A+ Server Solutions
World’s Most Versatile Portfolio of AMD Processor-Based Systems
Supporting AMD EPYC™ & Ryzen™ Series Processors

Supermicro® H13 and H12 Generation A+ Servers
The Most Comprehensive Portfolio of AMD Processor-Based Systems, now with AMD EPYC™ 9004 Series and Ryzen™ 7000 Series Processors, Including Servers, Storage, GPU-Optimized, Blade, and Multi-Node Solutions to Exactly Match System Requirements to Your Workload

December 2023
INTRODUCING
H13 GENERATION A+ SERVERS

AMD EPYC™ 9004 SERIES PROCESSORS
• Up to 128 "Zen 4C" cores or 96 "Zen 4" cores per socket with AMD 3D V-Cache™ technology
• Up to 6TB of memory of 12-channel DDR5 with ECC 4800MHz and Advanced Memory Device Correction (AMDC) and now supports 2 DIMMs per channel (2DPC) with single socket
• PCIe 5.0 up to 160 lanes (4U GPU system)
• Next Generation Reliability, Availability, and Serviceability (RAS)

WORKLOAD OPTIMIZED SYSTEMS WITH OPEN ARCHITECTURES
• Vast I/O, storage, networking and expansion slot options for maximum versatility
• Flexibile networking options with Advanced I/O Modules (AIOMs), up to 400Gbps throughput per card and OCP 3.0 support
• Market-leading GPU optimized servers for large scale AI/ML and HPC workloads
• Compute Express Link (CXL 1.1+) peripheral support including memory expansion through PCIe 5.0 lanes

INCREMENTED OPERATIONAL EFFICIENCY
• Tool-less chassis design
• Rear and Front I/O options
• Hot-swappable nodes with shared power for multi-node system
• Titanium level redundant power supplies
• Efficient resource-saving multi-node designs with shared power and cooling.

H13 GPU OPTIMIZED SYSTEM
Maximum Acceleration for AI/Deep Learning and HPC

H13 GRANDTWIN™ SYSTEM
Leading Multi-Node Architecture with Front or Rear I/O

H13 FLASH STORAGE SYSTEM
Purpose-built All-Flash E3.S Petascale Storage Solution

H13 W1O SYSTEM
Excellent Density and Energy Efficiency for Intelligent Edge

H13 HYPER SYSTEM
Industry Leading IOPS Servers with Energy Efficiency and Flexibility

H13 SHORT DEPTH FRONT I/O
Compact Front I/O design optimized for Telco deployments

H13 CLOUDDC SYSTEM
All-in-One Servers with Flexible I/O Options for Cloud Scale Data Centers

H13 WORKSTATION SYSTEM
Server-Grade Workstations for High Compute and Graphic Workloads
H13 8U 8-GPU SYSTEMS
Next-Gen Large Scale AI Training Platform

Industry standard OCP Accelerator Module (OAM) with eight accelerators interconnected on an AMD Universal Base Board (UBB 2.0)

Industry-leading 1.5TB HBM3 GPU memory in a single server node

1:1 400G networking dedicated for each GPU designed for large scale AI and supercomputing clusters

2-socket design supporting 4th Gen AMD EPYC™ Processors

Up to 24 DIMMs for up to 6 TB of DDR5-4800 memory

Streamline deployment at scale for AI & LLM
Built on Supermicro’s proven AI building-block system architecture, the new 8U 8-GPU system with AMD Instinct MI300X accelerators streamline deployment at scale for the largest AI models and reduce lead time. The 8U 8-GPU air-cooled solution is feature maximized and power optimized supporting dedicated I/O and dedicated storage per GPU, full performance GPUs, CPUs, and memory, and high-speed networking for large scale cluster deployments. These powerful GPUs enhance operations-per-second and performance-per watt at rack scale.

Key Applications
- Large Scale Deep Learning
- Generative AI and Large Language Model Training
- AI-fused HPC applications
- Industrial Automation
- Business Intelligence & Analytics
H13 2U & 4U QUAD APU SYSTEMS
Next-Gen Large Scale HPC and AI Inferencing Systems

Four APUs combine high-performance AMD CPU, GPU and HBM3 memory for a total of 912 AMD CDNA™ 3 GPU compute units and 96 “Zen 4” cores, and 512GB of unified HBM3 memory in one system.

PCIe 5.0 expansion slots for high-speed networking including RDMA to APU memory

2 PCIe 5.0 Open Compute Project (OCP) 3.0 AIOM slots

Fully optimized for the most popular AI & ML frameworks—PyTorch, TensorFlow, JAX, ONYX-RT, Triton

Quad-Socket MI300A APU-Based Systems
Supermicro offers two quad-socket APU-based servers that give flexibility in cooling models. The 2U AS -2145GH-TNMR is a dense, liquid-cooled system that delivers exceptional TCO with over 51% data center energy cost savings. Furthermore, there is a 70% reduction in fans compared to air-cooled solutions. The 4U AS -4145GH-TNMR provides more storage and 8-16 extra PCIe 5.0 AOC cards. Each server supports two compact AIOMs and offers PCIe 5.0 x16 slots for 400G Ethernet InfiniBand networks to develop a supercomputing cluster while speeding the flow of data directly to APU memory.

Key Applications
- HPC
- AI-fused HPC applications
- CSP
- Research Lab/ National Lab
**H13 4U PCIe GPU SYSTEMS**

Flexible, High Density GPU Systems for AI and HPC

High performance AI/ Deep Learning and HPC-optimized systems

Single and Dual processor AMD EPYC™ 9004 Series Processor

Double the CPU to GPU throughput with PCIe 5.0

Supports up to 10 FHFL double-width GPU units including AMD Instinct™ MI200 series and NVIDIA H100 GPUs

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**Maximum Acceleration 4U GPU Systems**

The Supermicro 4U GPU servers are 4U single and dual processor systems, supporting up to 10 FHFL double-width PCIe GPU cards, including the latest NVIDIA H100 and AMD Instinct GPUs. The 4U GPU-optimized systems provide maximum acceleration, flexibility, and balance for AI/deep learning, HPC, and Graphically-intensive workloads.
H13 GRANDTWIN™ SYSTEMS
Leading Multi-node Architecture with Front or Rear I/O

2U 4-node system optimized for single processor per node performance

Configurable up to six 2.5” drive bays supporting NVMe or SATA per node

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

Flexible networking options with AIOM / OCP 3.0 support

Highly Configurable Single Processor System with Front or Rear I/O

GrandTwin™ is an all-new multi-node architecture purpose-built for single-processor performance. The design maximizes compute, memory and efficiency to deliver maximum density. Powered by AMD EPYC™ 9004 Series Processors now with AMD 3D V-Cache™ technology, GrandTwin’s flexible modular design can be easily adapted for a wide range of applications, with the ability to add or remove components as required, reducing cost.

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

Key Applications

- HCI
- HPC
- CDN
- Technical Computing (EDA, CFD, FEA)
- Cloud Computing
- Big Data Analytics
- Scale-Out Storage
H13 HYPER SYSTEMS
Industry Leading IOPS Rackmount Servers with Energy Efficiency and Flexibility

Dual AMD EPYC™ 9004 Series Processors

3 PCIe 5.0 x16 slots (1U), or up to 4 PCIe 5.0 x16 slots/ 8 PCIe 5.0 x8 slots (2U) and CXL 1.1+ support

Up to 2 AIOM networking slots with OCP 3.0 support

Flexible NVMe and SATA hot-swap drive options

Tool-less design for easy deployment and maintenance

Key Applications

• Enterprise Server
• Hyperconverged Storage
• Virtualization
• AI Training/Inferencing
• Big Data Analytics
• Cloud Computing
• CDN
• In-Memory Database

Highest Performance A+ Hyper Servers

The new H13 Hyper series brings next-generation versatility and performance to Supermicro’s range of rackmount servers, built to take on the most demanding workloads along with the storage & I/O flexibility that provide customer fit for a wide range of application needs.

• Uncompromised performance design with 2 CPU sockets and 24 DIMMs optimized for supporting the highest processor TDP

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

• Fast PCIe 5.0 expansion slots for accelerators, AIOM/OCP 3.0 networking, and CXL 1.1+ peripheral support including memory expansion.
**H13 Hyper-U Systems**

Enterprise-Focused Servers delivering Memory Density, Flexibility, and Power Efficiency

Single AMD EPYC™ 9004 Series Processor with up to 128 cores

Up to 12-channel 24 DIMMs (2 DIMMs per channel) for up to 6 TB of DDR5 memory in a single-socket platform

Flexible NVMe, SAS, and SATA3 drive options

Configurable PCIe 5.0 expansion capabilities for GPUs and CXL 1.1+ support

**Key Applications**

- Enterprise Server
- Cloud Computing
- Virtualization
- AI Inference and Machine Learning
- Software-Defined Storage

**Designed for Enterprise and Cloud Native Workloads**

Supermicro H13 Hyper-U series are the ultimate single processor servers that can offer more cores than most 2 socket servers can, ideal for cloud native workloads, such as virtualization and HCI.

The 1U and 2U Hyper-U systems offer high-performance, density, and power efficiency on the latest AMD processors supporting up to 128 cores and up to 12 channels of DDR5 in 24 DIMMs slots. Additionally, the systems have configurable expansion capabilities such as CLX 1.1+ memory expansion devices, and GPU to support AI inferencing and other accelerated workloads.
**H13 CLOUDDC SYSTEMS**
All-in-One Servers with Flexible I/O Options for Cloud-Scale Data Centers

Single AMD EPYC™ 9004 Series Processor

Up to 12 hot-swap NVMe/SATA drives

2 PCIe 5.0 x16 slots (1U) or
up to 4 PCIe 5.0 x16 slots (2U)

Flexible networking options with AIOM/ OCP 3.0 support

Best-in-class serviceability features with tool-less chassis design

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**Cost Optimized Versatile Solutions for Rapid Cloud Deployment and Easy Maintenance**

Ultimate flexibility on I/O and storage with 2 to 4 PCIe 5.0 slots and dual AIOM slots (PCIe 5.0; OCP 3.0 compliant) for maximum data throughput. Supermicro H13 CloudDC systems offer convenient 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.

The H13 CloudDC servers are designed for cost-effective service delivery in cloud computing environments, including Internet infrastructure such as web hosting, email services, public and private cloud computing, and content-delivery networks (CDNs).

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**Key Applications**

- Cloud Computing
- Web Server
- Hyper-converged Storage
- Virtualization, File Servers
- Head-node Computing
- Telcom Security Server
- CDN

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AS -1115CS-TNR

AS -1015CS-TNR

AS -2015CS-TNR
H13 WIO SYSTEMS
Excellent Density and Energy Efficiency for Intelligent Edge

Single AMD EPYC™ 8004 Series Processor
6 DIMM slots; Up to 576GB DDR5-4800
Up to 10 SATA/NVMe/SAS (1U)
Up to 12 SATA/SAS or 6 NVMe and SATA/SAS (2U)
Redundant titanium level power supply
Up to 2 PCIe 5.0 x16 FHFL slots and
1 PCIe 5.0 x16 LP (1U), 2 PCIe 5.0 x8 LP (2U)

AS-1115SV-WTNRT

Cost and Energy Efficient for Intelligent Edge and Data Center Application

The Supermicro WIO systems are energy-efficient single socket (SP6) servers that lower the operating costs for data center, enterprise edge, cloud computing and network security applications. The Supermicro WIO with AMD EPYC™ 8004 series processor are designed for impressive performance balanced with cost, power, and flexible I/O options.

Key Applications
- Cloud Services
- Enterprise Edge
- Virtualization
- Database Storage
- Web Server
- DNS and Gateway Server
NEBS Compliant Design Optimized for Edge and Telco Application

The short-depth front I/O system is a compact form factor solutions quieter than traditional servers, ideal for Telco and Edge deployments with space and thermal limitations. Powered by AMD EPYC 8004 series processor supporting operating temperatures of up to 40–55°, depending on the processor core count. The new systems use Platinum power supplies for increased energy efficiency, resulting in higher performance per watt. The H13 Short depth front I/O system offers AC and DC options and features NEBS compliant design required for telco related operations.

Key Applications

- Virtualization
- Edge Cloud AI Computing
- vRAN/O-RAN/NEBS environment
- Telco 5G
- CDN/vCDN/Cloud CDN
H13 MicroCloud System
High Density Multi-Node System for Cloud and Dedicated Hosting

8 nodes in 3U system
Supporting single AMD Ryzen™ 7000 series processor per node
Up to 128GB ECC/non ECC UDIMM; DDR5 5200MHz, in 4 DIMM sockets per node
Single 8-lane PCIe 5.0 low profile slot per node (can be used for GPU accelerator)
8 sets of 2 front NVMe U.2/ SAS/ SATA3 drives w/ optional kits

3U 8-Nodes Flexible Architecture for Dedicated Hosting
Supermicro H13 MicroCloud is a 3U, multi-node server powered by AMD Ryzen™ 7000 series processors with 8 single-processor nodes delivering excellent density and power efficiency.

The MicroCloud system is designed for applications that require large numbers of discrete servers, offering 8 nodes containing up to two front-accessible NVMe U.2, as well as a single 8 lane PCIe 5.0 low profile slot that can be used for GPU accelerators for Web Hosting, Cloud Gaming, Content Creation, and Virtual Private Servers.

Key Applications
- Cloud Computing
- Web Cache, CDN, Video Streaming
- Web Colocation Services
- Social Networking Downloads
- Corporate - WINS, DNS, Print, Login
H13 MAINSTREAM 1U SYSTEM
Powerful and Economical Server for SMB

Supporting single AMD Ryzen 7000 series processor
Cost-Optimized for SMB
Up to 192GB DDR5 5200MHz
1x PCIe 5.0 x16 (FHHL) slot
668W Platinum certified power supply

AS-1015A-MT

Ryzen™ 7000 powered server for Web Hosting and SMB applications
Supermicro H13 1U system offers versatile storage options with 2 PCIe Gen5 M.2 slots and flexible configurations, effortlessly adapting to your growing business needs. This economical server is designed for small and medium businesses, remote offices, and branch offices, delivering unparalleled performance

Key Applications
• Cloud Computing
• Web Hosting, CDN, Video Streaming
• SMB Application
• Email/ Firewall/ Application Server
H13 MINI TOWER SYSTEM
Flexible Tower Workstation Optimized for Content Creation

Single AMD Ryzen 7000 series processor
4x DIMM up to 128GB, 4x 32GB DRAM
Up to 192GB DDR5-5200 memory
2x PCIe 5.0 x16 Slots (x16/NA or x8/x8)
668W Platinum level shared power supplies

Versatile Workstation Solutions for Content Creation and Entry Level Server Applications

Designed with versatility in mind, the latest mini-tower system based on AMD Ryzen 7000 series processor offers versatile storage options with 2 PCIe Gen5 M.2 slots and a flexible configuration, ensuring it seamlessly adapts to your evolving business requirements.

With remote management features via IPMI, this system can be deployed as an entry level server, workstation or as a desktop. No more settling for one-size-fits-all solutions - this system is ready to be tailored to elevate your IT infrastructure.

Key Applications
- 2D/3D Content Creation
- SMB Application
- Email/ Firewall/ Application Server
H13 All-Flash EDSFF System
All-Flash EDSFF Petascale for Software-Defined Data Center Workloads

Single 4th Generation AMD EPYC 9004 Scalable processor
24 DIMMs slots; up to 6TB DDR5 4800MHz
Two PCIe 5.0 x16 FHHL Slots, two PCIe 5.0 x16 AIOM Slots (OCP 3.0 SFF compliant)
16 hot-swap EDSFF E3.S (7.5mm) NVMe drive bays
Optional configuration supports 8 E3.S drives and 4 CXL devices in E3.S 2T form factor for memory expansion in 1U

Extreme Density, High-Performance All-Flash Servers
Supermicro H13 All-Flash NVMe storage systems powered by AMD EPYC 9004 series processors are designed with the latest EDSFF and CXL technologies allowing unprecedented capacity and performance to enable today’s data hungry workloads supporting latest software-defined storage and NVMe over fabrics solutions, as well as in-memory databases.

The new all-flash petascale servers take advantage of 128 PCIe 5.0 lanes, supporting up to 32 E3.S (x2) in 2U, and 16 E3.S drives (x4) in 1U, or configured with 8 E3.S (x4) drives and 4 CXL devices in E3.S 2T (x8) form factor allowing memory expansion.

Key Applications
- Software-Defined Storage
- Data Intensive HPC
- Private and Hybrid Cloud
- NVMe Over Fabrics Solution
- In-Memory Computing
H12 Universal GPU System
Modular Platform for HPC Applications and Advanced Data Center AI Infrastructure

- Dual AMD EPYC™ 7003 series processors
- Supports the new AMD Instinct MI250 OAM Accelerator
- 32 DIMM slots per node supporting DDR4-3200MHz
- Flexible Storage configuration with 10 hot-swap 2.5” U.2 NVMe drives
- 4U with optional 1U extension for a 5U system providing PCIe slots expansion with Supermicro AIOM support.
- Supports next-generation GPUs in a variety of form factors
- Universal GPU server OCP standards-based design
- Modular design for flexibility/future-proofing
- Optimized thermal capability for 500W/700W GPUs

Key Applications
- AI/ML
- HPC
- Vertical Markets (thermal modeling and other parallel-processing intensive tasks)
- Big Data Analytics

Open, Modular, Standards Based Universal GPU System
Supermicro A+ Universal GPU systems are open, modular, standards-based servers which provide superior performance and serviceability with dual AMD EPYC™ 7003 series processors, supporting AMD Instinct MI250 OAM Accelerator and various GPU and accelerator form factors, and featuring a hot-swappable, tool-less design. The system’s “future proofed” design allows to standardize on one GPU platforms with multiple configurations for all data center needs with optimized thermal management.
H12 Twin Systems
Leading Multi-node Architectures

Highly configurable 2U 4-node systems
2-socket with 16 DIMMs or
1-socket with 8 DIMMs per node
Flexible storage and I/O options including NVMe/SATA3 and SIOM networking

NO-COMPROMISE 2U 4-NODE ARCHITECTURE

BigTwin is the 5th generation in the Supermicro® Twin Family with a multitude of innovations and engineering breakthroughs.

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

With AMD EPYC™ 7003 Series Processors with AMD 3D V-Cache™ Technology, customers in high-end enterprise, data center, HPC and Cloud Computing environments receive the greatest competitive advantage from data center resources with the Supermicro® TwinPro.

Key Applications
- HCI
- HPC
- CDN
- 5G UPF
- Technical Computing (EDA, CFD, FEA)
- Cloud Computing
- Big Data Analytics
- Back-up and Recovery
- Scale-Out Storage
H12 ULTRA SYSTEMS
Industry Leading IOPS, Energy Efficiency, and Flexibility

Optimized for highest processor TDPs
Up to 24x Hybrid NVMe/SAS/SATA drive bays
Up to 3 double width GPUs

HIGHEST PERFORMANCE A+ ULTRA SERVERS
Supermicro® A+ 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 dual AMD EPYC™ 7003/7002 Series Processors* and 32 DIMMs of DDR4-3200MHz memory for up to 8TB of capacity.

- 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
- Vast networking and expansion possibilities with Ultra Riser cards

Key Applications
- Enterprise Server
- Hyperconverged Storage
- Virtualization
- AI Training/Inferencing
- Big Data Analytics
- Cloud Computing
- CDN
- In-Memory Database

* AMD EPYC™ 7003 Series Processor with AMD 3D V-Cache™ Technology requires BIOS version 2.3 or newer.
**H12 FatTwin®**  
Advanced 4U Twin Architecture with 8 and 4 Nodes

Highly modular multi-node (4U 8-Node or 4U 4-Node) systems with tool-less design and independent backplanes built-in per node to eliminate a single point of failure  

Front or Rear I/O accessible service design depending on data center environments  

All-hybrid drive bays  
- NVMe, SAS, or SATA

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**FRONT OR REAR I/O TWIN ARCHITECTURE TO MAXIMIZE SERVICEABILITY AND RELIABILITY**

The innovative FatTwin architecture provides flexibility and system accessibility for unique datacenter requirements with front or rear I/O, as well as electrically isolated, modularized left/right nodes with redundant power supplies for maximum reliability.

- Single AMD EPYC™ 7003/7002 Series Processor* (TDP up to 280W) per node  
- Flexible AIOM networking  
- Electrically isolated Redundant Titanium Level power supplies per side (2 left, 2 right)

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**Key Applications**

- Hyperscale / Hyperconverged  
- HPC and Big Data  
- Data Center Enterprise Applications  
- Scale Out Storage  
- Telco Data Center & Virtualization Server
SuperBlade with AMD EPYC™ 7003 Series Processors with AMD 3D V-Cache is an ideal choice for modern technical computing workloads including EDA. The system can contain up to 20 CPUs in an 8U chassis, including a network switch built into the chassis. 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 datacenters, such as free-air cooling, power efficiency, node density and networking management.

* AMD EPYC™ 7003 Series Processor with AMD 3D V-Cache™ Technology requires BIOS version 2.3 or newer.
Cost AND ENERGY EFFICIENCY FOR DATA CENTER ENVIRONMENTS

Supermicro® A+ 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, A+ WIO servers also provide attractive cost advantages and investment protection.

Key Applications

- Enterprise Mission-critical Applications
- Data Center Cloud Computing
- Virtualization
- Big Data
- Financial Analysis
A+ SERVER SOLUTIONS - DECEMBER 2023

H12 MAINSTREAM & TOWER
Versatile Entry Level and Volume Servers for Enterprise Server Applications

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

Choices of multiple form factors including rackmount, short-depth rackmount and tower

A rich selection of storage options, AOCs, CPU TDP and memory speed support

MAINSTREAM APPLICATION OPTIMIZED
The A+ H12 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
## H13 GPU-Optimized

*For Complete System Only*

### 8U8-GPU System

<table>
<thead>
<tr>
<th>MODEL</th>
<th>AS-8125GS-TNMR2</th>
<th>AS-8125GS-TNHR</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Processor Support</strong></td>
<td>AMD EPYC™ 9004 Series Processor Dual Socket (Socket SP5) supported TDP up to 400W</td>
<td>AMD EPYC™ 9004 Series Processors Dual Socket (Socket SP5)</td>
</tr>
</tbody>
</table>
| **Key Applications** | • Generative AI  
• Deep Learning  
• High Performance Computing | • AI/Deep Learning Training  
• High Performance Computing |
| **Outstanding Features** | • High density 8U system with AMD Instinct MI300X accelerators  
• 8 NIC for GPU direct RDMA (1:1 GPU Ratio)  
• 8 NVMe for GPU direct storage  
• 2 M.2 NVMe for boot drive | • High density 8U system with NVIDIA® HGX™ H100 8-GPU  
• Highest performance GPU communication using NVIDIA® NVLink™ + NVIDIA® NVSwitch™  
• 8 NIC for GPU direct RDMA (1:1 GPU Ratio)  
• 8 NVMe for GPU direct storage  
• 1 M.2 NVMe for boot drive |
| **Serverboard** | SUPER® H13DSG-OM | SUPER® H13DSG-O-CPU-D |
| **Chipset** | System on chip | System on Chip |
| **System Memory (Max.)** | System on chip | Up to 6TB 3DS ECC RDIMM DDR5-4800 MHz in 24 DIMMs |
| **Expansion Slots** | 8 PCIe 5.0 x16 LP, and up to 4 FHFL PCIe 5.0 x16 Slots | 8 PCIe 5.0 x16 LP, 2 FHFL PCIe 5.0 x16 Slots |
| **Onboard Storage Controller** | AMD SP5 | AMD SP5 |
| **Connectivity** | Optional FHFL x16 NIC for node management | Optional FHFL x16 NIC for node management |
| **VGA/Audio** | 1 VGA port | 1 VGA port |
| **Management** | IPMI 2.0; KVM with dedicated LAN; NMI; OOB Management Package (SFT-OOB-LIC); Redfish API; SPM; SSM; SUM; SuperDoctor® 5; Watch Dog | IPMI 2.0; KVM with dedicated LAN; NMI; OOB Management Package (SFT-OOB-LIC); Redfish API; SPM; SSM; SUM; SuperDoctor® 5; Watch Dog |
| **Drive Bays** | 16x 2.5" hot-swap NVMe drive bays (2x 2.5" SATA) | 14x 2.5" hot-swap NVMe/SATA drive bays (12x 2.5" NVMe, 2x 2.5" SATA) |
| **Power Supply** | Redundant 9000W Titanium level (96%) with option to increase to 12KW redundant power | Redundant 9000W Titanium level (96%) with option to increase to 12KW redundant power |
| **Cooling System** | 10 heavy duty fan(s) | 10 heavy duty fan(s) |
| **Form Factor** | 8U Rackmount  
Enclosure: 437 x 355.6 x 843.28mm (17.2” x 14” x 33.2”)  
Package: 698 x 750 x 1300mm (27.5” x 29.5” x 51.2”) | 8U Rackmount  
Enclosure: 437 x 355.6 x 843.28mm (17.2” x 14” x 33.2”)  
Package: 698 x 750 x 1300mm (27.5” x 29.5” x 51.2”) |
## H13 GPU-Optimized
*(For Complete System Only)*

### 4U Quad APU System

### 2U Quad APU System

<table>
<thead>
<tr>
<th>Model</th>
<th>AS-4145GH-TNMR</th>
<th>AS-2145GH-TNMR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Processor Support</td>
<td>AMD Instinct™ MI300A Accelerated Processing Units (APUs) Quad Socket (Socket SH5) supported</td>
<td>AMD Instinct™ MI300A Accelerated Processing Units (APUs) Quad Socket (Socket SH5) supported</td>
</tr>
<tr>
<td>Key Applications</td>
<td>• Research Lab • High Performance Compute (HPC) • Cloud Solution Provider (CSP) • Large Language Model (LLM) • Artificial Intelligence (AI)</td>
<td>• Research Lab • High Performance Compute (HPC) • Cloud Solution Provider (CSP) • Large Language Model (LLM) • Artificial Intelligence (AI)</td>
</tr>
<tr>
<td>Outstanding Features</td>
<td>• Unified memory and caches across CPU &amp; GPU maximizes performance • Optimized 4-Way Server</td>
<td>• Unified memory and caches across CPU &amp; GPU maximizes performance • Optimized 4-Way Server</td>
</tr>
<tr>
<td>Serverboard</td>
<td>SUPER® H13QSH</td>
<td>SUPER® H13QSH</td>
</tr>
<tr>
<td>Chipset</td>
<td>AMD SH5</td>
<td>AMD SH5</td>
</tr>
<tr>
<td>System Memory (Max.)</td>
<td>Up to 512GB: Onboard HBM3 (128GB per APU)</td>
<td>Up to 512GB: Onboard HBM3 (128GB per APU)</td>
</tr>
<tr>
<td>Expansion Slots</td>
<td>4 PCIe 5.0 x16 FHHL slot(s) 2 PCIe 5.0 x16 AIOM slot(s)</td>
<td>6 PCIe 5.0 x16 FHHL slot(s) 2 PCIe 5.0 x16 AIOM slot(s) If Slot 1<del>8 are configured as PCIe x8, Slot9</del>16 can be enabled</td>
</tr>
<tr>
<td>Onboard Storage Controller</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Connectivity</td>
<td>via AIOM</td>
<td>via AIOM</td>
</tr>
<tr>
<td>VGA/Audio</td>
<td>1 VGA port 1 Display Port</td>
<td>1 VGA port 1 Display Port</td>
</tr>
<tr>
<td>Management</td>
<td>IPMI 2.0; KVM with dedicated LAN; NMI; OOB Management Package (SFT-OOB-LIC ); Redfish API; SPM; SSM; SUM; SuperDoctor® 5</td>
<td>IPMI 2.0; KVM with dedicated LAN; NMI; OOB Management Package (SFT-OOB-LIC ); Redfish API; SPM; SSM; SUM; SuperDoctor® 5</td>
</tr>
<tr>
<td>Drive Bays</td>
<td>24x 2.5&quot; hot-swap NVMe/SAS3/SATA3 drive bays; 24x 2.5&quot; NVMe hybrid;</td>
<td>8x 2.5&quot; hot-swap NVMe/SAS3/SATA3 drive bays;</td>
</tr>
<tr>
<td>Peripheral Bays</td>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td>Power Supply</td>
<td>2+ 2 redundant 1600W hot-swappable Titanium-Level power supplies</td>
<td>2+ 2 redundant 1600W hot-swappable Titanium-Level power supplies</td>
</tr>
<tr>
<td>Cooling System</td>
<td>10x 8cm heavy duty fan(s)</td>
<td>3x 8cm heavy duty fan(s)</td>
</tr>
<tr>
<td>Form Factor</td>
<td>4U Rackmount Enclosure: 440.9 x 177 x 800mm (17.3&quot; x 6.96&quot; x 31.5&quot;) Package: 720 x 435 x 1080mm (28.34&quot; x 17.12&quot; x 42.3&quot;)</td>
<td>2U Rackmount Enclosure: 438.4 x 87.9 x 812.9mm (17.3&quot; x 3.5&quot; x 32&quot;) Package: 672 x 250 x 1100mm (26.5&quot; x 9.75&quot; x 43.5&quot;)</td>
</tr>
<tr>
<td>MODEL</td>
<td>AS -4125GS-TNRT</td>
<td>AS -4125GS-TNRT1</td>
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<tr>
<td>-------</td>
<td>----------------</td>
<td>----------------</td>
</tr>
<tr>
<td>Processor Support</td>
<td>AMD EPYC™ 9004 Series Processors Dual Socket (Socket SP5)</td>
<td>AMD EPYC™ 9004 Series Processors Single Socket (Socket SP5)</td>
</tr>
<tr>
<td>Key Applications</td>
<td>• AI/Deep Learning • High Performance Computing (HPC) • Rendering/VDI • Molecular Dynamics Simulation</td>
<td>• AI/Deep Learning • High Performance Computing (HPC) • Rendering/VDI • Molecular Dynamics Simulation</td>
</tr>
<tr>
<td>Outstanding Features</td>
<td>• Drive configurations for 2x 2.5&quot; hot-swap SATA and up to 4x 2.5&quot; hot-swap NVMe bays • Up to 10 PCIe 5.0 slots for up to 8 direct-attached double-width, full length, enterprise-level GPUs • Flexible GPU support: active and passive GPUs • Dual onboard 10GbE ports with up to 1 AIOM/OCP 3.0 slot • 1 M.2 slot onboard • 8 hot-swap cooling fans</td>
<td>• Drive configurations for 2x 2.5&quot; hot-swap SATA and up to 8x 2.5&quot; hot-swap NVMe bays • Single root architecture with PCIe switch for up to 10 double width, full length enterprise-level GPUs • Flexible GPU support: active and passive GPUs • Dual onboard 10GbE ports with up to 1 AIOM/OCP 3.0 slot • 1 M.2 slot onboard • 8 hot-swap cooling fans</td>
</tr>
<tr>
<td>Serverboard</td>
<td>SUPER® H13DSG-O-CPU</td>
<td>SUPER® H13DSG-O-CPU</td>
</tr>
<tr>
<td>Chipset</td>
<td>System on Chip</td>
<td>System on Chip</td>
</tr>
<tr>
<td>System Memory (Max.)</td>
<td>Up to 6TB 3DS ECC RDIMM DDR5-4800 MHz in 24 DIMMs</td>
<td>Up to 6TB 3DS ECC RDIMM DDR5-4800 MHz in 24 DIMMs</td>
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<tr>
<td>Expansion Slots</td>
<td>9 PCIe 5.0 X16 Slots</td>
<td>12 PCIe 5.0 X16 Slots</td>
</tr>
<tr>
<td>Onboard Storage Controller</td>
<td>AMD SPS</td>
<td>AMD SPS</td>
</tr>
<tr>
<td>Connectivity</td>
<td>2x 10GbE RJ45 port(s) with Intel® Ethernet Controller X710</td>
<td>2x 10GbE RJ45 port(s) with Intel® Ethernet Controller X710</td>
</tr>
<tr>
<td>VGA/Audio</td>
<td>1 VGA port</td>
<td>1 VGA port</td>
</tr>
<tr>
<td>Management</td>
<td>IPMI 2.0; KVM with dedicated LAN; NMI; OOB Management Package (SFT-OOB-LIC); Redfish API; SPM; SSM; SuperDoctor® 5; Watch Dog</td>
<td>IPMI 2.0; KVM with dedicated LAN; NMI; OOB Management Package (SFT-OOB-LIC); Redfish API; SPM; SSM; SuperDoctor® 5; Watch Dog</td>
</tr>
<tr>
<td>Drive Bays</td>
<td>24x 2.5&quot; hot-swap drive bays (up to 4x 2.5&quot; NVMe dedicated)</td>
<td>24x 2.5&quot; hot-swap drive bays (up to 8x 2.5&quot; NVMe dedicated)</td>
</tr>
<tr>
<td>Power Supply</td>
<td>Redundant 4000W Titanium level (96%)</td>
<td>Redundant 4000W Titanium level (96%)</td>
</tr>
<tr>
<td>Cooling System</td>
<td>8 heavy duty fan(s)</td>
<td>8 heavy duty fan(s)</td>
</tr>
<tr>
<td>Form Factor</td>
<td>4U Rackmount Enclosure: 437 x 178 x 737mm (17.2&quot; x 7&quot; x 29&quot;) Package: (27&quot; x 26.57&quot; x 41&quot;)</td>
<td>4U Rackmount Enclosure: 437 x 178 x 737mm (17.2&quot; x 7&quot; x 29&quot;) Package: (27&quot; x 26.57&quot; x 41&quot;)</td>
</tr>
</tbody>
</table>

H13 GPU-OPTIMIZED (For Complete System Only)

4U 8-GPU with PCIe
4U 10-GPU with PCIe
4U 10-GPU with PCIe
**H12 GPU-Optimized**  
*(For Complete System Only)*

### 4U 8-GPU with PCIe
- Processor Support: Dual AMD EPYC™ 7003/7002 Series Processors
- Key Applications: HPC, AI/ML, Cloud Gaming, Research & Academia
- Outstanding Features: 160 PCIe lanes, 8 direct attached GPUs, PCIe-4.0, Flexible architecture, AIOM support
- Serverboard: SUPER® H12DSG-O-CPU
- System Memory: Up to 8TB ECC DDR4 3200MHz SDRAM in 32 DIMMs
- Expansion Slots: 9 PCIe 4.0 x16 (Option: 10 PCIe 4.0 x16 slots without NVMe devices)
- Onboard Storage Controller: 2x 2.5" SATA in RAID 1 via onboard Marvell 9230
- Drive Bays: Up to 24x 2.5" SAS/SATA drive bays
- Power Supply: 2000W (2x2) Redundant Titanium Level (96%+) power supplies
- Cooling System: 8x hot-swap heavy duty PWM fans
- Form Factor: 4U Rackmount 178 x 437 x 737mm (7.0" x 17.2" x 29")

### 2U 2-Node, 4-GPU with PCIe
- Processor Support: Single AMD EPYC™ 7003/7002 Series Processor
- Key Applications: Cloud Gaming, Media/Video Streaming Gaming, AI Inference and Machine Learning
- Outstanding Features: 4 NVMe for GPUDirect Storage, Up to 8 DIMMs per node, M.2 Support, Supports 6 PCIe and 1 Mezzanine card
- Serverboard: SUPER® H12SSG-AN6
- System Memory: Up to 2TB ECC DDR4 3200MHz SDRAM in 8 DIMMs
- Expansion Slots: 6 PCIe 4.0 x16 (4 Internal and 2 external); 1 AIOM card support; 2 M.2 PCIe 4.0 x4 slots 2280/22110; M-key
- Onboard Storage Controller: AMD SP3
- Drive Bays: 2 Front Hot-swap U.2 NVMe Gen4 drive bays per node
- Power Supply: Four 2200W high-efficiency Platinum Level power supplies
- Cooling System: 4x hot-swap heavy duty PWM fans
- Form Factor: 2U Rackmount 447 x 88 x 760mm (17.6" x 3.47" x 29.9")

### 4U 8-GPU with HGX
- Processor Support: Dual AMD EPYC™ 7003/7002 Series Processors
- Key Applications: AI Compute / Model Training / Deep Learning, HPC, System for All AI Workload, Highest 8 GPU communication using NVIDIA NVLink and NVSwitch
- Outstanding Features: Up to 8 NVMe for GPUDirect RDMA (1:1 GPU Ratio)
- Serverboard: SUPER® H12DGO-6
- System Memory: Up to 8TB ECC DDR4 3200MHz SDRAM in 32 DIMMs
- Expansion Slots: 8 PCIe 4.0 x16 (LP) slots from PCIe Switch; 1 PCIe 4.0 x8 (LP) slot
- Onboard Storage Controller: SATA3, PCLE 4.0 U.2 NVMe and PCLE 4.0 M.2 NVMe
- Drive Bays: 6x hot-swap 2.5" drive bays (SATA/ NVMe Hybrid or SAS with optional backplane)
- Power Supply: Two 2200W high-efficiency Platinum Level power supplies
- Cooling System: 4x hot-swap heavy duty PWM fans
- Form Factor: 4U Rackmount 446 x 174 x 900mm (17.6" x 6.9" x 35.4")

### 2U 4-GPU with HGX
- Processor Support: Dual AMD EPYC™ 7003/7002 Series Processors
- Key Applications: AI Compute / Model Training / Deep Learning, HPC, High-density 2U with 4 GPU-peer-to-peer communication
- Outstanding Features: 4 NICs for GPUDirect RDMA (1:1 GPU Ratio)
- Serverboard: SUPER® H12DSG-Q-CPU6
- System Memory: Up to 8TB ECC DDR4 3200MHz SDRAM in 32 DIMMs
- Expansion Slots: 4 PCIe 4.0 x16 (LP) slots; 1 PCIe 4.0 x8 (LP) slot
- Onboard Storage Controller: SATA/NVMe Hybrid or SAS with optional HBA
- Drive Bays: 4x hot-swap 2.5" drive bays (SATA/ NVMe Hybrid or SAS with optional backplane)
- Power Supply: Two 2200W high-efficiency Platinum Level power supplies
- Cooling System: 4x hot-swap heavy duty PWM fans
- Form Factor: 2U Rackmount 437 x 89 x 823mm (17.2" x 3.5" x 32.4")

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* AMD EPYC™ 7003 Series Processor with AMD 3D V-Cache™ Technology requires BIOS version 2.3 or newer.
** Can be sold as barebone system.
## H13 GrandTwin™
(For Complete System Only)

### 2U 4-Node Rear I/O

### 2U 4-Node Front I/O

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### MODEL | AS-2115GT-HNTR | AS-2115GT-HNTF
--- | --- | ---
**Processor Support** | AMD EPYC™ 9004 Series Processors Single Socket (Socket SP5) | AMD EPYC™ 9004 Series Processors Single Socket (Socket SP5)
**Key Applications** | • HPC  
• Mission Critical Web Applications  
• EDA (Electric Design Automation)  
• Telco Edge Cloud  
• High-availability Cache Cluster  
• Multi-Purpose CDN  
• MEC (Multi-Access Edge Computing)  
• Cloud Gaming | • HPC  
• Mission Critical Web Applications  
• EDA (Electric Design Automation)  
• Telco Edge Cloud  
• High-availability Cache Cluster  
• Multi-Purpose CDN  
• MEC (Multi-Access Edge Computing)  
• Cloud Gaming
**Outstanding Features** | • Up to 6 2.5” hot-swap NVMe/SATA drives per node  
• 2x AIOM / OCP 3.0 slots per node  
• 2x M.2 NVMe/SATA slots per node  
• Front access node trays for easy serviceability and maintenance | • Up to 6 2.5” hot-swap NVMe/SATA drives per node  
• 2x AIOM / OCP 3.0 slots per node  
• 2x M.2 NVMe/SATA slots per node  
• Front access node trays for easy serviceability and maintenance
**Serverboard** | SUPER® H13SST-G | SUPER® H13SST-G
**Chipset** | System on Chip | System on Chip
**System Memory (Max.)** | Up to 3TB 3DS ECC RDIMM DDR5-4800MHz in 12 DIMMs | Up to 3TB 3DS ECC RDIMM DDR5-4800MHz in 12 DIMMs
**Expansion Slots** | 2 AIOM/OCP 3.0 slots per node | 1 PCIe 4.0 x16 LP slot optional, internal only
**Onboard Storage Controller** | AMD SP5 | AMD SP5
**Connectivity** | via AIOM and onboard dedicated BMC port | via AIOM and GrandTwin I/O Module
**VGA/Audio** | 1 VGA port | 1 VGA port
**Management** | SuperCloud Composer; SuperDoctor® 5 (SDS); Supermicro Diagnostics Offline (SDO); Supermicro Intelligent Mgmt (BMC Resources); Supermicro IPMI Utilities; Supermicro Power Manager (SPM); Supermicro Server Manager (SSM); Supermicro Server Mgmt (Redfish® API); Supermicro Thin-Agent Service (TAS); Supermicro Update Manager (SUM) | SuperCloud Composer; SuperDoctor® 5 (SDS); Supermicro Diagnostics Offline (SDO); Supermicro Intelligent Mgmt (BMC Resources); Supermicro IPMI Utilities; Supermicro Power Manager (SPM); Supermicro Server Manager (SSM); Supermicro Server Mgmt (Redfish® API); Supermicro Thin-Agent Service (TAS); Supermicro Update Manager (SUM)
**Drive Bays** | 6x 2.5” hot-swap NVMe/SATA drive bays | 4x 2.5” hot-swap NVMe/SATA drive bays
**Power Supply** | Redundant 2200W Titanium level (96%) | Redundant 2200W Titanium level (96%)
**Cooling System** | 2x 8cm heavy duty fans | 2x 8cm heavy duty fans
**Form Factor** | 2U Rackmount  
Enclosure: 449 x 88 x 711.2mm (17.67” x 3.46” x 28”)  
Package: 626 x 248 x 1150mm (24.65” x 9.76” x 45.28”) | 2U Rackmount  
Enclosure: 449 x 88 x 711.2mm (17.67” x 3.46” x 28”)  
Package: 626 x 248 x 1150mm (24.65” x 9.76” x 45.28”)

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**A+ Server Solutions - December 2023**

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## H13 MicroCloud
*(For Complete System Only)*

### Processor Support
- **AS-3015MR-H8TNR**: AMD Ryzen™ Zen4 7000 series Processors Single Socket LGA-1718 (Socket AM5) supported TDP up to 170W
- **AS-1015A-MT**: AMD Ryzen™ 7000 Series Processors Single Socket supported TDP up to 170W
- **AS-3015A-I**: Zen4 Gen AMD Ryzen™ 7000 series processors Single Socket supported TDP up to 170W

### Key Applications
- **AS-3015MR-H8TNR**: Designed for small and medium businesses Email/Firewall/Application Server Web/Hosting Application
- **AS-1015A-MT**: Designed for small and medium businesses Email/Firewall/Application Server 2D/3D Content Creation
- **AS-3015A-I**: Designed for small and medium businesses Email/Firewall/Application Server

### Outstanding Features
- **AS-3015MR-H8TNR**: Up to 8x hot-pluggable node in 3U chassis UID LED Hot-swappable SAS/SATA3 (Limited Support) HDDs 1+1 Redundant 2200W Titanium Level high-efficiency power supplies 1 PCIe 5.0 (x8) Low-profile expansion slot per node
- **AS-1015A-MT**: Remote management via IPMI with dedicated IPMI LAN port

### Serverboard
- **AS-3015MR-H8TNR**: SUPER® H13SRD-F
- **AS-1015A-MT**: SUPER® H13SAE-MF
- **AS-3015A-I**: SUPER® H13SAE-MF

### Chipset
- **AS-3015MR-H8TNR**: AMD Knoll - Integrated I/O Controller Hub
- **AS-1015A-MT**: AMD B650
- **AS-3015A-I**: AMD B650

### System Memory (Max.)
- **AS-3015MR-H8TNR**: 4 DIMM slots Up to 128 ECC UDIMM, DDR5-5200MHz
- **AS-1015A-MT**: 4 DIMM slots Up to 128GB: 4x 32 GB DRAM
- **AS-3015A-I**: 4 DIMM slots Up to 128GB: 4x 32 GB DRAM

### Expansion Slots
- **AS-3015MR-H8TNR**: PCIe 5.0 x16 LP slot(s) PCIe 5.0 x8 MLP slot(s)
- **AS-1015A-MT**: PCIe 5.0 x16 slot(s)
- **AS-3015A-I**: 2 PCIe 5.0 x16 slot(s)

### Onboard Storage Controller
- **AS-3015MR-H8TNR**: AMD AM5
- **AS-1015A-MT**: AMD AM5
- **AS-3015A-I**: AMD AM5

### Connectivity
- **AS-3015MR-H8TNR**: 1x 1GbE RJ45 port(s) with Realtek RTL8211F PHY (dedicated IPMI) <br> 2x 1GbE RJ45 port(s) with Intel® Ethernet Controller I210-AT
- **AS-1015A-MT**: 1x 1GbE RJ45 port(s) with Realtek RTL8211F PHY (dedicated IPMI) <br> 2x 1GbE RJ45 port(s) with Intel® Ethernet Controller I210-AT

### VGA/Audio
- **AS-3015MR-H8TNR**: 1 VGA port
- **AS-1015A-MT**: 1 VGA port
- **AS-3015A-I**: 1 VGA port

### Management
- **AS-3015MR-H8TNR**: Intel Node Manager; IPMI 2.0; KVM with dedicated LAN; SPM; SSM; SUM; SuperDoctor® 5; Watch Dog
- **AS-1015A-MT**: 1x 3.5" SATA drive bays; 4x 3.5" SATA drive bays;
- **AS-3015A-I**: 1x 3.5" SATA drive bays; 4x 3.5" SATA drive bays;

### Drive Bays
- **AS-3015MR-H8TNR**: 4x 8cm heavy duty fan(s)
- **AS-1015A-MT**: 6x 40mmcm heavy duty fan(s)
- **AS-3015A-I**: 2x 9cm heavy duty fan(s)

### Power Supply
- **AS-3015MR-H8TNR**: Redundant 2200W Titanium level (80%)
- **AS-1015A-MT**: 500WW Platinum level (93%)
- **AS-3015A-I**: 668WW Platinum level (92%)

### Cooling System
- **AS-3015MR-H8TNR**: 3U Rackmount Enclosure: 438 x 132 x 589mm (17.26" x 5.21" x 23.2") Package: 667 x 295.91 x 863.6mm (26.26" x 11.65" x 34")
- **AS-1015A-MT**: 1U Rackmount Enclosure: 437 x 43 x 429mm (17.2" x 1.7" x 16.9") Package: 686 x 203 x 610mm (27" x 8" x 24")
- **AS-3015A-I**: Mini-Tower Rackmount Enclosure: 184 x 362 x 425mm (7.25" x 14.25" x 16.75") Package: 279 x 508 x 533mm (11" x 20" x 21")
### H12 Twin Systems

#### TwinPro® - 2U 4 UP Nodes

- **Model**: AS-2014TP-HTR
- **Processor Support**: Single AMD EPYC™ 7003/7002 Series Processor*
- **Key Applications**: • Hyperscale and Hyperconverged Solutions • Compute Intensive Application • Enterprise Server • Data Center • HPC
- **Outstanding Features**: • Up to 3 3.5" SATA drives per node • Up to 8 DIMMs per node • Flexible SIOM options • M.2 support • 2 PCIe add-on cards per node
- **Serverboard**: SUPER® H12SST-PS
- **System Memory (Max.)**: Up to 2TB ECC 3DS LRDIMM, up to DDR4-3200MHz; 8 DIMM slots
- **Expansion Slots**: 2 PCIe 4.0 x16 (LP) 1 SIOM card support 4 M.2 SATA/PCIe slots 22110/2280/2260/2242 M-key
- **Onboard Storage Controller**: SATA3
- **Connectivity**: SIOM Network Card For Flexible Networking Options (not included, must add 1 per node)
- **VGA/Audio**: Aspeed AST2500 BMC
- **Management**: IPMI2.0; KVM with dedicated LAN; SPM; SSM; SUM; SuperDoctor® 5; Watchdog
- **Drive Bays**: 3 Hot-swap 3.5" SATA drive bays per node
- **Power Supply**: Redundant 2000W Titanium Level (96%) (Full redundancy based on configuration and application load)
- **Cooling System**: 4x 80mm heavy duty PWM fans
- **Form Factor**: 2U (4-Node) Rackmount 438 x 88 x 724mm (17.25" x 3.47" x 28.5")

#### BigTwin® - 2U 4 DP Nodes

- **Model**: AS-2124BT-HNTR**
- **Processor Support**: Dual AMD EPYC™ 7003/7002 Series Processors
- **Key Applications**: • Hyperscale and Hyperconverged Solutions • Compute Intensive Application • Enterprise Server • Data Center • HPC
- **Outstanding Features**: • Up to 6 2.5" drives per node (4 NVMe + 2 SATA) or (6 SATA) • Up to 16 DIMMs per node • Flexible SIOM options • M.2 support • 2 PCIe add-on cards per node
- **Serverboard**: SUPER® H12DST-B
- **System Memory (Max.)**: Up to 4TB ECC 3DS LRDIMM, up to DDR4-3200MHz; 16 DIMM slots
- **Expansion Slots**: 2 PCIe 4.0 x16 (LP) 1 SIOM card support 1 M.2 SATA/PCIe slot 2280/2210 M-key
- **Onboard Storage Controller**: NVMe and SATA3
- **Connectivity**: SIOM Network Card For Flexible Networking Options (not included, must add 1 per node)
- **VGA/Audio**: Aspeed AST2500 BMC
- **Management**: IPMI2.0; KVM with dedicated LAN; SPM; SSM; SUM; SuperDoctor® 5; Watchdog
- **Drive Bays**: 6 hot-swap 2.5” drive bays per node (4 NVMe + 2 SATA) or (6 SATA)
- **Power Supply**: Redundant 2200W Titanium Level (96%) (Full redundancy based on configuration and application load)
- **Cooling System**: 4x 80mm heavy-duty PWM fans
- **Form Factor**: 2U (4-Node) Rackmount 447 x 88 x 730mm (17.6" x 3.47" x 28.75")

#### BigTwin® - 2U 4 DP Nodes

- **Model**: AS-2124BT-HTR**
- **Processor Support**: Dual AMD EPYC™ 7003/7002 Series Processors
- **Key Applications**: • Hyperscale and Hyperconverged Solutions • Compute Intensive Application • Enterprise Server • Data Center • HPC
- **Outstanding Features**: • Up to 6 2.5" SATA drives per node • Up to 16 DIMMs per node • Flexible SIOM options • M.2 Support • 2 PCIe add-on cards per node
- **Serverboard**: SUPER® H12DST-B
- **System Memory (Max.)**: Up to 4TB ECC 3DS LRDIMM, up to DDR4-3200MHz; 16 DIMM slots
- **Expansion Slots**: 2 PCIe 4.0 x16 (LP) 1 SIOM card support 1 M.2 SATA/PCIe slot 2280/2210 M-key
- **Onboard Storage Controller**: SATA3
- **Connectivity**: SIOM Network Card For Flexible Networking Options (not included, must add 1 per node)
- **VGA/Audio**: Aspeed AST2500 BMC
- **Management**: IPMI2.0; KVM with dedicated LAN; SPM; SSM; SUM; SuperDoctor® 5; Watchdog
- **Drive Bays**: 6 hot-swap 2.5” SATA drive bays per node
- **Power Supply**: Redundant 2200W Titanium Level (96%) (Full redundancy based on configuration and application load)
- **Cooling System**: 4x 80mm heavy-duty PWM fans
- **Form Factor**: 2U (4-Node) Rackmount 447 x 88 x 730mm (17.6" x 3.47" x 28.75")

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* AMD EPYC™ 7003 Series Processor with AMD 3D V-Cache™ Technology requires BIOS version 2.3 or newer.
** For complete system only and AMD EPYC™ 7003 Series Processor with AMD 3D V-Cache Technology requires liquid cooling.
### Model Specifications

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<thead>
<tr>
<th>MODEL</th>
<th>AS-F1114S-FT</th>
<th>AS-F1114S-RNTR</th>
<th>AS-F2014S-RNTR</th>
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<tr>
<td>Processor Support</td>
<td>Single AMD EPYC™ 7003/7002 Series Processor*</td>
<td>Single AMD EPYC™ 7003/7002 Series Processor*</td>
<td>Single AMD EPYC™ 7003/7002 Series Processor*</td>
</tr>
</tbody>
</table>
| Key Applications | • Hyperscale and Hyperconverged Solutions  
  • Cloud Computing  
  • Cluster Node  
  • Data Center  
  • HPC cluster computer nodes | • Hyperscale / Hyperconverged  
  • HPC and Big Data  
  • Data Center Enterprise Applications  
  • Scale Out Storage  
  • Telco Data Center  
  • Virtualization Server | • Hyperscale / Hyperconverged  
  • HPC and Big Data  
  • Data Center Enterprise Applications  
  • Scale Out Storage  
  • Telco Data Center  
  • Virtualization Server |
| Outstanding Features | • 8 nodes in a 4U system  
  • 280W CPU support  
  • Supports up to 64 cores  
  • 2x LP PCIe x16 slots; 1x AIOM PCIe x16 slot per node  
  • Supports 2-4x 2.5” SATA drives per node  
  • Quad 2000W Titanium Level high-efficiency power supplies | • Up to 6 hot-swap optional SATA/NVMe drives per node  
  • 4 onboard M.2 SATA/NVMe support per node  
  • Flexible AIOM module per node  
  • 1 PCIe add-on card per node  
  • Up to 8 DIMMs per node | • Can support up to 8 SATA/NVMe drives per node  
  • Can support up to 10 2.5” SATA drives  
  • 4 onboard SATA/NVMe M.2 Support per node  
  • Flexible AIOM module per node  
  • 1 PCIe add-on cards per node  
  • Up to 8 DIMMs per node |
| Serverboard | SUPER® H12SSF-AN6 | SUPER® H12SSF-AN6 | SUPER® H12SSF-AN6 |
| System Memory (Max.) | Up to 4TB ECC 3DS LRDIMM, up to DDR4-3200MHz; 16 DIMM slots | Up to 2TB ECC 3DS LRDIMM, up to DDR4-3200MHz; 8 DIMM slots | Up to 2TB ECC 3DS LRDIMM, up to DDR4-3200MHz; 8 DIMM slots |
| Expansion Slots | 1 PCIe 4.0 x16 (AIOM)  
  2 PCIe 4.0 x16 (LP) per node | FatTwin Rear IO: PCIe 4.0 x16 LP Riser and PCIe 4.0 x8 Internal RAID AOC | FatTwin Rear IO: PCIe 4.0 x16 LP Riser and PCIe 4.0 x8 Internal RAID AOC |
| Onboard Storage Controller | NVMe and SATA3 | NVMe and SATA3 | NVMe and SATA3 |
| Connectivity | AIOM Network Card For Flexible Networking Options (not included, must 1 per Node) | AIOM Network Card For Flexible Networking Options (not included, must add 1 per node) | AIOM Network Card For Flexible Networking Options (not included, must add 1 per node) |
| VGA/Audio | 1 VGA; Aspeed AST2600 BMC per node | 1 VGA, Aspeed AST2600 BMC per node | 1 VGA, Aspeed AST2600 BMC per node |
| Management | IPMI 2.0, KVM with dedicated LAN, SSM, SUM SuperDoctor* 5, Watch Dog | IPMI 2.0, KVM with dedicated LAN, SSM, SUM SuperDoctor* 5, Watch Dog | IPMI 2.0, KVM with dedicated LAN, SSM, SUM SuperDoctor* 5, Watch Dog |
| Drive Bays | 2-4x 2.5” SATA3/NVMe drive bays per node | 4 hot-swap 2.5” SATA with 2 hot-swap 2.5” SATA/NVMe drive bays per node | 8 Hot-swap 3.5” SATA drive bays per node |
| Power Supply | 2000W or above Redundant Power Supplies with PMBus | Redundant 2200W Titanium Level (96%) power supplies (Full redundancy based on configuration and application load) | Redundant 2200W Titanium Level (96%) (Full redundancy based on configuration and application load) |
| Cooling System | 8x 8cm 13.5k RPM rear fans per enclosure | 3x 4cm 17.6K RPM | 2x 80mm heavy duty PWM fans |
| Form Factor | 4U (8-node) Rackmount  
  448 x 177 x 737mm (17.63” x 6.96” x 29”) | 4U (8-node) Rackmount  
  447 x 177 x 730mm (17.6” x 7” x 28.75”) | 4U (4-node) Rackmount  
  447 x 177 x 730mm (17.6” x 7” x 28.75”) |

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* AMD EPYC™ 7003 Series Processor with AMD 3D V-Cache™ Technology requires BIOS version 2.3 or newer.
## H13 HYPER
(For Complete System Only)

<table>
<thead>
<tr>
<th>MODEL</th>
<th>AS -1125HS-TNR</th>
<th>AS -2025HS-TNR</th>
<th>AS -2125HS-TNR</th>
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<tbody>
<tr>
<td><strong>Processor Support</strong></td>
<td>AMD EPYC™ 9004 Series Processors Dual Socket (Socket SP5)</td>
<td>AMD EPYC™ 9004 Series Processors Dual Socket (Socket SP5)</td>
<td>AMD EPYC™ 9004 Series Processors Dual Socket (Socket SP5)</td>
</tr>
</tbody>
</table>
| **Key Applications** | • Software-defined Storage  
• Virtualization  
• Enterprise Server  
• Cloud Computing  
• AI Inference and Machine Learning | • Software-defined Storage  
• Virtualization  
• Enterprise Server  
• Cloud Computing  
• AI Inference and Machine Learning | • Software-defined Storage  
• Virtualization  
• Enterprise Server  
• Cloud Computing  
• AI Inference and Machine Learning |
| **Outstanding Features** | • Tool-less system design for easy maintenance | • Tool-less system design for easy maintenance | • Tool-less system design for easy maintenance |
| **Serverboard** | SUPER® H13DSH | SUPER® H13DSH | SUPER® H13DSH |
| **Chipset** | System On Chip | System On Chip | System on Chip |
| **System Memory (Max.)** | Up to 6TB 3DS ECC RDIMM DDR5-4800MHz in 24 DIMMs | Up to 6TB 3DS ECC RDIMM DDR5-4800MHz in 24 DIMMs | Up to 6TB 3DS ECC RDIMM DDR5-4800MHz in 24 DIMMs |
| **Expansion Slots** | 2 PCIe 5.0 x16 FH, 10.5”L and 1 PCIe 5.0 x16, FH, 6.6”L | Configurable PCIe slot options up to 8 PCIe 5.0 x8 or 4 PCIe 5.0 x16 FH, 10.5”L | Configurable PCIe slot options up to 8 PCIe 5.0 x8 or 4 PCIe 5.0 x16 FH, 10.5”L |
| **Onboard Storage Controller** | AMD SP5 | AMD SP5 | AMD SP5 |
| **Connectivity** | AIOM / OCP 3.0 | AIOM / OCP 3.0 | AIOM / OCP 3.0 |
| **VGA/Audio** | 1 VGA port | 1 VGA port | 1 VGA port |
| **Management** | IPMI CFG; IPMI View for Linux/Windows; IPMI 2.0; KVM with dedicated LAN; NMI; Redfish API; SPM; SMS; SUM; SuperDoctor® 5; Watch Dog | IPMI CFG; IPMI View for Linux/Windows; IPMI 2.0; KVM with dedicated LAN; NMI; Redfish API; SPM; SMS; SUM; SuperDoctor® 5; Watch Dog | IPMI CFG; IPMI View for Linux/Windows; IPMI 2.0; KVM with dedicated LAN; NMI; Redfish API; SPM; SMS; SUM; SuperDoctor® 5; Watch Dog |
| **Drive Bays** | 8x 2.5” hot-swap NVMe/SAS/SATA drives bays (Option for up to 12 drives); Optional RAID support via RAID Controller AOC | 12x 3.5” hot-swap NVMe/SATA/SAS drive bays; Optional RAID support via RAID Controller AOC | 24x 2.5” hot-swap NVMe/SATA/SAS drive bays; Optional RAID support via RAID Controller AOC |
| **Power Supply** | Redundant 1200W Titanium level (96%) | Redundant 1600W Titanium level (96%) | Redundant 1600W Titanium level (96%) |
| **Cooling System** | 8x heavy-duty fans w/ Optimal Fan Speed Control | 8x heavy-duty fans w/ Optimal Fan Speed Control | 4x heavy-duty fans w/ Optimal Fan Speed Control |
| **Form Factor** | 1U Rackmount  
Enclosure: 437 x 43 x 747mm (17.2” x 1.7” x 29.4”)  
Package: 605 x 206 x 1032mm (23.8” x 8.1” x 40.6”) | 2U Rackmount  
Enclosure: 437 x 88.9 x 803mm (17.2” x 3.5” x 31.6”)  
Package: 605 x 263 x 1107mm (23.8” x 10.4” x 43.6”) | 2U Rackmount  
Enclosure: 437 x 88.9 x 760mm (17.2” x 3.5” x 29.9”)  
Package: 605 x 263 x 1107mm (23.8” x 10.4” x 43.6”) |
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Processor Support</td>
<td>AMD EPYC™ 9004 Series Processor Single Socket (Socket SP5) supported 4 UPI</td>
<td>AMD EPYC™ 9004 Series Processor Single Socket (Socket SP5) supported 4 UPI</td>
<td>AMD EPYC™ 9004 Series Processor Single Socket (Socket SP5) supported 4 UPI</td>
</tr>
</tbody>
</table>
| Key Applications | • Software-defined Storage  
• Virtualization  
• Enterprise Server  
• Cloud Computing  
• AI Inference and Machine Learning | • Software-defined Storage  
• Virtualization  
• Enterprise Server  
• Cloud Computing  
• AI Inference and Machine Learning | • Software-defined Storage  
• Virtualization  
• Enterprise Server  
• Cloud Computing  
• AI Inference and Machine Learning |
| Outstanding Features | • Tool-less system design for easy maintenance | • Tool-less system design for easy maintenance | • Tool-less system design for easy maintenance |
| Serverboard | SUPER® H13SSH | SUPER® H13SSH | SUPER® H13SSH |
| Chipset | System On Chip | System On Chip | System On Chip |
| System Memory (Max.) | 24 DIMM slots  
Up to 6TB: DDR5-4800MHz/ 3600MHz (24 DIMM slots, 2DPC) | 24 DIMM slots  
Up to 6TB: DDR5-4800MHz/ 3600MHz (24 DIMM slots, 2DPC) | 24 DIMM slots  
Up to 6TB: DDR5-4800MHz/ 3600MHz (24 DIMM slots, 2DPC) |
| Expansion Slots | 2 PCIe 5.0 x 16 FH, 10.5"L and 1 PCIe 5.0 x 16, FH, 6.6"L | Configurable PCIe slot options up to 8 PCIe 5.0 x 8 or 4 PCIe 5.0 x 16 FH, 10.5"L | Configurable PCIe slot options up to 8 PCIe 5.0 x 8 or 4 PCIe 5.0 x 16 FH, 10.5"L |
| Onboard Storage Controller | AMD SP5 | AMD SP5 | AMD SP5 |
| Connectivity | via AIOM | via AIOM | via AIOM |
| VGA/Audio | 1 VGA port | 1 VGA port | 1 VGA port |
| Management | IPMI CFG; IPMI View for Linux/ Windows; SPM; SSM; SUM; SuperDoctor® 5; Watch Dog | IPMI CFG; IPMI View for Linux/ Windows; SPM; SSM; SUM; SuperDoctor® 5; Watch Dog | IPMI CFG; IPMI View for Linux/ Windows; SPM; SSM; SUM; SuperDoctor® 5; Watch Dog |
| Drive Bays | 8x 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 | 24x 2.5" hot-swap NVMe/SATA/SAS drive bays; Optional RAID support via RAID Controller AOC |
| Power Supply | Redundant 1200W Titanium level (96%) | Redundant 1600W Titanium level (96%) | Redundant 1600W Titanium level (96%) |
| Cooling System | 8x 4cm heavy duty fan(s) | 4x 8cm heavy duty fan(s) | 4x 8cm heavy duty fan(s) |
| Form Factor | 1U Rackmount  
Enclosure: 437 x 43 x 747mm (17.2" x 1.7" x 29.4")  
Package: 605 x 206 x 1032mm (23.8" x 8.1" x 40.6") | 2U Rackmount  
Enclosure: 437 x 88.9 x 803mm (17.2" x 3.5" x 31.6")  
Package: 605 x 263 x 1107mm (23.8" x 10.4" x 43.6") | 2U Rackmount  
Enclosure: 437 x 88.9 x 760mm (17.2" x 3.5" x 29.9")  
Package: 605 x 263 x 1107mm (23.8" x 10.4" x 43.6") |
### H12 Ultra

(For Complete System Only)

![H12 Ultra Image](image)

**1U Ultra, 8TB DDR4**

**1U Ultra, 12 NVMe**

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Processor Support</td>
<td>Dual AMD EPYC™ 7003/7002 Series Processors*</td>
<td>Dual AMD EPYC™ 7003/7002 Series Processors*</td>
</tr>
<tr>
<td>Key Applications</td>
<td>• Virtualization</td>
<td>• Virtualization</td>
</tr>
<tr>
<td></td>
<td>• Cloud Computing</td>
<td>• Cloud Computing</td>
</tr>
<tr>
<td></td>
<td>• High End Enterprise Server</td>
<td>• High End Enterprise Server</td>
</tr>
<tr>
<td></td>
<td>• Optional 4 NVMe ready</td>
<td>• 32 DIMMs</td>
</tr>
<tr>
<td></td>
<td>• 3+1 PCIe add-on cards</td>
<td>• 3+1 PCIe add-on cards</td>
</tr>
<tr>
<td>Outstanding Features</td>
<td>• 4x 3.5&quot; SATA/SAS/NVMe drive bays</td>
<td>• 12-Port NVMe Gen 4.0/3.0 support</td>
</tr>
<tr>
<td></td>
<td>• 280W CPU support</td>
<td>• 280W CPU support</td>
</tr>
<tr>
<td></td>
<td>• Redundant Titanium Level (96%) power supplies</td>
<td>• Redundant Titanium Level (96%) power supplies</td>
</tr>
<tr>
<td></td>
<td>• Maximum IO output in 1U platform</td>
<td>• Maximum IO output in 1U platform</td>
</tr>
<tr>
<td>Serverboard</td>
<td>SUPER® H12DSU-IN</td>
<td>SUPER® H12DSU-IN</td>
</tr>
<tr>
<td>System Memory (Max.)</td>
<td>Up to 8TB ECC DDR4 3200MHz SDRAM in 32 DIMMs</td>
<td>Up to 8TB ECC DDR4 3200MHz SDRAM in 32 DIMMs</td>
</tr>
<tr>
<td>Expansion Slots</td>
<td>2 PCIe x16 (FH /9.5&quot;) slots</td>
<td>2 PCIe x16 (FH /9.5&quot;) slots</td>
</tr>
<tr>
<td></td>
<td>1 PCIe x16 slot (LP)</td>
<td>1 PCIe x16 slot (LP)</td>
</tr>
<tr>
<td></td>
<td>1 PCIe x16 slot (internal LP)</td>
<td>1 PCIe x16 slot (internal LP)</td>
</tr>
<tr>
<td>Onboard Storage Controller</td>
<td>4 SATA3 (6 Gbps) ports; Optional 4 SAS3 drives support VS additional option parts or, Optional 4 NVMe drives support vs addition NVMe trays required.</td>
<td>12 hot-Swappable U.2 drives support; Optional 12 SAS3 /12SATA support with additional SAS/SATA Kit</td>
</tr>
<tr>
<td>Connectivity</td>
<td>Dual 10GBase-T RJ45 LAN ports via Intel Carlsville X710-AT2; 3 USB 3.0 ports (2 rear, 1 Type A)</td>
<td>Dual port 10G RJ45 &amp; dual port 10G SFP+, Intel Carlsville X710-TM4; 4 USB 3.0 ports (1 front, 2 rear, 1 Type A)</td>
</tr>
<tr>
<td>VGA/Audio</td>
<td>1 VGA; 1 ASPEED AST2500 BMC</td>
<td>1 VGA; 1 ASPEED AST2500 BMC</td>
</tr>
<tr>
<td>Management</td>
<td>Built-in Server management tool (IPMI 2.0, KVM/media over LAN) with dedicated LAN port</td>
<td>Built-in Server management tool (IPMI 2.0, KVM/media over LAN) with dedicated LAN port</td>
</tr>
<tr>
<td>Drive Bays</td>
<td>4x hot-swap 3.5&quot; drive bays support</td>
<td>12x hot-swap 2.5&quot; drives support</td>
</tr>
<tr>
<td>Power Supply</td>
<td>1000W Redundant Titanium Level (96%+) power supplies (Full redundancy based on configuration and application load)</td>
<td>1200W Redundant Titanium Level (96%) power supplies (Full redundancy based on configuration and application load)</td>
</tr>
<tr>
<td>Cooling System</td>
<td>8 heavy-duty fans w/ Optimal Fan Speed Control</td>
<td>8 heavy-duty fans w/ optimal Fan Speed Control</td>
</tr>
<tr>
<td>Form Factor</td>
<td>437 x 43 x 754mm (17.2&quot; x 1.7&quot; x 29.7&quot;)</td>
<td>437 x 43 x 724mm (17.2&quot; x 1.7&quot; x 28.5&quot;)</td>
</tr>
</tbody>
</table>

* AMD EPYC™ 7003 Series Processor with AMD 3D V-Cache™ Technology requires BIOS version 2.3 or newer.

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**A+ Server Solutions - December 2023**

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## H12 Ultra

(For Complete System Only)

**2U Ultra, 8TB DDR4**

**2U Ultra, 24 NVMe**

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Processor Support</strong></td>
<td>Dual AMD EPYC™ 7003/7002 Series Processors*</td>
<td>Dual AMD EPYC™ 7003/7002 Series Processors*</td>
</tr>
</tbody>
</table>
| **Key Applications** | • Virtualization  
• Cloud Computing  
• High End Enterprise Server  
• Hyperconverge Storage | • Virtualization  
• Cloud Computing  
• High End Enterprise Server  
• Hyperconverge Storage |
| **Outstanding Features** | • 32 DIMMs  
• 5+1 PCIe add-on cards  
• 12x 3.5" SATA/SAS (SAS via AOC)/support up to 4 NVMe  
• 280W CPU support  
• 1600W redundant Titanium Level (96%) power supplies  
• Maximum IO output in 2U platform | • 32 DIMMs  
• 1 PCIe add-on cards  
• 24x 2.5" hot-swap NVMe drive bays  
• 280W CPU support  
• 1600W redundant Titanium Level (96%) power supplies  
• Maximum IO output in 2U platform |
| **Serverboard** | SUPER® H12DSU-IN | SUPER® H12DSU-IN |
| **System Memory (Max.)** | Up to 8TB ECC DDR4 3200MHz SDRAM in 32 DIMMs | Up to 8TB ECC DDR4 3200MHz SDRAM in 32 DIMMs |
| **Expansion Slots** | 2 PCIe 4.0 x16 slots (FH, 10.5" L)  
1 PCIe 4.0 x16 slot (FH, 9.5" L)  
1 PCIe 4.0 x16 slot (LP)  
1 PCIe 4.0 x8 slot (FH, 9.5" L, in x16 slot)  
1 PCIe 4.0 x8 slot (internal LP, in x16 slot) | 1 PCIe 4.0 x16 slot (FH, 9.5" L) |
| **Onboard Storage Controller** | 8 SATA3 (6 Gbps) ports + 4 hybrid SATA/NVMe function ready for HDD slots 0-3 with additional NVMe HDD trays for NMVe drives; Optional 12 SAS3 drive support VS SAS card with cables | 24x Hot-Swappable U.2 drive bays support with optional up to 24x SAS3 drive bays support VS SAS card and cables |
| **Connectivity** | Dual port 10G RJ45, Intel Carlsville X710-AT2; 3 USB 3.0 ports (2 rear + 1 Type A) | Dual 10G RJ45 & Dual 10G SFP+ ports, Intel Carlsville X710-TM4 3 USB 3.0 ports (2 rear, 1 Type A) |
| **VGA/Audio** | 1 VGA; 1 ASPEED AST2500 BMC | 1 VGA; 1 ASPEED AST2500 BMC |
| **Management** | Built-in Server management tool (IPMI 2.0, KVM/media over LAN) with dedicated LAN port | Built-in Server management tool (IPMI 2.0, KVM/media over LAN) with dedicated LAN port |
| **Drive Bays** | 12x hot-swap 3.5" drive bays support | 24x hot-swap 2.5" drive bays support |
| **Peripheral Bays** | 2x 2.5" peripheral drive bays with additional rear drive bay kits + cable | N/A |
| **Power Supply** | 1600W redundant Titanium Level (96%+) power supplies (Full redundancy based on configuration and application load) | 1600W redundant Titanium Level (96%) power supplies (Full redundancy based on configuration and application load) |
| **Cooling System** | 4x heavy-duty fans w/ optimal Fan Speed Control | 4x heavy-duty fans w/ optimal Fan Speed Control |
| **Form Factor** | 437 x 89 x 723mm (17.2" x 3.5" x 28.46") | 2U Rackmount 437 x 89 x 723mm (17.2" x 3.5" x 28.46") |

* AMD EPYC™ 7003 Series Processor with AMD 3D V-Cache™ Technology requires BIOS version 2.3 or newer.
### MODEL

<table>
<thead>
<tr>
<th>MODEL</th>
<th>AS-1015CS-TNR</th>
<th>AS-1115CS-TNR</th>
<th>AS-2015CS-TNR</th>
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<tr>
<td>Processor Support</td>
<td>AMD EPYC™ 9004 Series Processors Single Socket (Socket SP5)</td>
<td>AMD EPYC™ 9004 Series Processors Single Socket (Socket SP5)</td>
<td>AMD EPYC™ 9004 Series Processors Single Socket (Socket SP5)</td>
</tr>
</tbody>
</table>
| 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 | • 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 4x SATA/SAS/NVMe tool-less drive bays  
• 3.5” tool-less drive trays also support 2.5” drives  
• Dual AIOM slots for flexible networking (OCP3.0)  
• Compact server with tool-less drive trays  
• Balanced architecture in compact chassis (25.6”)  
• 2 On-board Gen 3 M.2 NVMe 80mm/110mm (Boot) | • Up to 10x NVMe/SATA/SAS hybrid tool-less drive bays  
• Dual AIOM slots for flexible networking (OCP3.0)  
• Compact server with tool-less drive trays  
• Balanced architecture in compact chassis (23.5”)  
• 2 On-board Gen 3 M.2 NVMe 80mm/110mm (Boot) | • Up to 12x NVMe/SATA/SAS hybrid tool-less drive bays  
• Optional hot-swappable 2.5" rear drive bays  
• Dual AIOM slots for flexible networking (OCP3.0)  
• 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  
• 2 On-board Gen 3 M.2 NVMe 80mm/110mm (Boot) |

### Serverboard

| Serverboard | SUPER® H13SSW | SUPER® H13SSW | SUPER® H13SSW |

### Chipset

<table>
<thead>
<tr>
<th>Chipset</th>
<th>System on Chip</th>
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<tr>
<td>System on Chip</td>
<td>System on Chip</td>
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</table>

### System Memory (Max.)

<table>
<thead>
<tr>
<th>System Memory</th>
<th>Up to 3TB 3DS ECC RDIMM DDR5-4800MHz in 12 DIMMs</th>
</tr>
</thead>
<tbody>
<tr>
<td>System Memory</td>
<td>Up to 3TB 3DS ECC RDIMM DDR5-4800MHz in 12 DIMMs</td>
</tr>
<tr>
<td>System Memory</td>
<td>Up to 3TB 3DS ECC RDIMM DDR5-4800MHz in 12 DIMMs</td>
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</table>

### Expansion Slots

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<thead>
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<th>2 Gen5 x16 FHHL slots</th>
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<tbody>
<tr>
<td>Expansion Slots</td>
<td>2 Gen5 x16 FHHL slots</td>
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<tr>
<td>Expansion Slots</td>
<td>2 Gen5 x16 FHHL slots</td>
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### Onboard Storage Controller

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<th>AMD SPS</th>
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<td>AMD SPS</td>
</tr>
<tr>
<td>Onboard Storage Controller</td>
<td>AMD SPS</td>
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</table>

### Connectivity

<table>
<thead>
<tr>
<th>Connectivity</th>
<th>Dual AIOM/ OCP3.0, 2 USB 3.0 ports (2 rear)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Connectivity</td>
<td>Dual AIOM/ OCP3.0, 2 USB 3.0 ports (2 rear)</td>
</tr>
<tr>
<td>Connectivity</td>
<td>Dual AIOM/ OCP3.0, 2 USB 3.0 ports (2 rear)</td>
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### VGA/Audio

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<tr>
<th>VGA/Audio</th>
<th>1 VGA; 1 ASPEED AST2600 BMC</th>
</tr>
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<tbody>
<tr>
<td>VGA/Audio</td>
<td>1 VGA; 1 ASPEED AST2600 BMC</td>
</tr>
<tr>
<td>VGA/Audio</td>
<td>1 VGA; 1 ASPEED AST2600 BMC</td>
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</table>

### Management

<table>
<thead>
<tr>
<th>Management</th>
<th>IPMI 2.0; KVM with dedicated LAN; NMI; Redfish API; SPM; SSM; SUM; SuperDoctor® 5; Watch Dog</th>
</tr>
</thead>
<tbody>
<tr>
<td>Management</td>
<td>IPMI 2.0; KVM with dedicated LAN; NMI; Redfish API; SPM; SSM; SUM; SuperDoctor® 5; Watch Dog</td>
</tr>
<tr>
<td>Management</td>
<td>IPMI 2.0; KVM with dedicated LAN; NMI; Redfish API; SPM; SSM; SUM; SuperDoctor® 5; Watch Dog</td>
</tr>
</tbody>
</table>

### Drive Bays

<table>
<thead>
<tr>
<th>Drive Bays</th>
<th>4x 3.5&quot; hot-swap NVMe/SATA/SAS hybrid drive bays; Optional RAID support via RAID controller AOC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Drive Bays</td>
<td>4x 3.5&quot; hot-swap NVMe/SATA/SAS hybrid drive bays; Optional RAID support via RAID controller AOC</td>
</tr>
<tr>
<td>Drive Bays</td>
<td>4x 3.5&quot; hot-swap NVMe/SATA/SAS hybrid drive bays; Optional RAID support via RAID controller AOC</td>
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### Peripheral Bays

<table>
<thead>
<tr>
<th>Peripheral Bays</th>
<th>2x 2.5” (optional)</th>
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<tr>
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<tr>
<td>Peripheral Bays</td>
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### Power Supply

<table>
<thead>
<tr>
<th>Power Supply</th>
<th>Redundant 860W Platinum level (94%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Power Supply</td>
<td>Redundant 860W Platinum level (94%)</td>
</tr>
<tr>
<td>Power Supply</td>
<td>Redundant 1200W Titanium level (96%)</td>
</tr>
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</table>

### Cooling System

<table>
<thead>
<tr>
<th>Cooling System</th>
<th>6x 4cm heavy duty fans</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cooling System</td>
<td>6x 4cm heavy duty fans</td>
</tr>
<tr>
<td>Cooling System</td>
<td>3x 8cm heavy duty fans</td>
</tr>
<tr>
<td>Cooling System</td>
<td>2U Rackmount Enclosure: 437 x 89 x 648mm (17.2&quot; x 3.5&quot; x 25.5&quot;) Package: 678 x 290 x 876mm (26.7&quot; x 11.4&quot; x 34.5&quot;)</td>
</tr>
</tbody>
</table>

### Form Factor

<table>
<thead>
<tr>
<th>Form Factor</th>
<th>1U Rackmount Enclosure: 437 x 43 x 650mm (17.2” x 1.7” x 25.6”) Package: 605 x 197 x 878mm (23.8” x 7.8” x 34.6”)</th>
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</thead>
<tbody>
<tr>
<td>Form Factor</td>
<td>1U Rackmount Enclosure: 437 x 43 x 597mm (17.2” x 1.7” x 23.5”) Package: 605 x 197 x 822mm (23.8” x 7.8” x 32.4”)</td>
</tr>
<tr>
<td>Form Factor</td>
<td>1U Rackmount Enclosure: 437 x 43 x 650mm (17.2” x 1.7” x 25.6”) Package: 605 x 197 x 878mm (23.8” x 7.8” x 34.6”)</td>
</tr>
</tbody>
</table>
### Cost Effective 1U

<table>
<thead>
<tr>
<th>MODEL</th>
<th>AS-1114CS-TNR</th>
<th>AS-2014CS-TR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Processor Support</td>
<td>Single AMD EPYC™ 7003/7002 Series Processor*</td>
<td>Single AMD EPYC™ 7003/7002 Series Processor*</td>
</tr>
<tr>
<td>Key Applications</td>
<td>• Financial Services • Cloud Computing • Network Appliance • Private Cloud • Content Delivery Network (CDN) • Deep Learning Inferencing</td>
<td>• Financial Services • Cloud Computing • Network Appliance • Private Cloud • Content Delivery Network (CDN) • Deep Learning Inferencing</td>
</tr>
<tr>
<td>Outstanding Features</td>
<td>• Dual AIOM slots for flexible networking • 2x PCIe 4.0 x16 FH/HL slots • 860W redundant Platinum Level power supplies • Tool-less drive trays and tool-less brackets • 280W CPU support • 16 DIMMs</td>
<td>• Dual AIOM slots for flexible networking • 4x PCIe 4.0 x16 (2 FH, 10.5”L) or 2x PCIe 4.0 x16 FH/HL + 4x PCIe 4.0 x8 FH/HL slots • 920W redundant Platinum Level high-efficiency power supplies • Tool-less drive trays and tool-less brackets • 280W CPU support • 16 DIMMs</td>
</tr>
<tr>
<td>Serverboard</td>
<td>SUPER® H12SSW-AN6</td>
<td>SUPER® H12SSW-AN6</td>
</tr>
<tr>
<td>System Memory (Max.)</td>
<td>Up to 4TB 3DS ECC DDR4-3200MHz RDIMM/LRDIMM, in 16 DIMMs slot</td>
<td>Up to 4TB 3DS ECC DDR4-3200MHz RDIMM/LRDIMM, in 16 DIMMs slot</td>
</tr>
<tr>
<td>Expansion Slots</td>
<td>2 PCIe 4.0 x16 (FH/HL)</td>
<td>4 PCIe 4.0 x16 (2 FH, 10.5”L) or, 2 PCIe 4.0 x16 (FH/HL) + 4 PCIe 4.0 x8 (2 FH/HL, 2 FH/HL)</td>
</tr>
<tr>
<td>Onboard Storage Controller</td>
<td>10x hot-swappable SATA drives bays support; Optional 10x SAS3/NVMe support with additional SAS/NVMe kit</td>
<td>12x 3.5&quot; SATA /SAS (SAS via AOC)/NVMe drive bays with optional kit + 2x 2.5” (with optional kit)</td>
</tr>
<tr>
<td>Connectivity</td>
<td>Dual AIOM slots, 2 USB 3.0 ports (2 rear)</td>
<td>Dual AIOM slots, 2 USB 3.0 ports (2 rear)</td>
</tr>
<tr>
<td>VGA/Audio</td>
<td>1 VGA; 1 ASPEED AST2600 BMC</td>
<td>1 VGA; 1 ASPEED AST2600 BMC</td>
</tr>
<tr>
<td>Management</td>
<td>Built-in Server management tool (IPMI 2.0, KVM/media over LAN) with dedicated LAN port</td>
<td>Built-in Server management tool (IPMI 2.0, KVM/media over LAN) with dedicated LAN port</td>
</tr>
<tr>
<td>Drive Bays</td>
<td>10x hot-swap 2.5&quot; drive bays support</td>
<td>12x hot-swap 3.5&quot; drive bays support</td>
</tr>
<tr>
<td>Peripheral Bays</td>
<td>N/A</td>
<td>2x 2.5” Peripheral drive bays with additional rear drive bay kits + cable</td>
</tr>
<tr>
<td>Power Supply</td>
<td>860W redundant Platinum Level high-efficiency power supplies</td>
<td>920W redundant Platinum Level high-efficiency power supplies</td>
</tr>
<tr>
<td>Cooling System</td>
<td>6x 40x40x56mm counter-rotation PWM fans</td>
<td>3x 80x80x38mm middle cooling fans</td>
</tr>
<tr>
<td>Form Factor</td>
<td>1U Rackmount 437 x 43 x 597mm (17.2” x 1.7” x 23.5&quot;)</td>
<td>2U Rackmount 437 x 89 x 648mm (17.2” x 3.5” x 25.5&quot;)</td>
</tr>
</tbody>
</table>

* AMD EPYC™ 7003 Series Processor with AMD 3D V-Cache Technology requires BIOS version 2.3 or newer.
### H13 Storage Servers

(For Complete System Only)

<table>
<thead>
<tr>
<th>MODEL</th>
<th>ASG-1115S-NE316R</th>
<th>ASG-2115S-NE332R</th>
</tr>
</thead>
<tbody>
<tr>
<td>Processor Support</td>
<td>AMD EPYC™ 9004 Series Processor (the latest AMD EPYC™ 9004 Series Processor with AMD 3D V-Cache™ Technology) Single Socket (Socket SP5) supported TDP up to 300W; 4 UPI</td>
<td>AMD EPYC™ 9004 Series Processor (the latest AMD EPYC™ 9004 Series Processor with AMD 3D V-Cache™ Technology) Single Socket (Socket SP5) supported TDP up to 300W; 4 UPI</td>
</tr>
<tr>
<td>Key Applications</td>
<td>In-Memory Computing</td>
<td>In-Memory Computing</td>
</tr>
<tr>
<td></td>
<td>Software-defined Storage</td>
<td>Software-defined Storage</td>
</tr>
<tr>
<td></td>
<td>NVMe Over Fabrics Solution</td>
<td>NVMe Over Fabrics Solution</td>
</tr>
<tr>
<td></td>
<td>Private &amp; Hybrid Cloud</td>
<td>Private &amp; Hybrid Cloud</td>
</tr>
<tr>
<td></td>
<td>Data Intensive HPC</td>
<td>Data Intensive HPC</td>
</tr>
<tr>
<td>Outstanding Features</td>
<td>Two PCIe 5.0 x16 slots &amp; two AIOM connectors (OCP 3.0 SFF compliant) Supports 24 DIMMs with 2DPC, up to 6TB memory capacity with 24 DIMMs of 256GB 3DS RDIMM/RDIMM DDR5 ECC memory Single Socket SP5 4th Generation AMD EPYC 9004 Scalable processors. Up to 300W TDP. Redundant Titanium 1600W Power Supplies Composable Infrastructure Platform</td>
<td>Two PCIe 5.0 x16 slots &amp; two AIOM connectors (OCP 3.0 SFF compliant) Supports 24 DIMMs with 2DPC, up to 6TB memory capacity with 24 DIMMs of 256GB 3DS RDIMM/RDIMM DDR5 ECC memory Single Socket SP5 4th Generation AMD EPYC 9004 Scalable processors. Up to 300W TDP. Redundant Titanium 2000W Power Supplies Composable Infrastructure Platform</td>
</tr>
<tr>
<td>Serverboard</td>
<td>SUPER® H13SSF</td>
<td>SUPER® H13SSF</td>
</tr>
<tr>
<td>Chipset</td>
<td>AMD SPS</td>
<td>AMD SPS</td>
</tr>
<tr>
<td>System Memory (Max.)</td>
<td>24 DIMMs slots Up to 6TB: 24 x 256 GB DRAM 4800MHz ECC DDR5 RDIMM/LRDIMM</td>
<td></td>
</tr>
<tr>
<td>Expansion Slots</td>
<td>2 PCIe 5.0 x16 AIOM slot(s) 2 PCIe 5.0 x16 FH slot(s)</td>
<td>2 PCIe 5.0 x16 AIOM slot(s) 2 PCIe 5.0 x16 FH slot(s)</td>
</tr>
<tr>
<td>Onboard Storage Controller</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Connectivity</td>
<td>via AIOM</td>
<td>via AIOM</td>
</tr>
<tr>
<td>VGA/Audio</td>
<td>1 VGA port</td>
<td>1 VGA port</td>
</tr>
<tr>
<td>Management</td>
<td>IPMI 2.0; NMI; SUM; SuperDoctor® 5; Watch Dog</td>
<td>IPMI 2.0; NMI; SUM; SuperDoctor® 5; Watch Dog</td>
</tr>
<tr>
<td>Drive Bays</td>
<td>16x E3.5 Hot-swap NVMe (1T/2T) drive slots</td>
<td></td>
</tr>
<tr>
<td>Power Supply</td>
<td>Redundant 1600W Titanium level (96%)</td>
<td>Redundant 2000W Titanium level (96%)</td>
</tr>
<tr>
<td>Cooling System</td>
<td>8x 4cm heavy duty fan(s)</td>
<td>4x 8cm heavy duty fan(s)</td>
</tr>
<tr>
<td>Form Factor</td>
<td>1U Rackmount Enclosure: 438.4 x 43.6 x 773.25mm (17.2“ x 1.7” x 30.4“) Package: 604.774 x 199.898 x 1029.97mm (23.81“ x 7.87” x 40.55“)</td>
<td>2U Rackmount Enclosure: 438.4 x 89.8 x 789.9mm (17.2“ x 3.5” x 30.8“)</td>
</tr>
</tbody>
</table>
# H13 Short-Depth Front I/O

*(For Complete System Only)*

## Short-Depth AC

![Short-Depth AC Image]

## Short-Depth DC

![Short-Depth DC Image]

## Table

<table>
<thead>
<tr>
<th>MODEL</th>
<th>AS-1115S-FWTRT</th>
<th>AS-1115S-FDWRST</th>
</tr>
</thead>
<tbody>
<tr>
<td>Processor Support</td>
<td>Single Socket AMD EPYC™ 8004 Series Processor up to 225W</td>
<td>Single Socket AMD EPYC™ 8004 Series Processor up to 225W</td>
</tr>
<tr>
<td>Key Applications</td>
<td>• Virtualization</td>
<td>• Virtualization</td>
</tr>
<tr>
<td></td>
<td>• Edge Cloud AI Computing</td>
<td>• Edge Cloud AI Computing</td>
</tr>
<tr>
<td></td>
<td>• vRAN/O-RAN/NEBS environment</td>
<td>• vRAN/O-RAN/NEBS environment</td>
</tr>
<tr>
<td></td>
<td>• Telco 5G</td>
<td>• Telco 5G</td>
</tr>
<tr>
<td></td>
<td>• CDN/vCDN/Cloud CDN</td>
<td>• CDN/vCDN/Cloud CDN</td>
</tr>
<tr>
<td>Outstanding Features</td>
<td>• NEBS compliant design</td>
<td>• NEBS compliant design</td>
</tr>
<tr>
<td></td>
<td>• 3 PCIe 5.0 x16 expansion slots</td>
<td>• 3 PCIe 5.0 x16 expansion slots</td>
</tr>
<tr>
<td></td>
<td>• Supports double width GPU</td>
<td>• Supports double width GPU</td>
</tr>
<tr>
<td></td>
<td>• 2 On-board PCIe 3.0 x4 M.2 NVMe 80mm/110mm (Boot)</td>
<td>• 2 On-board PCIe 3.0 x4 M.2 NVMe 80mm/110mm (Boot)</td>
</tr>
<tr>
<td>Serverboard</td>
<td>SUPER® H13SVW-NT</td>
<td>SUPER® H13SVW-NT</td>
</tr>
<tr>
<td>System Memory (Max.)</td>
<td>6 DIMM slots, DDR5-4800MHz memory, support up to 576GB</td>
<td>6 DIMM slots, DDR5-4800MHz memory, support up to 576GB</td>
</tr>
<tr>
<td>Expansion Slots</td>
<td>Slot 1: PCIe 5.0 x16 FHFL</td>
<td>Slot 1: PCIe 5.0 x16 FHFL</td>
</tr>
<tr>
<td></td>
<td>Slot 2: PCIe 5.0 x16 FHFL</td>
<td>Slot 2: PCIe 5.0 x16 FHFL</td>
</tr>
<tr>
<td></td>
<td>Slot 3: PCIe 5.0 x16 LP</td>
<td>Slot 3: PCIe 5.0 x16 LP</td>
</tr>
<tr>
<td>Onboard Storage</td>
<td>System on Chip</td>
<td>System on Chip</td>
</tr>
<tr>
<td>Controller</td>
<td>System on Chip</td>
<td>System on Chip</td>
</tr>
<tr>
<td>Connectivity</td>
<td>2x 10Gbe RJ45 port(s) with Broadcom BCM57416</td>
<td>2x 10Gbe RJ45 port(s) with Broadcom BCM57416</td>
</tr>
<tr>
<td>VGA/Audio</td>
<td>1 onboard VGA port</td>
<td>1 onboard VGA port</td>
</tr>
<tr>
<td>Management</td>
<td>Built-in Server management tool (IPMI 2.0, KVM/media over LAN) with dedicated LAN port</td>
<td>Built-in Server management tool (IPMI 2.0, KVM/media over LAN) with dedicated LAN port</td>
</tr>
<tr>
<td>Drive Bays</td>
<td>2x 2.5” SATA/SAS/NVMe drive bays</td>
<td>2x 2.5” SATA/SAS/NVMe drive bays</td>
</tr>
<tr>
<td>Power Supply</td>
<td>2x 800W Redundant AC Platinum Level power supplies</td>
<td>2x 600W Redundant DC power supplies</td>
</tr>
<tr>
<td>Cooling System</td>
<td>6x 4cm heavy duty fan(s)</td>
<td>6x 4cm heavy duty fan(s)</td>
</tr>
<tr>
<td>Form Factor</td>
<td>1U Rackmount</td>
<td>1U Rackmount</td>
</tr>
<tr>
<td></td>
<td>Enclosure: 436.88 x 44.5 x 429.3mm (17.2” x 1.7” x 16.9”)</td>
<td>Enclosure: 436.88 x 44.5 x 429.3mm (17.2” x 1.7” x 16.9”)</td>
</tr>
<tr>
<td></td>
<td>Package: 685 x 203 x 609mm (27” x 8” x 24”)</td>
<td>Package: 685 x 203 x 609mm (27” x 8” x 24”)</td>
</tr>
</tbody>
</table>
## H12 WIO / Storage

(For Complete System Only)

### 2U UP WIO

- **High Capacity Storage**

### AS -2114S-WN24RT

<table>
<thead>
<tr>
<th>Processor Support</th>
<th>Single AMD EPYC™ 7003/7002 Series Processor*; TDP up to 280W</th>
</tr>
</thead>
<tbody>
<tr>
<td>Key Applications</td>
<td>• Virtualization</td>
</tr>
<tr>
<td></td>
<td>• Hyperconverge Storage</td>
</tr>
<tr>
<td></td>
<td>• Cloud Computing</td>
</tr>
<tr>
<td></td>
<td>• All Flash Storage</td>
</tr>
<tr>
<td>Outstanding</td>
<td>24-Port NVMe SSD Support</td>
</tr>
<tr>
<td>Features</td>
<td>• Up to 4TB DDR4 ECC RDIMM</td>
</tr>
<tr>
<td></td>
<td>• Dual 10GBaseT LAN Ports</td>
</tr>
<tr>
<td></td>
<td>• 2x M.2 Support by default</td>
</tr>
<tr>
<td></td>
<td>• 2 SATA DOMs Support with Embedded Power</td>
</tr>
<tr>
<td>Serverboard</td>
<td>SUPER® H12SSW-NTR</td>
</tr>
<tr>
<td>System Memory</td>
<td>Up to 4TB 3DS ECC RDIMM/LRDIMM; DDR4 up to 3200MHz, in 16 DIMMs</td>
</tr>
<tr>
<td>(Max.)</td>
<td></td>
</tr>
<tr>
<td>Expansion Slots</td>
<td>1 PCIe 4.0 x16 (FH/HL)</td>
</tr>
<tr>
<td></td>
<td>2 PCIe 4.0 x16 (FHHL); 1 PCIe 4.0 x8 (LP)</td>
</tr>
<tr>
<td>Onboard Storage</td>
<td>24 Hot-Swappable U.2 NVMe drive support</td>
</tr>
<tr>
<td>Controller</td>
<td>NVMe drive bays via CPU</td>
</tr>
<tr>
<td>Connectivity</td>
<td>2 10GBase-T Ethernet via Broadcom BCM57416 Controller; 5 USB 3.0 ports (4 rear, 1 Type A)</td>
</tr>
<tr>
<td>VGA/Audio</td>
<td>1 VGA 1 Aspeed AST2500 BMC</td>
</tr>
<tr>
<td>Management</td>
<td>Built-in Server management tool (IPMI 2.0, KVM/media over LAN) with dedicated LAN port</td>
</tr>
<tr>
<td>Drive Bays</td>
<td>24 Hot-Swappable U.2 NVMe drive support</td>
</tr>
<tr>
<td></td>
<td>12x 3.5” SAS/SATA drive bays; 4x 2.5” 7mm NVMe drive bays</td>
</tr>
<tr>
<td>Power Supply</td>
<td>1200W Redundant Power Supplies Titanium Level (96%) (Full redundancy based on configuration and application load)</td>
</tr>
<tr>
<td></td>
<td>800W redundant Platinum Level high-efficiency power supplies</td>
</tr>
<tr>
<td>Cooling System</td>
<td>3 heavy duty fans w/ Optimal Fan Speed Control</td>
</tr>
<tr>
<td></td>
<td>6x 40x40x56mm counter-rotation PWM fans</td>
</tr>
<tr>
<td>Form Factor</td>
<td>2U Rackmount 437 x 89 x 630mm (17.2” x 3.5” x 24.8”)</td>
</tr>
</tbody>
</table>

* AMD EPYC™ 7003 Series Processor with AMD 3D V-Cache™ Technology requires BIOS version 2.3 or newer.

### ASG-1014S-ACR12N4H

<table>
<thead>
<tr>
<th>Processor Support</th>
<th>Single AMD EPYC™ 7003/7002 Series Processor*; TDP up to 240W</th>
</tr>
</thead>
<tbody>
<tr>
<td>Key Applications</td>
<td>• Object Storage</td>
</tr>
<tr>
<td></td>
<td>• Scale-Out Density</td>
</tr>
<tr>
<td></td>
<td>• Database Applications</td>
</tr>
<tr>
<td></td>
<td>• Hadoop &amp; Ceph storage solutions</td>
</tr>
<tr>
<td>Outstanding</td>
<td>Up to 4TB ECC DDR4</td>
</tr>
<tr>
<td>Features</td>
<td>4x 2.5” 7mm hot-swap NVMe drive bays</td>
</tr>
<tr>
<td></td>
<td>3x PCIe 4.0 x16 slots (1x slot occupied by storage controller)</td>
</tr>
<tr>
<td></td>
<td>Pull-out drawer storage bay w/internal cable arm design</td>
</tr>
<tr>
<td>Serverboard</td>
<td>SUPER® H12SSW-NTR</td>
</tr>
<tr>
<td>System Memory</td>
<td>Up to 4TB 3DS ECC RDIMM/LRDIMM; DDR4 up to 3200MHz, in 16 DIMMs</td>
</tr>
<tr>
<td>(Max.)</td>
<td></td>
</tr>
<tr>
<td>Expansion Slots</td>
<td>2 PCIe 4.0 x16 (FHHL); 1 PCIe 4.0 x8 (LP)</td>
</tr>
<tr>
<td>Onboard Storage</td>
<td>NVMe drive bays via CPU</td>
</tr>
<tr>
<td>Controller</td>
<td>2 10GBase-T Ethernet via Broadcom BCM57416 Controller; 2 USB 2.0 port(s) (2 Front_USB) 4 USB 3.0 port(s) (4 Rear_USB)</td>
</tr>
<tr>
<td>Connectivity</td>
<td>2 10GBase-T Ethernet via Broadcom BCM57416 Controller; 2 USB 2.0 port(s) (2 Front_USB) 4 USB 3.0 port(s) (4 Rear_USB)</td>
</tr>
<tr>
<td>VGA/Audio</td>
<td>1 VGA 1 Aspeed AST2500 BMC</td>
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<tr>
<td>Management</td>
<td>Built-in Server management tool (IPMI 2.0, KVM/media over LAN) with dedicated LAN port</td>
</tr>
<tr>
<td>Drive Bays</td>
<td>24 Hot-Swappable U.2 NVMe drive support</td>
</tr>
<tr>
<td></td>
<td>12x 3.5” SAS/SATA drive bays; 4x 2.5” 7mm NVMe drive bays</td>
</tr>
<tr>
<td>Power Supply</td>
<td>800W redundant Platinum Level high-efficiency power supplies</td>
</tr>
<tr>
<td>Cooling System</td>
<td>6 heavy duty fans w/ Optimal Fan Speed Control</td>
</tr>
<tr>
<td></td>
<td>6x 40x40x56mm counter-rotation PWM fans</td>
</tr>
<tr>
<td>Form Factor</td>
<td>1U Rackmount 447 x 43 x 940mm (17.6” x 1.7” x 37”)</td>
</tr>
</tbody>
</table>
## MODEL | SBA-4114S-C2N | SBA-4114S-T2N | SBA-4119SG
--- | --- | --- | ---
**Processor Support** | Single AMD EPYC™ 7003/7002 Series Processor*; TDP up to 280W | Single AMD EPYC™ 7003/7002 Series Processor*; TDP up to 280W | Single AMD EPYC™ 7003/7002 Series Processor*; TDP up to 280W
**Key Applications** | • Resource saving and high density • Data center • HPC • EDA | • Resource saving and high density • Data center • HPC • EDA | • Resource saving and high density • Data center • HPC • Cloud Gaming, Inference
**Outstanding Features** | • 2x hot-plug 2.5" NVMe/SAS3/SATA3 drive bays • 2 NVMe/SATA M.2 • 2x 25G on board • Flexible AIOM module per node | • 2x hot-plug 2.5" NVMe/SATA3 drive bays • 2 NVMe/SATA M.2 • 2x 25G on board • Flexible AIOM module per node | • 1 NVMe/SATA M.2 • 2 PCIe 4.0 x16 slots • 2x 25G on board
**Serverboard** | MBD-BH12SSI-M25 | MBD-BH12SSI-M25 | MBD-BH12SSI-M25
**System Memory (Max.)** | Up to 2TB DDR4-3200MHz RDIMM | Up to 2TB DDR4-3200MHz RDIMM | Up to 2TB DDR4-3200MHz RDIMM
**Expansion Slots** | N/A | N/A | 2 PCIe 4.0 x16
**Onboard Storage Controller** | Broadcom 3108 | AMD SP3 | AMD SP3
**Connectivity** | 25G Ethernet/100G EDR/200G HDR; Optional AIOM Network Card | 25G Ethernet/100G EDR/200G HDR; Optional AIOM Network Card | 25G Ethernet/100G EDR/200G HDR
**VGA/Audio** | N/A | N/A | N/A
**Management** | IPMI 2.0, KVM over IP, Virtual Media over LAN | IPMI 2.0, KVM over IP, Virtual Media over LAN | IPMI 2.0, KVM over IP, Virtual Media over LAN
**Drive Bays** | 2x hot-plug 2.5" NVMe/SAS3/SATA3 drive bays; 2x M.2 NVMe/SATA3 | 2x hot-plug 2.5" NVMe/SATA3 drive bays; 2x M.2 NVMe/SATA3 | 1x M.2 NVMe/SATA3
**Power Supply** | N/A | N/A | N/A
**Cooling System** | Passive HS for CPU | Passive HS for CPU | Passive HS for CPU
**SuperBlade Enclosures** | 820C 820H 820J 820L | 820C 820H 820J 820L | 820C 820H 820J 820L

* AMD EPYC™ 7003 Series Processor with AMD 3D V-Cache™ Technology requires BIOS version 2.3 or newer.
# H12 SUPERBLADE®

(For Complete System Only)

Up to 20 hot-plug server blades

![Rear View](image1)

![Rear View](image2)

## MODEL | SBE-820C | SBE-820J
--- | --- | ---
Server Blade | Up to 20 hot-plug server blades | Up to 20 hot-plug server blades

### Module Support
- Supports:
  - SBA-4114S-C2N
  - SBA-4114S-T2N
  - SBA-4119SG
- Supports:
  - SBA-4114S-C2N
  - SBA-4114S-T2N
  - SBA-4119SG

### LED
- Fault LED
- Power LED
- Fault LED
- Power LED

### InfiniBand Switch
- 1x 100G EDR IB or OPA switch
- N/A

### Gigabit Ethernet Switch
- Up to 2 hot-plug 25G Ethernet Switches
- Up to 4 hot plug 25G Ethernet switch

### Management Module
- 1 hot-plug management module providing remote KVM and IPMI 2.0 functionalities
- 2 hot-plug management modules providing remote KVM and IPMI 2.0 functionalities

### Power Supply
- 4/6/8 hot-swap 2200W power supplies, up to N+N redundancy, 4 pcs of 1200W BBP, 3 optional cooling fan modules(PWS-DF005-2F)
- 4/6/8 hot-swap 2200W power supplies, up to N+N redundancy, 4 pcs of 1200W BBP, 3 optional cooling fan modules(PWS-DF005-2F)

### Cooling Design
- Front to back
- Front to back

### Dimensions (HxWxD)
- 356 x 447 x 812.8mm (14” x 17.6” x 32”)
- 356 x 447 x 812.8mm (14” x 17.6” x 32”)

* AMD EPYC™ 7003 Series Processor with AMD 3D V-Cache™ Technology requires BIOS version 2.3 or newer.
## H12 SUPERBLADE®
*(For Complete System Only)*

Up to 20 hot-plug server blades

![Rear View](image)

**MODEL**

<table>
<thead>
<tr>
<th>SBE-820L</th>
<th>SBE-820H</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Server Blade</strong></td>
<td>Up to 20 hot-plug server blades</td>
</tr>
</tbody>
</table>
| **Module Support** | Supports:  
• SBA-4114S-C2N  
• SBA-4114S-T2N  
• SBA-4119S | Supports:  
• SBA-4114S-C2N  
• SBA-4114S-T2N  
• SBA-4119S |
| **LED** |  
• Fault LED  
• Power LED |  
• Fault LED  
• Power LED |
| **InfiniBand Switch** | N/A | 1x 200G HDR IB switch |
| **Gigabit Ethernet Switch** | Up to 2 hot-plug 10G Ethernet Switches | Up to 2 hot-plug 25G Ethernet Switches |
| **Management Module** | 1 hot-plug CMM (Central Management Modules) providing remote KVM and IPMI 2.0 functionalities | 1 hot-plug management modules providing remote KVM and IPMI 2.0 functionalities |
| **Power Supply** | 4/6/8pcs hot-swap 2200W power supplies, up to N+N redundancy, 3 optional cooling fan modules (PWS-DF005-2F) | 4/6/8 hot-swap 2200W power supplies, up to N+N redundancy, 4 pcs of 1200W BBP, 3 optional cooling fan modules(PWS-DF005-2F) |
| **Cooling Design** | Front to back | Front to back |
| **Dimensions (HxWxD)** | 356 x 447 x 812.8mm (14” x 17.6” x 32”) | 356 x 447 x 812.8mm (14” x 17.6” x 32”) |

* AMD EPYC™ 7003 Series Processor with AMD 3D V-Cache™ Technology requires BIOS version 2.3 or newer.
H12 MAINSTREAM

**Processor Support**
- **AS-2014S-TR**: Single AMD EPYC™ 7003/7002 Series Processor; TDP up to 280W
- **AS-2024S-TR**: Dual AMD EPYC™ 7003/7002 Series Processors
- **AS-3014TS-i**: Single AMD EPYC™ 7003/7002 Series Processors*; TDP up to 280W
- **AS-5014A-TT**: AMD Ryzen™ Threadripper™ PRO 3000WX Series Processor, up to 64 Cores

**Key Applications**
- **AS-2014S-TR**: Backup storage, Web or Database Servers, and Compact Network Appliance
- **AS-2024S-TR**: Data processing & Storage, Cloud Computing, Hosting & Application delivery, Cloud and Virtualization needs, Content Delivery Network (CDN), 6 PCIe Gen4 expansion slots for next generation AOC
- **AS-3014TS-i**: Entry-Level Workstation, Video and Music Production, Office Applications
- **AS-5014A-TT**: Media and Entertainment Content Creation, Product Design and Engineering Simulation, AI and Deep Learning

**Outstanding Features**
- **AS-2014S-TR**: 12x 3.5” hot-swap drive bays, Up to 2TB DDR4 ECC RDIMM, 2x 1GbE LAN, 2x M.2 Support
- **AS-2024S-TR**: Tool-less Drive Trays and Tool-less Brackets, 920W Redundant Platinum Level High-Efficiency Power Supplies, 12x 3.5/2.5” Hot-swap drive bays with NVMe support
- **AS-3014TS-i**: 3.5” internal SATA HDD Bays, Up to 2TB DDR4 ECC RDIMM, 2x 1GbE LAN, 2x M.2 Support
- **AS-5014A-TT**: 5U Rackmountable / Tower, 6 PCIe 4.0 x16 slots, 3.5” internal SATA HDD Bays, Optional Kits

**Serverboard**
- **AS-2014S-TR**: SUPER® H12SSL-i
- **AS-2024S-TR**: SUPER® H12DSi-N6
- **AS-3014TS-i**: SUPER® H12SSL-i
- **AS-5014A-TT**: SUPER® M12SWA-TF

**Chipset**
- **AS-2014S-TR**: System on Chip (SoC)
- **AS-2024S-TR**: System on Chip (SoC)
- **AS-3014TS-i**: System on Chip (SoC)
- **AS-5014A-TT**: AMD WRX80

**System Memory (Max.)**
- **AS-2014S-TR**: Up to 2TB 3DS ECC DDR4-3200MHz RDIMM/LRDIMM in 8 DIMM slots
- **AS-2024S-TR**: Up to 4TB 3DS ECC DDR4-3200MHz RDIMM/LRDIMM in 16 DIMM slots
- **AS-3014TS-i**: Up to 2TB 3DS ECC DDR4-3200MHz RDIMM/LRDIMM, in 8 DIMM slots
- **AS-5014A-TT**: Up to 2TB ECC DDR4-3200-MHz Memory, in 8 DIMM slots

**Expansion Slots**
- **AS-2014S-TR**: 5 PCIe 4.0 x16 LP slots, 2 PCIe 4.0 x8 LP slots
- **AS-2024S-TR**: 3 PCIe 4.0 x16 LP slots, 3 PCIe 4.0 x8 LP slots
- **AS-3014TS-i**: 5 PCIe 4.0 x16 (FH), 2 PCIe 4.0 x8 (FH)
- **AS-5014A-TT**: 2x M.2 Support, 2x 1GbE LAN

**Onboard Storage Controller**
- **AS-2014S-TR**: SP3
- **AS-2024S-TR**: SP3
- **AS-3014TS-i**: SP3
- **AS-5014A-TT**: SP3

**Connectivity**
- **AS-2014S-TR**: Dual Gigabit Ethernet via Broadcom BCM5720 Controller; 5 USB 3.0 ports (4 rear, 2 via header)
- **AS-2024S-TR**: Dual Gigabit Ethernet via Broadcom BCM5720 Controller; 2 USB 2.0 and 2 USB 3.0 ports in the rear
- **AS-3014TS-i**: Dual Gigabit Ethernet via Broadcom BCM5720 Controller; 5 USB 3.0 ports (4 rear, 2 via header)
- **AS-5014A-TT**: 4 SATA3 (6Gbps) ports; RAID 0, 1, 5, 10

**VGA/Audio**
- **AS-2014S-TR**: 1 VGA 1 Aspeed AST2500 BMC
- **AS-2024S-TR**: 1 VGA; 1 Aspeed AST2600 BMC
- **AS-3014TS-i**: 1 VGA; 1 Aspeed AST2500 BMC
- **AS-5014A-TT**: 1 VGA port (dedicated for IPMI); 7.1 HD Audio

**Management**
- **AS-2014S-TR**: Built-in Server management tool (IPMI 2.0, KVM/media over LAN) with dedicated LAN port 12 Hot-Swappable 3.5”/2.5” SATA/ NVMe drive bays; Optional 2x 2.5” SATA/NVMe drive support with optional kits
- **AS-2024S-TR**: Built-in Server management tool (IPMI 2.0, KVM/media over LAN) with dedicated LAN port 12x hot-swap 3.5/2.5” SATA/NVMe drive bays; 4 NVMe and 8 SATA default configuration*
- **AS-3014TS-i**: Built-in Server management tool (IPMI 2.0, KVM/media over LAN) with dedicated LAN port 4x internal fixed 3.5”/2.5” SATA/NVMe drive bays; 2x front fixed 2.5” SATA/NVMe drive bays
- **AS-5014A-TT**: Intel® Node Manager, IPMI 2.0, SPM, SUM, SuperDoctor* 5, Watchdog

**Drive Bays**
- **AS-2014S-TR**: 920W Redundant Power Supplies Platinum Level (94%) (Full redundancy based on configuration and application load)
- **AS-2024S-TR**: 920W redundant Platinum Level High-Efficiency power supplies
- **AS-3014TS-i**: 920W redundant Gold Level power supplies
- **AS-5014A-TT**: 2000W Platinum Level power supply

**Power Supply**
- **AS-2014S-TR**: 900W redundant Gold Level power supplies
- **AS-2024S-TR**: 920W redundant Platinum Level High-Efficiency power supplies
- **AS-3014TS-i**: 920W redundant Gold Level power supplies
- **AS-5014A-TT**: 2000W Platinum Level power supply

**Cooling System**
- **AS-2014S-TR**: 3 heavy duty fans w/ Optimal Fan Speed Control
- **AS-2024S-TR**: 3 heavy duty fans w/ Optimal Fan Speed Control
- **AS-3014TS-i**: 2 system fans w/ Optimal Fan Speed Control
- **AS-5014A-TT**: 3x 12cm rear exhaust fans, 3x 12cm front cooling fans (optional), 3x 12cm top cooling fans (optional); Optional high-performance closed-loop water cooling for CPU

**Form Factor**
- **AS-2014S-TR**: 437 x 89 x 648mm (17.2” x 3.5” x 25.5”)
- **AS-2024S-TR**: 437 x 89 x 648mm (17.2” x 3.5” x 25.5”)
- **AS-3014TS-i**: Mid-Tower 193 x 424 x 525mm (7.6” x 16.7” x 20.68”)
- **AS-5014A-TT**: 222 x 535 x 573 mm (21.06” x 8.74” x 22.56”)

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* AMD EPYC™ 7003 Series Processor with AMD 3D V-Cache™ Technology requires BIOS version 2.3 or newer.
## H13 WIO

### Model Comparison

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Processor Support</strong></td>
<td>AMD EPYC™ 8004 Series Processor Single Socket supported TDP up to 225W</td>
<td>AMD EPYC™ 8004 Series Processor Single Socket supported TDP up to 225W</td>
<td>AMD EPYC™ 8004 Series Processor Single Socket supported TDP up to 225W</td>
</tr>
</tbody>
</table>
| **Key Applications** | • Virtualization  
• Edge/Cloud Computing Services  
• Database/Storage  
• Firewall Applications  
• Data Center Optimized | • Virtualization  
• Edge/Cloud Computing Services  
• Database/Storage  
• Firewall Applications  
• Data Center Optimized | • Virtualization  
• Edge/Cloud Computing Services  
• Database/Storage  
• Firewall Applications  
• Data Center Optimized |
| **Outstanding Features** | • Support up to 2x PCIe 5.0 x16 FHFL expansion slots, and 1x PCIe 5.0 x16 LP expansion slot  
• Support double width GPU  
• PCIe 5.0 NVMe drives supported  
• Flexible I/O expansion  
• 2 On-board PCIe 3.0 x4 M.2 NVMe 80mm/110mm (Boot) | • Support up to 2x PCIe 5.0 x16 FHFL expansion slots, and 1x PCIe 5.0 x16 LP expansion slot  
• Support double width GPU  
• PCIe 5.0 NVMe drives supported  
• Flexible I/O expansion  
• 2 On-board PCIe 3.0 x4 M.2 NVMe 80mm/110mm (Boot) | • Support up to 2x PCIe 5.0 x16 FHFL expansion slots, and 2 PCIe 5.0 x8 LP expansion slots  
• Support double width GPU  
• PCIe 5.0 NVMe drives supported  
• Flexible I/O expansion  
• 2 On-board PCIe 3.0 x4 M.2 NVMe 80mm/110mm (Boot) |
| **Serverboard** | SUPER® H13SVW-NT | SUPER® H13SVW-NT | SUPER® H13SVW-NT |
| **System Memory (Max.)** | System On Chip | System On Chip | System On Chip |
| **Expansion Slots** | Slot 1: PCIe 5.0 x16 FHFL  
Slot 2: PCIe 5.0 x16 FHFL  
Slot 3: PCIe 5.0 x16 LP | Slot 1: PCIe 5.0 x16 FHFL  
Slot 2: PCIe 5.0 x16 FHFL  
Slot 3: PCIe 5.0 x16 LP | 2 PCIe 5.0 x16 FHFL slot(s)  
2 PCIe 5.0 x8 LP slot(s) |
| **Onboard Storage Controller** | | | |
| **Connectivity** | 2x 10Gb RJ45 port(s) with Broadcom BCM57416 | 2x 10Gb RJ45 port(s) with Broadcom BCM57416 | 2x 10Gb RJ45 port(s) with Broadcom BCM57416 |
| **VGA/Audio** | 1 onboard VGA port | 1 onboard VGA port | 1 onboard VGA port |
| **Management** | | | |
| **Drive Bays** | 4x 3.5” hot-swap SATA/SAS/NVMe drive bays; 6x 2.5” NVMe hybrid; | 10x 2.5” hot-swap SATA/SAS/NVMe drive bays; 6x 2.5” NVMe hybrid; | 12x 3.5” hot-swap SATA/SAS/NVMe drive bays; 6x 3.5” NVMe hybrid; |
| **Peripheral Bays** | | | |
| **Power Supply** | None | None | None |
| **Cooling System** | 6x 4cm heavy duty fan(s) | 6x 4cm heavy duty fan(s) | 3x 8cm heavy duty fan(s) |
| **Form Factor** | 1U Rackmount  
Enclosure: 437 x 43 x 650mm (17.2” x 1.7” x 25.6")  
Package: 597 x 216 x 856mm (23.5” x 8.5” x 33.7") | 1U Rackmount  
Enclosure: 437 x 43 x 597mm (17.2” x 1.7” x 23.5")  
Package: 597 x 197 x 800mm (23.5” x 7.75” x 31.5") | 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") |

### Support Models
- **WIO -1U**
- **WIO -1U**
- **WIO -2U**
**H12 WIO**

### 1U UP WIO

### 1U 10NVMe, UP WIO

### 1U UP WIO

<table>
<thead>
<tr>
<th>MODEL</th>
<th>AS -1014S-WTRT</th>
<th>AS -1114S-WN10RT**</th>
<th>AS -1114S-WTRT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Processor Support</td>
<td>Single AMD EPYC™ 7003/7002 Series Processor* TDP up to 240W</td>
<td>Single AMD EPYC™ 7003/7002 Series Processor* TDP up to 280W</td>
<td>Single AMD EPYC™ 7003/7002 Series Processor* TDP up to 240W</td>
</tr>
<tr>
<td>Key Applications</td>
<td>• Database Processing &amp; Storage • Data Center • FireWall Applications</td>
<td>• Virtualization • Cloud Computing • All Flash Storage</td>
<td>• Database Processing &amp; Storage • Data Center • FireWall Applications</td>
</tr>
<tr>
<td>Outstanding Features</td>
<td>• Support up to 3 PCIe cards • Up to 2TB DDR4 ECC RDIMM • Dual 10GBaseT LAN ports • 2x M.2 support by default • 2 SATA DOMs support with embedded power • 10-Port NVMe SSD support</td>
<td>• Support up to 3 PCIe cards • Up to 2TB DDR4 ECC RDIMM • Dual 10GBaseT LAN Ports • 2x M.2 Support by default • 2 SATA DOMs Support with Embedded Power</td>
<td>• Support up to 3 PCIe cards • Up to 2TB DDR4 ECC RDIMM • Dual 10GBaseT LAN Ports • 2x M.2 Support by default • 2 SATA DOMs Support with Embedded Power</td>
</tr>
<tr>
<td>Serverboard</td>
<td>• SUPER® H12SSW-NT</td>
<td>• SUPER® H12SSW-NTR</td>
<td>• SUPER® H12SSW-NT</td>
</tr>
<tr>
<td>System Memory (Max.)</td>
<td>Up to 2TB 3DS ECC DDR4-3200MHz RDIMM/ RRDIMM, in 8 DIMM slots</td>
<td>Up to 4TB 3DS ECC RDIMM/RRDIMM; DDR4 up to 3200MHz, in 16 DIMM slots</td>
<td>Up to 2TB 3DS ECC RDIMM/RRDIMM; DDR4 up to 3200MHz, in 8 DIMM slots</td>
</tr>
<tr>
<td>Expansion Slots</td>
<td>2 PCIe 4.0 x16 (FH/HL) slots 1 PCIe 4.0 x16 (LP) slot</td>
<td>2 PCIe 4.0 x16 (FH/HL) slots 1 PCIe 4.0 x16 (LP) slot</td>
<td>2 PCIe 4.0 x16 (FH/HL) slots 1 PCIe 4.0 x16 (LP) slot</td>
</tr>
<tr>
<td>Onboard Storage Controller</td>
<td>4 Hot-Swappable 3.5&quot; SATA drive support; Optional 4 U.2 NVMe (PCIe Gen 3) drive support vs additional NVMe cables required</td>
<td>10 Hot-Swappable U.2 NVMe drive support; Optional 10 SATA3 drive support vs additional SATA cables required</td>
<td>10 Hot-Swappable U.2 NVMe drive support; Optional 2 U.2 NVMe (PCIe Gen 3) drive support vs additional NVMe cables required</td>
</tr>
<tr>
<td>Connectivity</td>
<td>2 10GBase-T Ethernet via Broadcom BCM57416 Controller; 7 USB 3.0 ports (4 rear, 2 front, 1 Type A)</td>
<td>2 10GBase-T Ethernet via Broadcom BCM57416 Controller; 7 USB 3.0 ports (4 rear, 2 front, 1 Type A)</td>
<td>2 10GBase-T Ethernet via Broadcom BCM57416 Controller; 7 USB 3.0 ports (4 rear, 2 front, 1 Type A)</td>
</tr>
<tr>
<td>VGA/Audio</td>
<td>1 VGA 1 Aspeed AST2500 BMC</td>
<td>1 VGA 1 Aspeed AST2500 BMC</td>
<td>1 VGA 1 Aspeed AST2500 BMC</td>
</tr>
<tr>
<td>Management</td>
<td>Built-in Server management tool (IPMI 2.0, KVM/media over LAN) with dedicated LAN port; Software Out of Band License key (SFT-OOB-LIC) included for OOB BIOS management</td>
<td>Built-in Server management tool (IPMI 2.0, KVM/media over LAN) with dedicated LAN port</td>
<td>Built-in Server management tool (IPMI 2.0, KVM/media over LAN) with dedicated LAN port; Software Out of Band License key (SFT-OOB-LIC) included for OOB BIOS management</td>
</tr>
<tr>
<td>Drive Bays</td>
<td>4 Hot-Swappable 3.5&quot; SATA drive support; Optional 4 U.2 NVMe (PCIe Gen 3) drive support vs additional NVMe cables required</td>
<td>10 Hot-Swappable U.2 NVMe drive support; Optional 10 SATA3 drive support vs additional SATA cables required</td>
<td>10 Hot-Swappable 2.5&quot; SATA drive support; Optional 2 U.2 NVMe (PCIe Gen 3) drive support vs additional NVMe cables required</td>
</tr>
<tr>
<td>Peripheral Bays</td>
<td>Optional to support 1x Slim DVD-ROM Drive</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Power Supply</td>
<td>500W Redundant Power Supplies Platinum Level (94%) (Full redundancy based on configuration and application load)</td>
<td>750W Redundant Power Supplies Platinum Level (94%) (Full redundancy based on configuration and application load)</td>
<td>500W Redundant Power Supplies Platinum Level (94%) (Full redundancy based on configuration and application load)</td>
</tr>
<tr>
<td>Cooling System</td>
<td>4 heavy duty fans w/ Optimal Fan Speed Control, Additional 1 heavy duty fan support w/ Optimal Fan Speed Control</td>
<td>6 heavy duty fans w/ Optimal Fan Speed Control</td>
<td>4 heavy duty fans w/ Optimal Fan Speed Control, Additional 1 heavy duty fan support w/ Optimal Fan Speed Control</td>
</tr>
<tr>
<td>Form Factor</td>
<td>1U Rackmount 437 x 43 x 650mm (17.2&quot; x 1.7” x 25.6&quot;)</td>
<td>437 x 43 x 597mm (17.2&quot; x 1.7” x 23.5&quot;)</td>
<td>437 x 43 x 597mm (17.2&quot; x 1.7” x 23.5&quot;)</td>
</tr>
</tbody>
</table>

* AMD EPYC™ 7003 Series Processor with AMD 3D V-Cache™ Technology requires BIOS version 2.3 or newer.
** For complete system only
## H13 Motherboards

<table>
<thead>
<tr>
<th>Model</th>
<th>H13DSH</th>
<th>H13DSG-O-CPU</th>
</tr>
</thead>
<tbody>
<tr>
<td>Processor</td>
<td>AMD EPYC™ 9004 Series Processors</td>
<td>AMD EPYC™ 9004 Series Processors</td>
</tr>
<tr>
<td>Chipset</td>
<td>System on Chip</td>
<td>System on Chip</td>
</tr>
<tr>
<td>Form Factor</td>
<td>Proprietary, 17&quot; x 11.5&quot; (43.18cm x 29.21cm)</td>
<td>Proprietary, 17&quot; x 14.7&quot; (43.18cm x 37.34cm)</td>
</tr>
<tr>
<td>Memory Capacity &amp; Slots</td>
<td>Up to 6TB 3DS ECC RDIMM DDR5-4800MHz in 24 DIMMs</td>
<td>Up to 6TB 3DS ECC RDIMM DDR5-4800MHz in 24 DIMMs</td>
</tr>
</tbody>
</table>
| Expansion Slots | 1 PCIe 5.0 x16 AIOM / OCP 3.0  
2 PCIe 5.0 x16 (in x16 slot)  
M.2 Interface: 2 PCIe 3.0 x4  
Form Factor: 2280/22110  
M.2 Key: M-Key | 1 PCIe 5.0 x16 AIOM / OCP 3.0  
M.2 Interface: 1 PCIe 3.0 x4  
Form Factor: 2280/22110  
M.2 Key: M-Key |
| Onboard Storage Controller | N/A                                                                 | Asmedia ASM1061                                                        |
| Onboard LAN  | N/A                                                                    | N/A                                                                        |
| Onboard VGA  | 1 Aspeed AST2600 BMC port(s)                                           | N/A                                                                        |
| USB Ports    | 2 USB 3.1 Gen1 ports via header                                       | 1 USB 2.0 port via header                                                  |
| Other Onboard I/O Devices | 4 MCI0 (PCIe 5.0 x8/SATA3) ports  
6 MCI0 (PCIe 5.0 x8) ports | TPM 2.0 header  
20 MCI0 (PCIe 5.0 x8) ports |
| Manageability | SuperDoctorR 5, SPM, SUM, SSM, Watchdog, IPMICFG, IPMIView for Linux/Windows, SMICIPMITool, IPMI 2.0, KVM with dedicated LAN | SuperDoctorR 5, SPM, SUM, SSM, Watchdog, IPMICFG, IPMIView for Linux/Windows, SMICIPMITool, IPMI 2.0, KVM with dedicated LAN |
| PC Health Monitoring | VBAT, Memory temperature, CPU temperature, 3.3V standby, +5V standby, +3.3V, +12V, VRM temperature, CPU thermal trip support, 1.8V standby | VBAT, Memory temperature, CPU temperature, 3.3V standby, +5V standby, +3.3V, +12V, VRM temperature, CPU thermal trip support, 1.8V standby |
| Thermal Control | 8x 6-pin fan headers (up to 8 fans)                                   | 10x 4-pin fan headers (up to 10 fans)                                     |
| Other Features | RoT                                                                    | RoT                                                                        |
| BIOS         | AMI 32MB SPI Flash EEPROM                                              | AMI 32MB SPI Flash EEPROM                                                 |
## H13 Motherboards

<table>
<thead>
<tr>
<th>MODEL</th>
<th>H13SST-G</th>
<th>H13SST-GC</th>
<th>H13SSW</th>
</tr>
</thead>
<tbody>
<tr>
<td>Processor</td>
<td>AMD EPYC™ 9004 Series Processors</td>
<td>AMD EPYC™ 9004 Series Processors</td>
<td></td>
</tr>
<tr>
<td>Chipset</td>
<td>System on Chip</td>
<td>System on Chip</td>
<td></td>
</tr>
<tr>
<td>Form Factor</td>
<td>Proprietary GrandTwin, 8.53&quot; x 12.42&quot; (21.67cm x 31.55cm)</td>
<td>Proprietary, 12.29&quot; x 13.4&quot; (31.22cm x 34.04cm)</td>
<td></td>
</tr>
<tr>
<td>Memory Capacity &amp; Slots</td>
<td>Up to 3TB 3DS ECC RDIMM DDR5-4800MHz in 12 DIMMs</td>
<td>Up to 3TB 3DS ECC RDIMM DDR5-4800MHz in 12 DIMMs</td>
<td></td>
</tr>
<tr>
<td>Expansion Slots</td>
<td>M.2 Interface: 2 SATA/PCIe 5.0 x 4 Form Factor: 2280 M.2 Key: M-Key</td>
<td>1 PCIe 5.0 x 16 Right Riser Slot 1 PCIe 5.0 x 16 Left Riser Slot 2 PCIe 5.0 x 16 AIOM / OCP 3.0 M.2 Interface: 2 PCIe 3.0 x 2 Form Factor: 2280/22110 M.2 Key: M-Key</td>
<td></td>
</tr>
<tr>
<td>Onboard Storage Controller</td>
<td>-GC: Broadcom 3808 SAS3 (12 Gbps) controller for 8 SAS3 (12 Gbps) ports</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Onboard LAN</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Onboard VGA</td>
<td>1 Aspeed AST2600 BMC port(s)</td>
<td>1 VGA port(s) 1 Aspeed AST2600 BMC port(s)</td>
<td></td>
</tr>
<tr>
<td>USB Ports</td>
<td>N/A</td>
<td>2 USB 2.0 port(s) via header 2 USB 3.1 Gen1 ports</td>
<td></td>
</tr>
<tr>
<td>Other Onboard I/O Devices</td>
<td>1 MIO (PCIe 5.0 x 8/SATA3) ports 4 MIO (PCIe 5.0 x 8) ports -GC: 8 SAS3 ports via SlimSAS</td>
<td>1 COM Port (1 Serial Port) TPM 2.0 header 2 MIO (PCIe 5.0 x 8/SATA3) ports 6 MIO (PCIe 5.0 x 8) ports</td>
<td></td>
</tr>
<tr>
<td>Manageability</td>
<td>SuperDoctor® 5, SPM, SUM, SSM, Watchdog, IPMICFG, IPMIView for Linux/Windows, SMCIPMITool, IPMI 2.0, KVM with dedicated LAN</td>
<td>SuperDoctor® 5, SPM, SUM, SSM, Watchdog, IPMICFG, IPMIView for Linux/Windows, SMCIPMITool, IPMI 2.0, KVM with dedicated LAN</td>
<td></td>
</tr>
<tr>
<td>PC Health Monitoring</td>
<td>VBAT, Memory temperature, CPU temperature, 3.3V standby, +5V standby, +3.3V, +12V, VRM temperature, CPU thermal trip support, 1.8V standby</td>
<td>VBAT, Memory temperature, CPU temperature, 3.3V standby, +5V standby, +3.3V, +12V, VRM temperature, CPU thermal trip support, 1.8V standby</td>
<td></td>
</tr>
<tr>
<td>Thermal Control</td>
<td>1x 4-pin fan header (up to 1 fan)</td>
<td>6x 4-pin fan headers (up to 6 fans)</td>
<td></td>
</tr>
<tr>
<td>Other Features</td>
<td>RoT</td>
<td>RoT</td>
<td></td>
</tr>
<tr>
<td>BIOS</td>
<td>AMI 32MB SPI Flash EEPROM</td>
<td>AMI 32MB SPI Flash EEPROM</td>
<td></td>
</tr>
<tr>
<td>MODEL</td>
<td>H12SSL-i</td>
<td>H12SSL-C</td>
<td>H12SSL-CT</td>
</tr>
<tr>
<td>-------</td>
<td>---------</td>
<td>---------</td>
<td>-----------</td>
</tr>
<tr>
<td>Processor</td>
<td>Single AMD EPYC™ 7003/7002 Series Processor*</td>
<td>Dual AMD EPYC™ 7003/7002 Series Processors*</td>
<td>System on Chip</td>
</tr>
<tr>
<td>Chipset</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Form Factor</td>
<td>ATX 12” x 9.6”</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Memory Capacity &amp; Slots</td>
<td>2TB ECC Registered, DDR4-3200MHz SDRAM in 8 DIMMs</td>
<td>4TB ECC Registered, DDR4-3200MHz SDRAM in 16 DIMMs</td>
<td></td>
</tr>
<tr>
<td>Expansion Slots</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Onboard Storage Controller</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Onboard LAN</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Onboard VGA</td>
<td>1 VGA; Aspeed AST2500 BMC</td>
<td>1 VGA; Aspeed AST2600 BMC</td>
<td></td>
</tr>
<tr>
<td>USB Ports</td>
<td>6 USB 3.0 ports (4 rear + 2 headers)</td>
<td>2 USB 2.0 ports (2 rear)</td>
<td>4 USB 3.0 ports (2 rear + 2 headers)</td>
</tr>
<tr>
<td>Other Onboard I/O Devices</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Manageability</td>
<td>IPMI (Intelligent Platform Management Interface) v2.0 with KVM support, IPMI2.0, KVM with dedicated LAN, SPM, SSM, SUM, SuperDoctor* 5, Watchdog</td>
<td>IPMI (Intelligent Platform Management Interface) v2.0 with KVM support, IPMI2.0, KVM with dedicated LAN, SPM, SSM, SUM, SuperDoctor* 5</td>
<td></td>
</tr>
<tr>
<td>PC Health Monitoring</td>
<td>+3.3V, +5V, +5V standby, 3.3V standby, Monitors CPU voltages, Supports system management utility, VBAT</td>
<td>+12V, +3.3V, +5V, +5V standby, Chassis intrusion header, CPU temperature, LAN temperature, Memory temperature, Memory Voltages, Monitors CPU voltages</td>
<td></td>
</tr>
<tr>
<td>Thermal Control</td>
<td>7 fans header, 4-pin type of fan header, 7 fans with tachometer status monitoring, Dual Cooling Zone, Pulse Width Modulated (PWM) fan connectors, Status monitoring for speed control</td>
<td>8x fan header, 4-pin type of fan header, Dual Cooling Zone, Fan speed control, Overheat LED indication, PWM fan speed control</td>
<td></td>
</tr>
<tr>
<td>Other Features</td>
<td>ACPI power management, Control of power-on for recovery from AC power loss, CPU thermal trip support for processor protection, UID</td>
<td>ACPI power management, Control of power-on for recovery from AC power loss, CPU thermal trip support for processor protection, UID, WOL</td>
<td></td>
</tr>
<tr>
<td>BIOS</td>
<td>AMI 256Mb Flash EEPROM</td>
<td>AMI 256Mb Flash EEPROM</td>
<td></td>
</tr>
</tbody>
</table>

* AMD EPYC™ 7003 Series Processor with AMD 3D V-Cache™ Technology requires BIOS version 2.3 or newer.
SYSTEM MANAGEMENT SOFTWARE
Leverage Supermicro’s Management Software Suite to Meet Your IT Infrastructure Challenges

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

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

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

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

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

<table>
<thead>
<tr>
<th>Suite Bundle</th>
<th>Standard</th>
<th>Basic</th>
<th>Advanced</th>
<th>Enterprise</th>
</tr>
</thead>
<tbody>
<tr>
<td>Description</td>
<td>Covers all core functionality to effectively set up, manage, and monitor your Supermicro systems. These features are available to all Supermicro users.</td>
<td>Extends the core functionality and makes system management easier with additional features, such as remote BIOS management and system updates.</td>
<td>Delivers a broad set of tools to help administrators improve the performance, up-time, and monitoring of Supermicro systems.</td>
<td>Offers an extensive platform to manage large data centers and coordinate automated lifecycle management, software-defined infrastructure, and more in a single pane of glass.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>License</th>
<th>No license required</th>
<th>SFT-OOB-LIC</th>
<th>SFT-DCMS-SINGLE</th>
<th>SFT-DCMS-SINGLE + SFT-SDDC-SINGLE</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Key Features*</th>
<th>• Secure remote console (KVM/HTML5)</th>
<th>• Remote BMC management</th>
<th>• Remote OS deployment</th>
<th>• 3rd Party vendor support</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>• System temperature monitoring</td>
<td>• Remote BIOS management</td>
<td>• Auto-discovery</td>
<td>• POD &amp; Rack-level management</td>
</tr>
<tr>
<td></td>
<td>• System power thresholds &amp; alerts</td>
<td>• Out-of-Band systems checks</td>
<td>• Power capping</td>
<td>• SDI Lifecycle management</td>
</tr>
<tr>
<td></td>
<td>• Component monitoring</td>
<td>• TPM Provisioning</td>
<td>• RAID monitoring and configuration</td>
<td>• Manage Composable Dissagregated Infrastructure</td>
</tr>
<tr>
<td></td>
<td>• Email alerting</td>
<td>• Mount/Unmount ISO images from Samba/HTTP</td>
<td>• HDD monitoring</td>
<td>• Zero-touch provisioning for network configuration</td>
</tr>
<tr>
<td></td>
<td>• Remote configuration</td>
<td>• Basic Redfish APIs</td>
<td>• Advanced Redfish APIs</td>
<td>• Single pane of glass for data center deployment</td>
</tr>
<tr>
<td></td>
<td>• Offline diagnostics</td>
<td>• CIM management</td>
<td>• FW update policy</td>
<td>• Rich analytics &amp; telemetry</td>
</tr>
<tr>
<td></td>
<td>• Crash dump</td>
<td>• SysLog</td>
<td>• System lock down</td>
<td>• User defined role-based access control</td>
</tr>
</tbody>
</table>

*For detailed information, please check with your Supermicro sales representative or refer to Supermicro website: https://www.supermicro.com/en/solutions/management-software
World Class Total IT Solutions
Rack Plug and Play

- Rack Scale Solutions/Design/Production/Validation/Logistics and Service. The capacity of 3000 Integrated Rack Solutions per month, including up to 1000 Liquid Cooled Racks per month

- Flexible AC Power (120/208/230/480VAC, Single/3-phase) 48VDC Power

- 10/25/40/100/200/400 Gb/s Network Testing Environments

- Air Cooling/Free Air Cooling/Liquid Cooling

- Turnkey Data Center Solutions within two weeks
Supermicro's Asia Science and Technology Park is a key milestone in the company's growth as a true global leader in the development of advanced, power saving computing technologies.

Supermicro’s system integration facility and services in The Netherlands serves the dynamic, rapidly growing EMEA market with localized supply and time-to-market advantages.
Better
Brodest Portfolio of Versatile Systems

Faster
Maximum I/O and Lowest Latency

Greener
Reduced Environmental Impact and Lower TCO

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