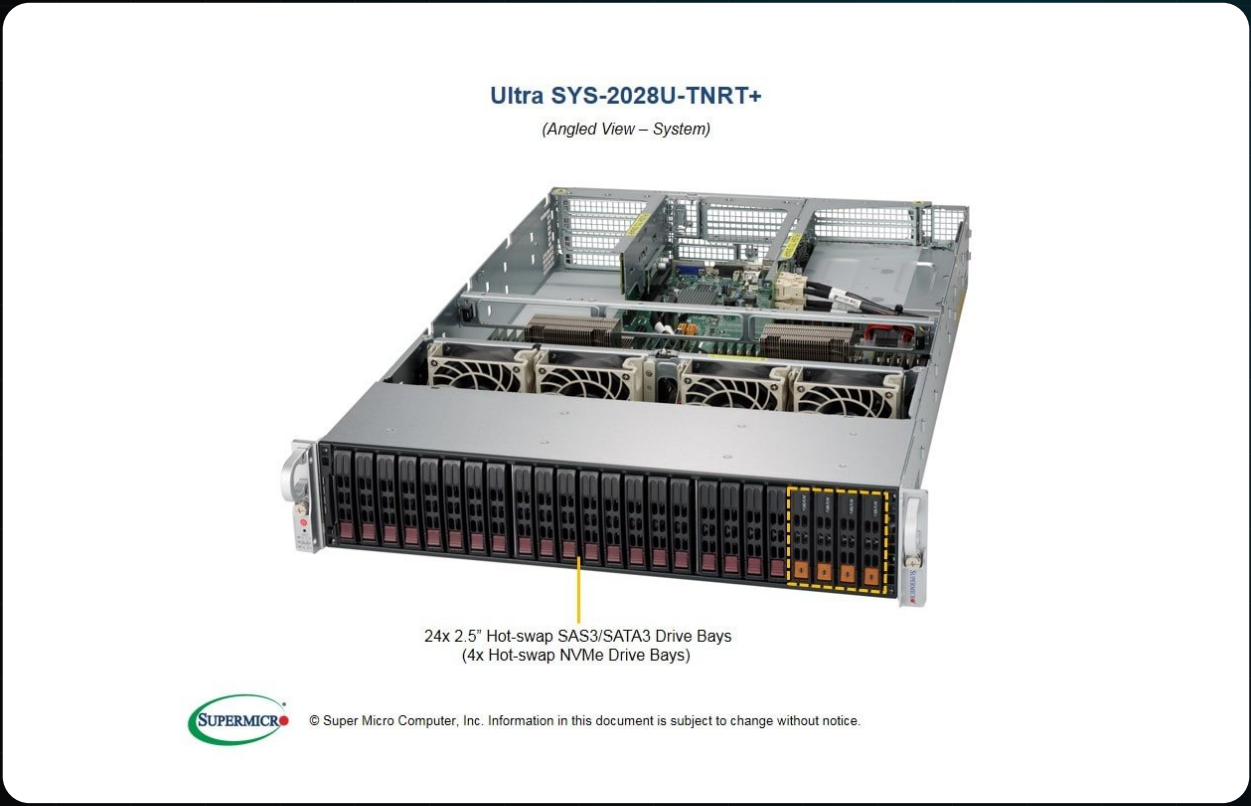
TECHNICAL DATASHEET

SUPERMICRO · RACKMOUNT SERVERS

Supermicro Server SYS-2028U-TNRT

SKU SYS-2028U-TNRT | 2U | Supermicro



FORM FACTOR	MAX POWER (BASE)	HEAT OUTPUT	PRICE
2U	549 W	1,873 BTU/h	On request

ISO 9001 · ISO 14001 · ISO 27001 · cisco · tp-link · Omada by tp-link

REQUEST A QUOTATION ONLINE
serverinvest.com/product/sys-2028u-tnrt

01 Product overview

The Supermicro SYS-2028U-TNRT is a server built on dual Intel Xeon processor E5-2600 v4 † / v3 family (up to 160W TD processors with up to 3 TB of memory in 4 DIMM slots.

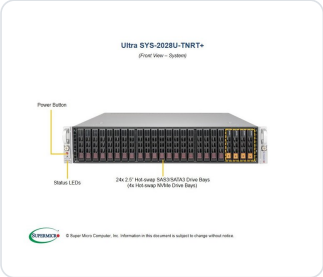
ServerInvest configures every SYS-2028U-TNRT to order, updates BIOS and BMC firmware, installs your operating system on request and runs a 48-hour burn-in test before delivery. Every system includes a 3-year warranty.

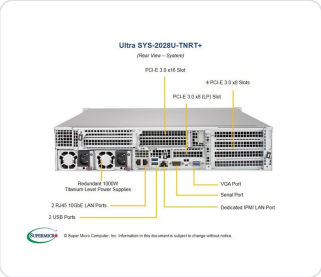
HIGHLIGHTS

- Dual Intel Xeon processor E5-2600 v4 † / v3 family (up to 160W TD
- Up to 3 TB memory · 4 DIMM slots
- 24x 2.5" Hot-swap drive bays
- Power: 800W: 100 – 127Vac
- Networking: 2x 10GBase-T ports via AOC-2UR8N4-i2XT

KEY SPECIFICATIONS

Form factor	**2U**
Processor	**2× Intel Xeon processor E5-2600 v4 † / v3 family (up to 160W TD**
Memory	**4 DIMM slots, up to 3 TB**
Drive bays	**24 (24 NVMe)**
Power supply	**1× 800 W**
Typical power draw	**750 W**
Networking	**2x 10GBase-T ports via AOC-2UR8N4-i2XT**
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**	**69%**

Typical 337 W · max 549 W · single PSU rating 800 W

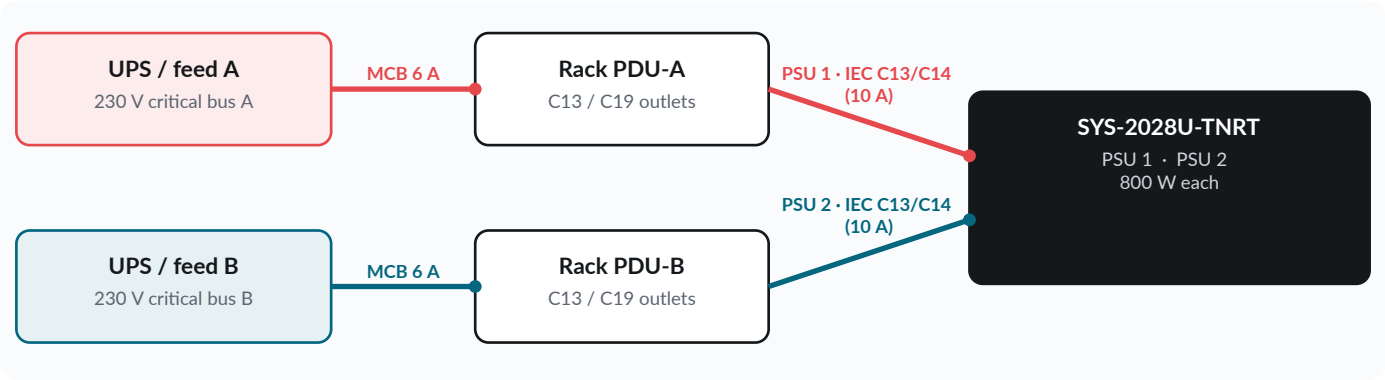
Annual IT energy (24/7)	2,379 kWh
Annual facility energy (PUE 1.5)	3,569 kWh
Annual energy cost	€476 IT · €714 incl. cooling (at 0.20 €/kWh)
CO_2 emissions / year	0.93 t (grid factor 0.26 kg/kWh)
Power supplies	1× 800 W

POWER BY COMPONENT	IDLE	TYPICAL	MAX
Chassis, motherboard, fans, BMC	50 W	77 W	**110 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: 2.5 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

PROCESSOR/CACHE	
CPU	Intel Xeon processor E5-2600 v4 † / v3 family (up to 160W TDP) * Dual Socket R3 (LGA 2011)
Cores / Cache	Up to 22 Cores † / Up to 55MB † Cache
System Bus	QPI up to 9.6 GT/s
Note	† BIOS version 2.0 or above is required
Note	* Please contact Supermicro Technical Support for additional information about frequency optimized CPUs and specialized system optimization.

SYSTEM MEMORY	
Memory Capacity	24x 288-pin DDR4 DIMM slots Up to 3TB † ECC 3DS LRDIMM, 768GB ECC RDIMM
Memory Type	2400 † /2133/1866/1600MHz ECC DDR4 SDRAM 72-bit 2666/2400 ECC DDR4 NVDIMM
DIMM Sizes	64GB, 32GB, 16GB, 8GB, 4GB NVDIMM: 16GB
Memory Voltage	1.2 V
Error Detection	Corrects single-bit errors

ON-BOARD DEVICES	
Chipset	Intel C612 chipset
SATA	SATA3 (6Gbps) with RAID 0, 1, 5, 10

IPMI	Support for Intelligent Platform Management Interface v.2.0 IPMI 2.0 with virtual media over LAN and KVM-over-LAN support ASPEED AST2400 BMC
Network Connectivity	2x 10GBase-T ports via AOC-2UR8N4-i2XT Intel X540 10GBase-T 1x Realtek RTL8211E PHY (dedicated IPMI)
Graphics	ASPEED AST2400 BMC

INPUT / OUTPUT

SATA	8x SATA3 (6Gbps) ports
SAS	24x SAS3 ports support via optional Add-on Cards
NVMe	4x NVMe ports
LAN	2x 10GBase-T LAN ports 1x RJ45 Dedicated IPMI LAN port
USB	5x USB 3.0 ports (2 rear, 2 onboard header, 1 Type A)
Video	1x VGA Connector
Serial Port / Header	1x Serial header
DOM	2x Super DOM (Disk on Module) ports

SYSTEM BIOS

BIOS Type	128Mb SPI Flash EEPROM with AMI BIOS
BIOS Features	Plug and Play (PnP) APM 1.2 PCI 2.3 ACPI 1.0 / 2.0 / 3.0 / 4.0 USB Keyboard support SMBIOS 2.7.1 UEFI 2.3.1

MANAGEMENT

Software	SuperDoctor 5 Intel Node Manager 3.0 Watch Dog NMI SUM and SSM Optional IPMI 1.5 / 2.0
Power Configurations	ACPI Power Management Power-on mode for AC power recovery

CHASSIS

Form Factor	2U Rackmount
Model	CSE-219UAC-R1K02

DIMENSIONS AND WEIGHT

Width	17.2" (437mm)
Height	3.5" (89mm)
Depth	27.76" (705.3mm)

Weight	Net Weight: 36 lbs (16.4 kg) Gross Weight: 72 lbs (32.7 kg)
Available Colors	Black

FRONT PANEL

Buttons	Power On/Off button System Reset button
LEDs	Power status LED HDD activity LED 2x Network activity LEDs System information (overheat/UID) LED

EXPANSION SLOTS

PCI-Express	7x PCI-E 3.0 x8 slots (5x FH, 10.5" L, 1x LP, 1x Internal LP) (Both CPUs need to be installed for full access to PCI-E slots and onboard controllers. See manual block diagram and AOC Support for details.)

DRIVE BAYS

Hot-swap	24x 2.5" Hot-swap drive bays Default 8x SATA3 ports and 4x NVMe ports Optional 24x SAS3 ports via AOC Note: optional storage card is required to support more than 10 drives.

SYSTEM COOLING

Fans	4x 8cm heavy duty PWM fans

POWER SUPPLY

Total Output Power	800W: 100 – 127Vac 1000W: 200 – 240Vac 1000W: 200 – 240Vdc (for CCC only)
Dimension (W x H x L)	73.5 x 40 x 203 mm
Input	100-127Vac / 9.8 - 7A / 50-60Hz 200-240Vac / 7 - 5A / 50-60Hz 200-240Vdc / 7 - 5A (for CCC only)
+12V	Max: 66.7A / Min: 0A (100-127Vac) Max: 83A / Min: 0A (200-240Vac) Max: 83A / Min: 0A (200-240Vdc)
12Vsb	Max: 2.1A / Min: 0A
Output Type	25 Pairs Gold Finger Connector
Certification	Titanium Level [Test Report]

PC HEALTH MONITORING

Voltage	Monitors for CPU Cores, +1.8V, +3.3V, +5V, +12V, +3.3V Standby, +5V Standby, VBAT, Memory Voltages. 5+1 Phase-switching voltage regulator
FAN	8x 4-pin fan headers Status monitor for speed control Pulse Width Modulated (PWM) fan connectors

Temperature	Support to monitor Supermicro AOC temperatures from IPMI or SD 5 Monitoring for CPU and chassis environment CPU thermal trip support Thermal Control for 8x Fan Connectors Thermal Monitor 2 (TM2) support PECI
LED	Memory DIMM ECC error LEDs CPU / System Overheat LED Suspend static indicator LED UID/Remote UID
Other Features	4x 8-pin GPU power connectors Chassis intrusion detection Chassis intrusion header SDDC Support RoHS

OPERATING ENVIRONMENT / COMPLIANCE

RoHS	RoHS Compliant
Environmental Spec.	Operating Temperature: 10°C to 35°C (50°F to 95°F) Non-operating Temperature: -40°C to 70°C (-40°F to 158°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.

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Interested in this solution?

Request a quotation online or talk to a solutions engineer — we reply within one business day.
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