

# SuperStorage Server 2028R-NR48N (Complete System Only)



Due to the complexity of integration, this product is sold as completely assembled systems only (with minimum 24 HDDs and 1 NIC or SIOM card).

## Key Features

1. Dual socket R3 (LGA 2011) supports Intel® Xeon® processor E5-2600 v4†/ v3 family; QPI up to 9.6GT/s
2. Up to 3TB† ECC 3DS LRDIMM , up to DDR4- 2400†MHz ; 24x DIMM slots
3. 2 PCI-E 3.0 x16, 1 PCI-E 3.0 x8
4. SIOM for flexible networking options
5. 48x 2.5" Hot-swap NVMe bays; 2x 2.5" rear Hot-swap drive bays
6. Server remote management: IPMI 2.0 / KVM over LAN / Media over LAN
7. 5x 8cm hot-swap redundant PWM fans
8. 1600W Redundant Power Supplies Titanium Level (96%)

Note: Image above may show a varied configuration or optional parts, Please refer to parts list for standard parts included.

## Specifications

### Product SKUs

- SSG-2028R-NR48N
- SuperServer 2028R-NR48N (Black)

### Motherboard

Super X10DSC+

### Processor/Cache

- CPU
- Intel® Xeon® processor E5-2600 v4†/ v3 family (up to 145W 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.

### Chassis

- Form Factor
- 2U Rackmount
- Model
- CSE-226STS-R1K62P1

### Dimensions

- Width
- 17.2" (437mm)
- Height
- 3.5" (89mm)
  - 30.2" (767mm)
  - With Cable Management Arm Installed: 35.2" (895mm)
- Depth
- Available Colors
- Black

### Front Panel

- Buttons
- Power On/Off button
  - System Reset button
- LEDs
- Power status LED
  - Hard drive activity LED
  - 2x Network activity LEDs
  - System Overheat LED
  - Power fail LED

## System Memory

Memory Capacity	<ul style="list-style-type: none"><li>24x 288-pin DDR4 DIMM slots</li><li>Up to 3TB<sup>†</sup> ECC 3DS LRDIMM, 768 ECC RDIMM</li></ul>
Memory Type	<ul style="list-style-type: none"><li>2400<sup>†</sup>/2133/1866/1600MHz ECC DDR4 SDRAM 72-bit</li></ul>
DIMM Sizes	<ul style="list-style-type: none"><li>RDIMM: 32GB, 16GB, 8GB, 4GB</li><li>LRDIMM: 64GB, 32GB</li><li>3DS LRDIMM: 128GB</li></ul>
Memory Voltage	<ul style="list-style-type: none"><li>1.2 V</li></ul>
Error Detection	<ul style="list-style-type: none"><li>Corrects single-bit errors</li></ul>

## On-Board Devices

Chipset	<ul style="list-style-type: none"><li>Intel® C612 chipset</li></ul>
IPMI	<ul style="list-style-type: none"><li>Support for Intelligent Platform Management Interface v.2.0</li><li>IPMI 2.0 with virtual media over LAN and KVM-over-LAN support</li><li>ASPEED AST2400 BMC</li></ul>
Network Controllers	<ul style="list-style-type: none"><li>SIOM support for flexible networking options</li></ul>
Video	<ul style="list-style-type: none"><li>ASPEED AST2400 BMC</li></ul>

## Input / Output

LAN	<ul style="list-style-type: none"><li>LAN ports via SIOM Add-On-Card: (See <a href="#">SIOM Compatibility Matrix</a>)</li></ul>
USB	<ul style="list-style-type: none"><li>3x USB 3.0 ports (2 rear + 1 Type A)</li></ul>
Video	<ul style="list-style-type: none"><li>1x VGA port</li></ul>
Serial Port / Header	<ul style="list-style-type: none"><li>1x Fast UART 16550 port / 1 Header</li></ul>

## Expansion Slots

PCI-Express	<ul style="list-style-type: none"><li>2x PCI-E 3.0 x16 slots</li><li>1x PCI-E 3.0 x8 slots</li><li>Slot 3 Occupied by NVMe AOC</li></ul>
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## Drive Bays

Hot-swap	<ul style="list-style-type: none"><li>48x 2.5" Hot-swap NVMe drive bays</li><li>2x 2.5" rear Hot-swap drive bays</li></ul>
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## Backplane

Two 24 port NVMe backplanes, each supporting up to 24x 2.5" NVMe SSDs

## System Cooling

Fans	<ul style="list-style-type: none"><li>5x 8cm hot-swap redundant PWM cooling fans</li></ul>
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## Power Supply

1600W Redundant Titanium Level AC Power Supplies with PMbus	
Input	<ul style="list-style-type: none"><li>100-127 V, 50-60 Hz</li><li>200-240 V, 50-60 Hz</li></ul>
+12V	<ul style="list-style-type: none"><li>Max: 83.3A &amp; Min: 0A (100Vac-127Vac)</li><li>Max: 133A &amp; Min: 0A (200Vac-240Vac)</li></ul>
12V SB	<ul style="list-style-type: none"><li>Max: 2.1A</li><li>Min: 0A</li></ul>

Certification	  Titanium Level Certified [ <a href="#">Test Report</a> ]
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## System BIOS

BIOS Type	<ul style="list-style-type: none"><li>128Mb SPI Flash EEPROM with AMI BIOS</li></ul>
BIOS Features	<ul style="list-style-type: none"><li>Plug and Play (PnP)</li><li>APM 1.2</li><li>PCI 2.2</li><li>ACPI 1.0 / 2.0</li><li>USB Keyboard support</li><li>SMBIOS 2.3</li><li>UEFI</li></ul>

## Operating Environment / Compliance

RoHS	<ul style="list-style-type: none"><li>RoHS Compliant</li></ul>
Environmental Spec.	<ul style="list-style-type: none"><li>Operating Temperature: 10°C to 35°C (50°F to 95°F)</li><li>Non-operating Temperature: -40°C to 70°C (-40°F to 158°F)</li><li>Operating Relative Humidity: 8% to 90% (non-condensing)</li><li>Non-operating Relative Humidity: 5% to 95% (non-condensing)</li></ul>

## Parts List

### Parts List - (Items Included)

	Part Number	Qty	Description
<b>Motherboard / Chassis</b>	MBD-X10DSC+	1	Super X10DSC+ Motherboard
	CSE-226STS-R1K62P1	1	2U Chassis
<b>Add-on Card / Module</b>	AOC-SLG3-4E4R-P	1	NVMe AOC by 16, HF, RoHS/REACH
<b>Backplane</b>	BPN-NVME3-216EB	2	BPN-NVMe3-216A-S4 Backplane Base Board
<b>Backplane</b>	BPN-NVME3-216EL	4	PCIe Gen3x16 input to PLX9765 to support 12x NVMe port
<b>Cable 1</b>	CBL-SAST-0847	2	OCuLink v.91, INT, PCIe NVMe SSD, 76CM, 11D38F27D, 34AWG
<b>Cable 2</b>	CBL-SAST-0850	2	OCuLink to MiniSAS HD V.91, INT, PCIe NVMe SSD, 37CM, 15D15F7D, 34AWG
<b>Cable 3</b>	CBL-SAST-0848	2	OCuLink v.91, INT, PCIe NVMe SSD, 95CM, 11D38F46D, 34AWG
<b>Cable 4</b>	CBL-SAST-0849	2	OCuLink to MiniSAS Hd V.91, INT, PCIe NVMe SSD, 57CM, 15D15F27D, 34AWG
<b>Parts</b>	MCP-110-00015-0N	8	Pan head screw, #6-32 x 6L
<b>Heatsink / Retention</b>	SNK-P0047PS	2	1U Passive CPU Heat Sink for X9, X10 Systems Equipped w/ a Narrow ILM MB
<b>Parts</b>	MCP-220-82609-0N	1	Rear 2.5 x 2 Hot swap HDD kit for 216B/826B/417B/846X/847B
<b>Power Supply</b>	PWS-1K62A-1R	2	AC-DC 1600W, Titanium Level, Redundancy, 1U, DC Output: +12V and +12Vs, 203 x 73.5 x 40 mm, AC Input: 90 - 264 VAC/47-63Hz, PMBus 1.2 with DSP controller, HF, RoHS/REACH
<b>Drive Tray(s)</b>	MCP-220-00127-0B	48	Black gen-3 2.5 NVMe drive tray, Orange tab with lock (for hotswap NVMe drive), HF, RoHS/REACH

### Optional Parts List

	Part Number	Qty	Description
<b>Onsite Service Program</b>	<a href="#">OS4HR3/2/1</a>	-	3/2/1-year onsite 24x7x4 service
<b>Onsite Service Program</b>	<a href="#">OSNBD3/2/1</a>	-	3/2/1-year onsite NBD service
<b>Software</b>	SFT-OOB-LIC	1	OOB Management Package (per node license)
<b>Software</b>	SFT-DCMS-Single	1	DataCenter Management Package (per node license)
<b>SIOM Network Card(s)</b>	<a href="#">AOC-MGP-I2</a>	-	SIOM 2-port GbE, Intel i350-AM2
	<a href="#">AOC-MGP-I4</a>	-	SIOM 4-port GbE, Intel i350-AM4
	<a href="#">AOC-MTGN-I2S</a>	-	SIOM 2-port 10G SFP+, Intel 82599ES
	<a href="#">AOC-MTG-I4S</a>	-	SIOM 4-port 10G SFP+, Intel XL710