

TECHNICAL DATASHEET

SUPERMICRO · RACKMOUNT SERVERS

Supermicro Server SYS-2049P-TN8R

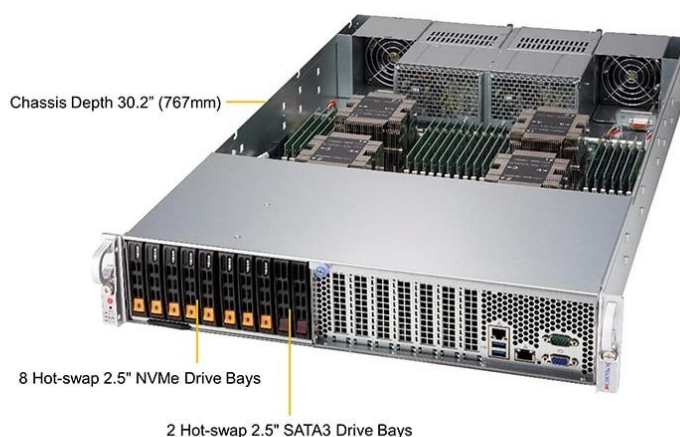
SKU SYS-2049P-TN8R

2U

Supermicro

SuperServer SYS-2049P-TN8R

(Angled View – System)



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FORM FACTOR

2U

MAX POWER (BASE)

981 W

HEAT OUTPUT

3,347 BTU/h

PRICE

On request



REQUEST A QUOTATION ONLINE

serverinvest.com/product/sys-2049p-tn8r



01 Product overview

The Supermicro SYS-2049P-TN8R is a server built on dual Quad Socket P (LGA 3647) 2nd Gen Intel Xeon Scalable Process processors with up to 12 TB of memory in 48 DIMM slots.

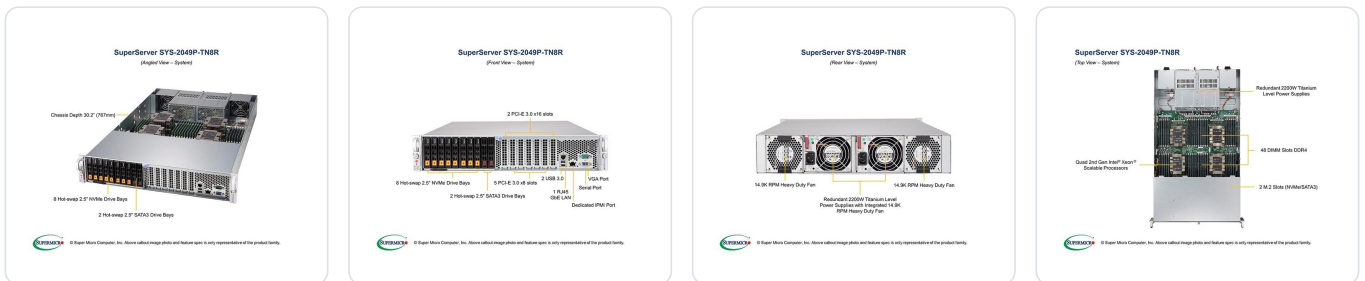
ServerInvest configures every SYS-2049P-TN8R to order, updates BIOS and BMC firmware, installs your operating system on request and runs a 48-hour burn-in test before delivery. Every system includes a 3-year warranty.

HIGHLIGHTS

- Dual Quad Socket P (LGA 3647) 2nd Gen Intel Xeon Scalable Process
- Up to 12 TB memory · 48 DIMM slots
- 2 Hot-swap 2.5" SATA3 drive bays
- Power: 1200W/1800W/1980W/2090W/2200W
- Networking: 1 Gigabit Ethernet port via Intel i210

KEY SPECIFICATIONS

Form factor	2U
Processor	4× Quad Socket P (LGA 3647) 2nd Gen Intel Xeon Scalable Process
Memory	48 DIMM slots, up to 12 TB
Drive bays	10 (10 NVMe)
Power supply	1× 1200 W
Typical power draw	1350 W
Networking	1 Gigabit Ethernet port via Intel i210
Dimensions (W×H×D)	437 × 89 mm



02 Power & thermal

Calculated for the base configuration

IDLE	TYPICAL	MAXIMUM	HEAT (MAX)	COOLING	PSU LOAD
185 W	593 W	981 W	3,347 BTU/h	1 kW	82%

Typical 593 W · max 981 W · single PSU rating 1200 W

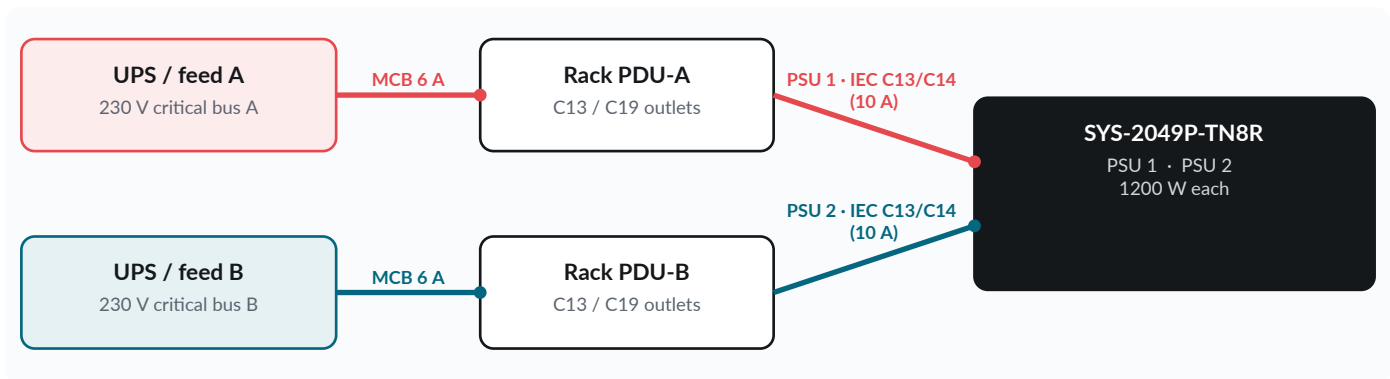
Annual IT energy (24/7)	4,122 kWh
Annual facility energy (PUE 1.5)	6,183 kWh
Annual energy cost	€824 IT · €1,237 incl. cooling (at 0.20 €/kWh)
CO ₂ emissions / year	1.61 t (grid factor 0.26 kg/kWh)
Power supplies	1× 1200 W

POWER BY COMPONENT	IDLE	TYPICAL	MAX
Chassis, motherboard, fans, BMC	50 W	77 W	110 W
4× CPU (base configuration)	100 W	440 W	740 W
8× Memory (base configuration)	24 W	40 W	72 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: 4.5 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: 981 W = 3,347 BTU/h (1 kW).

04 Full specifications

PROCESSOR

CPU	Quad Socket P (LGA 3647) 2nd Gen Intel Xeon Scalable Processors and Intel Xeon Scalable Processors ‡ , 3 UPI up to 10.4GT/s Support CPU TDP up to 205W
Cores	Up to 28 Cores
Note	‡ BIOS version 3.0 or above is required to support 2nd Gen Intel Xeon Scalable processors

SYSTEM MEMORY

Memory Capacity	48 DIMM slots Up to 12TB 3DS ECC DDR4-2933MHz † RDIMM/LRDIMM Supports Intel Optane DCPMM ††
Memory Type	2933 † /2666MHz ECC DDR4 RDIMM/LRDIMM
Note	† 2933MHz in two DIMMs per channel can be achieved by using memory purchased from Supermicro †† Cascade Lake only. Contact your Supermicro sales rep for more info.

ON-BOARD DEVICES

Chipset	Intel C621 chipset
SATA	SATA3 via Intel C621; RAID 0, 1, 5, 10
Network Connectivity	1 Gigabit Ethernet port via Intel i210
IPMI	Support for Intelligent Platform Management Interface v.2.0 IPMI 2.0 with virtual media over LAN and KVM-over-LAN support
Graphics	ASPEED AST2500 BMC

INPUT / OUTPUT

SATA	2 SATA3 (6Gbps) ports
NVMe	8 U.2 NVMe
LAN	1 RJ45 GbE LAN port 1 RJ45 Dedicated IPMI LAN port
USB	2 USB 3.0 ports (front)
Video	1 VGA Connector
Serial Port / Header	1 COM port (rear)

SYSTEM BIOS

BIOS Type	128Mb SPI Flash EEPROM with AMI BIOS
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MANAGEMENT

Software	SuperDoctor 5 Watch Dog NMI SUM IPMI 2.0
Power Configurations	ACPI Power Management Power-on mode for AC power recovery

PC HEALTH MONITORING

CPU	Monitors for CPU Cores, Chipset Voltages, Memory. 4+1 Phase-switching voltage regulator
FAN	Fans with tachometer monitoring Status monitor for speed control Pulse Width Modulated (PWM) fan connectors
Temperature	Monitoring for CPU and chassis environment Thermal Control for fan connectors

CHASSIS

Form Factor	2U Rackmount
Model	CSE-218LTS-R2K21P

DIMENSIONS AND WEIGHT

Width	17.2" (437mm)
Height	3.5" (89mm)
Depth	30.2" (767mm)
Weight	Net Weight: 47.5 lbs (21.55 kg) Gross Weight: 73.5 lbs (33.34 kg)
Available Colors	Black

FRONT PANEL

Buttons	Power On/Off button System Reset button
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LEDs	Power status LED HDD activity LED Network activity LEDs System information (overheat/UID) LED
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EXPANSION SLOTS

PCI-Express	5 PCI-E 3.0 x8 slots 2 PCI-E 3.0 x16 slots (4 CPUs need to be installed for full access to PCI-E slots and onboard controllers.)
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DRIVE BAYS

Hot-swap	2 Hot-swap 2.5" SATA3 drive bays 8 Hot-swap 2.5" U.2 NVMe SSD bays
M.2	2 M.2 M key for NVMe/SATA3 (22110/2280)

SYSTEM COOLING

Fans	4 heavy duty fans with optimal fan speed control
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POWER SUPPLY

Total Output Power	1200W/1800W/1980W/2090W/2200W (UL/cUL only)
Dimension (W x H x L)	106.5 x 82.4 x 203.5 mm
Input	1200W: 100-127 Vac / 14-11 A / 50-60 Hz 1800W: 200-220 Vac / 10-9.5 A / 50-60 Hz 1980W: 220-230 Vac / 10-9.5 A / 50-60 Hz 2090W: 230-240 Vac / 10-9.8 A / 50-60 Hz 2200W: 220-240 Vac / 12-11 A / 50-60 Hz (UL/cUL only) 2090W: 180-220 Vac / 14-11 A / 50-60 Hz (UL/cUL only) 2090W: 230-240 Vdc / 10-9.8 A (CCC only)
+12V	Max: 100A / Min: 0A (1200W) Max: 150A / Min: 0A (1800W) Max: 165A / Min: 0A (1980W) Max: 174.17A / Min: 0A (2090W) Max: 183.3A / Min: 0A (2200W) Max: 174.17A / Min: 0A (2090W)
12Vsb	Max: 2A / Min: 0A
Output Type	Gold Finger (connector on M/P)
Certification	Titanium Level [Test Report]

OPERATING ENVIRONMENT

RoHS	RoHS Compliant
Environmental Spec.	Operating Temperature: 10°C ~ 35°C (50°F ~ 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

