

# SuperServer 2028TP-HC0R



## Key Features

Four **hot-pluggable** systems (nodes) in a 2U form factor. Each node supports the following:

1. Dual socket R3 (LGA 2011) supports Intel® Xeon® processor E5-2600 v4†/ v3 family; QPI up to 9.6GT/s
2. Up to 2TB† ECC 3DS LRDIMM , up to DDR4- 2400†MHz ; 16 DIMM slots
3. 1 PCI-E 3.0 x16 Low-profile slot, 1 "0 slot" (x16)
4. Intel® i350-AM2 Dual port GbE LAN
5. Integrated IPMI 2.0 with KVM and Dedicated LAN
6. 6 Hot-swap 2.5" SAS/SATA HDD Bays
7. Broadcom 3008 SAS3 controller (8 ports); RAID 0, 1, 10
8. Mini-mSATA (half size) support
9. 2000W Redundant Power Supplies

[▶ Drivers & Utilities](#) ▶ [BIOS](#) ▶ [IPMI](#) ▶ [Tested Memory](#) ▶ [Manuals](#) ▶ [OS Certification Matrix](#) ▶ [Quick-References Guide](#) ▶ [Drive Options](#) ▶ [Tested Network Card \(AOC\)](#)

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

## Specifications

### Product SKUs

SYS-2028TP-HC0R ■ SuperServer 2028TP-HC0R (Black)

### Motherboard

Super X10DRT-P

### Processor/Cache (per Node)

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-217HQ+-R2K04B

### Dimensions and Weight

Width ■ 17.25" (438mm)

Height ■ 3.47" (88mm)

Depth ■ 28.75" (730mm)

Weight ■ Gross Weight: 90 lbs (40.9kg)  
 ■ Net Weight: 72 lbs (32.7 kg)

Available Colors ■ Black

### Front Panel

Buttons ■ Power On/Off button  
 ■ UID button

LEDs ■ Power status LED  
 ■ HDD activity LED  
 ■ 2 Network activity LEDs  
 ■ Universal Information (UID) LED

System Memory (per Node)	
Memory Capacity	<ul style="list-style-type: none"> <li>16x 288-pin DDR4 DIMM slots</li> <li>Up to 2TB<sup>†</sup> ECC 3DS LRDIMM, 512GB 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>
SAS	<ul style="list-style-type: none"> <li>Broadcom 3008 SAS3 (12Gbps) controller; RAID 0, 1, 10 support</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>Intel® i350-AM2 Dual Port Gigabit Ethernet</li> <li>Virtual Machine Device Queues reduce I/O overhead</li> <li>Supports 10BASE-T, 100BASE-TX, and 1000BASE-T, RJ45 output</li> <li>1 Realtek RTL8201N PHY (dedicated IPMI)</li> </ul>
Graphics	<ul style="list-style-type: none"> <li>ASPEED AST2400 BMC</li> </ul>

#### Input / Output (per Node)

SAS	<ul style="list-style-type: none"> <li>6 SAS3 (12Gbps) ports</li> </ul>
LAN	<ul style="list-style-type: none"> <li>2 RJ45 Gigabit Ethernet LAN ports</li> <li>1 RJ45 Dedicated IPMI LAN port</li> </ul>
USB	<ul style="list-style-type: none"> <li>2 USB 3.0 ports total (2 rear)</li> </ul>
VGA	<ul style="list-style-type: none"> <li>1 VGA port</li> </ul>
Serial Port / Header	<ul style="list-style-type: none"> <li>1 Fast UART 16550 port / 1 Header (internal)</li> </ul>
Others	<ul style="list-style-type: none"> <li>1 <a href="#">SATADOM</a> support on the motherboard</li> </ul>

Expansion Slots (per Node)	
PCI-Express	<ul style="list-style-type: none"> <li>1 PCI-E 3.0 x16 Low-profile slot</li> </ul>
0 Slot	<ul style="list-style-type: none"> <li>1x "0 slot" (x16)</li> <li><a href="#">Compatible Listing</a></li> </ul> <p>(Both CPUs need to be installed for full access to PCI-E slots and 0 slot.)</p>



#### Drive Bays (per Node)

Hot-swap	<ul style="list-style-type: none"> <li>6 Hot-swap 2.5" SAS/SATA HDD trays</li> </ul>
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#### System Cooling

Fans	<ul style="list-style-type: none"> <li>4 heavy duty 8cm PWM fans with optimal fan speed control</li> </ul>
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#### Power Supply (76mm Width)

2000W Redundant Power Supplies with PMBus	
Total Output Power	<ul style="list-style-type: none"> <li>1000W/1800W/1980W/2000W</li> </ul>
Dimension (W x H x L)	<ul style="list-style-type: none"> <li>76 x 40 x 336 mm</li> </ul>
Input	<ul style="list-style-type: none"> <li>100-127 Vac / 12-9.5 A / 50-60 Hz</li> <li>200-220 Vac / 10-9.5 A / 50-60 Hz</li> <li>220-230 Vac / 10-9.8 A / 50-60 Hz</li> <li>230-240 Vac / 10-9.8 A / 50-60 Hz</li> <li>200-240 Vac / 11.8-10 A / 50-60 Hz (UL/cUL only)</li> </ul>
+12V	<ul style="list-style-type: none"> <li>Max: 83.3A / Min: 0A (100-127 Vac)</li> <li>Max: 150A / Min: 0A (200-220 Vac)</li> <li>Max: 165A / Min: 0A (220-230 Vac)</li> <li>Max: 166.7A / Min: 0A (230-240 Vac)</li> <li>Max: 166.7A / Min: 0A (200-240 Vac) (UL/cUL only)</li> </ul>
+5Vsb	<ul style="list-style-type: none"> <li>Max: 1A / Min: 0A</li> </ul>
Output Type	<ul style="list-style-type: none"> <li>27 Pairs Gold Finger Connector</li> </ul>
Certification	  <ul style="list-style-type: none"> <li>UL/cUL/CB/BSMI/CE/CCC Titanium Level</li> <li><a href="#">[ Test Report ]</a></li> </ul>

#### 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
Motherboard / Chassis	MBD-X10DRT-P	4	Super X10DRT-P Motherboards
	CSE-217HQ+-R2K04B	1	2U Chassis
Backplane	BPN-ADP-S3008L-L6IP	4	LSI 3008, SAS 12Gbs (X6 port inside)
Backplane	BPN-SAS3-217HQ	1	24-port 2U TwinPro^2 SAS3 CSE-217HQ (6 drives per node) backplane, support up to 24x 2.5-inch SAS3/SATA3 HDD/SSD
Label	LBL-0108	1	CAUTION LABEL FOR REDUNDANT PWR SYSTEMS
Manual	MNL-1658-QRG	1	2028TP-HC0R/HC0TR/HC0FR, QRG
Riser Card	RSC-R1UTP-E16R	4	1U RHS TwinPro Riser card with one PCI-E x16 slot
Heatsink / Retention	SNK-P0047PSM	4	1U Passive Front CPU Heat Sink w/ a Middle Air Channel for X9, X10 2U Twin^2+ and Twin Pro^2 Series Servers
Heatsink / Retention	SNK-P0057PS	4	1U High Performance Passive CPU Heat Sink for X9, X10 Systems Equipped w/ a Narrow ILM MB
Air Shroud	MCP-310-21703-0B or MCP-310-21702-0B	4	TwinPro 217HQ+/827HQ+ X10 plastic air shroud or TwinPro 217HQ+/827HQ+ X10 mylay air shroud
Power Supply	PWS-2K04A-1R or PWS-2K02P-1R	2	2000W Redundant Titanium Level Power Supplies or 2000W Redundant Platinum Level Power Supplies

### Optional Parts List

	Part Number	Qty	Description
Global Services & Support	<u>OS4HR3/2/1</u>	-	3/2/1-year onsite 24x7x4 service
	<u>OSNBD3/2/1</u>	-	3/2/1-year onsite NBD service
Software	SFT-OOB-LIC	4	OOB Management Package (per node license)
Software	SFT-DCMS-Single	4	DataCenter Management Package (per node license)