

TECHNICAL DATASHEET

SUPERMICRO · GPU & AI SERVERS

Supermicro 4U GPU Server SYS-420GP-TNR

DP Intel, Dual-Root System with 10 PCIe GPUs

SKU SYS-420GP-TNR

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-420gp-tnr

01 Product overview

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

DP Intel, Dual-Root System with 10 PCIe GPUs.

The chassis accepts up to 10 GPU accelerators for AI, rendering and HPC workloads.

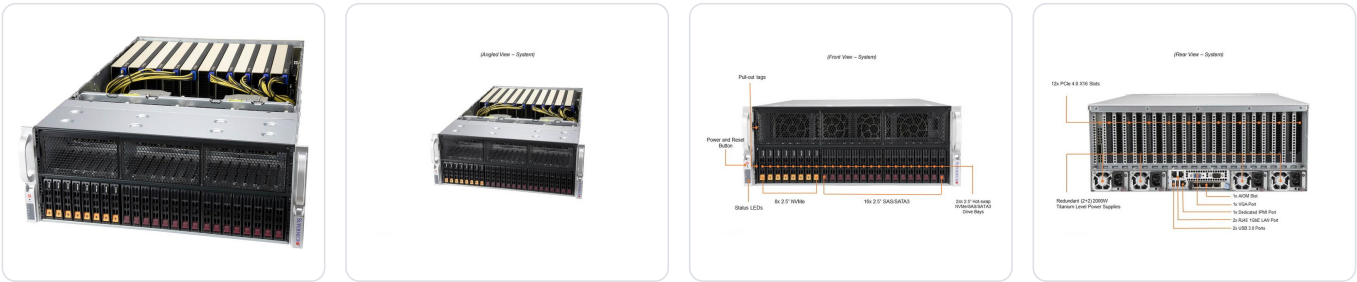
ServerInvest configures every SYS-420GP-TNR to order, updates BIOS and BMC firmware, installs your operating system on request and runs a 48-hour burn-in test before delivery. Every system includes a 3-year warranty.

HIGHLIGHTS

- Dual Intel Xeon Scalable 3rd Gen
- Up to 8 TB memory · 32 DIMM slots
- Total 24 bays 8 front hot-swap 2.5" NVMe drive bays
- Up to 10 GPUs
- Power: 4x 2000W
- Networking: 2 RJ45 1GbE with Intel I350

KEY SPECIFICATIONS

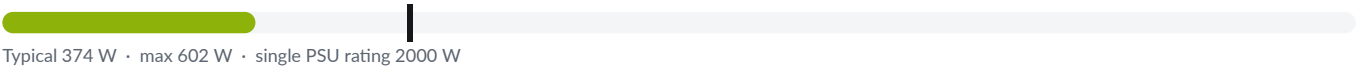
Form factor	4U
Processor	2× Intel Xeon Scalable 3rd Gen
Socket	LGA4189
Memory	32 DIMM slots, up to 8 TB
Drive bays	64 (64 NVMe)
GPU	Up to 10 GPUs
Power supply	4× 2000 W
Typical power draw	5250 W
Networking	2 RJ45 1GbE with Intel I350
Dimensions (W×H×D)	437 × 178 mm



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	30%



Typical 374 W · max 602 W · single PSU rating 2000 W

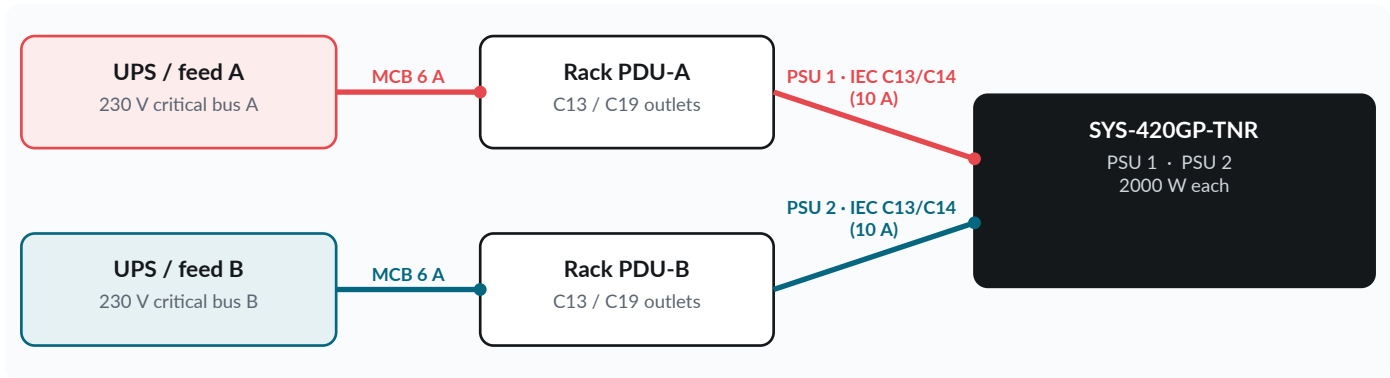
Annual IT energy (24/7)	2,669 kWh
Annual facility energy (PUE 1.5)	4,004 kWh
Annual energy cost	€534 IT · €801 incl. cooling (at 0.20 €/kWh)
CO ₂ emissions / year	1.04 t (grid factor 0.26 kg/kWh)
Power supplies	4× 2000 W redundant (N+1)

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 C13/C14 (10 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-OA6

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 10 double-width or 10 single-width GPUs
Supported GPU	NVIDIA PCIe: H100, A10, A100, A16, A2, A30, A40, L40, RTX A2000, RTX A4000, RTX A4500, RTX A5000, RTX A5500, RTX A6000 Intel PCIe: Intel Data Center GPU Flex 170 View GPU Options
CPU-GPU Interconnect	PCIe 4.0 x16 Switch Dual-Root
GPU-GPU Interconnect	NVIDIA NVLink Bridge (optional)

SYSTEM MEMORY

Memory	Slot Count: 32 DIMM slots Max Memory (2DPC): Up to 8TB 3200MT/s ECC DDR4 RDIMM/LRDIMM 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
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Network Connectivity	2 RJ45 1GbE with Intel I350 View AOC Options
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BMC	ASPEED AST2600 BMC
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INPUT / OUTPUT

Video	1 VGA port
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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!
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Power configurations	Power-on mode for AC power recovery ACPI Power Management
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SECURITY

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

CPU	7 +1 Phase-switching voltage regulator Monitors for CPU Cores, Chipset Voltages, Memory
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Fan	Fans with tachometer monitoring Pulse Width Modulated (PWM) fan connectors Status monitor for speed control
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Temperature	Monitoring for CPU and chassis environment Thermal Control for fan connectors
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CERTIFICATIONS

Operating Systems	ESXi 6.7 U3, ESXi 7.0 U2, Hypervisor 8.2, Oracle Linux 8.3, RHEL 7.9, RHEL 8.3, RHEL 9.0, Windows Server 2019, Windows Server 2022 View all OS Compatibility and Certification Matrix
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CHASSIS

Form Factor	4U Rackmount
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Model	CSE-418G2TS-R4016BP
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DIMENSIONS AND WEIGHT

Height	7" (178 mm)
Width	17.2" (437 mm)
Depth	29" (737 mm)
Package	26.57" (H) x 27" (W) x 41" (D)
Weight	Gross Weight: 100 lbs (45.3 kg) Net Weight: 65.5 lbs (29.7 kg)
Available Color	Black Front & Silver Body

EXPANSION SLOTS

PCI-Express (PCIe) Configuration	Default 12 PCIe 4.0 x16 FHFL slots View AOC Options
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DRIVE BAYS / STORAGE

Drive Bays Configuration	Default: Total 24 bays 8 front hot-swap 2.5" NVMe drive bays 16 front hot-swap 2.5" SAS/SATA drive bays Option A: Total 24 bays 24 front hot-swap 2.5" NVMe*/SAS/SATA drive bays (*NVMe 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) View M.2 Options

SYSTEM COOLING

Fans	Up to 8 heavy duty fans with optimal fan speed control
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POWER SUPPLY

4x 2000W
4x 2000W Redundant Titanium Level (96%) power supplies
Dimension (WxHxL)
73.5 x 40 x 203 mm

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-420gp-tnr/datasheet/manufacturerr

