to 270W TDP processors • Modular Components for Building Application-Optimized Solutions • Hot-swappable hybrid drive bays supporting NVMe, SATA or SAS • Flexible onboard networking options • Dual Socket P+ (LGA-4189) 3rd Gen Intel® Xeon® Scalable Processors • Configurable number of PCI-E 4.0 expansion slots with support for double-width GPUs and FPGAs.	• Up to 8TB Intel® Optane™ Persistent Memory (up to 12TB with DRAM) • Optimized Cooling with Support up to 270W TDP processors • Modular Components for Building Application-Optimized Solutions • Hot-swappable hybrid drive bays supporting NVMe, SATA or SAS • Flexible onboard networking options • Dual Socket P+ (LGA-4189) 3rd Gen Intel® Xeon® Scalable Processors • Configurable number of PCI-E 4.0 expansion slots with support for double-width GPUs and FPGAs.
Serverboard	SUPER●® X12DPU-6	SUPER●® X12DPU-6	SUPER●® X12DPU-6
Chipset	Intel® C621A	Intel® C621A	Intel® C621A
System Memory (Max.)	32 DIMM slots UP to 8TB: 32x 256GB DRAM UP to 12TB: 16x 256GB DRAM and 16x 512GB PMem Intel® Optane™ persistent memory 200 series	32 DIMM slots UP to 8TB: 32x 256GB DRAM UP to 12TB: 16x 256GB DRAM and 16x 512GB PMem Intel® Optane™ persistent memory 200 series	32 DIMM slots UP to 8TB: 32x 256GB DRAM UP to 12TB: 16x 256GB DRAM and 16x 512GB PMem Intel® Optane™ persistent memory 200 series
Expansion Slots	2 PCI-E 4.0 x16 FH, 10.5"L slots 1 PCI-E 4.0 x16 LP slot 1 PCI-E 4.0 x16 Internal LP slot	2 PCI-E 4.0 x16 FH, 10.5"L slots 1 PCI-E 4.0 x16 LP slot 1 PCI-E 4.0 x16 Internal LP slot	1 PCI-E 4.0 x16 FH, 10.5"L slot 1 PCI-E 4.0 x16 LP slot 5 PCI-E 4.0 x8 FH, 10.5"L slots (PCI-E 4.0 x16 options available) 1 PCI-E 4.0 x8 internal LP slot
Onboard Storage Controller	Intel® SATA	Intel® SATA	Intel® SATA
Connectivity	2x 10GbE RJ45 with Intel® X710-AT2 (optional) 2x 10GbE RJ45 and 2x 10GbE SFP+ with Intel® X710-TM4 (optional)	2x 10GbE RJ45 with Intel® X710-AT2 (optional) 2x 10GbE RJ45 and 2x 10GbE SFP+ with Intel® X710-TM4 (optional)	2x 10GbE RJ45 with Intel® X710-AT2 (optional) 2x 10GbE RJ45 and 2x 10GbE SFP+ with Intel® X710-TM4 (optional)
VGA/Audio	1 VGA port	1 VGA port	1 VGA port
Management	Intel® Node Manager; KVM with dedicated LAN; SuperDoctor® 5; Watch Dog; NMI; IPMI 2.0; SPM; SSM; SUM; Redfish API	Intel® Node Manager; KVM with dedicated LAN; SuperDoctor® 5; Watch Dog; NMI; IPMI 2.0; SPM; SSM; SUM; Redfish API	Intel® Node Manager; KVM with dedicated LAN; SuperDoctor® 5; Watch Dog; NMI; IPMI 2.0; SPM; SSM; SUM; Redfish API
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 Enclosure: 437 x 43 x 739mm (17.2" x 1.7" x 29.1") Package: 605 x 203 x 950mm (23.81" x 7.99" x 37.4")	1U Rackmount Enclosure: 437 x 43 x 754mm (17.2" x 1.7" x 29.7") Package: 605 x 203 x 950mm (23.81" x 7.99" x 37.4")	2U Rackmount Enclosure: 437 x 89 x 705.3mm (17.2" x 3.5" x 27.76") 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 Dual Socket LGA-4189 (Socket P+) supported TDP up to 270W; 3 UPI up to 11.2GT/s	3rd Gen Intel® Xeon® Scalable processors Dual Socket LGA-4189 (Socket P+) supported TDP up to 270W; 3 UPI up to 11.2GT/s
Key Applications	• CDN, Edge Nodes • DNS & Gateway Servers, Firewall Application • Cloud Computing, Compact Server • Data Center Optimized, Value IaaS • Web Server, Firewall Application	• CDN, Edge Nodes • DNS & Gateway Servers, Firewall Application • Cloud Computing, Compact Server • Data Center Optimized, Value IaaS • Web Server, Firewall Application
Outstanding Features	• Up to 12x NVMe/SATA/SAS hybrid tool-less drive bays • Optional hot-swappable 2.5" rear drive bays • 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 • Dual sockets up to 76 cores and 270W TDP • Dual NVMe M.2 (2280) • Dual FHFLDW PCI-E 4.0 GPU support • Dual AIOM with NCSI (OCP 3.0 NIC) • Compact server with tool-less drive trays • Balanced architecture in compact chassis (25.6") • 3.5" tool-less drive trays also support 2.5" drives	• Up to 4x SATA/SAS tool-less drive bays • Optional fixed 2.5" 7 mm drive bays • Flexible expansion with up to 2x PCI-E 4.0 x16 slots • Dual sockets up to 76 cores and 270W TDP • Dual NVMe M.2 (2280) • Dual AIOM with NCSI (OCP 3.0 NIC) • Compact server with tool-less drive trays • Balanced architecture in compact chassis (25.6") • 3.5" tool-less drive trays also support 2.5" drives
Serverboard	SUPER® X12DDW-A6	SUPER® X12DDW-A6
Chipset	Intel® C621A	Intel® C621A
System Memory (Max.)	16 DIMM slots Up to 4 TB ECC RDIMM, DDR4-3200MHz Up to 4 TB ECC LRDIMM, DDR4-3200MHz Up to 4 TB Intel® DCPMM, DDR4-3200MHz	16 DIMM slots Up to 4 TB ECC RDIMM, DDR4-3200MHz Up to 4 TB ECC LRDIMM, DDR4-3200MHz Up to 4 TB Intel® DCPMM, DDR4-3200MHz
Expansion Slots	2 PCI-E 4.0 x16 FHHL slot(s) 4 PCI-E 4.0 x8 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; KVM with dedicated LAN; SuperDoctor® 5; Watch Dog; NMI; IPMI 2.0; SPM; SSM; SUM; Redfish API; SCC	Intel® Node Manager; KVM with dedicated LAN; SuperDoctor® 5; Watch Dog; NMI; IPMI 2.0; SPM; SSM; SUM; Redfish API; SCC
Drive Bays	12x 3.5" hot-swap NVMe/SATA/SAS hybrid drive bays; Optional RAID support via RAID controller AOC	4x 3.5" hot-swap SATA/SAS drive bays; Optional RAID support via RAID controller AOC
Peripheral Bays	None	2x 2.5" (optional)
Power Supply	Redundant 1200W Titanium level	Redundant 860W Platinum level (94%)
Cooling System	3x 8cm heavy duty fan(s)	6x 4cm heavy duty fan(s)
Form Factor	2U rackmount Enclosure: 437 x 89 x 648mm (17.2" x 3.5" x 25.5")	1U rackmount Enclosure: 437 x 43 x 650mm (17.2" x 1.7" x 25.6")

X12 CloudDC

(For Complete System Only)

NEW!

3rd Gen Intel® Xeon® Scalable processors Supported

10x 2.5" NVMe/SAS/SATA Drives

8x 2.5" SAS/SATA Drives

MODEL	SYS-120C-TN10R	SYS-120C-TR
Processor Support	3rd Gen Intel® Xeon® Scalable processors Dual Socket LGA-4189 (Socket P+) supported TDP up to 270W; 3 UPI up to 11.2GT/s	3rd Gen Intel® Xeon® Scalable processors Dual Socket LGA-4189 (Socket P+) supported TDP up to 270W; 3 UPI up to 11.2GT/s
Key Applications	• CDN, Edge Nodes • DNS & Gateway Servers, Firewall Application • Cloud Computing, Compact Server • Data Center Optimized, Value IaaS • Web Server, Firewall Application	• CDN, Edge Nodes • DNS & Gateway Servers, Firewall Application • Cloud Computing, Compact Server • Data Center Optimized, Value IaaS • Web Server, Firewall Application
Outstanding Features	• Up to 10x NVMe/SATA/SAS hybrid tool-less drive bays • Flexible expansion with up to 2x PCI-E 4.0 x16 slots • Dual sockets up to 76 cores and 270W TDP • Dual NVMe M.2 (2280) • Dual AIOM with NCSI (OCP 3.0 NIC) • Compact server with tool-less drive trays • Balanced architecture in compact chassis (23.5")	• Up to 8x SATA/SAS tool-less drive bays • Optional DVD ROM support • Flexible expansion with up to 2x PCI-E 4.0 x16 slots • Dual sockets up to 76 cores and 270W TDP • Dual NVMe M.2 (2280) • Dual AIOM with NCSI (OCP 3.0 NIC) • Compact server with tool-less drive trays • Balanced architecture in compact chassis (23.5")
Serverboard	SUPER® X12DDW-A6	SUPER® X12DDW-A6
Chipset	Intel® C621A	Intel® C621A
System Memory (Max.)	16 DIMM slots Up to 4 TB ECC RDIMM, DDR4-3200MHz Up to 4 TB ECC LRDIMM, DDR4-3200MHz Up to 4 TB Intel® DCPMM, DDR4-3200MHz	16 DIMM slots Up to 4 TB ECC RDIMM, DDR4-3200MHz Up to 4 TB ECC LRDIMM, DDR4-3200MHz Up to 4 TB Intel® DCPMM, 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; KVM with dedicated LAN; SuperDoctor® 5; Watch Dog; NMI; IPMI 2.0; SPM; SSM; SUM; Redfish API; SCC	Intel® Node Manager; KVM with dedicated LAN; SuperDoctor® 5; Watch Dog; NMI; IPMI 2.0; SPM; SSM; SUM; Redfish API; SCC
Drive Bays	10x 2.5" hot-swap NVMe/SATA/SAS hybrid drive bays; Optional RAID support via RAID controller AOC	8x 2.5" hot-swap SATA/SAS drive bays; 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 Enclosure: 437 x 43 x 597mm (17.2" x 1.7" x 23.5")	1U rackmount Enclosure: 437 x 43 x 597mm (17.2" x 1.7" x 23.5")

X12 SuperBlade®

NEW!

3rd Gen Intel® Xeon® Scalable processors Supported

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 Up to 10 hot-pluggable full-height 4-socket blade servers 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 • Single 200G HDR InfiniBand switch with add-on card SBE-820C/CB only • Single 100G EDR InfiniBand or Intel Omni-Path switch with add-on card	N/A	N/A
Ethernet Switch	SBE-820J/JB only • Up to 4 switches, 2 hot-pluggable 25G Ethernet switches and 2 hot-pluggable 25G Ethernet switches with add-on card SBE-820H/C/CB only • Up to 2 hot-pluggable 25G Ethernet switches SBE-820L only • 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 • 8x 2200W Titanium power supplies SBE-820H/C/J/L-622 • 6x 2200W Titanium power supplies SBE-820H/C/J/L-422 • 4x 2200W Titanium power supplies SBE-820H/C/J/L-622S • 6x 2200W Platinum long-life power supplies + 2 long-life cooling fans SBE-820H/C/J/L-820D • 8x 2000W DC power supplies SBE-820H/C/J/L-820D • 4x 2000W DC power supplies + 4 cooling fans SBE-820CB/JB-422 • 4x 2200W Titanium power supplies + 4x 1200W BBP modules	SBE-610J-822 • 8x 2200W Titanium power supplies SBE-610J-622 • 6x 2200W Titanium power supplies SBE-610J-422 • 4x 2200W Titanium power supplies SBE-610J-622S • 6x 2200W Platinum long-life power supplies + 2 long-life cooling fans SBE-610JB-422 • 4x 2200W Titanium power supplies + 4x 1200W BBP modules	SBE-414J-422 • 4x 2200W Titanium power supplies SBE-414J-222 • 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)

NEW!

3rd Gen Intel® Xeon® Scalable processors Supported

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; Dual Socket supported TDP up to 220W; 3 UPI	3rd Gen Intel® Xeon® Scalable processors; Dual Socket supported TDP up to 270W; 3 UPI	3rd Gen Intel® Xeon® Scalable processors; Dual Socket supported TDP up to 220W; 3 UPI	3rd Gen Intel® Xeon® Scalable processors; Dual Socket supported 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 • Advanced networking (InfiniBand, OmniPath)	• Direct liquid cooling • Advanced networking (InfiniBand, OmniPath)	• High performance, high density • Advanced networking (InfiniBand, OmniPath) • SAS with hardware RAID 1	• Value and density optimized • 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 Up to 4 TB ECC RDIMM, DDR4-3200MHz Up to 4 TB ECC LRDIMM, DDR4-3200MHz Up to 2 TB Intel® DCPMM, DDR4-3200MHz	16 DIMM slots Up to 4 TB ECC RDIMM, DDR4-3200MHz Up to 4 TB ECC LRDIMM, DDR4-3200MHz Up to 2 TB Intel® DCPMM, DDR4-3200MHz	16 DIMM slots Up to 4 TB ECC RDIMM, DDR4-3200MHz Up to 4 TB ECC LRDIMM, DDR4-3200MHz Up to 2 TB Intel® DCPMM, DDR4-3200MHz	16 DIMM slots 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 Mezzanine option for 2x25GbE, 200G/100G InfiniBand	Dual-port 25GbE LOM Mezzanine option for 2x25GbE, 200G/100G InfiniBand	Dual-port 25GbE LOM 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 2x U.2 NVMe/SATA and 1x SATA Optional mezzanine 4x M.2 NVMe	1x M.2 NVMe 2x U.2 NVMe/SATA Optional mezzanine 4x M.2 NVMe	1x M.2 NVMe 2x U.2 NVMe/SAS/SATA Optional mezzanine 4x M.2 NVMe	1x M.2 NVMe 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 3x System fan modules (optional)	Up to 8x fans 3x System fan modules	Up to 8x fans 3x System fan modules (optional)	4x PSU fans 3x System fan modules
Form Factor	8U Enclosure Up to 20x half-height blades	8U Enclosure Up to 20x half-height blades	8U Enclosure Up to 20x half-height blades	4U Enclosure Up to 14x blades

** Contact Supermicro for more information*

X12 SuperBlade®

(For Complete System Only)

NEW!

3rd Gen Intel® Xeon® Scalable processors Supported

	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; Single Socket supported; TDP up to 270W	3rd Gen Intel® Xeon® Scalable processor; Single Socket supported; TDP up to 270W	3rd Gen Intel® Xeon® Scalable processors; Dual Socket supported; TDP up to 270W; 3UPI	3rd Gen Intel® Xeon® Scalable processors; Dual Socket supported; 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	• High performance 1S with max memory footprint • 2 PCI-E 4.0 x16 slots for GPUs, or industry-standard PCI-E cards • SAS with hardware RAID 1	• High performance 1S with max memory footprint • 2 PCI-E 4.0 x16 slots for GPUs, or industry-standard PCI-E cards • Support up to 4x 25GbE networks	• High performance 2S with max memory footprint • Support up to 4x 25GbE networks • SAS with hardware RAID 0/1/5	• High performance 2S with max memory footprint • Support up to 4x 25GbE networks
Serverboard	SUPER® B12SPE	SUPER® B12SPE	SUPER® B12DPE	SUPER® B12DPE
Chipset	Intel C621A	Intel C621A	Intel C621A	Intel C621A
System Memory (Max.)	16 DIMM slots; Up to 4TB Intel® DCPMM, DDR4-3200MHz; Up to 4TB ECC LRDIMM, DDR4-3200MHz; Up to 4TB ECC RDIMM, DDR4-3200MHz	16 DIMM slots; Up to 4TB Intel® DCPMM, DDR4-3200MHz; Up to 4TB ECC LRDIMM, DDR4-3200MHz; Up to 4TB ECC RDIMM, DDR4-3200MHz	32 DIMM slots; Up to 8TB Intel® DCPMM, DDR4-3200MHz; Up to 8TB ECC LRDIMM, DDR4-3200MHz; Up to 8TB ECC RDIMM, DDR4-3200MHz	32 DIMM slots; Up to 8TB Intel® DCPMM, DDR4-3200MHz; Up to 8TB ECC LRDIMM, DDR4-3200MHz; Up to 8TB ECC RDIMM, DDR4-3200MHz
Expansion Slots	2 PCI-E 4.0 x16 slots 1 PCI-E 4.0 x16 slot for high-speed networking mezzanine connector	2 PCI-E 4.0 x16 slots 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 Mezzanine option for 2x25GbE	Dual-port 25GbE LOM Mezzanine option for 2x25GbE	Dual-port 25GbE LOM Mezzanine option for 2x25GbE	Dual-port 25GbE LOM 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 1x M.2 NVMe/SATA	2x U.2 NVMe/SATA 1x M.2 NVMe/SATA 2x M.2 NVMe	2x U.2 NVMe/SAS/SATA 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 Up to 10x blades	6U Enclosure Up to 10x blades	6U Enclosure Up to 10x blades	6U Enclosure Up to 10x blades

X12 GPU

(For Complete System Only)

NEW!

3rd Gen Intel® Xeon® Scalable processors Supported

4U HGX A100 8-GPU

4U 10-GPU

4U 4-GPU

MODEL	SYS-420GP-TNAR SYS-420GP-TNAR+	SYS-420GP-TNR	SYS-740GP-TNRT
Processor Support	3rd Gen Intel® Xeon® Scalable processors Dual Socket LGA-4189 (Socket P+) supported TDP up to 270W; 3 UPI up to 11.2GT/s	3rd Gen Intel® Xeon® Scalable processors Dual Socket LGA-4189 (Socket P+) supported TDP up to 270W; 3 UPI up to 11.2GT/s	3rd Gen Intel® Xeon® Scalable processors Dual Socket LGA-4189 (Socket P+) supported TDP up to 270W; 3 UPI up to 11.2GT/s
Key Applications	• AI/Deep Learning • High Performance Computing	• Rendering • VDI • AI/Deep Learning • High Performance Computing	• Rendering • AI/Deep Learning • High Performance Computing • Scientific Virtualization
Outstanding Features	• Highest GPU communication using NVIDIA® NVLINK™ + NVIDIA® NVSwitch™ • High Density 4U System with NVIDIA® HGX™ A100 8-GPU • AIOM / OCP 3.0 Support • 8 NIC for GPU Direct RDMA (1:1 GPU Ratio) • 4 NVMe for GPU Direct Storage • 2 SATA / NVMe M.2	• Up to 10 double width, full length GPUs • Thermal performance with separate GPU & CPU Zones • Flexible GPU Support: Active & Passive GPUs • AIOM / OCP 3.0 Support • 2x USB 3.0 • 2 NVMe M.2	• Up to 4 Double Width GPUs • Flexible I/O support: 7 PCI-E slots • Flexible GPU Support: Active & Passive GPUs • 2 SATA / NVMe M.2
Serverboard	SUPER® X12DGO-6	SUPER® X12DPG-OA6	SUPER® X12DPG-QT
Chipset	Intel® C621A	Intel® C621A	Intel® C621A
System Memory (Max.)	32 DIMM slots Up to 8TB ECC LRDIMM, DDR4-3200MHz	32 DIMM slots Up to 8TB ECC LRDIMM, DDR4-3200MHz	16 DIMM slots Up to 4TB ECC LRDIMM, DDR4-3200MHz
Expansion Slots	10 PCI-E 4.0 X16 LP Slots	12 PCI-E 4.0 X16 FHFL Slots	6 PCI-E 4.0 X16 FHFL Slots, 1 PCI-E 4.0 X 8 LP Slots
Onboard Storage Controller	Intel® SATA	Intel® SATA	Intel® SATA
Connectivity	2x 10GbE RJ45 with Intel® X550-AT2 (optional)	2x 1GbE RJ45 port(s) with Intel® Ethernet Controller I350	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; SUM; SPM; SSM	Intel® Node Manager; IPMI 2.0; KVM with dedicated LAN; NMI; SUM; SPM; SSM	Intel® Node Manager; IPMI 2.0; KVM with dedicated LAN; NMI; SUM; SPM; SSM
Drive Bays	6x 2.5" hot-swap NVMe/SATA/SAS drive bays;	16x 2.5" hot-swap SATA/SAS, 8x 2.5" Hot-swap NVMe drive bays;	8x 3.5" hot-swap NVMe/SATA/SAS Support drive bays;
Peripheral Bays	None	None	None
Power Supply	-TNAR: Redundant 2200W Titanium level (96%) -TNAR+: Redundant 3000W Titanium level (96%)	Redundant 2000W Titanium level (96%)	Redundant 2200W Titanium level (96%)
Cooling System	4 heavy duty fan(s)	8 heavy duty fan(s)	4 heavy duty fan(s)
Form Factor	4U Rackmount Enclosure: 446 x 174 x 900mm (17.6" x 6.9" x 35.4") Package: 695 x 750 x 1140mm (27.4" x 29.5" x 44.9")	4U Rackmount Enclosure: 437 x 178 x 737mm (17.2" x 7" x 29") Package: 362 x 675 x 1042mm (27" x 26.57" x 41")	Tower Enclosure: 437 x 178 x 737mm (17.2" x 7" x 29") Package: 330.2 x 685.8 x 965.2mm (13" x 27" x 38")

X12 GPU

(For Complete System Only)

NEW!

3rd Gen Intel® Xeon® Scalable processors Supported

2U 6-GPU

1U 4-GPU

MODEL	SYS-220GP-TNR	SYS-120GQ-TNRT
Processor Support	3rd Gen Intel® Xeon® Scalable processors Dual Socket LGA-4189 (Socket P+) supported TDP up to 270W; 3 UPI up to 11.2GT/s	3rd Gen Intel® Xeon® Scalable processors Dual Socket LGA-4189 (Socket P+) supported TDP up to 220W; 3 UPI up to 11.2GT/s
Key Applications	• VDI • AI/Deep Learning • High Performance Computing • Scientific Virtualization	• Rendering • AI/Deep Learning • High Performance Computing • Scientific Virtualization
Outstanding Features	• Up to 6 double width GPUs • Flexible I/O support: 8 PCI-E Slots & AIOM Support • AIOM / OCP 3.0 Support • 2xM.2 with internal adaptor • 2x Front USB 3.0	• Up to 4 Double Width GPUs • Highest density GPU system • Flexible GPU Support: Active & Passive GPUs • 2x Front USB 3.0
Serverboard	SUPER® X12DPG-AR	SUPER® X12DGQ-R
Chipset	Intel® C621A	Intel® C621A
System Memory (Max.)	16 DIMM slots Up to 4TB ECC LRDIMM, DDR4-3200MHz Up to 4TB ECC RDIMM, DDR4-3200MHz	16 DIMM slots Up to 4TB ECC LRDIMM, DDR4-3200MHz Up to 4TB ECC RDIMM, DDR4-3200MHz
Expansion Slots	6 PCI-E 4.0 x16 FHFL Slots 2 PCI-E 4.0 x8 Slots or 1 PCI-E 4.0 x16 slot PCI-E 4.0	4 PCI-E 4.0 X16 FHFL Slots, 2 PCI-E 4.0 X16 LP Slots
Onboard Storage Controller	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
Management	Intel® Node Manager; IPMI 2.0; KVM with dedicated LAN; NMI; SUM; SPM; SSM	Intel® Node Manager; IPMI 2.0; KVM with dedicated LAN; NMI; SUM; SPM; SSM
Drive Bays	10x 2.5" hot-swap NVMe/SATA/SAS drive bays; 2x 2.5" NVMe dedicated;	2x 2.5" hot-swap NVMe/SATA, 2x fixed SATA drive bays; 2x 2.5" NVMe dedicated;
Peripheral Bays	None	None
Power Supply	Redundant 2600W Titanium level (96%)	Redundant 2000W Titanium level (96%)
Cooling System	5 heavy duty fan(s)	9 heavy duty fan(s)
Form Factor	2U Rackmount Enclosure: 437 x 89 x 787mm (17.2" x 3.5" x 31") Package: 279.4 x 673.1 x 1130.3mm (26.5" x 11" x 44.5")	1U Rackmount Enclosure: 437 x 43 x 894mm (17.2" x 1.7" x 35.2") Package: 203.2 x 609.6 x 1168.4mm (24" x 8" x 46")

X12 STORAGE

(For Complete System Only)

NEW!

3rd Gen Intel® Xeon® Scalable processors Supported

1U 12x Drives

2U 12x Drives

2U 16x Drives

MODEL	SSG-610P-ACR12N4H SSG-610P-ACR12N4L	SSG-620P-ACR12H SSG-620P-ACR12L	SSG-620P-ACR16H SSG-620P-ACR16L
Processor Support	3rd Gen Intel® Xeon® Scalable processors Dual Socket LG-4189 (Socket P+) supported TDP up to 230W; up to 11.2GT/s	3rd Gen Intel® Xeon® Scalable processors Dual Socket LG-4189 (Socket P+) supported TDP up to 270W; up to 11.2GT/s	3rd Gen Intel® Xeon® Scalable processors Dual Socket LG-4189 (Socket P+) supported TDP up to 270W; up to 11.2GT/s
Key Applications	• Scale-out NAS • Database Applications • Hadoop & Ceph storage solutions • Scale-Out Density • Big Data Analytics • Object Storage • Hyperscale Data Center	• Appliance Optimized Storage Building Blocks • Enterprise Database Applications • Big Data Analytic and HPC • On Premise Converged Infrastructure	• Appliance Optimized Storage Building Blocks • Enterprise Database Applications • Big Data Analytic and HPC • On Premise Converged Infrastructure
Outstanding Features	• Server remote management: IPMI 2.0/KVM over LAN/Media over LAN • Hardware RAID supported for 12x 3.5" drives • Dual socket 3rd Gen Intel® Xeon® Scalable processors, up to 72 Cores • 4 Front EDSFF Short Slots + 2 SATA NVMe Slots • 2 x 25G SFP+ onboard • 2 PCI-E 4.0 X16 Slots + 1 PCI-E 4.0 x8 Slots • 16 ECC DDR4-3200:LRDIMM/RDIMM; • 12 Hot-swap 3.5" SAS3/SATA3 drive bays • 1 PCI-E 4.0 x8 AIOM slot	• Server remote management: IPMI 2.0/KVM over LAN/Media over LAN • Onboard 1 M.2 NVMe/SATA • Dual socket 3rd Gen Intel® Xeon® Scalable processors, up to 72 Cores • 4 PCI-E 4.0 x16 Slots + 2 PCI-E 4.0 x8 Slots • 2x 10GBase-T LAN ports • 16 ECC DDR4-3200:LRDIMM/RDIMM; +2 Intel® DCPMM • 16 ECC DDR4-3200: LRDIMM/RDIMM; +2 Intel® DCPMM • 12 Hot-swap 3.5" NVMe/SAS3/SATA3 drive bays	• Dual socket 3rd Gen Intel® Xeon® Scalable processors, up to 72 Cores • 16 ECC DDR4-3200:LRDIMM/RDIMM; +2 DCPMM • 4 PCI-E 4.0 X16 Slots + 2 PCI-E 4.0 x8 Slots • Server remote management: IPMI 2.0/KVM over LAN/Media over LAN • 3 Hot-swap 8cm redundant PWM fans • 2x 10GBase-T LAN ports with X710-TM4 • 1600W Redundant Power Supplies Titanium Level (96%) • 12 Hot-swap 3.5" Hybrid NVMe/SAS3/SATA3 drive bays+ 4 SAS3/SATA3 Drive Bays; on board 1 M.2 NVMe • - ACR16H: Broadcom 3916 Controller - ACR16L: Broadcom 3816 Controller
Serverboard	SUPER® X12DPD-A6M25	SUPER® X12DPI-NT6	SUPER® X12DPI-NT6
Chipset	Intel® C621A	Intel® C621A	Intel® C621A
System Memory (Max.)	16 DIMM slots Up to 4TB ECC RDIMM/LRDIMM, DDR4-3200MHz	16 DIMM slots Up to 4TB ECC LRDIMM, DDR4-3200MHz Up to 4TB RDIMM, DDR4-3200MHz Up to 4TB Intel® Optane™ Persistent Memory, DDR4-3200MHz	16 DIMM slots Up to 4TB ECC LRDIMM, DDR4-3200MHz Up to 4TB RDIMM, DDR4-3200MHz Up to 4TB Intel® Optane™ Persistent Memory, DDR4-3200MHz
Expansion Slots	PCI-E 4.0 x16 AIOM slot(s) 2 PCI-E 4.0 x16 LP slot(s) PCI-E 4.0 x8 LP slot(s)	4 PCI-E 4.0 x16 LP slot(s) 2 PCI-E 4.0 x8 LP slot(s)	4 PCI-E 4.0 x16 LP slot(s) 2 PCI-E 4.0 x8 LP slot(s)
Onboard Storage Controller	-ACR12N4H: M.2 interface: 2x 2280 NVMe/SATA -ACR12N4L: M.2 interface: 2x 2280 NVMe/SATA	-ACR12H: Intel® SATA Broadcom® 3916 -ACR12L: Intel® SATA Broadcom® 3816	-ACR16H: Intel® SATA Broadcom® 3916 -ACR16L: Intel® SATA Broadcom® 3816
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	1 VGA port	1 VGA port	1 VGA port
Management	Intel® Node Manager; KVM with dedicated LAN; SuperDoctor® 5; Watch Dog; NMI; IPMI 2.0; Redfish API; SUM; SPM	SuperDoctor® 5; Watch Dog; NMI; IPMI 2.0; SUM	SuperDoctor® 5; Watch Dog; NMI; IPMI 2.0; SUM
Drive Bays	12x 3.5" hot-swap SATA3/SAS3 drive bays; 2x 2.5" 7mm drive bays	12x 3.5" hot-swap NVMe/SATA/SAS drive bays; 4x 3.5" NVMe hybrid; Optional RAID support via RAID/HBA controller AOC	16x 3.5" hot-swap NVMe/SATA/SAS drive bays; 4x 3.5" NVMe hybrid; Optional RAID support via RAID/HBA controller AOC
Peripheral Bays	None	None	None
Power Supply	800W Redundant Power Supplies with PMBus	Redundant 1200W Titanium level	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 Enclosure: 447 x 43 x 940mm (17.6" x 1.7" x 37")	2U Rackmount Enclosure: 437 x 89 x 630mm (17.3" x 3.5" x 25.5")	2U Rackmount Enclosure: 437 x 89 x 705mm (17.3" x 3.5" x 25.5")

X12 STORAGE

(For Complete System Only)

NEW!

3rd Gen Intel® Xeon® Scalable processors Supported

2U Simply Double, 24x Drives

4U 24x Drives

4U 36x Drives

MODEL	SSG-620P-E1CR24H SSG-620P-E1CR24L	SSG-640P-E1CR24H SSG-640P-E1CR24L	SSG-640P-E1CR36H SSG-640P-E1CR36L
Processor Support	3rd Gen Intel® Xeon® Scalable processors Dual Socket LG-4189 (Socket P+) supported TDP up to 250W; up to 11.2GT/s	3rd Gen Intel® Xeon® Scalable processors Dual Socket LG-4189 (Socket P+) supported TDP up to 270W; up to 11.2GT/s	3rd Gen Intel® Xeon® Scalable processors Dual Socket LG-4189 (Socket P+) supported TDP up to 270W; up to 11.2GT/s
Key Applications	• Appliance Optimized Storage Building Blocks • Corporate Database • Database Processing & Storage • HPC, Data Center • iSCSI SAN • Enterprise Server	• Appliance Optimized Storage Building Blocks • Corporate Database • Database Processing & Storage • HPC, Data Center • iSCSI SAN • Enterprise Server	• Corporate Database • Database Processing & Storage • HPC, Data Center • iSCSI SAN • Enterprise Server
Outstanding Features	• Support dual Intel® Xeon Scalable CPUs • Server remote management: IPMI 2.0/KVM over LAN/Media over LAN • High Density platform in 2U rack size • Flexible storage media and controller configurations, and support tiering storage (HDD/SSD) • Enterprise serviceability with hot-swappable drives and power supplies • 24 Hot-swap 3.5" SAS3/SATA3 drive bays + 4 NVME/SATA3 Rear Drive Bays	• Server remote management: IPMI 2.0/KVM over LAN/Media over LAN • Server remote management: IPMI 2.0 / KVM over LAN / Media over LAN per node • On board 1 M.2 NVMe/SATA • HW RAID support via Broadcom® 3908 • Dual socket 3rd Gen Intel® Xeon® Scalable processors, up to 72 Cores • 4 PCI-E 4.0 x16 Slots + 2 PCI-E 4.0 x8 Slots • 24 Hot-swap 3.5" SAS3/SATA3 drive bays • 16 ECC DDR4-3200:LRDIMM/RDIMM; +2 Intel® DCPMM	• Server remote management: IPMI 2.0/KVM over LAN/Media over LAN • Server remote management: IPMI 2.0 / KVM over LAN / Media over LAN per node • Onboard 1 M.2 NVMe/SATA • HW RAID support via Broadcom® 3908 • Dual socket 3rd Gen Intel® Xeon® Scalable processors, up to 72 Cores • 4 PCI-E 4.0 x16 Slots + 2 PCI-E 4.0 x8 Slots • 32 Hot-swap 3.5" SAS3/SATA3 drive bays + 4 NVME/ SAS3/SATA3 Drive Bays • 16 ECC DDR4-3200:LRDIMM/RDIMM; +2 Intel® DCPMM
Serverboard	SUPER● X12DSC+	SUPER● X12DPI-NT6	SUPER● X12DPI-NT6
Chipset	Intel® C621A	Intel® C621A	Intel® C621A
System Memory (Max.)	16 DIMM slots Up to 4TB ECC RDIMM/LRDIMM, DDR4-3200MHz	16 DIMM slots Up to 4TB ECC LRDIMM, DDR4-3200MHz Up to 4TB RDIMM, DDR4-3200MHz Up to 4TB Intel® Optane™ Persistent Memory, DDR4-3200MHz	16 DIMM slots Up to 4TB ECC LRDIMM, DDR4-3200MHz Up to 4TB RDIMM, DDR4-3200MHz Up to 4TB Intel® Optane™ Persistent Memory, DDR4-3200MHz
Expansion Slots	PCI-E 4.0 x16 AIOM slot(s) 3 PCI-E 4.0 x16 LP slot(s)	4 PCI-E 4.0 x16 LP slot(s) 2 PCI-E 4.0 x8 LP slot(s)	4 PCI-E 4.0 x16 LP slot(s) 2 PCI-E 4.0 x8 LP slot(s)
Onboard Storage Controller	-E1CR24HL: Intel® SATA Broadcom® 3916 -E1CR24L: Intel® SATA Broadcom® 3816	-E1CR24H: Intel® SATA Broadcom® 3916 -E1CR24L: Intel® SATA Broadcom® 3816	-E1CR36H: Intel® SATA Broadcom® 3916 -E1CR36L: Intel® SATA Broadcom® 3816
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	SuperDoctor® 5; Watch Dog; NMI; IPMI 2.0; SUM	SuperDoctor® 5; Watch Dog; NMI; IPMI 2.0; SUM	SuperDoctor® 5; Watch Dog; NMI; IPMI 2.0; SUM
Drive Bays	24x 3.5" hot-swap Simply Double drive bays; Optional RAID support via RAID/HBA Controller AOC	24x 3.5" hot-swap NVMe/SATA/SAS drive bays; Optional RAID support via RAID/HBA controller AOC	36x 3.5" hot-swap NVMe/SATA/SAS drive bays; 4x 3.5" NVMe hybrid; Optional RAID support via RAID/HBA controller AOC
Peripheral Bays	None	None	None
Power Supply	Redundant 1600W Titanium level (96%)	Redundant 1200W Titanium level	Redundant 1200W Titanium level
Cooling System	5x 8cm heavy duty fan(s)	5x 8cm heavy duty fan(s)	5x 8cm heavy duty fan(s)
Form Factor	2U Rackmount Enclosure: 437 x 89 x 866.14mm (17.2" x 3.5" x 34")	4U Rackmount Enclosure: 437 x 138 x 673mm (17.2" x 7" x 26.5")	4U Rackmount Enclosure: 437 x 138 x 699mm (17.2" x 7" x 27.5")

X12 STORAGE

(For Complete System Only)

NEW!

3rd Gen Intel® Xeon® Scalable processors Supported

4U 60x Top-loading

4U 90x Top-loading

MODEL	SSG-640SP-E1CR60	SSG-640SP-E1CR90
Processor Support	3rd Gen Intel® Xeon® Scalable processors Dual Socket LG-4189 (Socket P+) supported TDP up to 250W; up to 11.2GT/s	3rd Gen Intel® Xeon® Scalable processors Dual Socket LG-4189 (Socket P+) supported TDP up to 250W; up to 11.2GT/s
Key Applications	• Government Data Protection • Content Repositories • Financial Services & Healthcare Image Archives • Telco & Cloud Service Providers • HPC and AI/ML Workloads • Big Data & Analytics, Data Lake	• Government Data Protection • Content Repositories • Financial Services & Healthcare Image Archives • Telco & Cloud Service Providers • HPC and AI/ML Workloads • Big Data & Analytics, Data Lake
Outstanding Features	• Single Node High density, 2 rear mirrored boot drives, 4 NVMe SSD drives for caching • Server remote management: IPMI 2.0 / KVM over LAN / Media over LAN • Excellent Serviceability with Modular Design • Drive Controller support via Broadcom® 3916 HW RAID or 3816 IT Mode	• Single Node High density, 2 rear mirrored boot drives, 4 NVMe SSD drives for caching • Server remote management: IPMI 2.0 / KVM over LAN / Media over LAN • Excellent Serviceability with Modular Design • Drive Controller support via Broadcom® 3916 HW RAID or 3816 IT Mode
Serverboard	SUPER● X12DSC-6	SUPER● X12DSC-6
Chipset	Intel® C621A	Intel® C621A
System Memory (Max.)	16 DIMM slots Up to 4TB ECC RDIMM/LRDIMM, DDR4-3200MHz	16 DIMM slots 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 Broadcom® 3616	Intel® SATA Broadcom® 3616
Connectivity	2x 10GbE RJ45 port(s) with X550	2x 10GbE RJ45 port(s) with X550
VGA/Audio	1 VGA port	1 VGA port
Management	SuperDoctor® 5; Watch Dog; NMI; IPMI 2.0; SUM	SuperDoctor® 5; Watch Dog; NMI; IPMI 2.0; SUM
Drive Bays	60x 3.5" hot-swap SATA3/SAS3 drive bays; Optional RAID support via RAID/HBA controller AOC 2x 2.5" 7mm drive bays	90x 3.5" hot-swap SATA3/SAS3 drive bays; Optional RAID support via RAID/HBA controller AOC 2x 2.5" 7mm drive bays
Peripheral Bays	None	None
Power Supply	Redundant 2000W Titanium level (96%)	Redundant 2600W Titanium level (96%)
Cooling System	6x 8cm heavy duty fan(s)	6x 8cm heavy duty fan(s)
Form Factor	4U Rackmount Enclosure: 447 x 138 x 866.14mm (17.6" x 7" x 34.1")	4U Rackmount Enclosure: 447 x 138 x 1069.34mm (17.6" x 7" x 42.1")

X12 STORAGE

(For Complete System Only)

NEW!

3rd Gen Intel® Xeon® Scalable processors Supported

4U 60x Top-loading

4U 90x Top-loading

MODEL	SSG-640SP-DE1CR60 SSG-640SP-DE2CR60	SSG-640SP-DE1CR90 SSG-640SP-DE2CR90
Processor Support	3rd Gen Intel® Xeon® Scalable processors Dual Socket LG-4189 (Socket P+) supported TDP up to 250W; up to 11.2GT/s	3rd Gen Intel® Xeon® Scalable processors Dual Socket LG-4189 (Socket P+) supported TDP up to 250W; up to 11.2GT/s
Key Applications	• Government Data Protection • Content Repositories • Financial Services & Healthcare Image Archives • Telco & Cloud Service Providers • HPC and AI/ML Workloads • Big Data & Analytics, Data Lake	• Government Data Protection • Content Repositories • Financial Services & Healthcare Image Archives • Telco & Cloud Service Providers • HPC and AI/ML Workloads • Big Data & Analytics, Data Lake
Outstanding Features	• Server remote management: IPMI 2.0 / KVM over LAN / Media over LAN • Excellent Serviceability with Modular Node Design • Dual Node Twin Architecture, 2x the Compute (Each node controls 30 drives) • Drive Controller support via Broadcom® 3916 HW RAID or 3816 IT Mode	• Server remote management: IPMI 2.0 / KVM over LAN / Media over LAN • Excellent Serviceability with Modular Node Design • Dual Node (HA), Enterprise High Availability (SBB) Architecture (shared storage); 2 Hot Pluggable Nodes • Drive Controller support via Broadcom® 3916 HW RAID or 3816 IT Mode • Dedicated node to node connectivity featuring high performance NTB PCI-E 4.0 x16 , 1G private Ethernet, and IPMI for robust node fail-over support
Serverboard	SUPER® X12DSC-6	SUPER® X12DSC-6
Chipset	Intel® C621A	Intel® C621A
System Memory (Max.)	16 DIMM slots Up to 4TB ECC RDIMM/LRDIMM, DDR4-3200MHz	16 DIMM slots 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 -DE2CR60: Intel® SATA Broadcom® 3816	-DE1CR90: Intel® SATA Broadcom® 3916 -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	SuperDoctor® 5; Watch Dog; NMI; IPMI 2.0; SUM	SuperDoctor® 5; Watch Dog; NMI; IPMI 2.0; SUM
Drive Bays	60x 3.5" hot-swap SATA3/SAS3 drive bays; Optional RAID support via RAID/HBA controller AOC 4x 2.5" 7mm drive bays	90x 3.5" hot-swap SATA3/SAS3 drive bays; Optional RAID support via HBA controller AOC 4x 2.5" 7mm drive bays
Peripheral Bays	None	None
Power Supply	Redundant 2600W Titanium level (96%)	Redundant 2600W Titanium level (96%)
Cooling System	6x 8cm heavy duty fan(s)	6x 8cm heavy duty fan(s)
Form Factor	4U Rackmount Enclosure: 447 x 138 x 866.14mm (17.6" x 7" x 34.1")	4U Rackmount Enclosure: 447 x 138 x 1069.34mm (17.6" x 7" x 42.1")

X12 Storage

NEW!

3rd Gen Intel® Xeon® Scalable processors Supported

4U UP 36x Drives

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

MODEL	SSG-540P-E1CTR36H SSG-540P-E1CTR36L	SSG-540P-E1CTR45H SSG-540P-E1CTR45L
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	• Appliance Optimized Storage • Database Processing & Storage • Enterprise Server	• Data Warehousing, Archiving • Backup Storage, Cold Storage • Database Applications
Outstanding Features	• Expander chip and JBOD support, up to 36x SATA/SAS drives with PCI-E 4.0 SAS Controller • 4U 36 Bay High Density Storage • 2x optional Gen 4 NVMe drives; onboard 1x M.2 NVMe/SATA	• Top Loading with expander chip, up to 45x SATA/SAS drives with PCI-E 4.0 SAS Controller • 5 Hot-Swap 8cm redundant PWM fans • 4U 45 Bay High Density Storage • 2x optional Gen 4 NVMe drives + 2 rear Hot-swap 2.5" SATA drive bays; onboard 1x M.2 NVMe/SATA
Serverboard	SUPER® X12SPI-TF	SUPER® X12SPI-TF
Chipset	Intel® C621A	Intel® C621A
System Memory (Max.)	8 DIMM slots ECC LRDIMM, DDR4-3200MHz ECC RDIMM, DDR4-3200MHz Intel® DCPMM, DDR4-3200MHz	8 DIMM slots ECC LRDIMM, DDR4-3200MHz ECC RDIMM, DDR4-3200MHz Intel® DCPMM, DDR4-3200MHz
Expansion Slots	2 PCI-E 4.0 x16 LP slot(s) 2 PCI-E 4.0 x8 LP slot(s)	2 PCI-E 4.0 x16 LP slot(s) 2 PCI-E 4.0 x8 LP slot(s)
Onboard Storage Controller	-E1CTR36H: Broadcom® 3908 -E1CTR36L: Broadcom® 3808	-E1CTR45H:Broadcom® 3908 -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; KVM with dedicated LAN; NMI; SPM; SSM; SUM; Redfish API; IPMI2.0	Intel® Node Manager; KVM with dedicated LAN; NMI; SPM; SSM; SUM; Redfish API; IPMI2.0
Drive Bays	36x 3.5" hot-swap SATA/SAS drive bays;	45x 3.5" hot-swap SATA/SAS drive bays;
Peripheral Bays	2x 2.5" SATA or NVMe (optional)	2x 2.5" SATA or NVMe (optional) 2x 2.5" SATA
Power Supply	Redundant 1200W Titanium level	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 Enclosure: 437 x 178 x 699mm (17.2" x 7" x 27.5") Package: 656 x 445 x 1003mm (27" x 17.5" x 39.5")	4U Rackmount Enclosure: 437 x 178 x 660mm (17.2" x 7" x 26") Package: 711 x 559 x 1067mm (28" x 22" x 42")

X12 STORAGE

NEW!

3rd Gen Intel® Xeon® Scalable processors Supported

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

2U UP 12x Drives

MODEL	SSG-110P-NTR10	SSG-520P-ACTR12H SSG-520P-ACTR12L
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	• All Flash Storage • CDN Optimized • Virtualization • Cloud Computing	• Appliance Optimized Storage • Database Processing & Storage • Enterprise Server
Outstanding Features	• Optimized Cooling with support up to 270W TDP processor • 2x NVMe/SATA M.2 supported • 10x NVMe tool-less drive bays	• Server remote management: IPMI 2.0/KVM over LAN/Media over LAN • Direct-attached 12x 3.5" hot-swap SATA/SAS drive bays with PCI-E 4.0 SAS Controller • Cost-effective 2U rackmount storage • 2x optional Gen 4 NVMe drives; onboard 1x M.2 NVMe/SATA
Serverboard	SUPER® X12SPO-NTF	SUPER® X12SPI-TF
Chipset	Intel® C621A	Intel® C621A
System Memory (Max.)	8 DIMM slots ECC LRDIMM, DDR4-3200MHz ECC RDIMM, DDR4-3200MHz Intel® DCPMM, DDR4-3200MHz	8 DIMM slots ECC LRDIMM, DDR4-3200MHz ECC RDIMM, DDR4-3200MHz Intel® DCPMM, DDR4-3200MHz
Expansion Slots	1 PCI-E 4.0 x16 FHHL slot(s)	2 PCI-E 4.0 x16 LP slot(s) 2 PCI-E 4.0 x8 LP slot(s)
Onboard Storage Controller	NVMe	-ACTR12H: Broadcom® 3916 -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; KVM with dedicated LAN; NMI; SPM; SSM; SUM; Redfish API; IPMI2.0	Intel® Node Manager; KVM with dedicated LAN; NMI; SPM; SSM; SUM; Redfish API; IPMI2.0
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 Enclosure: 437 x 43 x 597mm (17.2" x 1.7" x 23.5") Package: 610 x 203 x 813mm (24" x 8" x 32")	2U Rackmount Enclosure: 437 x 89 x 650mm (17.2" x 3.5" x 25.6") 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 Dual Socket LGA-4189 (Socket P+) supported TDP up to 270W; up to 11.2GT/s	3rd Gen Intel® Xeon® Scalable processors Dual Socket LGA-4189 (Socket P+) supported TDP up to 270W; up to 11.2GT/s	3rd Gen Intel® Xeon® Scalable processors Dual Socket LGA-4189 (Socket P+) supported TDP up to 270W; up to 11.2GT/s
Key Applications	• Application-Optimized Solutions • Database Processing and High Density Storage • Data Center Optimized • High Performance Computing • Enterprise Server	• Application-Optimized Solutions • Database Processing and High Density Storage • Data Center Optimized • High Performance Computing • Enterprise Server	• Model analysis • Application and data serving • Compute Intensive Applications • Data Center Optimized • Enterprise Server • Virtualization
Outstanding Features	• High end all-purpose 2U rackmount server	• High end all-purpose 2U rackmount server	• Cost effective all-purpose 2U rackmount server
Serverboard	SUPER●® X12DPi-N6	SUPER●® X12DPI-NT6	SUPER●® X12DPi-N6
Chipset	Intel® C621A	Intel® C621A	Intel® C621A
System Memory (Max.)	18 DIMM slots UP to 4TB: DRAM UP to 4TB: PMem Intel® Optane™ persistent memory 200 series	18 DIMM slots UP to 4TB: DRAM UP to 4TB: PMem Intel® Optane™ persistent memory 200 series	• 18 DIMM slots • UP to 4TB: DRAM • UP to 4TB: PMem • Intel® Optane™ persistent memory 200 series
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 Broadcom® 3908	Intel® C621A 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; KVM with dedicated LAN; NMI; SPM; SSM; SUM; Redfish API; IPMI2.0	Intel® Node Manager; KVM with dedicated LAN; NMI; SPM; SSM; SUM; Redfish API; IPMI2.0	Intel® Node Manager; KVM with dedicated LAN; NMI; SPM; SSM; SUM; Redfish API; IPMI2.0
Drive Bays	6x 2.5" hot-swap drive bays; 4x 2.5" NVMe optional	6x 2.5" hot-swap drive bays; 4x 2.5" NVMe optional	8x 3.5" hot-swap drive bays; 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	Redundant 1200W Titanium level	Redundant 1200W Titanium level
Cooling System	3 heavy duty fan(s)	3 heavy duty fan(s)	3 heavy duty fan(s)
Form Factor	2U rackmount Enclosure: 437 x 89 x 630mm (17.2" x 3.5" x 24.8")	2U rackmount Enclosure: 437 x 89 x 630mm (17.2" x 3.5" x 24.8")	2U rackmount Enclosure: 437 x 89 x 647mm (17.2" x 3.5" x 25.5")

X12 MAINSTREAM

NEW!

3rd Gen Intel® Xeon® Scalable processors Supported

DP Mainstream

UP Mainstream

UP Mainstream

MODEL	SYS-620P-TRT	SYS-510P-M	SYS-510P-MR
Processor Support	3rd Gen Intel® Xeon® Scalable processors Dual Socket LGA-4189 (Socket P+) supported TDP up to 270W; up to 11.2GT/s	3rd Gen Intel® Xeon® Scalable processors Single Socket LGA-4189 (Socket P+) supported TDP up to 220W;	3rd Gen Intel® Xeon® Scalable processors Single Socket LGA-4189 (Socket P+) supported TDP up to 220W;
Key Applications	• Model analysis • Application and data serving • Compute Intensive Applications • Data Center Optimized • Enterprise Server • Virtualization	• Small Business • Web/Hosting Application • Email/Firewall/Print Server	• Small Business • Web/Hosting Application • Email/Firewall/Print Server
Outstanding Features	• Cost effective all-purpose 2U rackmount server	• Short Depth • Cost Effective • 2x NVMe/SATA M.2 supported	• Short Depth. • Cost Effective. • 2x NVMe/SATA M.2 supported.
Serverboard	SUPER® X12DPI-NT6	SUPER® X12SPO-F	SUPER® X12SPO-F
Chipset	Intel® C621A	Intel® C621A	Intel® C621A
System Memory (Max.)	• 18 DIMM slots • UP to 4TB: DRAM • UP to 4TB: PMem • Intel® Optane™ persistent memory 200 series	8 DIMM slots ECC LRDIMM, DDR4-3200MHz ECC RDIMM, DDR4-3200MHz Intel® DCPMM, DDR4-3200MHz	8 DIMM slots ECC LRDIMM, DDR4-3200MHz ECC RDIMM, DDR4-3200MHz Intel® DCPMM, 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; KVM with dedicated LAN; NMI; SPM; SSM; SUM; Redfish API; IPMI2.0	Intel® Node Manager; KVM with dedicated LAN; NMI; SPM; SSM; SUM; Redfish API; IPMI2.0	Intel® Node Manager; KVM with dedicated LAN; NMI; SPM; SSM; SUM; Redfish API; IPMI2.0
Drive Bays	8x 3.5" hot-swap drive bays; 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	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 Enclosure: 437 x 89 x 647mm (17.2" x 3.5" x 25.5")	1U Rackmount Enclosure: 437 x 43 x 507mm (17.2" x 1.7" x 19.98") Package: 609.6 x 215.9 x 749.3mm (24" x 8.5" x 29.5")	1U Rackmount Enclosure: 437 x 43 x 507mm (17.2" x 1.7" x 19.98") 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 Dual Socket LGA-4189 (Socket P+) supported TDP up to 270W; up to 11.2GT/s	3rd Gen Intel® Xeon® Scalable processors Dual Socket LGA-4189 (Socket P+) supported TDP up to 270W; up to 11.2GT/s
Key Applications	• Office environment • Model analysis • Application and data serving • Compute Intensive Applications • Enterprise Server	• Office environment • Model analysis • Application and data serving • Compute Intensive Applications • Enterprise Server
Outstanding Features	• Cost-effective all-purpose tower server	• Cost-effective all-purpose tower server
Serverboard	SUPER® X12DPi-N6	SUPER® X12DPI-NT6
Chipset	Intel® C621A	Intel® C621A
System Memory (Max.)	18 DIMM slots UP to 4TB: DRAM UP to 4TB: PMem Intel® Optane™ persistent memory 200 series	18 DIMM slots UP to 4TB: DRAM UP to 4TB: PMem Intel® Optane™ persistent memory 200 series
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; KVM with dedicated LAN; NMI; SPM; SSM; SUM; Redfish API; IPMI2.0	Intel® Node Manager; KVM with dedicated LAN; NMI; SPM; SSM; SUM; Redfish API; IPMI2.0
Drive Bays	8x 3.5" hot-swap drive bays; 2x 2.5" NVMe hybrid; 2.5" NVMe fixed drives optional	8x 3.5" hot-swap drive bays; 2x 2.5" NVMe hybrid; 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 Enclosure: 178 x 452 x 648mm (7" x 17.8" x 25.5")	Tower/4U rackmount Enclosure: 178 x 452 x 648mm (7" x 17.8" x 25.5")

X12 HYPER-E

(For Complete System Only)

NEW!

3rd Gen Intel® Xeon® Scalable processors Supported

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	3rd Gen Intel® Xeon® Scalable processors Dual Socket LGA-4189 (Socket P+) supported TDP up to 270W; 3 UPI up to 11.2GT/s	3rd Gen Intel® Xeon® Scalable processors Dual Socket LGA-4189 (Socket P+) supported TDP up to 270W; 3 UPI up to 11.2GT/s
Key Applications	• AI Inference and Machine Learning • Telecom Micro Data Center • Network Function Virtualization • 5G Core and Edge • Cloud Computing	• AI Inference and Machine Learning • Telecom Micro Data Center • Network Function Virtualization • 5G Core and Edge • Cloud Computing
Outstanding Features	• NEBS level 3 certified for Telecommunication • Front I/O, tool-less design	• NEBS level 3 certified for Telecommunication • Front I/O, tool-less design
Serverboard	SUPER® X12DHM-6	SUPER® X12DHM-6
Chipset	Intel® C621A	Intel® C621A
System Memory (Max.)	32 DIMM slots Up to 8TB ECC LRDIMM, DDR4-3200MHz Up to 8TB ECC RDIMM, DDR4-3200MHz Up to 8TB Intel® DCPMM, DDR4-3200MHz	32 DIMM slots Up to 8TB ECC LRDIMM, DDR4-3200MHz Up to 8TB ECC RDIMM, DDR4-3200MHz Up to 8TB Intel® DCPMM, DDR4-3200MHz
Expansion Slots	3 PCI-E 4.0 x16 DW FHFL or 6 x8 SW FHFL slot(s) 1 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) 1 PCI-E 4.0 x16 SW FHHL or 2 x8 SW FHHL slot(s)
Onboard Storage Controller	Intel® SATA	Intel® SATA
Connectivity	1x 1Gb port(s) with Aspeed 2600 2x 25GbE SFP28 with Broadcom® BCM57414 (optional) 2x 100GbE QSFP28 with Broadcom® BCM57508 (optional) 2x 1GbE RJ45 with Intel® i350-AM2 (optional) 4x 1GbE C or 4x 1GbE SFP with Intel® i350-AM4 (optional) 2x 10GbE RJ45 with Intel® X550-AT2 (optional) 2x 10GbE SFP+ with Intel® X710-BM2 (optional) 4x 10GbE RJ45/SFP+ with Intel® X710-TM4 (optional) 4x 10GbE SFP+ with Intel® XL710-BM1 (optional) 4x 25GbE RJ45/SFP28 with Mellanox® CX-4 Lx EN Intel® X550-AT2 (optional) via AIOM	1x 1Gb port(s) with Aspeed 2600 2x 25GbE SFP28 with Broadcom® BCM57414 (optional) 2x 100GbE QSFP28 with Broadcom® BCM57508 (optional) 2x 1GbE RJ45 with Intel® i350-AM2 (optional) 4x 1GbE C or 4x 1GbE SFP with Intel® i350-AM4 (optional) 2x 10GbE RJ45 with Intel® X550-AT2 (optional) 2x 10GbE SFP+ with Intel® X710-BM2 (optional) 4x 10GbE RJ45/SFP+ with Intel® X710-TM4 (optional) 4x 10GbE SFP+ with Intel® XL710-BM1 (optional) 4x 25GbE RJ45/SFP28 with Mellanox® CX-4 Lx EN Intel® X550-AT2 (optional) via AIOM
VGA/Audio	1 VGA port	1 VGA port
Management	Intel® Node Manager; KVM with dedicated LAN; SuperDoctor® 5; Watch Dog; NMI; IPMI 2.0; SPM; SSM; SUM; Redfish API	Intel® Node Manager; KVM with dedicated LAN; SuperDoctor® 5; Watch Dog; NMI; IPMI 2.0; SPM; SSM; SUM; Redfish API
Drive Bays	6x 2.5" hot-swap NVMe/SATA/SAS drive bays; 6x 2.5" NVMe hybrid; Optional RAID support via RAID Controller AOC	6x 2.5" hot-swap NVMe/SATA/SAS drive bays; 6x 2.5" NVMe hybrid; 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 3.98cm heavy duty fan(s)	6x 3.98cm heavy duty fan(s)
Form Factor	2U Rackmount Enclosure: 436.88 x 88.9 x 574mm (17.2" x 3.5" x 22.6")	2U Rackmount Enclosure: 436.88 x 88.9 x 574mm (17.2" x 3.5" x 22.6")

X12 HYPER

(For Complete System Only)

NEW!

3rd Gen Intel® Xeon® Scalable processors Supported

Coming Soon!

Coming Soon!

Optimized for 5G and Telco

MODEL	SYS-220H-TN24R	SYS-620H-TN12R	SYS-120H-TNR
Processor Support	3rd Gen Intel® Xeon® Scalable processors Dual Socket LGA-4189 (Socket P+) supported TDP up to 270W; 3 UPI up to 11.2GT/s	3rd Gen Intel® Xeon® Scalable processors Dual Socket LGA-4189 (Socket P+) supported TDP up to 270W; 3 UPI up to 11.2GT/s	3rd Gen Intel® Xeon® Scalable processors Dual Socket LGA-4189 (Socket P+) supported TDP up to 270W; 3 UPI up to 11.2GT/s
Key Applications	• Software-Defined Storage • AI Inference and Machine Learning • Enterprise Server • Virtualization • Cloud Computing	• Software-Defined Storage • AI Inference and Machine Learning • Enterprise Server • Virtualization • Cloud Computing	• Software-Defined Storage • AI Inference and Machine Learning • Enterprise Server • Virtualization • Cloud Computing
Outstanding Features	• Tool-less system design for easy maintenance • Flexible networking options with AIOM/OCP NIC 3.0 support • 24x 2.5" hot-swap NVMe/SATA/SAS drive bays	• Tool-less system design for easy maintenance • Flexible networking options with AIOM/OCP NIC 3.0 support • 12x 3.5" hot-swap NVMe/SATA/SAS drive bays	• Tool-less system design for easy maintenance • Storage configurations up to 12x 2.5" hot-swap NVMe/SATA/SAS drive bays • Flexible networking options with AIOM/OCP NIC 3.0 support
Serverboard	SUPER●® X12DHM-6	SUPER●® X12DHM-6	SUPER●® X12DHM-6
Chipset	Intel® C621A	Intel® C621A	Intel® C621A
System Memory (Max.)	32 DIMM slots Up to 8TB ECC LRDIMM, DDR4-3200MHz Up to 8TB ECC RDIMM, DDR4-3200MHz Up to 8TB Intel® DCPMM, DDR4-3200MHz	32 DIMM slots Up to 8TB ECC LRDIMM, DDR4-3200MHz Up to 8TB ECC RDIMM, DDR4-3200MHz Up to 8TB Intel® DCPMM, DDR4-3200MHz	32 DIMM slots Up to 8TB ECC LRDIMM, DDR4-3200MHz Up to 8TB ECC RDIMM, DDR4-3200MHz Up to 8TB Intel® DCPMM, 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 25GbE SFP28 with Broadcom® BCM57414 (optional) 2x 100GbE QSFP28 with Broadcom® BCM57508 (optional) 2x 1GbE RJ45 with Intel® i350-AM2 (optional) 4x 1GbE C or 4x 1GbE SFP with Intel® i350-AM4 (optional) 2x 10GbE RJ45 with Intel® X550-AT2 (optional) 2x 10GbE SFP+ with Intel® X710-BM2 (optional) 4x 10GbE RJ45/SFP+ with Intel® X710-TM4 (optional) 4x 10GbE SFP+ with Intel® XL710-BM1 (optional) 4x 25GbE RJ45/SFP28 with Mellanox® CX-4 Lx EN Intel® X550-AT2 (optional) via AIOM	2x 25GbE SFP28 with Broadcom® BCM57414 (optional) 2x 100GbE QSFP28 with Broadcom® BCM57508 (optional) 2x 1GbE RJ45 with Intel® i350-AM2 (optional) 4x 1GbE C or 4x 1GbE SFP with Intel® i350-AM4 (optional) 2x 10GbE RJ45 with Intel® X550-AT2 (optional) 2x 10GbE SFP+ with Intel® X710-BM2 (optional) 4x 10GbE RJ45/SFP+ with Intel® X710-TM4 (optional) 4x 10GbE SFP+ with Intel® XL710-BM1 (optional) 4x 25GbE RJ45/SFP28 with Mellanox® CX-4 Lx EN Intel® X550-AT2 (optional) via AIOM	2x 25GbE SFP28 with Broadcom® BCM57414 (optional) 2x 100GbE QSFP28 with Broadcom® BCM57508 (optional) 2x 1GbE RJ45 with Intel® i350-AM2 (optional) 4x 1GbE C or 4x 1GbE SFP with Intel® i350-AM4 (optional) 2x 10GbE RJ45 with Intel® X550-AT2 (optional) 2x 10GbE SFP+ with Intel® X710-BM2 (optional) 4x 10GbE RJ45/SFP+ with Intel® X710-TM4 (optional) 4x 10GbE SFP+ with Intel® XL710-BM1 (optional) 4x 25GbE RJ45/SFP28 with Mellanox® CX-4 Lx EN Intel® X550-AT2 (optional) via AIOM
VGA/Audio	1 VGA port	1 VGA port	1 VGA port
Management	Intel® Node Manager; KVM with dedicated LAN; SuperDoctor® 5; Watch Dog; NMI; IPMI 2.0; SPM; SSM; SUM; Redfish API	Intel® Node Manager; KVM with dedicated LAN; SuperDoctor® 5; Watch Dog; NMI; IPMI 2.0; SPM; SSM; SUM; Redfish API	Intel® Node Manager; KVM with dedicated LAN; SuperDoctor® 5; Watch Dog; NMI; IPMI 2.0; SPM; SSM; SUM; Redfish API
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; 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 Enclosure: 436.88 x 88.9 x 760mm (17.2" x 3.5" x 29.9") Package: 625 x 253 x 1154mm (24.6" x 9.96" x 45.43")	2U Rackmount Enclosure: 436.88 x 88.9 x 803mm (17.2" x 3.5" x 31.6") Package: 605 x 256 x 947mm (23.81" x 10.07" x 37.28")	1U Rackmount Enclosure: 437 x 43 x 746mm (17.2" x 1.7" x 29.36") Package: 605 x 205 x 1025mm (23.81" x 7.99" x 37.4")

X12 FatTwin®

(For Complete System Only)

NEW!

3rd Gen Intel® Xeon® Scalable processors Supported

8 Nodes, Rear IO

4 Nodes, Rear IO

MODEL	SYS-F610P2-RTN	SYS-F620P3-RTBN
Processor Support	3rd Gen Intel® Xeon® Scalable processors Dual Socket LGA-4189 (Socket P+) supported TDP up to 165W; 3 UPI up to 11.2GT/s	3rd Gen Intel® Xeon® Scalable processors Dual Socket LGA-4189 (Socket P+) supported TDP up to 165W; 3 UPI up to 11.2GT/s
Key Applications	• Telco Data Center and ETSI certified • Virtualization Server • Scale-Out Storage • Data Center Enterprise Applications • HPC and Big Data • Hyperscale / Hyperconverged	• High Capacity and Ultra Dense Storage • Telco Data Center and ETSI certified • Virtualization Server (VSAN) • Data Center Enterprise Applications • HPC and Big Data • Hyperscale / Hyperconverged
Outstanding Features	• Shared Power Architecture for Best Efficiency • Redundant cooling and power configurations for high availability • Optimized Designs for Storage and Compute Density • HDD hot-swap capability • 4U 8-node Architecture with Front Serviceability from Cold Aisle for all Nodes	• Shared Power Architecture for Best Efficiency • Redundant cooling and power configurations for high availability • Optional 2x Additional Internal SSDs • Optimized Designs for Storage and Compute Density • HDD hot-swap capability • 4U 4-node Architecture with Front Serviceability from Cold Aisle for all Nodes
Serverboard	SUPER® X12DPFR-AN6	SUPER® X12DPFR-AN6
Chipset	Intel® C621A	Intel® C621A
System Memory (Max.)	16 DIMM slots Up to 2TB RDIMM/LRDIMM, DDR4-3200MHz Up to 4TB Intel® Optane™ Persistent Memory, DDR4-3200MHz	16 DIMM slots Up to 2TB RDIMM/LRDIMM, DDR4-3200MHz Up to 4TB Intel® Optane™ Persistent Memory, DDR4-3200MHz
Expansion Slots	M.2 slot(s) PCI-E 4.0 x8 LP slot(s)	AIOM slot(s) HBA slot(s) 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; SSM, SPM, SUM; SuperDoctor® 5; Watch Dog	Intel® Node Manager; IPMI 2.0; KVM with dedicated LAN; SSM, SPM, SUM; SuperDoctor® 5; Watch Dog
Drive Bays	6x 2.5" hot-swap NVMe/SATA/SAS drive bays; 6x 2.5" 7mm drive bays	8x 3.5" hot-swap SATA/SAS drive bays; 6x 2.5" NVMe hybrid; 8x 2.5" 7mm drive bays
Peripheral Bays	None	None
Power Supply	Redundant 2200W Titanium level (96%)	Redundant 2200W Titanium level (96%)
Cooling System	3x 4cm heavy duty fan(s)	2x 8cm heavy duty fan(s)
Form Factor	4U Rackmount Enclosure: 448 x 177 x 737mm (17.63" x 6.96" x 29")	4U Rackmount Enclosure: 448 x 177 x 737mm (17.63" x 6.96" x 29")

X12 TwinPro®

(For Complete System Only)

NEW!

3rd Gen Intel® Xeon® Scalable processors Supported

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-220TP-HTTR	SYS-220TP-HC0TR	SYS-220TP-HC1TR
Processor Support	3rd Gen Intel® Xeon® Scalable processors Dual Socket LGA-4189 (Socket P+) supported TDP up to 185W; 2 UPI up to 11.2GT/s	3rd Gen Intel® Xeon® Scalable processors Dual Socket LGA-4189 (Socket P+) supported TDP up to 185W; 2 UPI up to 11.2GT/s	3rd Gen Intel® Xeon® Scalable processors Dual Socket LGA-4189 (Socket P+) supported TDP up to 185W; 2 UPI up to 11.2GT/s
Key Applications	• Hyper-Converged Infrastructure • High Performance Computing • Big Data / Big Science • Oil immersion, Liquid Cooling	• Hyper-Converged Infrastructure • High Performance Computing • Big Data / Big Science • Oil immersion, Liquid Cooling	• Hyper-Converged Infrastructure • High Performance Computing • Big Data / Big Science • Oil immersion, Liquid Cooling
Outstanding Features	• The Most Cost Optimized 2U, 4 Node solution	• The Most Cost Optimized 2U, 4 Node solution	• The Most Cost Optimized 2U, 4 Node solution
Serverboard	SUPER® X12DPT-PT6	SUPER® X12DPT-PT6	SUPER® X12DPT-PT6
Chipset	Intel® C621A	Intel® C621A	Intel® C621A
System Memory (Max.)	16 DIMM slots 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) 2 PCI-E 4.0 x16 LP slot(s)	M.2 slot(s) 2 PCI-E 4.0 x16 LP slot(s)	M.2 slot(s) 2 PCI-E 4.0 x16 LP slot(s)
Onboard Storage Controller	Intel® SATA	Broadcom® 3008	Broadcom® 3108
Connectivity	2x 10GbE RJ45 port(s) with Intel® Ethernet Controller X710-AT2	2x 10GbE RJ45 port(s) with Intel® Ethernet Controller X710-AT2	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; KVM with dedicated LAN; SuperDoctor® 5; Watch Dog; NMI; IPMI 2.0; SPM; SSM; SUM; Redfish API	Intel® Node Manager; KVM with dedicated LAN; SuperDoctor® 5; Watch Dog; NMI; IPMI 2.0; SPM; SSM; SUM; Redfish API	Intel® Node Manager; KVM with dedicated LAN; SuperDoctor® 5; Watch Dog; NMI; IPMI 2.0; SPM; SSM; SUM; Redfish API
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	Redundant 2200W Titanium level (96%)	Redundant 2200W Titanium level (96%)	Redundant 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 Enclosure: 438 x 88 x 730mm (17.25" x 3.47" x 28.75") 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") 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") Package: 622 x 254 x 1143mm (24.5" x 10" x 45")

X12 TwinPro®

(For Complete System Only)

NEW!

3rd Gen Intel® Xeon® Scalable processors Supported

3x 3.5" Drives/Node x 4 Nodes

3x 3.5" Drives/Node x 4 Nodes

3x 3.5" Drives/Node x 4 Nodes

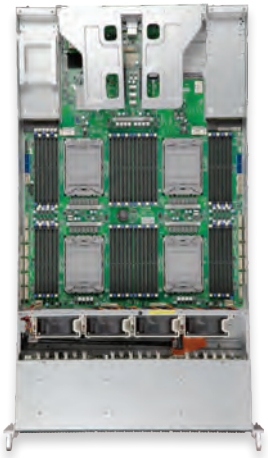
MODEL	SYS-620TP-HTTR	SYS-620TP-HC0TR	SYS-620TP-HC1TR
Processor Support	3rd Gen Intel® Xeon® Scalable processors Dual Socket LGA-4189 (Socket P+) supported TDP up to 185W; 2 UPI up to 11.2GT/s	3rd Gen Intel® Xeon® Scalable processors Dual Socket LGA-4189 (Socket P+) supported TDP up to 185W; 2 UPI up to 11.2GT/s	3rd Gen Intel® Xeon® Scalable processors Dual Socket LGA-4189 (Socket P+) supported TDP up to 185W; 2 UPI up to 11.2GT/s
Key Applications	• Hyper-Converged Infrastructure • High Performance Computing • Big Data / Big Science • Oil immersion, Liquid Cooling	• Hyper-Converged Infrastructure • High Performance Computing • Big Data / Big Science • Oil immersion, Liquid Cooling	• Hyper-Converged Infrastructure • High Performance Computing • Big Data / Big Science • Oil immersion, Liquid Cooling
Outstanding Features	• The Most Cost Optimized 2U, 4 Node solution	• The Most Cost Optimized 2U, 4 Node solution	• The Most Cost Optimized 2U, 4 Node solution
Serverboard	SUPER® X12DPT-PT6	SUPER® X12DPT-PT6	SUPER® X12DPT-PT6
Chipset	Intel® C621A	Intel® C621A	Intel® C621A
System Memory (Max.)	16 DIMM slots 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) 2 PCI-E 4.0 x16 LP slot(s)	M.2 slot(s) 2 PCI-E 4.0 x16 LP slot(s)	M.2 slot(s) 2 PCI-E 4.0 x16 LP slot(s)
Onboard Storage Controller	Intel® SATA	Broadcom® 3008	Broadcom® 3108
Connectivity	2x 10GbE RJ45 port(s) with Intel® Ethernet Controller X710-AT2	2x 10GbE RJ45 port(s) with Intel® Ethernet Controller X710-AT2	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; KVM with dedicated LAN; SuperDoctor® 5; Watch Dog; NMI; IPMI 2.0; SPM; SSM; SUM; Redfish API	Intel® Node Manager; KVM with dedicated LAN; SuperDoctor® 5; Watch Dog; NMI; IPMI 2.0; SPM; SSM; SUM; Redfish API	Intel® Node Manager; KVM with dedicated LAN; SuperDoctor® 5; Watch Dog; NMI; IPMI 2.0; SPM; SSM; SUM; Redfish API
Drive Bays	3x 3.5" hot-swap SATA drive bays;	3x 3.5" hot-swap SAS/SATA drive bays;	3x 3.5" hot-swap SATA/SAS drive bays;
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 8cm heavy duty fan(s)	4x 8cm heavy duty fan(s)	4x 8cm heavy duty fan(s)
Form Factor	2U Rackmount Enclosure: 438 x 88 x 774mm (17.25" x 3.47" x 30.5") Package: 622 x 254 x 1143mm (24.5" x 10" x 45")	2U Rackmount Enclosure: 438 x 88 x 774mm (17.25" x 3.47" x 30.5") Package: 622 x 254 x 1143mm (24.5" x 10" x 45")	2U Rackmount Enclosure: 438 x 88 x 774mm (17.25" x 3.47" x 30.5") Package: 622 x 254 x 1143mm (24.5" x 10" x 45")

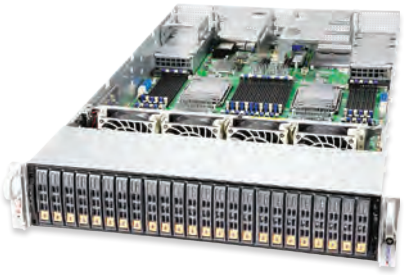
X12 MP

(For Complete System Only)

NEW!

3rd Gen Intel® Xeon® Scalable processors Supported





MODEL	SYS-240P-TNRT
Processor Support	3rd Gen Intel® Xeon® Scalable processors Quad Socket LGA-4189 (Socket P+) supported TDP up to 250W; 6 UPI up to 10.4GT/s
Key Applications	• SAP HANA • HCI • In-Memory Database • Scientific Virtualization • ERP, CRM • Business Intelligence • Artificial Intelligence (AI)
Outstanding Features	• Large memory footprint for up to 18TB • Flexible onboard networking options up to dual 10G Ethernet & dual SFP+ • Flexible networking options with AIOM/OCP NIC 3.0 support • 24x 2.5" hybrid hot-swappable NVMe/SAS/SATA drive bays
Serverboard	SUPER® X12QCH+
Chipset	Intel® C621
System Memory (Max.)	48 DIMM slots Up to 12TB ECC LRDIMM, DDR4-3200MHz Up to 12TB ECC RDIMM, DDR4-3200MHz Up to 18TB Intel® DCPMM, DDR4-2666MHz
Expansion Slots	2 PCI-E 3.0 x16 FHFL slot(s) 2 PCI-E 3.0 x16 FHHL slot(s) 2 PCI-E 3.0 x8 FHFL slot(s) 4 PCI-E 3.0 x8 LP slot(s)
Onboard Storage Controller	Intel® SATA
Connectivity	100Gb QSFP 28 with AIOM (optional) 2x 10GbE RJ45 and 2x 10GbE SFP+ port(s) with Intel® Ethernet Controller X710-TM4 via AIOM
VGA/Audio	1 VGA port
Management	IPMI 2.0; SuperDoctor® 5; Watch Dog; NMI; SUM
Drive Bays	24x 2.5" hot-swap NVMe/SAS3/SATA3 drive bays; 24x 2.5" NVMe hybrid; 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 Enclosure: 439.5 x 89 x 803mm (17.3" x 3.5" x 31.6")

X12 SuperWorkstations

(For Complete System Only)

NEW!

3rd Gen Intel® Xeon® Scalable processors Supported

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 Dual Socket LGA-4189 (Socket P+) supported TDP up to 270W; 3 UPI	3rd Gen Intel® Xeon® Scalable processors Dual Socket LGA-4189 (Socket P+) supported TDP up to 270W; 3 UPI	3rd Gen Intel® Xeon® Scalable processors Single Socket LGA-4189 (Socket P+) supported TDP up to 270W; up to 11.2GT/s
Key Applications	• Engineering/scientific research • Multimedia/Digital Content creation • CAD • Rendering	• Engineering/scientific research • Multimedia/Digital Content creation • CAD • Rendering	• Deep Learning/AI/Machine Learning Development
Outstanding Features	• Supports up to two double width GPUs • Redundant Power Supplies • Front accessible storage configurable up to 8x 2.5/3.5" hot-swap drive bays	• Supports up to two double width GPUs • New front bezel with keylock for added security • Compact and quiet operation	• Versatile: Full Tower or 4U Rack mount form factor • Robust: Features 7 PCI-E Gen 4 slots • Powerful: Up to 4 double-width GPUs • Flexible: Supports either active & passive GPUs
Serverboard	SUPER® X12DAI-N6	SUPER® X12DAI-N6	SUPER® X12SPA-TF
Chipset	Intel® C621A	Intel® C621A	Intel® C621A
System Memory (Max.)	16 DIMM slots Up to 4 TB ECC RDIMM, DDR4-3200MHz Up to 4 TB ECC LRDIMM, DDR4-3200MHz Up to 512GB Intel® DCPMM, DDR4-3200MHz	16 DIMM slots Up to 4 TB ECC RDIMM, DDR4-3200MHz Up to 4 TB ECC LRDIMM, DDR4-3200MHz Up to 512GB Intel® DCPMM, DDR4-3200MHz	16 DIMM slots Up to 4TB ECC LRDIMM, DDR4-3200MHz
Expansion Slots	5 PCI-E 4.0 x16 FHFL slot(s) PCI-E 4.0 x8 FHHL slot(s)	5 PCI-E 4.0 x16 FHFL slot(s) PCI-E 4.0 x8 FHHL 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 1GbE RJ45 port(s) with Intel® Ethernet Controller I210-AT 1x 10GbE RJ45 port(s) with Marvell AQC113C 1x 1GbE RJ45 port(s) with Realtek RTL8211F PHY (dedicated IPMI)
VGA/Audio	1 VGA port	1 VGA port	1 VGA port
Management	KVM with dedicated LAN; SuperDoctor® 5; Watch Dog; NMI; IPMI 2.0; SPM; SSM; SUM; Redfish API	KVM with dedicated LAN; SuperDoctor® 5; Watch Dog; NMI; IPMI 2.0; SPM; SSM; SUM; Redfish API	IPMI 2.0; KVM with dedicated LAN; Watch Dog; SUM; SPM; SuperDoctor 5
Drive Bays	8x 3.5" hot-swap SATA (SAS/NVMe optional) drive bays; 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" (optional)
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 Enclosure: 178 x 452 x 647mm (7" x 17.8" x 25.5") Package: 356 x 625 x 795mm (14" x 24.6" x 31.3")	Mid-Tower Rackmount Enclosure: 193 x 424 x 525.3mm (7.6" x 16.7" x 20.68") Package: 304 x 543 x 642mm (11.97" x 21.38" x 25.28")	Tower Enclosure: 437 x 178 x 737mm (17.2" x 7" x 29") Package: 330.2 x 685.8 x 965.2mm (13" x 27" x 38")

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	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	• Network Appliance • Database Processing and Storage • Data Center Optimized	• Database Processing and Storage • Data Center Optimized • Enterprise Server • Virtualization • Cloud Computing
Outstanding Features	• Up to 6 expansion slots with optional riser card. • Flexible I/O expansion.	• Maximum I/O. Support 3 x16 expansion slots in 1U form factor. • 4x Gen4 NVMe drives supported in 1U Form Factor.
Serverboard	SUPER® X12SPW-TF	SUPER® X12SPW-TF
Chipset	Intel® C621A	Intel® C621A
System Memory (Max.)	8 DIMM slots ECC LRDIMM, DDR4-3200MHz ECC RDIMM, DDR4-3200MHz Intel® DCPMM, DDR4-3200MHz	8 DIMM slots ECC LRDIMM, DDR4-3200MHz ECC RDIMM, DDR4-3200MHz Intel® DCPMM, DDR4-3200MHz
Expansion Slots	2 PCI-E 4.0 x16 FHFL slot(s) 2 PCI-E 4.0 x8 LP slot(s)	2 PCI-E 4.0 x16 FHFL slot(s) 1 PCI-E 4.0 x16 LP 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 onboard VGA port	1 onboard VGA port
Management	Intel® Node Manager; KVM with dedicated LAN; NMI; SPM; SSM; SUM; Redfish API; IPMI2.0	Intel® Node Manager; KVM with dedicated LAN; NMI; SPM; SSM; SUM; Redfish API; IPMI2.0
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 Enclosure: 437 x 89 x 647mm (17.2" x 3.5" x 25.5") Package: 673.1 x 279.4 x 863.6mm (26.5" x 11" x 34")	1U Rackmount Enclosure: 437 x 43 x 597mm (17.2" x 1.7" x 23.5") Package: 609.6 x 203.2 x 812.8mm (24" x 8" x 32")

X12WIO

NEW!

3rd Gen Intel® Xeon® Scalable processors Supported

1U UP WIO

1U UP WIO

MODEL	SYS-510P-WT	SYS-510P-WTR
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	• Data Center Optimized • Enterprise Server • Virtualization • Cloud Computing	• Data Center Optimized • Enterprise Server • Virtualization • Cloud Computing
Outstanding Features	• Maximum I/O. Support 3 x16 expansion slots in 1U form factor. • Cost Effective • 4x NVMe drives supported in 1U Form Factor.	• Maximum I/O. Support 3 x16 expansion slots in 1U form factor. • 4x NVMe drives supported in 1U Form Factor.
Serverboard	SUPER● X12SPW-TF	SUPER● X12SPW-TF
Chipset	Intel® C621A	Intel® C621A
System Memory (Max.)	8 DIMM slots ECC LRDIMM, DDR4-3200MHz ECC RDIMM, DDR4-3200MHz Intel® DCPMM, DDR4-3200MHz	8 DIMM slots ECC LRDIMM, DDR4-3200MHz ECC RDIMM, DDR4-3200MHz Intel® DCPMM, DDR4-3200MHz
Expansion Slots	2 PCI-E 4.0 x16 FHFL slot(s) 1 PCI-E 4.0 x16 LP slot(s)	2 PCI-E 4.0 x16 FHFL slot(s) 1 PCI-E 4.0 x16 LP 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 onboard VGA port	1 onboard VGA port
Management	Intel® Node Manager; KVM with dedicated LAN; NMI; SPM; SSM; SUM; Redfish API; IPMI2.0	Intel® Node Manager; KVM with dedicated LAN; NMI; SPM; SSM; SUM; Redfish API; IPMI2.0
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 Enclosure: 437 x 43 x 650mm (17.2" x 1.7" x 25.6") Package: 596.9 x 215.9 x 855.98mm (23.5" x 8.5" x 33.7")	1U Rackmount Enclosure: 437 x 43 x 650mm (17.2" x 1.7" x 25.6") 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 Single Socket LGA-4189 (Socket P+) supported, CPU up to 38 cores and 205W TDP	3rd Gen Intel® Xeon® Scalable processors Single Socket LGA-4189 (Socket P+) supported, CPU up to 38 cores and 205W TDP
Key Applications	• Telecom, Storage, GPU, DL/AI/ML	• 5G BBU DU applications, Telecom
Outstanding Features	• 8-DIMM, DDR4 -3200MHz, ECC, RDIMM(3DS), LRDIMM(3DS) • 2x PCI-E 4.0 x16 FHFL slots, 1x PCI-E 4.0 x16 low profile slot • 600W DC Redundant power supplies • 2x 10G Based-T LAN Ports	• 8-DIMM, DDR4 -3200MHz, ECC, RDIMM(3DS), LRDIMM(3DS) • 2x PCI-E 4.0 x16 FHFL slots • 600W DC Redundant power supplies • 2x 10G Based-T LAN Ports
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 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) Enclosure: 437 x 429 x 43mm (17.2" x 16.9" x1.7")	1U rackmount (Front I/O) Enclosure: 437 x 399 x 43mm (17.2" x 15.7" x1.7")

X12 IoT/Embedded

(For Complete System Only)

NEW!

3rd Gen Intel® Xeon® Scalable processors Supported

Front I/O, Rear AC Power

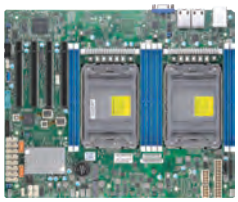
2U Compact Rackmount

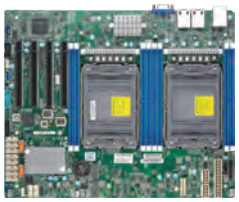
MODEL	SYS-110P-FRN2T	SYS-210P-FRDN6T
Processor Support	3rd Gen Intel® Xeon® Scalable processors Single Socket LGA-4189 (Socket P+) supported, CPU up to 38 cores and 205W TDP	3rd Gen Intel® Xeon® Scalable processors Single Socket LGA-4189 (Socket P+) supported TDP up to 250W;
Key Applications	• 5G BBU DU applications, Telecom	• Network Function Virtualization • 5G Core and Edge • Cloud Computing
Outstanding Features	• 8-DIMM, DDR4 -3200MHz, ECC, RDIMM(3DS), LRDIMM(3DS) • 2x PCI-E 4.0 x16 FHFL slots • 800W AC Redundant power supplies • 2x 10G Based-T LAN Ports	• Ultra short depth, front I/O, 2U server • Multiple PCI-E expansion slots for GPU & Accelerator Add-On-Cards
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 Up to 2TB ECC LRDIMM, DDR4-3200MHz 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) PCI-E 4.0 x16 FHHL in certain configurations slot(s) PCI-E 4.0 x16 Low Profile or 2 x8 Low Profile slot(s) 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; KVM with dedicated LAN; SuperDoctor® 5; Watch Dog; NMI; IPMI 2.0; SPM; Redfish API; SSM; SUM
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) Enclosure: 437 x 399 x 43mm (17.2'' x 15.7'' x1.7'')	2U Rackmount Enclosure: 436.88 x 88.9 x 298.8mm (17.2" x 3.5" x 11.8")

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 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 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 Dual Socket LGA-4189 (Socket P+) supported, CPU TDP supports Up to 185W TDP, 2 UPI up to 10.4 GT/s	3rd Gen Intel® Xeon® Scalable processors Dual Socket LGA-4189 (Socket P+) supported, CPU TDP supports Up to 185W TDP, 2 UPI up to 10.4 GT/s
Chipset	Intel® C621A	Intel® C621A	Intel® C621A	Intel® C621A
Form Factor	E-ATX, 12" x 13" (30.48cm x 33.02cm)	E-ATX, 12`" x 13" (30.48cm x 33.02cm)	ATX, 12.23" x 10" (31.06cm x 25.4cm)	ATX, 12.23" x 10" (31.06cm x 25.4cm)
Memory Capacity & Slots	Up to 4TB 3DS ECC RDIMM, DDR4-3200MHz; Up to 4TB 3DS ECC LRDIMM, DDR4-3200MHz Up to 4TB Intel® Optane™ Persistent Memory 200 Series, DDR4-3200MHz, in 18 DIMM slotsP1-DIMMB2 and P2-DIMMB2 are reserved for Intel Optane Persistent Memory 200 Series only.	Up to 4TB RDIMM, DDR4-3200MHz; Up to 4TB 3DS ECC LRDIMM, DDR4-3200MHz Up to 4TB Intel® Optane™ Persistent Memory 200 Series, DDR4-3200MHz, in 18 DIMM slotsP1-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, 4 PCI-E 4.0 x16, 2 PCI-E 4.0 NVMe x8 Internal Port(s) **M.2 Interface:** 1 PCI-E 4.0 x4 **M.2 Form Factor:** 2280/22110 **M.2 Key:** M-Key	2 PCI-E 4.0 x8, 4 PCI-E 4.0 x16, 2 PCI-E 4.0 NVMe x8 Internal Port(s) **M.2 Interface:** 1 PCI-E 4.0 x4 **M.2 Form Factor:** 2280/22110 **M.2 Key:** M-Key	4 PCI-E 4.0 x16 **M.2 Interface:** 2 PCI-E 4.0 x4 **M.2 Form Factor:** 2280/22110, 2280 **M.2 Key:** M-Key	4 PCI-E 4.0 x16, 1 PCI-E 4.0 NVMe x8 Internal Port(s) **M.2 Interface:** 2 PCI-E 4.0 x4 **M.2 Form Factor:** 2280/22110, 2280 **M.2 Key:** 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, ASPEED AST2600 BMC	1 VGA port, ASPEED AST2600 BMC
USB Ports	2 USB 2.0 ports (2 via headers) 7 USB 3.2 Gen1 ports (4 rear + 2 via headers + 1 Type A)	2 USB 2.0 ports (2 via headers) 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 2 COM Ports (1 rear, 1 header)	TPM 2.0 Header 2 COM Ports (1 rear, 1 header)	2 ports SuperDOM TPM 2.0 Header 1 COM Port (1 header)	2 ports SuperDOM TPM 2.0 Header 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, NCSI header, Node Manager Support, RoHS, 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, NCSI header, Node Manager Support, RoHS, 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

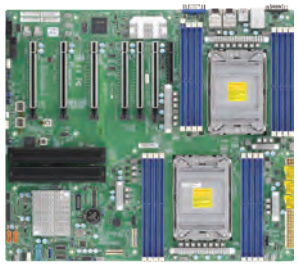
NEW!

3rd Gen Intel® Xeon® Scalable processors Supported

Workstation

WIO

4 GPUs

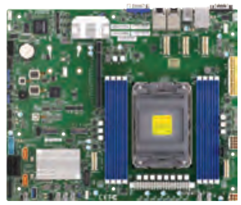


MODEL	X12DAi-N6	X12DDW-A6	X12DPG-QT6
Processor	3rd Gen Intel® Xeon® Scalable Processors and Intel® Xeon® Scalable Processors Dual Socket LGA-4189 (Socket P+) supported, CPU TDP supports Up to 270W TDP, 3 UPI up to 11.2 GT/s	3rd Gen Intel® Xeon® Scalable processors Dual Socket LGA-4189 (Socket P+) supported, CPU TDP supports Up to 270W TDP, UPI up to 11.2 GT/s	3rd Gen Intel® Xeon® Scalable Processors and Intel® Xeon® Scalable Processors Dual Socket LGA-4189 (Socket P+) supported, CPU TDP supports Up to 270W TDP, 3 UPI up to 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 34.05cm)	Proprietary, 15.12" x 13.2" (38.4cm x 33.53cm)
Memory Capacity & Slots	Up to 4TB 3DS ECC RDIMM, DDR4-3200MHz; Up to 4TB 3DS ECC LRDIMM, DDR4-3200MHz Up to 4TB Intel® Optane™ Persistent Memory 200 Series, DDR4-3200MHz, in 16 DIMM slots; Up to 6TB Intel® Optane™ DC Persistent Memory in memory mode.	Up to 4TB RDIMM, DDR4-3200MHz; Up to 4TB LRDIMM, DDR4-3200MHz Up to 4TB Intel® Optane™ Persistent Memory 200 Series, DDR4-3200MHz (OC), in 16 DIMM slots	Up to 4TB 3DS ECC RDIMM, DDR4-3200MHz; Up to 4TB 3DS ECC LRDIMM, DDR4-3200MHz Up to 6TB Intel® Optane™ Persistent Memory 200 Series, in 16 DIMM slots; Up to 6TB Intel® Optane™ DC Persistent Memory in memory mode.
Expansion Slots	5 PCI-E 4.0 x16, 1 PCI-E 4.0 x8, 4 PCI-E 4.0 NVMe x4 Internal Port(s) **M.2 Interface:** 2 PCI-E 3.0 x4, RAID 0 & 1 **M.2 Form Factor:** 2280/22110 **M.2 Key:** M-Key	1 PCI-E 4.0 x16 Left Riser Slot, 1 PCI-E 4.0 x16 Right Riser Slot, 2 PCI-E 4.0 x16 Center Right Hand Slot, 8 PCI-E 4.0 NVMe Internal Port(s) **M.2 Interface:** 2 PCI-E 2.0 x1 **M.2 Form Factor:** 2260/2280 **M.2 Key:** M-Key 2 PCI-E 4.0 x16, AIOM slots Superset of OCP 3.0 Expansion	6 PCI-E 4.0 x16, 1 PCI-E 4.0 x8 (in x4 slot) **M.2 Interface:** PCI-E 3.0 x4 **M.2 Form Factor:** 2280/22110, 2280/22110 **M.2 Key:** 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	Dual LAN with Intel® i210 Gigabit Ethernet Controller	AIOM for LAN	Dual LAN with Intel® X550 10GBase-T Ethernet Controller
Onboard VGA	1 VGA D-Sub Connector port, ASPEED AST2600 BMC	1 VGA D-Sub Connector port, ASPEED AST2600 BMC	1 VGA D-Sub Connector port, ASPEED AST2500 BMC
USB Ports	6 USB 3.2 Gen1 ports (4 rear + 2 via headers)2 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) 6 USB 3.1 Gen1 ports (3 Rears Type A + 1 Rear Type C, 1 via header, 1 via header, 1 Type A) 6 USB 3.2 Gen1 ports (3 rear + 2 via headers + 1 Type A)
Other Onboard I/O Devices	7.1 HD Audio TPM 2.0 Header 1 COM Port (1 header)	TPM Header 1 COM Port (1 header)	2 ports SuperDOM 7.1 HD Audio Header TPM 2.0 Header 2 COM Ports (1 rear, 1 header)
Manageability	Intel® Node Manager, IPMI (Intelligent Platform Management Interface) v2.0 with KVM support, SPM, SSM, SUM, SuperDoctor® 5, Watchdog	Intel® Node Manager, IPMI (Intelligent Platform Management Interface) v2.0 with KVM support, IPMI2.0, KVM with dedicated LAN, NMI, SPM, SSM, SUM, SuperDoctor® 5, SuperDoctor® III, vPro, 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, 8 -fan status, CPU, CPU temperature, Memory temperature, Memory Voltages, Monitors CPU voltages, PCH temperature, System temperature, VBAT, VRM temperature	+1.8V PCH, +12V, +5V standby, 6 -fan status, Chassis intrusion header, CPU temperature, CPU thermal trip support, Memory Voltages, Monitors CPU voltages, PCH temperature	+1.8V, +12V, +3.3V, +5V, +5V standby, 10 -fan status, 5+1 Phase-switching voltage regulator, Chassis intrusion header, HT, Supports system management utility, VBAT
Other Features	ACPI power management, ATX Power connector, Chassis intrusion detection, Chassis intrusion header, CPU thermal trip support for processor protection, NCSI header, Node Manager Support, RoHS, RoT, UID, WOL	ACPI power management, ATX Power connector, Chassis intrusion detection, NCSI header, Node Manager Support, RoHS, RoT, UID, WOL	Chassis intrusion detection, CPU thermal trip support for processor protection, Node Manager Support, RoHS
BIOS	AMI UEFI	AMI UEFI	

X12 UP SERVERBOARDS

NEW!

3rd Gen Intel® Xeon® Scalable processors Supported

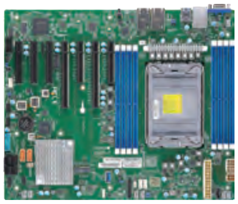
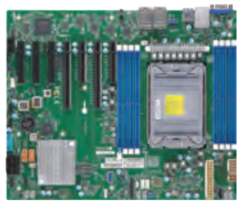
	1U Optimized	1U Optimized	Embedded, High Performance Quad 1GbE LAN	Embedded, High Performance Dual 25G SFP28
				

MODEL	**X12SPO-F**	**X12SPO-NTF**	**X12SPZ-LN4F**	**X12SPZ-SPLN6F**
Processor	3rd Gen Intel® Xeon® Scalable processors Single Socket LGA-4189 (Socket P+) supported, CPU TDP supports Up to 270W TDP	3rd Gen Intel® Xeon® Scalable processors Single Socket LGA-4189 (Socket P+) supported, CPU TDP supports Up to 270W TDP	3rd Gen Intel® Xeon® Scalable processors Single Socket LGA-4189 (Socket P+) supported, CPU TDP supports Up to 270W TDP	3rd Gen Intel® Xeon® Scalable processors 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, 12" x 10" (30.48cm x 25.4cm)	ATX, 12" x 10" (30.48cm x 25.4cm)	Micro-ATX, 9.6" x 9.6" (24.38cm x 24.38cm)	Micro-ATX, 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 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 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 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 Up to 2TB Intel® Optane™ Persistent Memory 200 Series, in 8 DIMM slots
Expansion Slots	1 PCI-E 4.0 x16, 2 PCI-E 4.0 NVMe x8 Internal Port(s) **M.2 Interface:** 2 SATA/PCI-E 3.0 x4 **M.2 Form Factor:** 2280/22110 **M.2 Key:** M-Key	1 PCI-E 4.0 x16, 5 PCI-E 4.0 NVMe x8 Internal Port(s) **M.2 Interface:** 2 SATA/PCI-E 3.0 x4 **M.2 Form Factor:** 2280/22110 **M.2 Key:** M-Key	2 PCI-E 4.0 x16, 1 PCI-E 4.0 NVMe x8 SlimSAS Internal Port(s), 1 PCI-E 4.0 NVMe x4 Internal Port(s), 1 PCI-E 3.0 NVMe x4 Internal Port(s) 1 M.2 M-Key SATA/PCI-E 3.0 x4, 2242/2280	2 PCI-E 4.0 x16, 1 PCI-E 4.0 NVMe x8 SlimSAS Internal Port(s), 1 PCI-E 4.0 NVMe x4 Internal Port(s), 1 PCI-E 3.0 NVMe x4 Internal Port(s) 1 M.2 M-Key SATA/PCI-E 3.0 x4, 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; 4 SATA ports via OCuLink; RAID 0,1,5,10	Intel® C621A controller for 6 SATA3 (6 Gbps) ports; 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 Dual LAN with Broadcom BCM57414 25G SFP28
Onboard VGA	1 VGA port, ASPEED AST2600 BMC	1 VGA port, ASPEED AST2600 BMC	1 VGA port,	1 VGA port,
USB Ports	6 USB 2.0 ports (2 rear + 4 via headers) 5 USB 3.2 Gen1 ports (2 rear + 2 via headers + 1 Type A)	6 USB 2.0 ports (2 rear + 4 via headers) 5 USB 3.2 Gen1 ports (2 rear + 2 via headers + 1 Type A)	4 USB 2.0 ports (4 via headers) 4 USB 3.2 Gen1 ports (2 rear + 2 via headers)	4 USB 2.0 ports (4 via headers) 4 USB 3.2 Gen1 ports (2 rear + 2 via headers)
Other Onboard I/O Devices	TPM Header 2 COM Ports (1 rear, 1 header)	TPM Header 2 COM Ports (1 rear, 1 header)	TPM Header & Chip both 1 COM Port (1 header)	TPM Header & Chip both 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	12V DC or ATX Power Source, 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	12V DC or ATX Power Source, 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

NEW!

3rd Gen Intel® Xeon® Scalable processors Supported

	Cost-optimized I/O Intensive, Dual 1 GbE	*Cost-optimized I/O Intensive, Quad 1 GbE*	*WIO, 3 AOC in 1U, Dual 1 GbE*	*WIO, 3 AOC in 1U, Dual 10 GbE*
				
MODEL	**X12SPL-F**	**X12SPL-LN4F**	**X12SPW-F**	**X12SPW-TF**
Processor	3rd Gen Intel® Xeon® Scalable processors Single Socket LGA-4189 (Socket P+) supported, CPU TDP supports Up to 270W TDP	3rd Gen Intel® Xeon® Scalable processors Single Socket LGA-4189 (Socket P+) supported, CPU TDP supports Up to 270W TDP	3rd Gen Intel® Xeon® Scalable processors Single Socket LGA-4189 (Socket P+) supported, CPU TDP supports Up to 270W TDP	3rd Gen Intel® Xeon® Scalable processors 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, 12.1" x 10" (30.73cm x 25.4cm)	ATX, 12.1" x 10" (30.73cm x 25.4cm)	Proprietary WIO, 8" x 13" (20.32cm x 33.02cm)	Proprietary WIO, 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 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 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 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 Up to 2TB Intel® Optane™ Persistent Memory 200 Series, in 8 DIMM slots
Expansion Slots	2 PCI-E 4.0 x8, 1 PCI-E 4.0 x16, 1 PCI-E 4.0 x8 (in x16 slot) 3 PCI-E 3.0 x8 **M.2 Interface:** 1 SATA/PCI-E 3.0 x4 **M.2 Form Factor:** 2280/22110 **M.2 Key:** M-Key	2 PCI-E 4.0 x8, 1 PCI-E 4.0 x16, 1 PCI-E 4.0 x8 (in x16 slot) 3 PCI-E 3.0 x8 **M.2 Interface:** 1 SATA/PCI-E 3.0 x4 **M.2 Form Factor:** 2280/22110 **M.2 Key:** M-Key	1 PCI-E 4.0 x16 Right Riser Slot, 1 PCI-E 4.0 x32 Left Riser Slot, 4 PCI-E 4.0 NVMe x4 Internal Port(s) **M.2 Interface:** PCI-E 3.0 x4 and SATA **M.2 Form Factor:** 2280, 22110 **M.2 Key:** M-Key	1 PCI-E 4.0 x16 Right Riser Slot, 1 PCI-E 4.0 x32 Left Riser Slot, 4 PCI-E 4.0 NVMe x4 Internal Port(s) **M.2 Interface:** PCI-E 3.0 x4 and SATA **M.2 Form Factor:** 2280, 22110 **M.2 Key:** 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, ASPEED AST2600 BMC	1 VGA port, ASPEED AST2600 BMC	1 VGA port, ASPEED AST2600 BMC	1 VGA port, ASPEED AST2600 BMC
USB Ports	6 USB 2.0 ports (2 rear + 4 via headers) 5 USB 3.2 Gen1 ports (2 rear + 2 via headers + 1 Type A)	6 USB 2.0 ports (2 rear + 4 via headers) 5 USB 3.2 Gen1 ports (2 rear + 2 via headers + 1 Type A)	4 USB 2.0 ports (2 rear + 2 via headers) 5 USB 3.2 Gen1 ports (2 rear + 2 via headers + 1 Type A)	4 USB 2.0 ports (2 rear + 2 via headers) 5 USB 3.2 Gen1 ports (2 rear + 2 via headers + 1 Type A)
Other Onboard I/O Devices	TPM Header 1 COM Port (1 header)	TPM Header 1 COM Port (1 header)	2 ports SuperDOM TPM Header 2 COM Ports (1 rear, 1 header)	2 ports SuperDOM TPM Header 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

NEW!

3rd Gen Intel® Xeon® Scalable processors Supported

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 9.6" x 9.6" (24.38cm x 24.38cm)	microATX, 9.6" x 9.6" (24.38cm x 24.38cm)	microATX, 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 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 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 Up to 2TB Intel® Optane™ Persistent Memory 200 Series, in 8 DIMM slots
Expansion Slots	1 PCI-E 4.0 x8, 2 PCI-E 4.0 x16, 4 PCI-E 4.0 NVMe x4 Internal Port(s) **M.2 Interface:** 1 PCI-E 3.0 x4 **M.2 Form Factor:** 2280, 22110 **M.2 Key:** M-Key	1 PCI-E 4.0 x8, 2 PCI-E 4.0 x16, 4 PCI-E 4.0 NVMe x4 Internal Port(s) **M.2 Interface:** 1 PCI-E 3.0 x4 **M.2 Form Factor:** 2280, 22110 **M.2 Key:** M-Key	1 PCI-E 4.0 x8, 2 PCI-E 4.0 x16, 4 PCI-E 4.0 NVMe x4 Internal Port(s) **M.2 Interface:** 1 PCI-E 3.0 x4 **M.2 Form Factor:** 2280, 22110 **M.2 Key:** 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 Dual LAN with 10GBase-T with Intel® X550	Dual LAN with 10GBase-T with Intel® X550
Onboard VGA	1 VGA port ASPEED AST2600 BMC	1 VGA port, ASPEED AST2600 BMC	1 VGA port, ASPEED AST2600 BMC
USB Ports	6 USB 2.0 ports (2 rear + 4 via headers) 5 USB 3.2 Gen1 ports (2 rear + 2 via headers + 1 Type A)	6 USB 2.0 ports (2 rear + 4 via headers) 5 USB 3.2 Gen1 ports (2 rear + 2 via headers + 1 Type A)	6 USB 2.0 ports (2 rear + 4 via headers) 5 USB 3.2 Gen1 ports (2 rear + 2 via headers + 1 Type A)
Other Onboard I/O Devices	2 ports SuperDOM TPM Header 1 COM Port (1 header)	2 ports SuperDOM TPM Header 1 COM Port (1 header)	2 ports SuperDOM TPM Header 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

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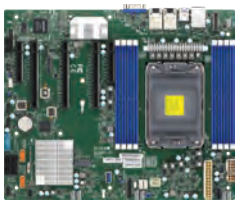

Workstation

MODEL	X12SPi-TF	X12SPA-TF
Processor	3rd Gen Intel® Xeon® Scalable processors Single Socket LGA-4189 (Socket P+) supported, CPU TDP supports Up to 270W TDP	3rd Gen Intel® Xeon® Scalable processors Single Socket LGA-4189 (Socket P+) supported, CPU TDP supports Up to 270W TDP
Chipset	Intel® C621A	Intel® C621A
Form Factor	ATX, 12.1" x 10" (30.73cm x 25.4cm)	E-ATX, 13" x 12" (33.02cm x 30.48cm)
Memory Capacity & Slots	Up to 2TB RDIMM, DDR4-3200MHz; Up to 2TB LRDIMM, DDR4-3200MHz Up to 2TB Intel® Optane™ Persistent Memory 200 Series, in 8 DIMM slots	Up to 4TB 3DS ECC RDIMM, DDR4-3200MHz; Up to 4TB 3DS ECC LRDIMM, DDR4-3200MHz Up to 4TB Intel® Optane™ Persistent Memory 200 Series, DDR4-3200MHz, in 16 DIMM slots
Expansion Slots	2 PCI-E 4.0 x16, 2 PCI-E 4.0 x8, 1 PCI-E 4.0 x8 (in x16 slot), 1 PCI-E 4.0 NVMe x8 Internal Port(s) **M.2 Interface:** 1 SATA/PCI-E 3.0 x4 **M.2 Form Factor:** 2280/22110 **M.2 Key:** M-Key	4 PCI-E 4.0 x16, 3 PCI-E 4.0 x8 (in x16 slot) **M.2 Interface:** 4 PCI-E 4.0 x4, RAID 0 & 1 **M.2 Form Factor:** 2260/2280/22110 **M.2 Key:** M-Key M.2 support RAID 0,1(up to RAID 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 Single LAN with Marvell AQC113 Single LAN with Realtek RTL8211F PHY (dedicated IPMI)
Onboard VGA	1 VGA D-Sub Connector port, ASPEED AST2600 BMC	1 VGA port, VGA connector is dedicated for IPMI., ASPEED AST2500 BMC
USB Ports	4 USB 2.0 ports (2 rear + 2 via headers) 5 USB 3.2 Gen1 ports (2 rear + 2 via headers + 1 Type A)	4 USB 2.0 ports (2 rear + 2 via headers) 6 USB 3.2 Gen1 ports (4 rear + 2 via headers) 2 USB 3.2 Gen2 ports (1 Type A, 1 Type C) 1 USB 3.2 Gen2x2 ports (1 Type C)
Other Onboard I/O Devices	TPM Header 1 COM Port (1 header)	ALC 888S HD Audio TPM 2.0 Header 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

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