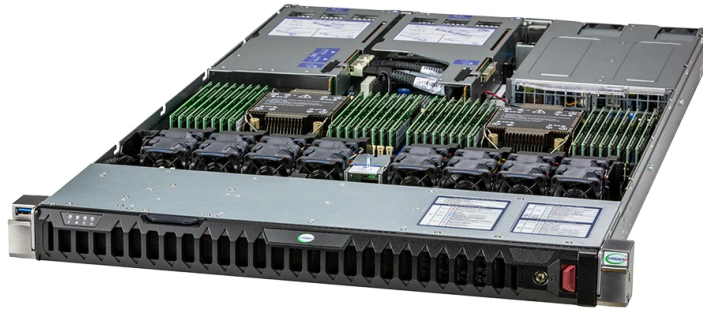


Hyper SuperServer SYS-120H-TNR (Complete System Only)



Key Applications

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

Key Features

1. Dual Socket P+ (LGA-4189) 3rd Gen Intel® Xeon® Scalable Processors

2. 32 DIMM Slots;
Up to 8TB DRAM;
Up to 8TB Intel® Optane™ Persistent Memory (up to 12TB with DRAM);
3200/2933/2666 ECC DDR4 LRDIMM;RDIMM;
Intel® Optane™ Persistent Memory 200 series

3. 3 PCI-E 4.0 x16 slots with support for GPU/Accelerator cards

4. Flexible networking options with 1 AIOM networking slot (OCP NIC 3.0 compatible)

5. 8x 2.5" hot-swap NVMe/SATA/SAS drive bays;
Optional 4x 2.5" hot-swap NVMe/SAS/SATA drive bays;
2x internal M.2 NVMe/SATA drive slots;
Optional RAID support via storage add-on card

6. 8 heavy duty hot-swap fans with optimal fan speed control

Specifications

Product SKUs

SYS-120H-TNR ■ SuperServer SYS-120H-TNR

Motherboard

Super X12DHM-6

Processor

CPU ■ Dual Socket P+ (LGA-4189)
■ 3rd Gen Intel® Xeon® Scalable processors
■ Support CPU TDP 270W *

Cores ■ Up to 40C/80T; Up to 60MB Cache

Note ■ *Certain CPUs with high TDP may be supported only under specific conditions. Please contact Supermicro Technical Support for additional information about specialized system optimization

System Memory

Memory ■ Memory Capacity: 32 DIMM slots
■ Up to 8TB: 32x 256 GB DRAM
■ Up to 12TB: 16x 512 GB PMem and 16x 256 GB DRAM
■ Memory Type: 3200MHz ECC DDR4
■ Intel® Optane™ persistent memory 200 series

Memory Voltage ■ 1.2 V

Error Detection ■ ECC

On-Board Devices

SATA ■ SATA3 (6Gbps); RAID 0/1/5/10 support

NVMe ■ NVMe; RAID 0/1/5/10 support

Chipset ■ Intel® C621A

Chassis

Form Factor ■ 1U Rackmount

Model ■ **CSE-HS119-R1K24P**

Dimensions and Weight

Height ■ 1.7" (43mm)

Width ■ 17.2" (437mm)

Depth ■ 29.36" (746mm)

Package ■ 7.99" (H) x 23.81" (W) x 37.4" (D)

Weight ■ Net Weight: 34 lbs (15.4 kg)
■ Gross Weight: 49 lbs (22.2 kg)

Available Color ■ N/A

Front Panel

Buttons ■ Power On/Off
■ UID button

LEDs ■ HDD activity
■ LAN1 activity
■ Power status
■ System information

Expansion Slots

PCI-Express (PCI-E) ■ Slot 1: PCI-E 4.0 x16 FH, 6.6"L
■ Slot 2: PCI-E 4.0 x16 FH, 10.5"L
■ Slot 3: PCI-E 4.0 x16 FH, 10.5"L

Drive Bays / Storage

Hot-swap ■ 8x 2.5" hot-swap NVMe/SATA/SAS drive bays (8x 2.5" NVMe hybrid) (Configurable option for 12x 2.5" hot-swap NVMe/SAS/SATA drive bays. NVMe, SATA, or SAS support requires additional parts. Please see the Optional Parts list.)

M.2 ■ 2 M.2 NVMe OR 2 M.2 SATA3

System Cooling

Fans ■ 8x 4cm heavy duty fans with optimal fan speed control

Air Shroud ■ 2 Air Shroud(s)

Power Supply

1200W Redundant Power Supplies with PMBus

Dimension (W x H x L) ■ 73.5 x 40 x 265 mm

AC Input ■ 800W: 100-127Vac / 9.8A-7A / 50-60Hz
■ 1200W: 200-240Vac / 7.5A-6A / 50-60Hz

Network Connectivity	<ul style="list-style-type: none"> ■ 2x 1GbE BaseT with Intel® i350-AM2 (optional) ■ 4x 1GbE SFP or 2x 10GbE BaseT with Intel® X550-AT2 (optional) ■ 2x 10GbE SFP+ with Intel® X710-BM2 (optional) ■ 4x 10GbE SFP+ with Intel® XL710-BM1 (optional) ■ 4x 10GbE RJ45/SFP+ with Intel® X710-TM4 (optional) ■ 2x 25GbE SFP28 with Broadcom® BCM57414 (optional) ■ 4x 25GbE RJ45/SFP28 with Mellanox® CX-4 Lx EN Intel® X550-AT2 (optional) ■ 2x 100GbE QSFP28 with Broadcom® BCM57508 (optional) ■ 4x 1GbE BaseT with Intel® i350-AM4 (optional)
IPMI	<ul style="list-style-type: none"> ■ Support for Intelligent Platform Management Interface v.2.0 ■ IPMI 2.0 with virtual media over LAN and KVM-over-LAN support

Input / Output

LAN	<ul style="list-style-type: none"> ■ 1 RJ45 Dedicated BMC LAN port
USB	<ul style="list-style-type: none"> ■ 3 USB 3.0 port(s) (1 front; 2 rear)
Video	<ul style="list-style-type: none"> ■ 1 VGA port(s)

System BIOS

BIOS Type	<ul style="list-style-type: none"> ■ AMI 256MB SPI Flash
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Management

Software	<ul style="list-style-type: none"> ■ Redfish API ■ <u>IPMI 2.0</u> ■ <u>SSM</u> ■ Intel® Node Manager ■ <u>SPM</u> ■ KVM with dedicated LAN ■ <u>SUM</u> ■ NMI ■ Watch Dog ■ SuperDoctor® 5
Power Configurations	<ul style="list-style-type: none"> ■ Power-on mode for AC power recovery ■ ACPI Power Management

PC Health Monitoring

CPU	<ul style="list-style-type: none"> ■ Monitors for CPU Cores, Chipset Voltages, Memory
FAN	<ul style="list-style-type: none"> ■ Fans with tachometer monitoring ■ Pulse Width Modulated (PWM) fan connectors ■ Status monitor for speed control
Temperature	<ul style="list-style-type: none"> ■ Monitoring for CPU and chassis environment ■ Thermal Control for fan connectors

+12V	<ul style="list-style-type: none"> ■ Max: 83A / Min: 0A (100Vac-127Vac) ■ Max: 166A / Min: 0A (200Vac-220Vac)
12V SB	<ul style="list-style-type: none"> ■ Max: 2.1A / Min: 0A
Output Type	<ul style="list-style-type: none"> ■ 25 Pairs Gold Finger Connector
Certification	<p>[Test Report]</p>

Operating Environment

Environmental Spec.	<ul style="list-style-type: none"> ■ Operating Temperature: 10°C ~ 35°C (50°F ~ 95°F) ■ Non-operating Temperature: -40°C to 70°C (-40°F to 158°F) ■ Operating Relative Humidity: 8% to 90% (non-condensing) ■ Non-operating Relative Humidity: 5% to 95% (non-condensing)
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Parts List

Parts List - (Items Included)

	Part Number	Qty	Description
Motherboard / Chassis	MBD-X12DHM-6	1	Super X12DHM-6 Motherboard
	CSE-HS119-R1K24P	1	1U Chassis
Add-on Card / Module	AOM-HS119-IO-P	1	Hyper IO Board,RoHS
Backplane	BPN-NVME4-HS119N-S8L	1	1U 8-Port Backplane Supports 8 x SAS3/SATA3/NVMe4 Storage Device for Hyper-S Platform,HF,RoHS
Cable 1	CBL-GNZ4-1261-85	1	GENZ4C x16 (STR) to GENZ4C x16 (STR),8CM,85 OHM,RoHS
Cable 2	CBL-PWEX-1142-60	1	MicroHi,(2X4 to 2X4) P3.0,60CM,8A/pin,18AWG,RoHS
Cable 3	CBL-SAST-1225LP	1	SlimlineLP x8 (LE) to SlimlineLP x8 (RA),30CM,75/85/100,
Cable 4	CBL-SAST-1234LP-85	2	SlimlineLP x8 (STR) to 2x SlimlineLP x8 (STR),17CM,85 O
Drive Tray(s)	MCP-220-00178-0B	8	2.5 thin profile drive tray, Orange tab (for hotswap NVMe drive), for SC119UH
Air Shroud	MCP-310-11910-0N	1	CSE-HS119 Plastic Air Shroud (CPU1) for X12DHM,RoHS
Air Shroud	MCP-310-11911-0N	1	CSE-HS119 Plastic Air Shroud (CPU2) for X12DHM,RoHS
Riser Card	RSC-H-66G4L	2	1U LHS Hyper riser card with two PCI-E 4.0 X16 slots,HF,RoHS
Software	SFT-OOB-LIC	1	License key for enabling OOB BIOS management
Heatsink / Retention	SNK-P0077V	2	X12 ICX/CPX CPU Heatsink (78x113x25.5mm), VC Base, Cu Fin
*Power Supply	PWS-1K24A-1R	2	1U 800W/1200W Redundant Titanium CRPS w/PMBus power supply,
*Cable 5	CBL-CUSB-1265-119	1	[NR] USB 3.0(F) Type A, RA to USB3.0 20pin,65CM,26/32AWG
*Cable 6	CBL-PWCD-0160-IS	2	PWCD,US,NEMA5-15P TO IEC60320 C13,6FT,16AWG,RoHS/REACH
*FAN 1	FAN-0216L4	8	40x40x56 mm, 31K-26.6K RPM, Hot Swap, Counter-rotating Fan,R
*Front Panel	FPB-FP119UH	1	Front control board for 119UHTS 1U Ultra

Notes:

1. Parts with * are inside the chassis
2. Excessive parts might not be shipped, including but not limited to excessive drive trays, fans, riser brackets, air shrouds, IO shields, cables.....etc.

Optional Parts List

	Part Number	Qty	Description
12 Drive Bay Configuration (Select one from options A-I)	(D) 8 SAS/SATA (RAID) + 4 NVMe: AOC-S3908L-H8IR-16DD-O & CBL-SAST-1273LP-100 & MCP-450-11902-ASM	-	8 SAS/SATA (HW RAID) via Broadcom 3908 (RAID 0, 1, 5, 6, 10, 50, 60) for drive bays 0-7 + 4 NVMe for drive bays 8-11
	(C) 12 SAS/SATA: AOC-S3816L-L16IT-O & CBL-SAST-1273LP-100 & MCP-450-11903-ASM	-	12 SAS/SATA (HBA/IT Mode) via Broadcom 3808 for drive bays 0-11

	(I) 8 NVMe + 4 SATA: CBL-KIT-120H-TNR-8-1 & MCP-450-11904-ASM	-	8 NVMe cable kit for drive bays 0-7 + 4 SATA via onboard Intel® PCH for drive bays 8-11)
	(B) 12 SAS/SATA (RAID): AOC-S3916L-H16IR-32DD-O & CBL-SAST-1273LP-100 & MCP-450-11903-ASM	-	12 SAS/SATA (HW RAID) via Broadcom 3916 (RAID 0, 1, 5, 6, 10, 50, 60) for drive bays 0-11
	(H) 8 NVMe + 4 SAS/SATA: CBL-KIT-120H-TNR-8-1 & AOC-S3808L-L8IT-O & MCP-450-11903-ASM	-	8 NVMe cable kit for drive bays 0-7 + 4 SAS/SATA (HBA/IT Mode) via Broadcom 3808 for drive bays 8-11
	(A) 12 NVMe: MCP-450-11901-ASM	1	12 NVMe kit for drive bays 0-11
	(G) 8 NVMe + 4 SAS/SATA (RAID): CBL-KIT-120H-TNR-8-1 & AOC-S3908L-H8IR-16DD-O & MCP-450-11903-ASM	-	8 NVMe cable kit for drive bays 0-7 + 4 SAS/SATA (HW RAID) via Broadcom 3908 (RAID 0, 1, 5, 6, 10, 50, 60) for drive bays 8-11
	(F) 8 SATA + 4 NVMe: CBL-SAST-1237LP-100 & MCP-450-11902-ASM	-	8 SATA via onboard Intel® PCH for drive bays 0-7 + 4 NVMe for drive bays 8-11
	(E) 8 SAS/SATA + 4 NVMe: AOC-S3808L-L8IT-O & CBL-SAST-1273LP-100 & MCP-450-11902-ASM	-	8 SAS/SATA (HBA/IT Mode) via Broadcom 3808 for drive bays 0-7 + 4 NVMe for drive bays 8-11
8 Drive Bay Configuration (Select one from options A-D)	(B) 8 SAS/SATA (RAID): AOC-S3908L-H8IR-16DD-O & CBL-SAST-1273LP-100	-	8 SAS/SATA (HW RAID) via Broadcom 3908 (RAID 0, 1, 5, 6, 10, 50, 60) for drive bays 0-7
	(A) 8 NVMe: CBL-KIT-120H-TNR-8-1	1	8 NVMe cable kit for drive bays 0-7
	(D) 8 SATA: CBL-SAST-1237LP-100	1	8 SATA via onboard Intel® PCH for drive bays 0-7
	(C) 8 SAS/SATA: AOC-S3808L-L8IT-O & CBL-SAST-1273LP-100	-	8 SAS/SATA (HBA/IT Mode) via Broadcom 3808 for drive bays 0-7
CacheVault for Broadcom 3916/3908	BTR-CVPM05 + MCP-120-00092-0N	1	CacheVault Flash Cache Protection Module for Broadcom 3916/3908 RAID controller (CVPM05) + slot 2-3 riser cage mounting bracket
Drive Bay Cover	MCP-220-11902-0B	-	Drive bay cover for two 2.5" drive bays (top & bottom drive bays)
Drive Tray Label	LBL-0968	-	Pack of 4 "NVMe" labels for hot-swap drive tray
Front Bezel	MCP-210-11909-0B	1	Optional front bezel for 1U Hyper
Global Services &	<u>OSNBD3/2/1</u>	-	Silver Level, 3/2/1-year onsite NBD SLA

Support	<u>OS4HR3/2/1</u>	-	Gold Level, 3/2/1-year onsite 24x7x4 SLA
	SMSAD3/2/1	-	Bronze Level, 3/2/1-year 3BD SLA
Intel® VROC RAID Key Options	<u>AOC-VROCPREMOD</u>	1	Intel VROC Premium, RAID 0, 1, 5, 10
	<u>AOC-VROCSTNMOD</u>	1	Intel VROC Standard, RAID 0, 1, 10
	<u>AOC-VROCINTMOD</u>	1	Intel VROC, RAID 0, 1, 5, 10 (Intel SSD Only)
Software	<u>SFT-DCMS-Single</u>	1	DataCenter Management Package (per node license)
Trusted Platform Module Options	AOM-TPM-9671V-O	1	SPI capable vertical TPM 1.2
	AOM-TPM-9670V-O	1	SPI capable vertical TPM 2.0
	AOM-TPM-9670V-S-FIPS-O	1	AOM-TPM-9670V-S-FIPS TPM 2.0 support TAA and FIPS