

TECHNICAL DATASHEET

SUPERMICRO · RACKMOUNT SERVERS

Supermicro 6U MP Server SYS-681E-TR

6U 8-socket system with 128 DIMMs, 24 NVMe/SAS/SATA drive bays, and 24 PCIe slots

SKU SYS-681E-TR

6U

LGA4677

Supermicro



FORM FACTOR

6U

MAX POWER (BASE)

1,706 W

HEAT OUTPUT

5,821 BTU/h

PRICE

On request**CONFIGURE & QUOTE ONLINE**serverinvest.com/product/sys-681e-tr

01 Product overview

The Supermicro SYS-681E-TR is a 6U MP Server built on dual Intel Xeon Scalable 4th/5th Gen processors with up to 32 TB of memory in 128 DIMM slots.

6U 8-socket system with 128 DIMMs, 24 NVMe/SAS/SATA drive bays, and 24 PCIe slots.

The chassis accepts up to 12 GPU accelerators for AI, rendering and HPC workloads.

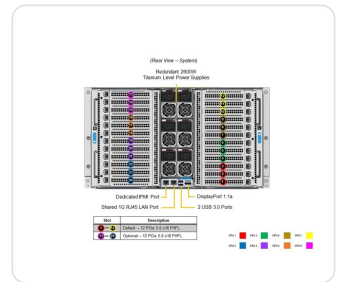
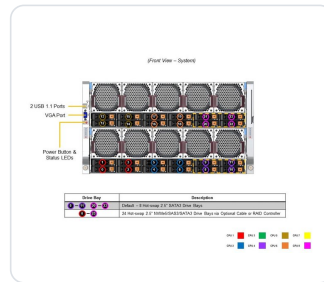
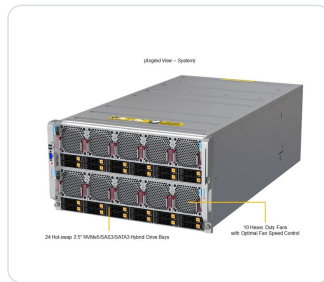
ServerInvest configures every SYS-681E-TR to order, updates BIOS and BMC firmware, installs your operating system on request and runs a 48-hour burn-in test before delivery. Every system includes a 3-year warranty.

HIGHLIGHTS

- Dual Intel Xeon Scalable 4th/5th Gen
- Up to 32 TB memory · 128 DIMM slots
- Total 8 bays 8 front hot-swap 2.5" SATA drive bays
- Up to 12 GPUs
- Power: 4x 2600W
- Networking: 1 RJ45 1GBASE-T

KEY SPECIFICATIONS

Form factor	6U
Processor	8× Intel Xeon Scalable 4th/5th Gen
Socket	LGA4677
Memory	128 DIMM slots, up to 32 TB
Memory type	DDR5-5600 ECC RDIMM
Drive bays	32 (32 NVMe)
GPU	Up to 12 GPUs
Power supply	4× 2600 W
Typical power draw	7950 W
Networking	1 RJ45 1GBASE-T
Dimensions (W×H×D)	437 × 267 mm



02 Base configuration

Components included in the listed base price — every part can be changed in the online configurator

COMPONENT	DESCRIPTION	QTY
Base system	Supermicro 6U MP Server SYS-681E-TR	1
Processor	Intel Xeon Silver 4410Y Processor 12 Cores (30M Cache, 2.00/3.90 Ghz) 150W	8
Memory	16GB 5600MT/s DDR5 ECC Registered DIMM Module	16
Warranty & support	3-year return-to-base warranty (included)	1

Price on request — contact us for a tailored quotation

03 Power & thermal

Calculated for the base configuration

IDLE	TYPICAL	MAXIMUM	HEAT (MAX)	COOLING	PSU LOAD
371 W	1113 W	1706 W	5,821 BTU/h	1.7 kW	66%

Typical 1113 W · max 1706 W · single PSU rating 2600 W

Annual IT energy (24/7)	7,800 kWh
Annual facility energy (PUE 1.5)	11,700 kWh
Annual energy cost	€1,560 IT · €2,340 incl. cooling (at 0.20 €/kWh)
CO ₂ emissions / year	3.04 t (grid factor 0.26 kg/kWh)
Power supplies	4× 2600 W redundant (N+1)

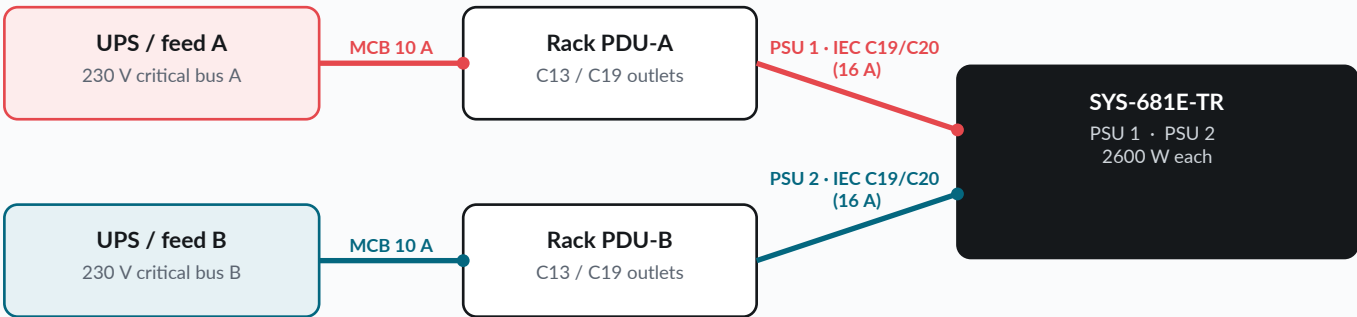
POWER BY COMPONENT

	IDLE	TYPICAL	MAX
Chassis, motherboard, fans, BMC	117 W	182 W	260 W
8× CPU — Intel Xeon Silver 4410Y Processor 12 Cores	184 W	784 W	1200 W
16× Memory 16 GB DIMM	48 W	80 W	144 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.

04 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: 7.8 A at 230 V — each feed must be able to carry the full load if the other fails.
- Recommended protection per PDU circuit: MCB 10 A, curve C; RCD according to local regulations.
- Heat to remove at full load: 1706 W = 5,821 BTU/h (1.7 kW).

05 Full specifications

MOTHERBOARD	
	Super X13OEI-CPU
PROCESSOR	
CPU	8 Socket E (LGA-4677) 4th Gen Intel Xeon Scalable processors
Core Count	Up to 60C/120T; Up to 112.5MB Cache per CPU

Note Supports 250W - 350W TDP CPUs (Air Cooled)

GPU

Max GPU Count Up to 12 double-width GPUs

SYSTEM MEMORY

Memory Slot Count: 128 DIMM slots
Max Memory (1DPC): Up to 16TB 4800MT/s ECC DDR5 RDIMM
Max Memory (2DPC): Up to 32TB 4400MT/s ECC DDR5 RDIMM
[View Memory Options](#)

Memory Voltage 1.1V

ON-BOARD DEVICES

Network Connectivity 1 RJ45 1GBASE-T
[View AOC Options](#)

INPUT / OUTPUT

LAN 1 RJ45 1 GbE Dedicated BMC LAN port
1 RJ45 1 GbE LAN port

USB 2 USB 3.0 ports (rear)
2 ports (front)

Video 1 VGA port (Front)
1 DisplayPort port (Rear)

SYSTEM BIOS

BIOS Type AMI 32MB SPI Flash EEPROM

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
Supply Chain Security: Remote Attestation
Runtime BMC Protections
System Lockdown

PC HEALTH MONITORING

CPU	4+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 8.0 U2, Oracle Linux 9.0, RHEL 8.6, RHEL 9.0, SAP HANA 2.0, SLES 15 SP4, Windows Server 2019, Windows Server 2022 View all OS Compatibility and Certification Matrix
Enterprise Solutions	SAP HANA

CHASSIS

Form Factor	6U Rackmount
Model	CSE-618TS-R5K26P

DIMENSIONS AND WEIGHT

Height	10.4" (265 mm)
Width	17.68" (449 mm)
Depth	33.1" (841 mm)
Package	36.3" (H) x 28.34" (W) x 42.5" (D)
Weight	Gross Weight: 242.5 lbs (110 kg) Net Weight: 176.37 lbs (80 kg)
Available Color	Black

FRONT PANEL

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

EXPANSION SLOTS

PCI-Express (PCIe) Configuration	Default 12 PCIe 5.0 x16 FHFL slots 2 PCIe 5.0 x16 LP slots Option A* 12 PCIe 5.0 x16 FHFL slots (*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.) View AOC Options
M.2	2 M.2 NVMe/SATA slots (M-key 2280/22110)

DRIVE BAYS / STORAGE

Drive Bays Configuration

Default: Total 8 bays 8 front hot-swap 2.5" SATA drive bays
Option A: Total 24 bays 24 front hot-swap 2.5" NVMe*/SAS*/SATA* drive bays
(*NVMe/SAS/SATA support may require additional storage controller and/or cables, please see the optional parts list for details)
[View NVMe Options](#)
[View Drive Options](#)

M.2

2 M.2 PCIe 3.0 x4 NVMe/SATA slots (M-key 2280/22110)
[View M.2 Options](#)

SYSTEM COOLING

Fans

Up to 10 Heavy duty counter-rotating 8cm Fan(s)

Air Shroud

1 Air Shroud

POWER SUPPLY

4x 2600W
4x 2600W Redundant (2 + 2) Titanium Level (96%) power supplies
Dimension (WxHxL)
73.5 x 40 x 265 mm

OPERATING ENVIRONMENT

RoHS

RoHS Compliant

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)

06 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.



Ready to order or need changes?

Configure this system online or talk to a solutions engineer — we reply within one business day.

office@serverinvest.com

Official manufacturer datasheet: serverinvest.com/product/sys-681e-tr/datasheet/manufacture

