

TECHNICAL DATASHEET

SUPERMICRO · STORAGE SERVERS

Supermicro 4U Storage Server SSG-640SP-DE1CR90

4U 2-node top-loading storage server with 90 hot-swap 3.5" SAS/SATA bays and PCIe 4.0

SKU SSG-640SP-DE1CR90

4U

LGA4189

Supermicro



FORM FACTOR

4U

MAX POWER (BASE)

602 W

HEAT OUTPUT

2,054 BTU/h

PRICE

On request

REQUEST A QUOTATION ONLINE

serverinvest.com/product/ssg-640sp-de1cr90

01 Product overview

The Supermicro SSG-640SP-DE1CR90 is a 4U Storage Server built on dual Intel Xeon Scalable 3rd Gen processors with up to 4 TB of memory in 16 DIMM slots.

4U 2-node top-loading storage server with 90 hot-swap 3.5" SAS/SATA bays and PCIe 4.0.

ServerInvest configures every SSG-640SP-DE1CR90 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 4 TB memory · 16 DIMM slots
- Total 47 bays 2 internal fixed 2.5" SATA drive bays
- Power: 2x 2600W
- Networking: 2 RJ45 10GBASE-T

KEY SPECIFICATIONS

Form factor	4U
Processor	2× Intel Xeon Scalable 3rd Gen
Socket	LGA4189
Memory	16 DIMM slots, up to 4 TB
Drive bays	92
Power supply	2× 2600 W
Typical power draw	750 W
Networking	2 RJ45 10GBASE-T
Dimensions (W×H×D)	437 × 178 mm



02 Power & thermal

Calculated for the base configuration

IDLE	TYPICAL	MAXIMUM	HEAT (MAX)	COOLING	PSU LOAD
143 W	374 W	602 W	2,054 BTU/h	0.6 kW	23%

Typical 374 W · max 602 W · single PSU rating 2600 W

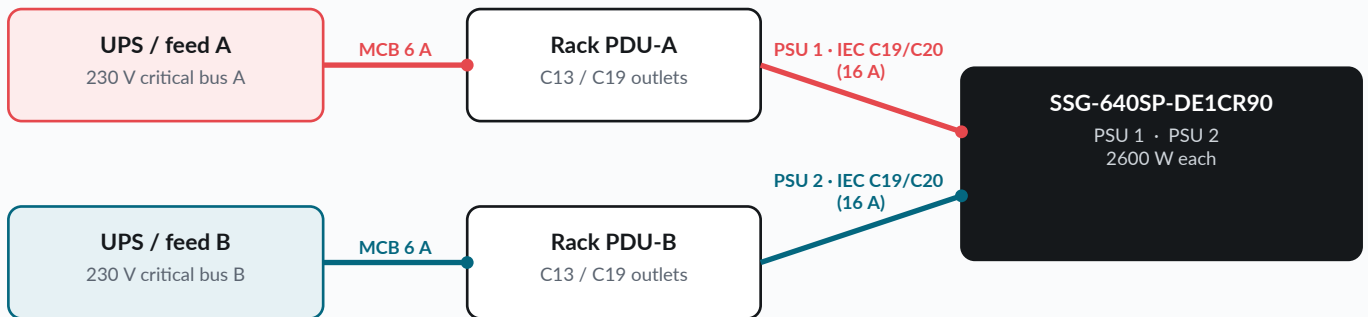
Annual IT energy (24/7)	2,669 kWh
Annual facility energy (PUE 1.5)	4,004 kWh
Annual energy cost	€534 IT · €801 incl. cooling (at 0.20 €/kWh)
CO ₂ emissions / year	1.04 t (grid factor 0.26 kg/kWh)
Power supplies	2× 2600 W redundant (N+1)

POWER BY COMPONENT	IDLE	TYPICAL	MAX
Chassis, motherboard, fans, BMC	72 W	112 W	160 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 C19/C20 (16 A) power cords.
- Maximum current per feed: 2.8 A at 230 V — each feed must be able to carry the full load if the other fails.
- Recommended protection per PDU circuit: MCB 6 A, curve C; RCD according to local regulations.
- Heat to remove at full load: 602 W = 2,054 BTU/h (0.6 kW).

04 Full specifications

MOTHERBOARD

Super X12DSC-6

PROCESSOR (PER NODE)

CPU	Dual Socket P+ (LGA-4189) 3rd Gen Intel Xeon Scalable processors
Core Count	Up to 36C/72T; Up to 54MB Cache per CPU
Note	Supports 120W - 205W TDP CPUs (Air Cooled)

SYSTEM MEMORY (PER NODE)

Memory	Slot Count: 16 DIMM slots Max Memory (2DPC): Up to 4TB 3200MT/s ECC DDR4 RDIMM/LRDIMM View Memory Options
Memory Voltage	1.2V

ON-BOARD DEVICES (PER NODE)

Network Connectivity	2 RJ45 10GBASE-T View AOC Options
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INPUT / OUTPUT (PER NODE)

LAN	1 RJ45 1 GbE Dedicated BMC LAN port 2 RJ45 10 GBASE-T LAN ports
USB	2 USB 3.0 ports (rear)
Video	1 VGA port
DOM	2 Super DOM (Disk on Module) ports

SYSTEM BIOS

BIOS Type	AMI 128MB 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!
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Power configurations	Power-on mode for AC power recovery ACPI Power Management
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SECURITY

Hardware	Trusted Platform Module (TPM) 2.0 Silicon Root of Trust (RoT) – NIST 800-193 Compliant
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Features	Cryptographically Signed Firmware Secure Boot Secure Firmware Updates Automatic Firmware Recovery System Lockdown
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PC HEALTH MONITORING

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

Operating Systems	Oracle Linux 8.3, RHEL 8.3, Windows Server 2019, Windows Server 2022 View all OS Compatibility and Certification Matrix
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CHASSIS

Form Factor	4U Rackmount
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Model	CSE-947HTS-R2K63P
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DIMENSIONS AND WEIGHT

Height	6.96" (177 mm)
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Width	17.6" (447 mm)
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Depth	43.3" (1099 mm)
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Package	N/A
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Weight	Gross Weight: 225 lbs (102.06 kg) Net Weight: 130 lbs (58.97 kg)
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Palletized Packing (W x H x L)	35.82" (910 mm) x 29.92" (755 mm) x 53.15" (1345 mm)
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Available Color N/A

EXPANSION SLOTS (PER NODE)

PCI-Express (PCIe) Configuration Default
 3 PCIe 4.0 x16 LP slots
[View AOC Options](#)

DRIVE BAYS / STORAGE (PER NODE)

Drive Bays Configuration Default: Total 47 bays 2 internal fixed 2.5" SATA drive bays
 45 top-loading hot-swap 3.5"/2.5" SAS/SATA drive bays
[View Drive Options](#)

M.2 2 M.2 NVMe slots (M-key)
[View M.2 Options](#)

SYSTEM COOLING

Fans Up to 6 Heavy Duty 8cm Fan(s)

Air Shroud 1 Air Shroud

POWER SUPPLY

2x 2600W
 2x 2600W Redundant Titanium Level (96%) Hot-plug 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)

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/ssg-640sp-de1cr90/datasheet/manufacture

