

SuperServer 2048U-RTR4 (Complete System Only)



Due to the complexity of integration, this product is sold as completely assembled systems only (including but not limited to CPUs, memory, and HDDs). Please contact your Supermicro sales rep for special requirements.

Key Features

- 48 DDR4 DIMM Slots, up to 6TB
- Up to 11 PCI-E 3.0 slots
- 4 Hot-Swap NVMe Bays support via optional NVMe AOC
- Flexible Connectivity Options

1. Quad socket R3 (LGA 2011) supports Intel® Xeon® processor E5-4600 v4/v3 family (up to 22-Core)
2. Up to 6TB 3DS LRDIMM, up to DDR4-2400MHz; 48 DIMM slots
3. 9 PCI-E 3.0 x8 slots, 2 PCI-E 3.0 x16 slots
4. 4 GbE + 1 dedicated IPMI LAN ports
5. 24 Hot-swap 2.5" Drive Bays: 4 Hybrid ports with NVMe support via extra AOC
6. 4x 8cm heavy duty fans
7. 1000W High efficiency (96%) Redundant PSU; Titanium Level

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

Specifications

Product SKUs

- SYS-2048U-RTR4 ■ SuperServer 2048U-RTR4 (Black)

Motherboard

Super X10QRH+

Processor/Cache

- CPU ■ Intel® Xeon® processor E5-4600 v4/v3 family (up to 135W TDP) *
■ Quad Socket R3 (LGA 2011)

- Cores / Cache ■ Up to 22 Cores / Up to 55MB Cache

- System Bus ■ QPI up to 9.6 GT/s

System Memory

- Memory Capacity ■ 48x 288-pin DDR4 DIMM slots
■ Up to 6TB ECC 3DS LRDIMM
■ Up to 3TB ECC LRDIMM
■ Up to 1.5TB ECC RDIMM

Chassis

- Form Factor ■ 2U Rackmount
Model ■ CSE-218U-R1K02P

Dimensions and Weight

- Width ■ 17.2" (437mm)
Height ■ 3.5" (89mm)
Depth ■ 30.7" (780mm)
Weight ■ Net Weight: 43 lbs (19.4 kg)
■ Gross Weight: 69 lbs (31.2 kg)
Gross Weight ■ 36 lbs (16.4kg)
Available Colors ■ Black

Front Panel

- Buttons ■ Power On/Off button
■ System Reset button
LEDs ■ Power status LED
■ HDD activity LED
■ Network activity LEDs

Memory Type	<ul style="list-style-type: none"> 2400/2133/1866/1600MHz ECC DDR4 SDRAM 72-bit
DIMM Sizes	<ul style="list-style-type: none"> RDIMM: 32GB, 16GB, 8GB, 4GB LRDIMM: 64GB, 32GB 3DS LRDIMM: 128GB
Memory Voltage	<ul style="list-style-type: none"> 1.2 V
Error Detection	<ul style="list-style-type: none"> Corrects single-bit errors

On-Board Devices

Chipset	<ul style="list-style-type: none"> Intel® C612 chipset
SATA	<ul style="list-style-type: none"> SATA3 (6Gbps) with RAID 0, 1, 5, 10
Network Connectivity	<ul style="list-style-type: none"> 4x Gigabit Ethernet ports via AOC-2UR66-i4G; Other options
IPMI	<ul style="list-style-type: none"> Support for Intelligent Platform Management Interface v.2.0 IPMI 2.0 with virtual media over LAN and KVM-over-LAN support ASPEED AST2400 BMC
Graphics	<ul style="list-style-type: none"> ASPEED AST2400 BMC

Input / Output

SATA	<ul style="list-style-type: none"> 10 SATA3 (6Gbps) ports
SAS	<ul style="list-style-type: none"> 24 SAS3 ports support via optional Add-on Cards
NVMe	<ul style="list-style-type: none"> 4 Hybrid ports with NVMe support via AOC
LAN	<ul style="list-style-type: none"> 4 RJ45 GbE LAN ports 1 RJ45 Dedicated IPMI LAN port
USB	<ul style="list-style-type: none"> 5 USB 3.0 ports (2 rear, 2 via header, 1 Type A) 2 USB 2.0 ports (2 via header)
Video	<ul style="list-style-type: none"> 1 VGA Connector
Serial Port / Header	<ul style="list-style-type: none"> 1 Serial header
DOM	<ul style="list-style-type: none"> 2 SuperDOM (Disk on Module) ports

System BIOS

BIOS Type	<ul style="list-style-type: none"> 128Mb SPI Flash EEPROM with AMI BIOS
BIOS Features	<ul style="list-style-type: none"> Plug and Play (PnP) APM 1.2 PCI 2.3 ACPI 1.0 / 2.0 / 3.0 / 4.0 USB Keyboard support SMBIOS 2.7.1 UEFI 2.3.1

Management

Software	<ul style="list-style-type: none"> SuperDoctor® 5 Intel® Node Manager 3.0 Watch Dog NMI SUM and SSM Optional IPMI 1.5 / 2.0
Power Configurations	<ul style="list-style-type: none"> ACPI Power Management Power-on mode for AC power recovery

- System information (overheat/UID) LED

Expansion Slots

- 9 PCI-E 3.0 x8 slots (include 4 PCI-E 3.0 x8 internal slots)
- 2 PCI-E 3.0 x16 slots

PCI-Express

(4 CPUs need to be installed for full access to PCI-E slots and onboard controllers. See [AOC Support](#) for details.)

Drive Bays

- 24x 2.5" Hot-swap drive bays
- Default 10 SATA3 ports (2 SATA3 ports for SATA DOM or internal HDD)
- Optional 24 SAS3 ports via AOC
- Optional 20 SAS3 ports via AOC + 4 NVMe ports via AOC

Hot-swap

Note: optional storage card is required to support more than 8 drives through backplane.

System Cooling

- Fans
- 4x 8cm heavy duty PWM fans

Power Supply

1000W Redundant Power Supplies with PMBus

Total Output Power	<ul style="list-style-type: none"> 800W/1000W
Dimension (W x H x L)	<ul style="list-style-type: none"> 73.5 x 40 x 203 mm
Input	<ul style="list-style-type: none"> 100-127Vac / 9.8 - 7A / 50-60Hz 200-240Vac / 7 - 5A / 50-60Hz
+12V	<ul style="list-style-type: none"> Max: 66.7A / Min: 0A (100-127Vac) Max: 83A / Min: 0A (200-240Vac)
12Vsb	<ul style="list-style-type: none"> Max: 2.1A / Min: 0A
Output Type	<ul style="list-style-type: none"> 25 Pairs Gold Finger Connector

Certification



UL/cUL/CB/BSMI/CE/CCC Titanium Level [[Test Report](#)]

PC Health Monitoring

Voltage	<ul style="list-style-type: none"> Monitors for CPU Cores, +1.8V, +3.3V, +5V, +12V, +3.3V Standby, +5V Standby, VBAT, Memory Voltages. 5+1 Phase-switching voltage regulator
FAN	<ul style="list-style-type: none"> 8x 4-pin fan headers Status monitor for speed control Pulse Width Modulated (PWM) fan connectors
Temperature	<ul style="list-style-type: none"> Support to monitor Supermicro AOC temperatures from IPMI or SD 5 Monitoring for CPU and chassis environment CPU thermal trip support Thermal Control for 8x Fan Connectors Thermal Monitor 2 (TM2) support PECI
LED	<ul style="list-style-type: none"> Memory DIMM ECC error LEDs CPU / System Overheat LED Suspend static indicator LED UID/Remote UID

Other Features

- 4x 8-pin GPU power connectors
- Chassis intrusion detection
- Chassis intrusion header
- SDDC Support
- RoHS

Operating Environment / Compliance**RoHS**

- RoHS Compliant

Environmental Spec.

- Operating Temperature: 10°C to 35°C (50°F to 95°F)
- Non-operating Temperature: -40°C to 70°C (-40°F to 158°F)
- Operating Relative Humidity: 8% to 90% (non-condensing)
- Non-operating Relative Humidity: 5% to 95% (non-condensing)

Parts List - (Items Included)

	Part Number	Qty	Description
Motherboard / Chassis	MBD-X10QRH+	1	Super X10QRH+ Motherboard
	CSE-218U-R1K02P	1	2U Chassis
Add-on Card / Module	AOC-2UR66-I4G	1	2U Ultra Riser with 4 GbE ports and 2 PCI-E x16 3.0, Intel i350
Air Shroud	MCP-310-21804-0B	1	Black Mylar air shroud for X10QRH+ in SC218U, HF, RoHS/REACH
Backplane	BPN-SAS3-216A-N4	1	2U 24 Ports Hybrid Backplane support up to 20 x 2.5" SAS3/SATA3 HDD/SSD and 4x2.5" NVMe/SAS3/SATA3 Storage Devices
Cable 1	CBL-SAST-0701	2	Internal RA side exit (right) miniSAS to miniSAS HD 85cm w/ SB, 30AWG, HF, RoHS/REACH
Cable 2	CBL-PWEX-0673	3	8 pin female to 2x big 4 pin female power, 65/70CM, 18AWG, RoHS/REACH
Label	LBL-0108	1	CAUTION LABEL FOR REDUNDANT PWR SYSTEMS
Riser Card	RSC-R1UW-E8R	1	RSC-R1UW-E8R-O-P
Riser Card	RSC-S2-88	2	RSC-S2-88
Riser Card	RSC-R2UW-4E8	1	RSC-R2UW-4E8-O-P
Heatsink / Retention	SNK-P0047PS	4	1U Passive CPU Heat Sink for X9, X10 Systems Equipped w/ a Narrow ILM MB
Power Supply	PWS-1K02A-1R	2	1U 1000W Redundant Power Supply 73.5mm width Titanium Level, RoHS/REACH

Optional Parts List

	Part Number	Qty	Description
2000w power supply kit	MCP-250-21802-0N	-	Power adapter bracket for 2K03P in SC218U, HF, RoHS/REACH
	PWS-2K03P-1R	-	1U 2000W Redundant Power Supply Platinum 73.5mm width
CacheVault(s)	BTR-TFM8G-LSICVM02 & BKT-BBU-BRACKET-05	-	CacheVault for LSI 3108; Supercap mounting bracket for PCI-E location
	BTR-TFM8G-LSICVM02 & MCP-240-00127-0N	-	CacheVault for LSI 3108; Supercap mounting bracket for 2.5" HDD location
Network Card(s)	AOC-S40G-i2Q	-	Standard LP 2-port 40GbE controller, based on Intel Fortville XL710
	AOC-SGP-i2	-	Standard LP, 2x GbE RJ45, PCI-E x4, Intel i350AM2
	AOC-SGP-i4	-	Standard LP, 4x GbE RJ45, PCI-E x4, Intel i350
	AOC-STG-b4S	-	Standard LP, 4x 10GbE SFP+, PCI-E x8, Broadcom BCM57840S
	AOC-STGN-i2S	-	Standard LP, 2x 10GbE SFP+, PCI-E x8, Intel 82599ES
	AOC-STGN-i1S	-	Standard LP, 1x 10GbE SFP+, PCI-E x8, Intel 82599EN
	AOC-STG-i2T	-	Standard LP, 2x 10GbE RJ45, PCI-E x8, Intel X540
Storage Options	See Details	-	SAS3 and NVMe Options
Onsite Service Program	QS4HR3/2/1	-	3/2/1-year onsite 24x7x4 service
Onsite Service Program	OSNBD3/2/1	-	3/2/1-year onsite NBD service
Software	SFT-OOB-LIC	1	OOB Management Package (per node license)
Software	SFT-DCMS-Single	1	DataCenter Management Package (per node license)