

## TECHNICAL DATASHEET

SUPERMICRO · RACKMOUNT SERVERS

# Supermicro 2U Hyper Server SYS-620H-TN12R

2U Hyper with 12 NVMe/SAS/SATA bays and up to 8 PCIe slots with GPU support

SKU SYS-620H-TN12R

2U

LGA4189

Supermicro



FORM FACTOR

**2U**

MAX POWER (BASE)

**549 W**

HEAT OUTPUT

**1,873 BTU/h**

PRICE

**On request**

REQUEST A QUOTATION ONLINE

[serverinvest.com/product/sys-620h-tn12r](https://serverinvest.com/product/sys-620h-tn12r)

## 01 Product overview

The Supermicro SYS-620H-TN12R is a 2U Hyper Server built on dual Intel Xeon Scalable 3rd Gen processors with up to 8 TB of memory in 32 DIMM slots.

2U Hyper with 12 NVMe/SAS/SATA bays and up to 8 PCIe slots with GPU support.

The chassis accepts up to 4 GPU accelerators for AI, rendering and HPC workloads.

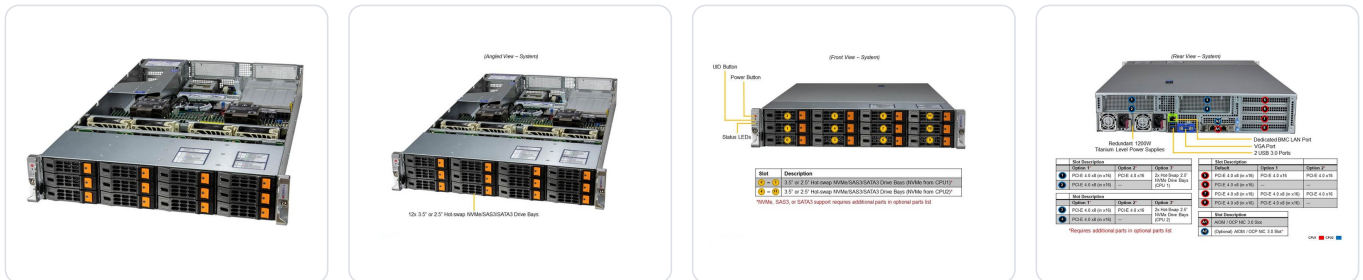
ServerInvest configures every SYS-620H-TN12R to order, updates BIOS and BMC firmware, installs your operating system on request and runs a 48-hour burn-in test before delivery. Every system includes a 3-year warranty.

### HIGHLIGHTS

- Dual Intel Xeon Scalable 3rd Gen
- Up to 8 TB memory · 32 DIMM slots
- Total 12 bays 12 front hot-swap 3.5" NVMe\*/SAS\*/SATA\* drive bays
- Up to 4 GPUs
- Power: 2x 1200W
- Networking: 2 RJ45 1GbE with Intel I350-AM2 (optional)

### KEY SPECIFICATIONS

|                    |                                            |
|--------------------|--------------------------------------------|
| Form factor        | 2U                                         |
| Processor          | 2× Intel Xeon Scalable 3rd Gen             |
| Socket             | LGA4189                                    |
| Memory             | 32 DIMM slots, up to 8 TB                  |
| Drive bays         | 12 (12 NVMe)                               |
| GPU                | Up to 4 GPUs                               |
| Power supply       | 2× 1200 W                                  |
| Typical power draw | 2550 W                                     |
| Networking         | 2 RJ45 1GbE with Intel I350-AM2 (optional) |
| Dimensions (W×H×D) | 437 × 89 mm                                |



## 02 Power & thermal

Calculated for the base configuration

|       |         |         |             |         |          |
|-------|---------|---------|-------------|---------|----------|
| IDLE  | TYPICAL | MAXIMUM | HEAT (MAX)  | COOLING | PSU LOAD |
| 119 W | 337 W   | 549 W   | 1,873 BTU/h | 0.5 kW  | 46%      |

Typical 337 W · max 549 W · single PSU rating 1200 W

|                                  |                                              |
|----------------------------------|----------------------------------------------|
| Annual IT energy (24/7)          | 2,379 kWh                                    |
| Annual facility energy (PUE 1.5) | 3,569 kWh                                    |
| Annual energy cost               | €476 IT · €714 incl. cooling (at 0.20 €/kWh) |
| CO <sub>2</sub> emissions / year | 0.93 t (grid factor 0.26 kg/kWh)             |
| Power supplies                   | 2× 1200 W redundant (N+1)                    |

#### POWER BY COMPONENT

Chassis, motherboard, fans, BMC

2× CPU (base configuration)

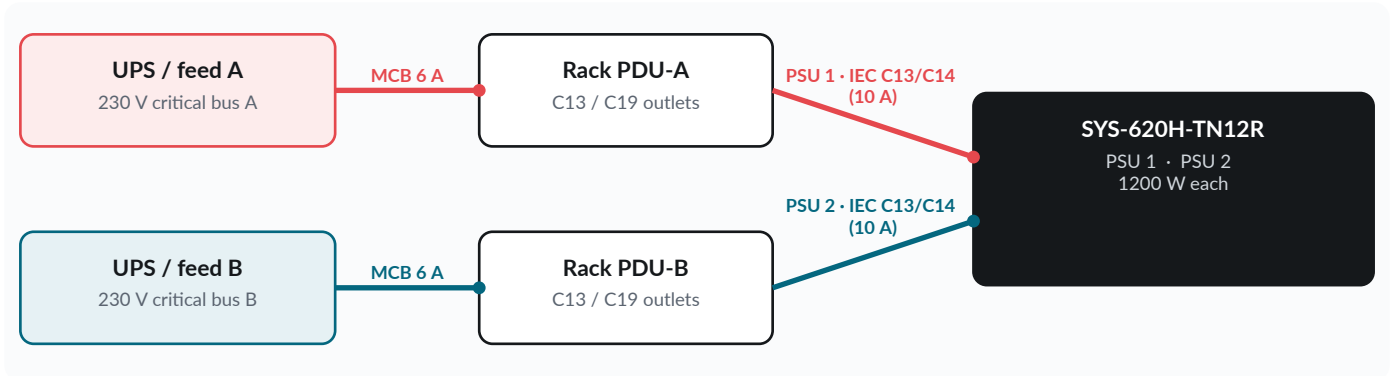
4× Memory (base configuration)

| IDLE | TYPICAL | MAX   |
|------|---------|-------|
| 50 W | 77 W    | 110 W |
| 50 W | 220 W   | 370 W |
| 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: 2.5 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: 549 W = 1,873 BTU/h (0.5 kW).

### 04 Full specifications

#### MOTHERBOARD

Super X12DHM-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 | Up to 4 double-width GPUs |
|---------------|---------------------------|

#### SYSTEM MEMORY

|                |                                                                                                                                                          |
|----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------|
| Memory         | Slot Count: 32 DIMM slots<br>Max Memory (2DPC): Up to 8TB 3200MT/s ECC DDR4<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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| NVMe                 | NVMe; RAID 0/1/5/10 support(Intel VROC RAID key required)<br>View NVMe Options                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Network Connectivity | 2 RJ45 1GbE with Intel I350-AM2 (optional)<br>4 RJ45 1GbE with Intel I350-AM4 (optional)<br>4 SFP 1GbE with Intel I350-AM4 (optional)<br>2 RJ45 10GBASE-T with Intel X550-AT2 (optional)<br>2 SFP+ 10GbE with Intel X710-BM2 (optional)<br>4 SFP+ 10GbE with Intel XL710-BM1 (optional)<br>4 SFP+ 10GbE with Intel X710-TM4 (optional)<br>2 SFP28 25GbE with Broadcom BCM57414 (optional)<br>4 SFP28 25GbE (optional)<br>2 QSFP28 100GbE with Broadcom BCM57508 (optional)<br>View AIOM Options<br>View AOC Options |

## SYSTEM BIOS

|           |                     |
|-----------|---------------------|
| BIOS Type | AMI 256MB SPI Flash |
|-----------|---------------------|

## 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 |

## PC HEALTH MONITORING

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

## CERTIFICATIONS

|                   |                                                                                                                                                      |
|-------------------|------------------------------------------------------------------------------------------------------------------------------------------------------|
| Operating Systems | Hypervisor 8.2, Oracle Linux 8.3, RHEL 8.2, RHEL 9.0, Windows Server 2019, Windows Server 2022<br>View all OS Compatibility and Certification Matrix |
|-------------------|------------------------------------------------------------------------------------------------------------------------------------------------------|

## CHASSIS

|             |                  |
|-------------|------------------|
| Form Factor | 2U Rackmount     |
| Model       | CSE-HS829-R1K24P |

## DIMENSIONS AND WEIGHT

|                 |                                                                |
|-----------------|----------------------------------------------------------------|
| Height          | 3.5" (88.9 mm)                                                 |
| Width           | 17.2" (437 mm)                                                 |
| Depth           | 31.6" (803 mm)                                                 |
| Package         | 10.4" (H) x 23.8" (W) x 43.6" (D)                              |
| Weight          | Gross Weight: 63 lbs (28.6 kg)<br>Net Weight: 37 lbs (16.8 kg) |
| Available Color | N/A                                                            |

## FRONT PANEL

|         |                                                              |
|---------|--------------------------------------------------------------|
| Buttons | Power On/Off<br>UID button                                   |
| LED     | HDD activity<br>LAN1 activity<br>Power<br>System information |

## EXPANSION SLOTS

|                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|----------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| PCI-Express (PCIe) Configuration | Default*<br>8 PCIe 4.0 x8 (in x16) FH/10.5"L slots<br>2 PCIe 4.0 x16 AIOM slots (OCP 3.0 compatible)<br>Option A*<br>2 PCIe 4.0 x8 (in x16) FH/10.5"L slots<br>3 PCIe 4.0 x16 FH/10.5"L slots<br>2 PCIe 4.0 x16 AIOM slots (OCP 3.0 compatible)<br>(*Requires additional parts, please see the optional parts list for details. For more details on PCIe slot configuration options, please refer to the system callout images above.)<br><a href="#">View AOC Options</a> |
|----------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

## DRIVE BAYS / STORAGE

|                          |                                                                                                                                                                                                                                                                                          |
|--------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Drive Bays Configuration | Default: Total 12 bays 12 front hot-swap 3.5" NVMe*/SAS*/SATA* drive bays<br>(*NVMe/SAS/SATA support may require additional storage controller and/or cables, please see the optional parts list for details)<br><a href="#">View NVMe Options</a><br><a href="#">View Drive Options</a> |
| M.2                      | 2 M.2 NVMe/SATA slots (M-key 2280/22110)<br><a href="#">View M.2 Options</a>                                                                                                                                                                                                             |

## SYSTEM COOLING

|            |                                                             |
|------------|-------------------------------------------------------------|
| Fans       | Up to 4x 8cm heavy duty fans with optimal fan speed control |
| 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](mailto:office@serverinvest.com)

Official manufacturer datasheet: [serverinvest.com/product/sys-620h-tn12r/datasheet/manufacture](https://serverinvest.com/product/sys-620h-tn12r/datasheet/manufacture)

