

TECHNICAL DATASHEET

SUPERMICRO · RACKMOUNT SERVERS

Supermicro 1U Ultra Server SYS-120U-TNR

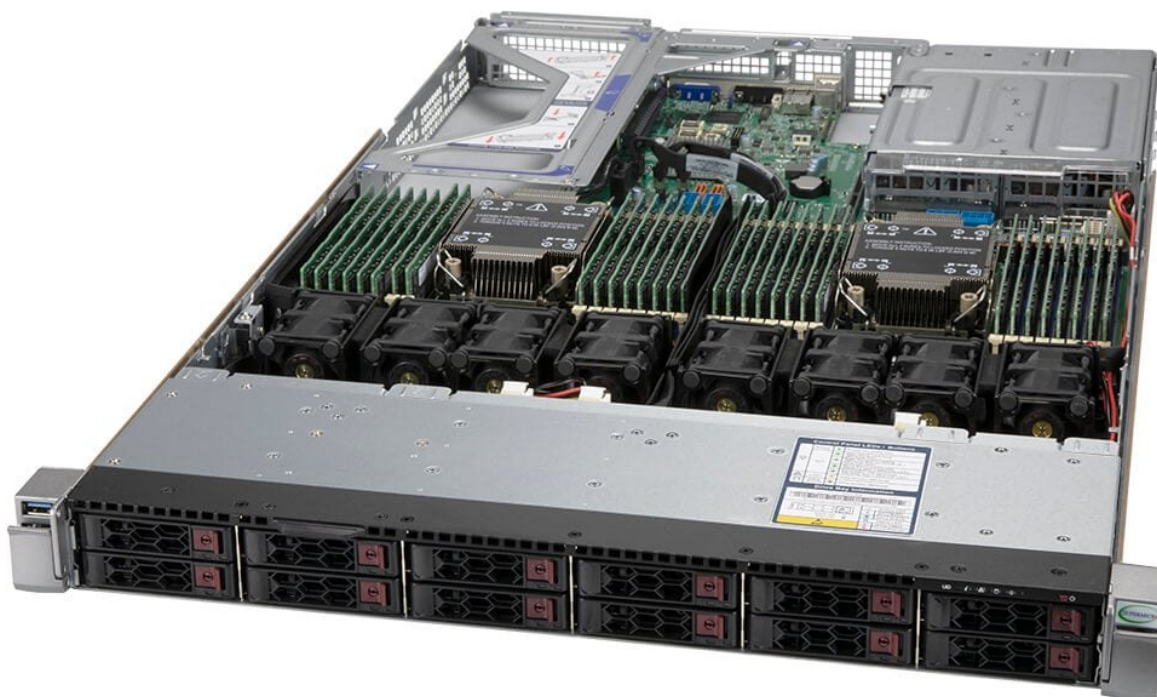
1U Ultra with 12 NVMe/SAS/SATA bays

SKU SYS-120U-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-120u-tnr

01 Product overview

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

1U Ultra with 12 NVMe/SAS/SATA bays.

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

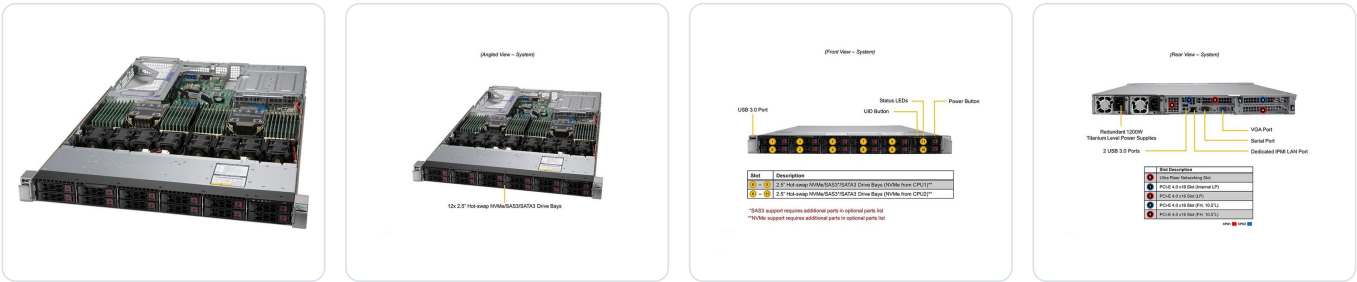
ServerInvest configures every SYS-120U-TNR to order, updates BIOS and BMC firmware, installs your operating system on request and runs a 48-hour burn-in test before delivery. Every system includes a 3-year warranty.

HIGHLIGHTS

- Dual Intel Xeon Scalable 3rd Gen
- Up to 8 TB memory · 32 DIMM slots
- Total 12 bays 12 front hot-swap 2.5" NVMe/SAS*/SATA drive bays
- Up to 2 GPUs
- Power: 1x 1200W
- Networking: 2 RJ45 10GBASE-T with Intel X710-AT2 (optional)

KEY SPECIFICATIONS

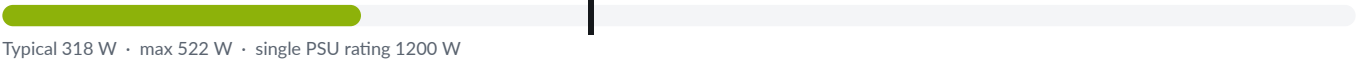
Form factor	1U
Processor	2× Intel Xeon Scalable 3rd Gen
Socket	LGA4189
Memory	32 DIMM slots, up to 8 TB
Drive bays	12 (12 NVMe)
GPU	Up to 2 GPUs
Power supply	1× 1200 W
Typical power draw	1650 W
Networking	2 RJ45 10GBASE-T with Intel X710-AT2 (optional)
Dimensions (W×H×D)	437 × 44 mm



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

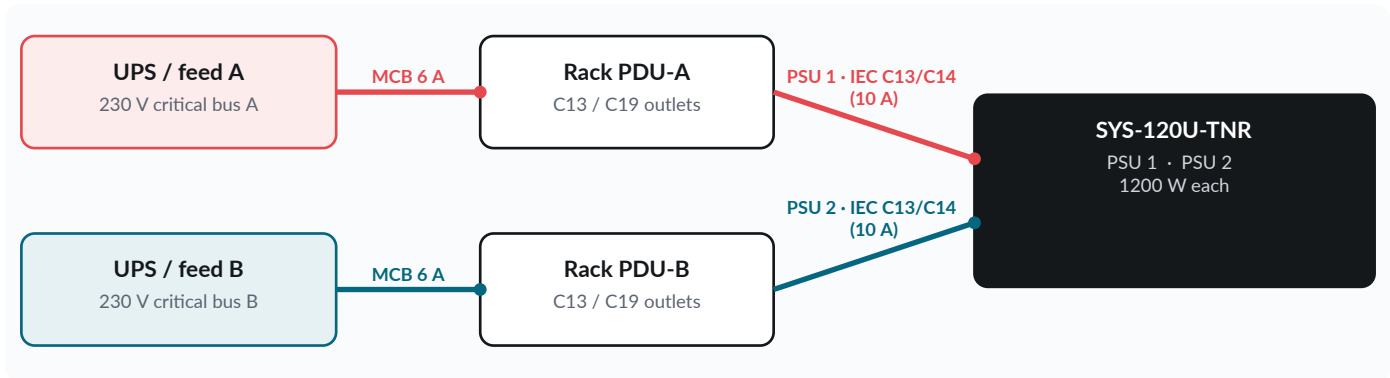
Annual IT energy (24/7)	2,229 kWh
Annual facility energy (PUE 1.5)	3,344 kWh
Annual energy cost	€446 IT · €669 incl. cooling (at 0.20 €/kWh)
CO ₂ emissions / year	0.87 t (grid factor 0.26 kg/kWh)
Power supplies	1× 1200 W

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 X12DPU-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 or 2 single-width GPUs
Supported GPU	NVIDIA PCIe: A100, A16, A2, L4, T4 View GPU Options

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
NVMe	NVMe; RAID 0/1/5/10 support View NVMe Options

Network Connectivity	2 RJ45 10GBASE-T with Intel X710-AT2 (optional) 2 RJ45 10GBASE-T with Intel X710-TM4 (optional) 2 SFP+ 10GbE with Intel X710-TM4 (optional) No NIC option supported View Network Card (AOC) 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
DOM	2 Super DOM (Disk on Module) ports

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

CERTIFICATIONS

Operating Systems	ESXi 6.7 U3, ESXi 7.0 U2, ESXi 8.0, Hypervisor 8.2, Oracle Linux 8.3, RHEL 7.9, RHEL 8.2, RHEL 9.0, SAP HANA 2.0, SLES 12 SP5, SLES 15 SP2, SLES 15 SP3, Windows Server 2019, Windows Server 2022 View all OS Compatibility and Certification Matrix
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Enterprise Solutions	VMWare vSAN Microsoft Azure Local SAP HANA
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CHASSIS

Form Factor	1U Rackmount
Model	CSE-119UH3TS-R1K22P-T

DIMENSIONS AND WEIGHT

Height	1.7" (43 mm)
Width	17.2" (437 mm)
Depth	29.1" (739 mm)
Package	7.99" (H) x 23.81" (W) x 37.4" (D)
Weight	Gross Weight: 41 lbs (18.6 kg) Net Weight: 26.5 lbs (12.2 kg)
Available Color	Black Front & Silver Body

FRONT PANEL

Buttons	Power On/Off UID button
LED	HDD activity LAN1 activity Power status System information (overheat/UID)

EXPANSION SLOTS

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

Drive Bays Configuration	Default: Total 12 bays 12 front hot-swap 2.5" NVMe/SAS*/SATA drive bays (*SAS support may require additional storage controller and/or cables, please see the optional parts list for details) View NVMe Options View Drive Options
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SYSTEM COOLING

Fans	Up to 8x 4cm heavy duty fans with optimal fan speed control
Air Shroud	2 Air Shrouds

POWER SUPPLY

1x 1200W
1x 1200W Redundant Titanium Level (96%) Hot-plug power supply
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)

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-120u-tnr/datasheet/manufacture

