

TECHNICAL DATASHEET

SUPERMICRO · TOWER SERVERS & WORKSTATIONS

Supermicro Mid-Tower SuperWorkstation Server AS-531AW-TC

UP workstation for AI, design, simulation and media

SKU AS-531AW-TC

Tower

Supermicro



FORM FACTOR

Tower

MAX POWER (BASE)

306 W

HEAT OUTPUT

1,044 BTU/h

PRICE

from €5,500



REQUEST A QUOTATION ONLINE

serverinvest.com/product/as-531aw-tc

01 Product overview

The Supermicro AS-531AW-TC is a Mid-Tower SuperWorkstation Server built on Single Socket sTR5 (LGA-4844) AMD Ryzen Threadripper PRO 900 with up to 512 GB of memory in 4 DIMM slots.

UP workstation for AI, design, simulation and media.

The chassis accepts up to 1 GPU accelerators for AI, rendering and HPC workloads.

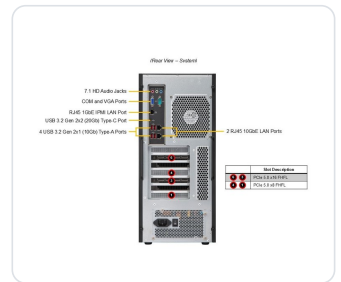
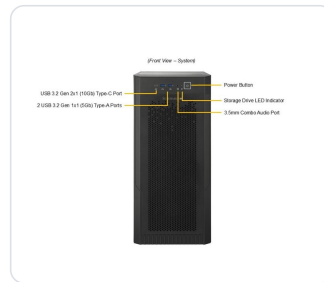
ServerInvest configures every AS -531AW-TC to order, updates BIOS and BMC firmware, installs your operating system on request and runs a 48-hour burn-in test before delivery. Every system includes a 3-year warranty.

HIGHLIGHTS

- Single Socket sTR5 (LGA-4844) AMD Ryzen Threadripper PRO 900
- Up to 512 GB memory · 4 DIMM slots
- Total 8 bays 2 internal fixed 3.5" SATA* drive bays
- Up to 1 GPUs
- Power: 1x 1000W
- Networking: 2 RJ45 10GbE with Broadcom BCM57416

KEY SPECIFICATIONS

Form factor	Tower
Processor	Single Socket sTR5 (LGA-4844) AMD Ryzen Threadripper PRO 900
Memory	4 DIMM slots, up to 512 GB
Drive bays	28 (28 NVMe)
GPU	Up to 1 GPUs
Power supply	1× 1000 W
Typical power draw	900 W
Networking	2 RJ45 10GbE with Broadcom BCM57416



02 Power & thermal

Calculated for the base configuration

IDLE	TYPICAL	MAXIMUM	HEAT (MAX)	COOLING	PSU LOAD
73 W	190 W	306 W	1,044 BTU/h	0.3 kW	31%

Typical 190 W · max 306 W · single PSU rating 1000 W

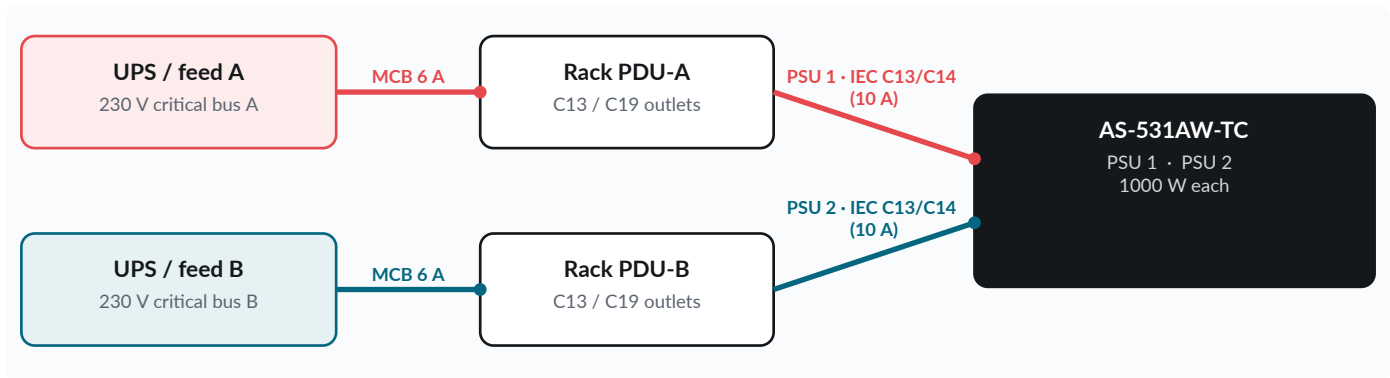
Annual IT energy (24/7)	1,357 kWh
Annual facility energy (PUE 1.5)	2,036 kWh
Annual energy cost	€271 IT · €407 incl. cooling (at 0.20 €/kWh)
CO ₂ emissions / year	0.53 t (grid factor 0.26 kg/kWh)
Power supplies	1× 1000 W

POWER BY COMPONENT	IDLE	TYPICAL	MAX
Chassis, motherboard, fans, BMC	38 W	59 W	85 W
CPU (base configuration)	25 W	110 W	185 W
2× Memory (base configuration)	6 W	10 W	18 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: 1.4 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: 306 W = 1,044 BTU/h (0.3 kW).

04 Full specifications

MOTHERBOARD

Super H13SRA-TF

PROCESSOR

CPU	Single Socket sTR5 (LGA-4844) AMD Ryzen Threadripper PRO 9000/7000 WX-Series and Ryzen Threadripper 9000/7000 Series Processors
Core Count	Up to 96C/192T; Up to 384MB Cache
Note	Supports up to 350W TDP CPUs (Air Cooled) Supports up to 350W TDP CPUs (Liquid Cooled)

GPU

Max GPU Count	Up to 1 quad-width or 2 triple-width or 2 double-width or 2 single-width GPUs
Supported GPU	NVIDIA PCIe: NVIDIA RTX PRO 4000 Blackwell, NVIDIA RTX PRO 5000 Blackwell, NVIDIA RTX PRO 6000 Blackwell Max-Q Workstation Edition, NVIDIA RTX PRO 6000 Blackwell Workstation Edition, RTX 4500 Ada, RTX 5000 Ada, RTX 6000 Ada Generation NVIDIA: GeForce RTX 5070, GeForce RTX 5080, GeForce RTX 5090 AMD PCIe: Radeon AI PRO R9700 View GPU Options

SYSTEM MEMORY

Memory	Slot Count: 4 DIMM slots/4 Channels Max Memory (1DPC): Up to 512GB 6400MT/s ECC DDR5 RDIMM View Memory Options
Memory Voltage	1.1V

ON-BOARD DEVICES

Network Connectivity	2 RJ45 10GbE with Broadcom BCM57416 1 RJ45 1GbE with ASPEED AST2600 View AOC Options
IPMI	Support for Intelligent Platform Management Interface v.2.0 IPMI 2.0 with virtual media over LAN and KVM-over-LAN support

INPUT / OUTPUT

LAN	2 RJ45 10 GBASE-T LAN ports (Broadcom BCM57416) 1 RJ45 1 GbE Dedicated BMC LAN port (ASPEED AST2600)
USB	2 USB 3.2 Gen1 Type-A ports (front) 4 USB 3.2 Gen2 Type-A ports (Rear) 1 USB 3.2 Gen2 Type-C port (Rear) 1 USB 3.2 Gen2 Type-C port (Front)
Video	1 VGA port
Serial	1 COM port (rear)
Audio	7.1 HD Audio
TPM	1 TPM header

SYSTEM BIOS

BIOS Type	AMI 32MB SPI Flash EEPROM
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MANAGEMENT

Software	Supermicro Server Manager (SSM) Supermicro Power Manager (SPM) Supermicro Update Manager (SUM) Supermicro SuperDoctor 5 (SD5) Super Diagnostics Offline (SDO) SuperServer Automation Assistant (SAA) New! IPMICFG SMCIPMITool IPMIView
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Power configurations	ACPI 6.0 Power Management
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SECURITY

Hardware	Trusted Platform Module (TPM) 2.0
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PC HEALTH MONITORING

Fan	Status monitor for speed control
Temperature	Monitoring for CPU and chassis environment; CPU Thermal Trip Support; I ² C Temperature Sensing Logic
Voltage	Monitors CPU Core Voltages, +3.3V, +12V, +3.3Vstb, +5Vstb, Vcore, Vmem

CERTIFICATIONS

Operating Systems	RHEL 10.0, Windows 11 View all OS Compatibility and Certification Matrix
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CHASSIS

Form Factor	Mid-Tower
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Model	CSE-GS3A-000NBP
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DIMENSIONS AND WEIGHT

Height	17.72" (450 mm)
Width	8.07" (205 mm)
Depth	18.5" (470 mm)
Package	24.29" (H) x 12.8" (W) x 23.23" (D)
Weight	Gross Weight: 19.2 lbs (8.7 kg) Net Weight: 14.1 lbs (6.4 kg)
Available Color	Black

FRONT PANEL

Buttons	Power On/Off
LED	HDD activity Power status LED
Port	Audio Jack-Combo microphone input / audio output port USB Type-A Ports-USB 3.2 Gen 1X1 ports (5G) USB Type-C-USB 3.2 Gen 2X2 port (20G)

EXPANSION SLOTS

PCI-Express (PCIe) Configuration	Default 2 PCIe 5.0 x16 (in x16) FHFL slots 2 PCIe 5.0 x8 (in x8) FHFL slots View AOC Options
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DRIVE BAYS / STORAGE

Drive Bays Configuration	Default: Total 8 bays 2 internal fixed 3.5" SATA* drive bays 6 internal fixed 2.5" SATA* drive bays Option A: Total 8 bays 2 internal fixed 3.5" SATA drive bays 4 internal fixed 2.5" SATA drive bays 2 internal fixed 2.5" PCIe 4.0 NVMe* drive bays (*NVMe/SATA support may require additional storage controller and/or cables, please see the optional parts list for details) View Drive Options
M.2	2 M.2 PCIe 4.0 x4 NVMe slots (M-key 22110(default)/2280) View M.2 Options

SYSTEM COOLING

Fans	Up to 1 Rear Exhaust Fan 120mm Fan(s) Up to 3 Front Intake 120mm Fan(s)
Liquid Cooling	Direct to Chip (D2C) Cold Plate (optional)

POWER SUPPLY

1x 1000W
1x 2000W
1x 1300W
1x 1000W
1x 1000W Gold Level (90%) power supply
Dimension (WxHxL)
150 x 86 x 140 mm

OPERATING ENVIRONMENT

RoHS

RoHS Compliant

Environmental Spec.

Operating Temperature: 10°C to 30°C (50°F to 86°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/as-531aw-tc/datasheet/manufacturer

