

TECHNICAL DATASHEET

SUPERMICRO · RACKMOUNT SERVERS

Supermicro 1U Hyper Server SYS-120H-TNR

1U Hyper with 8 NVMe/SAS/SATA bays

SKU SYS-120H-TNR

1U

LGA4189

Supermicro



FORM FACTOR

1U

MAX POWER (BASE)

522 W

HEAT OUTPUT

1,781 BTU/h

PRICE

On request

REQUEST A QUOTATION ONLINE

serverinvest.com/product/sys-120h-tnr

01 Product overview

The Supermicro SYS-120H-TNR is a 1U Hyper Server built on dual Intel Xeon Scalable 3rd Gen processors with up to 8 TB of memory in 32 DIMM slots.

1U Hyper with 8 NVMe/SAS/SATA bays.

The chassis accepts up to 2 GPU accelerators for AI, rendering and HPC workloads.

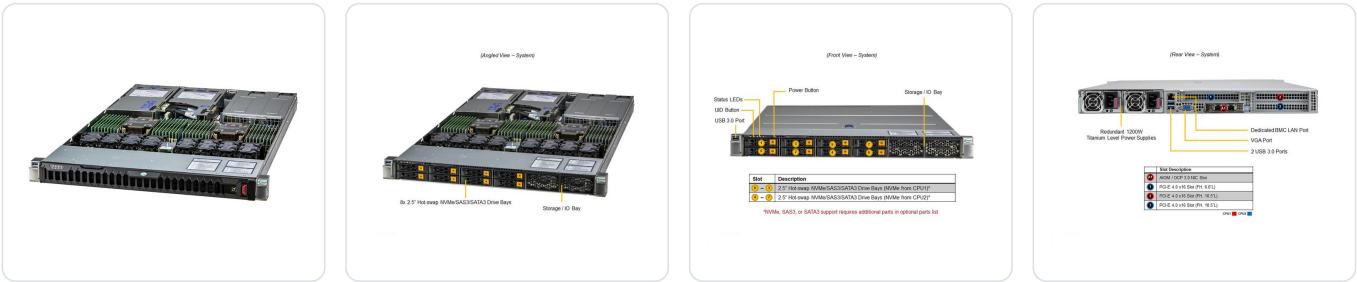
ServerInvest configures every SYS-120H-TNR to order, updates BIOS and BMC firmware, installs your operating system on request and runs a 48-hour burn-in test before delivery. Every system includes a 3-year warranty.

HIGHLIGHTS

- Dual Intel Xeon Scalable 3rd Gen
- Up to 8 TB memory · 32 DIMM slots
- Total 8 bays 8 front hot-swap 2.5" NVMe*/SAS*/SATA* drive bays
- Up to 2 GPUs
- Power: 2x 1200W
- Networking: 2 RJ45 1GbE with Intel I350-AM2 (optional)

KEY SPECIFICATIONS

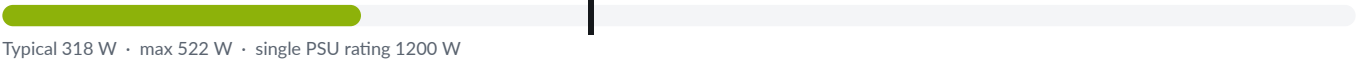
Form factor	1U
Processor	2× Intel Xeon Scalable 3rd Gen
Socket	LGA4189
Memory	32 DIMM slots, up to 8 TB
Drive bays	20 (20 NVMe)
GPU	Up to 2 GPUs
Power supply	2× 1200 W
Typical power draw	1650 W
Networking	2 RJ45 1GbE with Intel I350-AM2 (optional)
Dimensions (W×H×D)	437 × 44 mm



02 Power & thermal

Calculated for the base configuration

IDLE	TYPICAL	MAXIMUM	HEAT (MAX)	COOLING	PSU LOAD
106 W	318 W	522 W	1,781 BTU/h	0.5 kW	44%



Typical 318 W · max 522 W · single PSU rating 1200 W

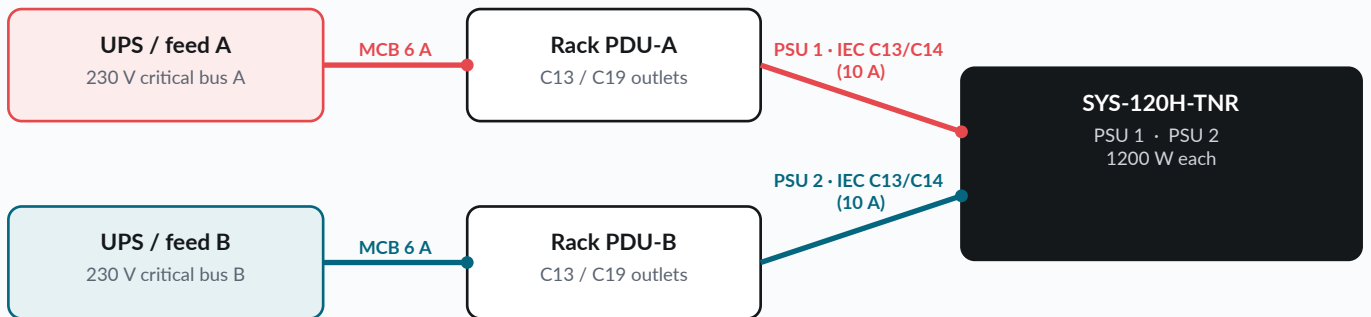
Annual IT energy (24/7)	2,229 kWh
Annual facility energy (PUE 1.5)	3,344 kWh
Annual energy cost	€446 IT · €669 incl. cooling (at 0.20 €/kWh)
CO ₂ emissions / year	0.87 t (grid factor 0.26 kg/kWh)
Power supplies	2× 1200 W redundant (N+1)

POWER BY COMPONENT	IDLE	TYPICAL	MAX
Chassis, motherboard, fans, BMC	38 W	59 W	85 W
2× CPU (base configuration)	50 W	220 W	370 W
4× Memory (base configuration)	12 W	20 W	36 W

DC loads converted to wall power at 94% PSU efficiency; typical load assumed 70% of the time. Engineering estimates — confirm with the manufacturer's power calculator for critical designs.

03 Power connection diagram

Dual-feed (A/B) connection for redundant power supplies



- Connect PSU 1 to PDU-A and PSU 2 to PDU-B (independent feeds) using IEC C13/C14 (10 A) power cords.
- Maximum current per feed: 2.4 A at 230 V — each feed must be able to carry the full load if the other fails.
- Recommended protection per PDU circuit: MCB 6 A, curve C; RCD according to local regulations.
- Heat to remove at full load: 522 W = 1,781 BTU/h (0.5 kW).

04 Full specifications

MOTHERBOARD

Super X12DHM-6

PROCESSOR

CPU	Dual Socket P+ (LGA-4189) 3rd Gen Intel Xeon Scalable processors
Core Count	Up to 40C/80T; Up to 60MB Cache per CPU
Note	Supports up to 270W TDP CPUs (Air Cooled)

GPU

Max GPU Count	Up to 2 double-width GPUs
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SYSTEM MEMORY

Memory	Slot Count: 32 DIMM slots Max Memory (2DPC): Up to 8TB 3200MT/s ECC DDR4 Supports Intel Optane persistent memory 200 series View Memory Options
Memory Voltage	1.2V

ON-BOARD DEVICES

SATA	SATA (6Gbps) ; RAID 0/1/5/10 support
NVMe	NVMe; RAID 0/1/5/10 support(Intel VROC RAID key required) View NVMe Options

Network Connectivity	2 RJ45 1GbE with Intel I350-AM2 (optional) 4 RJ45 1GbE with Intel I350-AM4 (optional) 4 SFP 1GbE with Intel I350-AM4 (optional) 2 RJ45 10GBASE-T with Intel X550-AT2 (optional) 2 SFP+ 10GbE with Intel X710-BM2 (optional) 4 SFP+ 10GbE with Intel XL710-BM1 (optional) 4 SFP+ 10GbE with Intel X710-TM4 (optional) 2 SFP28 25GbE with Broadcom BCM57414 (optional) 4 SFP28 25GbE (optional) 2 QSFP28 100GbE with Broadcom BCM57508 (optional) View AIOM Options View AOC Options
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INPUT / OUTPUT

LAN	1 RJ45 1 GbE Dedicated BMC LAN port
USB	2 USB 3.0 ports (rear) 1 USB 3.0 port (front)
Video	1 VGA port

SYSTEM BIOS

BIOS Type	AMI 256MB SPI Flash
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MANAGEMENT

Software	SuperCloud Composer (SCC) Supermicro Server Manager (SSM) Supermicro Update Manager (SUM) Supermicro SuperDoctor 5 (SD5) Super Diagnostics Offline (SDO) Supermicro Thin-Agent Service (TAS) SuperServer Automation Assistant (SAA) New!
Power configurations	Power-on mode for AC power recovery ACPI Power Management

SECURITY

Hardware	Trusted Platform Module (TPM) 2.0 Silicon Root of Trust (RoT) – NIST 800-193 Compliant
Features	Cryptographically Signed Firmware Secure Boot Secure Firmware Updates Automatic Firmware Recovery System Lockdown

PC HEALTH MONITORING

CPU	Monitors for CPU Cores, Chipset Voltages, Memory
Fan	Fans with tachometer monitoring Pulse Width Modulated (PWM) fan connectors Status monitor for speed control
Temperature	Monitoring for CPU and chassis environment Thermal Control for fan connectors

CERTIFICATIONS

Operating Systems

ESXi 6.7 U3, ESXi 7.0 U2, Hypervisor 8.2, Oracle Linux 8.3, RHEL 8.2, RHEL 9.0, Windows Server 2019, Windows Server 2022
View all OS Compatibility and Certification Matrix

CHASSIS

Form Factor	1U Rackmount
Model	CSE-HS119-R1K24P

DIMENSIONS AND WEIGHT

Height	1.7" (43 mm)
Width	17.2" (437 mm)
Depth	29.4" (747 mm)
Package	8.1" (H) x 23.8" (W) x 40.6" (D)
Weight	Gross Weight: 49 lbs (22.2 kg) Net Weight: 34 lbs (15.4 kg)
Available Color	N/A

FRONT PANEL

Buttons	Power On/Off Power On/Off UID button
LED	HDD activity LAN1 activity Power System information

EXPANSION SLOTS

PCI-Express (PCIe) Configuration	Default 1 PCIe 4.0 x16 FHHL slot 2 PCIe 4.0 x16 FH/10.5"L slots 1 PCIe 4.0 x16 AIOM slot (OCP 3.0 compatible) View AOC Options
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DRIVE BAYS / STORAGE

Drive Bays Configuration	Default: Total 8 bays 8 front hot-swap 2.5" NVMe*/SAS*/SATA* drive bays Option A: Total 12 bays 12 front hot-swap 2.5" NVMe*/SAS*/SATA* drive bays (*NVMe/SAS/SATA support may require additional storage controller and/or cables, please see the optional parts list for details) View NVMe Options View Drive Options
M.2	2 M.2 NVMe/SATA slots (M-key 2280/22110) View M.2 Options

SYSTEM COOLING

Fans	Up to 8 counter-rotating 40x40x56mm Fan(s)
Air Shroud	2 Air Shrouds

POWER SUPPLY

2x 1200W
2x 1200W Redundant Titanium Level (96%) Hot-plug power supplies
Dimension (WxHxL)
73.5 x 40 x 265 mm

OPERATING ENVIRONMENT

Environmental Spec.

Name: A2

Operating Temperature: 10°C to 35°C (50°F to 95°F)

Non-operating Temperature: -30°C to 60°C (-40°F to 140°F)

Operating Relative Humidity: 8% to 80% (max 21° DP; non-condensing)

Non-operating Relative Humidity: 8% to 90% (max 38° DP; non-condensing)

05 Built, tested & supported by ServerInvest

Engineered configuration

Every option validated for socket, memory channels, PCIe lanes, power and cooling.

48-hour burn-in

Assembled, firmware-updated and stress-tested before it leaves our workshop.

3-year warranty

Standard on every system, with on-site next-business-day upgrades available.

Rack-ready delivery

Rails, cable management and labelling included — delivered across Europe.



Interested in this solution?

Request a quotation online or talk to a solutions engineer — we reply within one business day.
office@serverinvest.com

Official manufacturer datasheet: serverinvest.com/product/sys-120h-tnr/datasheet/manufacture

