

TECHNICAL DATASHEET

SUPERMICRO · RACKMOUNT SERVERS

Supermicro 4U AI Training Server SYS-420GH-TNGR

4U GPU server supporting up to 8 double-width GPUs + 4 hot-swap 2.5" NVMe/
SAS/SATA drives

SKU SYS-420GH-TNGR

4U

LGA4189

Supermicro



FORM FACTOR

4U

MAX POWER (BASE)

602 W

HEAT OUTPUT

2,054 BTU/h

PRICE

On request

REQUEST A QUOTATION ONLINE

serverinvest.com/product/sys-420gh-tngr

01 Product overview

The Supermicro SYS-420GH-TNGR is a 4U AI Training Server built on dual Intel Xeon Scalable 3rd Gen processors with up to 8 TB of memory in 32 DIMM slots.

4U GPU server supporting up to 8 double-width GPUs + 4 hot-swap 2.5" NVMe/SAS/SATA drives.

The chassis accepts up to 8 GPU accelerators for AI, rendering and HPC workloads.

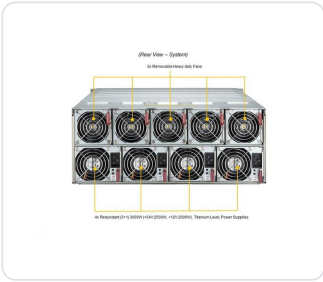
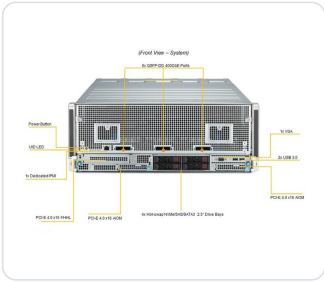
ServerInvest configures every SYS-420GH-TNGR to order, updates BIOS and BMC firmware, installs your operating system on request and runs a 48-hour burn-in test before delivery. Every system includes a 3-year warranty.

HIGHLIGHTS

- Dual Intel Xeon Scalable 3rd Gen
- Up to 8 TB memory · 32 DIMM slots
- Total 4 bays 4 front hot-swap 2.5" NVMe/SAS/SATA drive bays
- Up to 8 GPUs
- Power: 1x 3000W
- Networking: 6 QSFP-DD 400GbE

KEY SPECIFICATIONS

Form factor	4U
Processor	2× Intel Xeon Scalable 3rd Gen
Socket	LGA4189
Memory	32 DIMM slots, up to 8 TB
Drive bays	4 (4 NVMe)
GPU	Up to 8 GPUs
Power supply	1× 3000 W
Typical power draw	4350 W
Networking	6 QSFP-DD 400GbE
Dimensions (W×H×D)	437 × 178 mm



02 Power & thermal

Calculated for the base configuration

IDLE	TYPICAL	MAXIMUM	HEAT (MAX)	COOLING	PSU LOAD
143 W	374 W	602 W	2,054 BTU/h	0.6 kW	20%

Typical 374 W · max 602 W · single PSU rating 3000 W

Annual IT energy (24/7)	2,669 kWh
Annual facility energy (PUE 1.5)	4,004 kWh
Annual energy cost	€534 IT · €801 incl. cooling (at 0.20 €/kWh)
CO ₂ emissions / year	1.04 t (grid factor 0.26 kg/kWh)
Power supplies	1× 3000 W

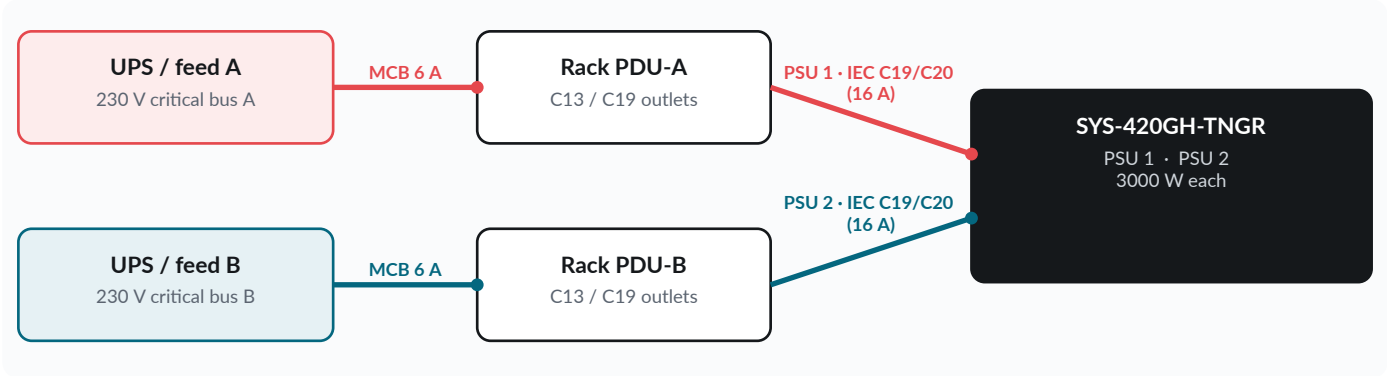
POWER BY COMPONENT

	IDLE	TYPICAL	MAX
Chassis, motherboard, fans, BMC	72 W	112 W	160 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 C19/C20 (16 A) power cords.
- Maximum current per feed: 2.8 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: 602 W = 2,054 BTU/h (0.6 kW).

04 Full specifications

MOTHERBOARD	
	Super X12DPG-U6
PROCESSOR	
CPU	Dual Socket P+ (LGA-4189) 3rd Gen Intel Xeon Scalable processors
Core Count	Up to 40C/80T
Note	Supports up to 270W TDP CPUs (Air Cooled)
GPU	
Max GPU Count	Up to 8 double-width GPUs
SYSTEM MEMORY	
Memory	Slot Count: 32 DIMM slots Max Memory (2DPC): Up to 8TB 3200MT/s ECC DDR4 RDIMM/LRDIMM View Memory Options
Memory Voltage	1.2V
ON-BOARD DEVICES	

Network Connectivity	6 QSFP-DD 400GbE 1 RJ45 10GbE View AOC Options
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INPUT / OUTPUT

LAN	1 RJ45 1 GbE LAN port
USB	2 USB 3.0 ports
Video	1 VGA port

SYSTEM BIOS

BIOS Type	AMI 32MB SPI Flash EEPROM
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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	7+1 Phase-switching voltage regulator 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

CHASSIS

Form Factor	4U Rackmount
Model	CSE-428G2

DIMENSIONS AND WEIGHT

Height	7" (178 mm)
Width	17.6" (447 mm)
Depth	32" (813 mm)

Package	15" (H) x 27.3" (W) x 49.4" (D)
Weight	Gross Weight: 137 lbs (62 kg)
Available Color	Silver

FRONT PANEL

Buttons	Power On/Off button
LED	Carrier Board Node LED CPU Node LED Information LED PSU Failed LED UID LED

EXPANSION SLOTS

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

Drive Bays Configuration	Default: Total 4 bays 4 front hot-swap 2.5" NVMe/SAS/SATA drive bays View NVMe Options View Drive Options
M.2	2 M.2 NVMe slots (M-key) View M.2 Options

SYSTEM COOLING

Fans	Up to 5 Removable Heavy-Duty 84x203.5x82.4mm Fan(s)
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POWER SUPPLY

	1x 3000W 1x 3000W Redundant Titanium Level (96%) power supply Dimension (WxHxL) 106.5 x 82.4 x 203.5 mm
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OPERATING ENVIRONMENT

Environmental Spec.	Operating Temperature: 10°C to 35°C (50°F to 95°F) Non-operating Temperature: -40°C to 60°C (-40°F to 140°F) Operating Relative Humidity: 8% to 90% (non-condensing) Non-operating Relative Humidity: 5% to 95% (non-condensing)
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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-420gh-tngr/datasheet/manufacture

