

## TECHNICAL DATASHEET

SUPERMICRO · GPU &amp; AI SERVERS

# Supermicro 4U GPU Server SYS-420GP-TNAR+

DP Intel System with NVIDIA HGX A100 8-GPU and 3000W Power Supplies

SKU SYS-420GP-TNAR+

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-tnar](https://serverinvest.com/product/sys-420gp-tnar)



01 Product overview

The Supermicro SYS-420GP-TNAR+ 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 System with NVIDIA HGX A100 8-GPU and 3000W Power Supplies.

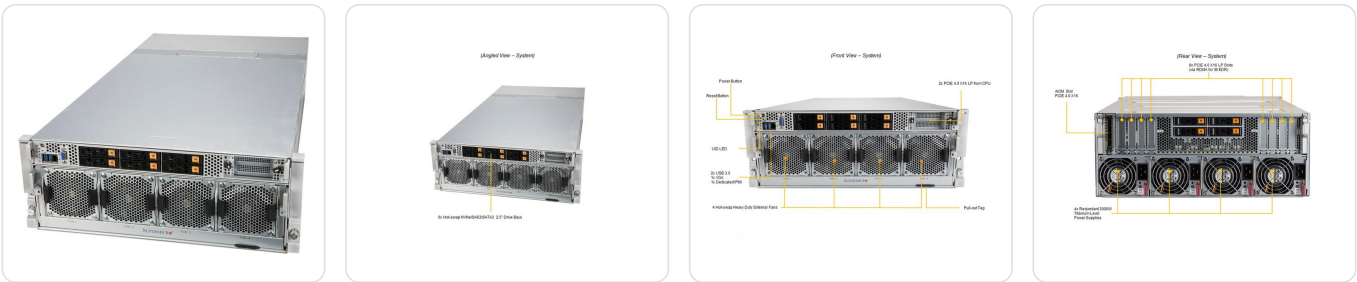
ServerInvest configures every SYS-420GP-TNAR+ to order, updates BIOS and BMC firmware, installs your operating system on request and runs a 48-hour burn-in test before delivery. Every system includes a 3-year warranty.

HIGHLIGHTS

- Dual Intel Xeon Scalable 3rd Gen
- Up to 8 TB memory · 32 DIMM slots
- Total 6 bays 6 front hot-swap 2.5" NVMe/SAS/SATA drive bays
- Power: 1x 3000W
- Networking: 2 RJ45 10GbE with Intel X550-AT2 (optional)

KEY SPECIFICATIONS

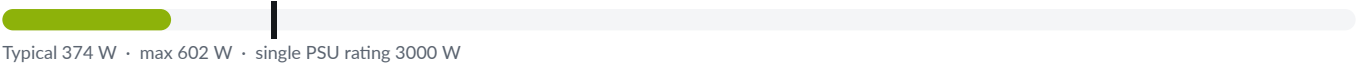
|                    |                                             |
|--------------------|---------------------------------------------|
| Form factor        | 4U                                          |
| Processor          | 2× Intel Xeon Scalable 3rd Gen              |
| Socket             | LGA4189                                     |
| Memory             | 32 DIMM slots, up to 8 TB                   |
| Drive bays         | 6 (6 NVMe)                                  |
| Power supply       | 1× 3000 W                                   |
| Typical power draw | 750 W                                       |
| Networking         | 2 RJ45 10GbE with Intel X550-AT2 (optional) |
| 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%      |



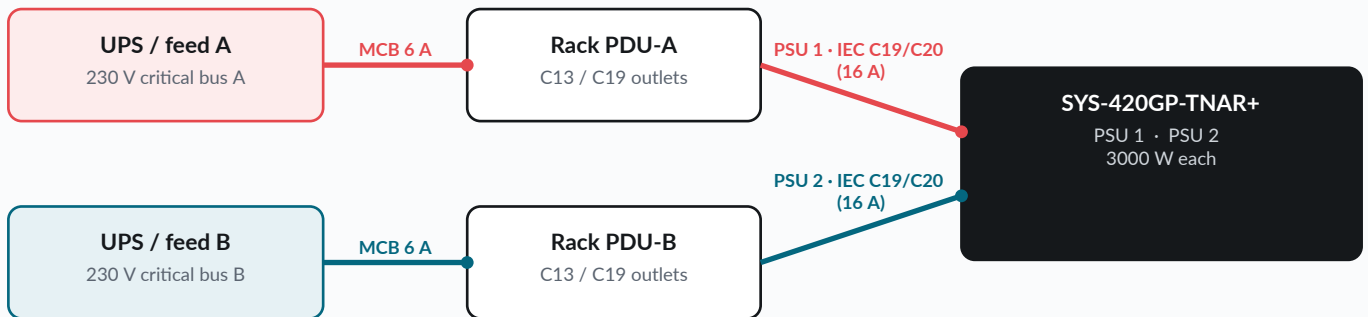
|                                  |                                              |
|----------------------------------|----------------------------------------------|
| Annual IT energy (24/7)          | 2,669 kWh                                    |
| Annual facility energy (PUE 1.5) | 4,004 kWh                                    |
| Annual energy cost               | €534 IT · €801 incl. cooling (at 0.20 €/kWh) |
| CO <sub>2</sub> 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 X12DGO-6

#### PROCESSOR

|            |                                                                     |
|------------|---------------------------------------------------------------------|
| CPU        | Dual Socket P+ (LGA-4189)<br>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        | 8 onboard GPUs                       |
| Supported GPU        | NVIDIA SXM: HGX A100 8-GPU (80GB)    |
| CPU-GPU Interconnect | PCIe 4.0 x16 CPU-to-GPU Interconnect |
| GPU-GPU Interconnect | NVIDIA NVLink with NVSwitch          |

#### SYSTEM MEMORY

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

#### ON-BOARD DEVICES

|                      |                                                                 |
|----------------------|-----------------------------------------------------------------|
| SATA                 | SATA (6Gbps) ; RAID 0/1/5/10 support                            |
| Network Connectivity | 2 RJ45 10GbE with Intel X550-AT2 (optional)<br>View AOC Options |

## INPUT / OUTPUT

|       |            |
|-------|------------|
| Video | 1 VGA port |
|-------|------------|

## SYSTEM BIOS

|           |                           |
|-----------|---------------------------|
| BIOS Type | AMI 32MB SPI Flash EEPROM |
|-----------|---------------------------|

## MANAGEMENT

|          |                                                                                                                                                                                                                                                            |
|----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Software | SuperCloud Composer (SCC)<br>Supermicro Server Manager (SSM)<br>Supermicro Update Manager (SUM)<br>Supermicro SuperDoctor 5 (SD5)<br>Super Diagnostics Offline (SDO)<br>Supermicro Thin-Agent Service (TAS)<br>SuperServer Automation Assistant (SAA) New! |
|----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

|                      |                                                              |
|----------------------|--------------------------------------------------------------|
| Power configurations | Power-on mode for AC power recovery<br>ACPI Power Management |
|----------------------|--------------------------------------------------------------|

## SECURITY

|          |                                                                                           |
|----------|-------------------------------------------------------------------------------------------|
| Hardware | Trusted Platform Module (TPM) 2.0<br>Silicon Root of Trust (RoT) – NIST 800-193 Compliant |
|----------|-------------------------------------------------------------------------------------------|

|          |                                                                                                                               |
|----------|-------------------------------------------------------------------------------------------------------------------------------|
| Features | Cryptographically Signed Firmware<br>Secure Boot<br>Secure Firmware Updates<br>Automatic Firmware Recovery<br>System Lockdown |
|----------|-------------------------------------------------------------------------------------------------------------------------------|

## CERTIFICATIONS

|                   |                                                                                                                                                            |
|-------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Operating Systems | Hypervisor 8.2, Oracle Linux 8.3, RHEL 8.2, Windows Server 2019, Windows Server 2022<br><a href="#">View all OS Compatibility and Certification Matrix</a> |
|-------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------|

## CHASSIS

|             |              |
|-------------|--------------|
| Form Factor | 4U Rackmount |
|-------------|--------------|

|       |          |
|-------|----------|
| Model | CSE-438G |
|-------|----------|

## DIMENSIONS AND WEIGHT

|                 |                                                                   |
|-----------------|-------------------------------------------------------------------|
| Height          | 6.9" (174 mm)                                                     |
| Width           | 17.6" (446 mm)                                                    |
| Depth           | 35.4" (900 mm)                                                    |
| Package         | 29.5" (H) x 27.4" (W) x 44.9" (D)                                 |
| Weight          | Gross Weight: 225 lbs (102.1 kg)<br>Net Weight: 166 lbs (75.3 kg) |
| Available Color | Black Front & Silver Body                                         |

## EXPANSION SLOTS

|                                  |                                                                         |
|----------------------------------|-------------------------------------------------------------------------|
| PCI-Express (PCIe) Configuration | Default<br>10 PCIe 4.0 x16 LP slots<br><a href="#">View AOC Options</a> |
|----------------------------------|-------------------------------------------------------------------------|

## DRIVE BAYS / STORAGE

|                          |                                                                                                                 |
|--------------------------|-----------------------------------------------------------------------------------------------------------------|
| Drive Bays Configuration | Default: Total 6 bays 6 front hot-swap 2.5" NVMe/SAS/SATA drive bays<br>View NVMe Options<br>View Drive Options |
| M.2                      | 2 M.2 NVMe/SATA slots (M-key)<br>View M.2 Options                                                               |

## SYSTEM COOLING

|      |                                                        |
|------|--------------------------------------------------------|
| Fans | Up to 4 heavy duty fans with optimal fan speed control |
|------|--------------------------------------------------------|

## POWER SUPPLY

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

## OPERATING ENVIRONMENT

|                     |                                                                                                                                                                                                                                           |
|---------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Environmental Spec. | Operating Temperature: 10°C to 35°C (50°F to 95°F)<br>Non-operating Temperature: -40°C to 60°C (-40°F to 140°F)<br>Operating Relative Humidity: 8% to 90% (non-condensing)<br>Non-operating Relative Humidity: 5% to 95% (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-420gp-tnar/datasheet/manufacture](https://serverinvest.com/product/sys-420gp-tnar/datasheet/manufacture)

