

# BigTwin SuperServer SYS-220BT-HNC8R (Complete System Only )

NEW



## Key Applications

- Container-as-a-Service; Application Accelerator
- Diskless HPC Clusters
- All-Flash Hyperconverged Infrastructure

## Key Features

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

1. Socket P+ (LGA 4189) support 3rd Gen Intel® Xeon® Scalable processors

---

2. Intel® C621A

---

3. 20 DIMM Slots (16 DIMM Slots + 4 Intel® Optane™ Persistent Memory Slots)

---

4. 2 PCI-E 4.0 x16 (LP) slot;  
Tool-less support  
Internal PCI-E 3.0 x8 for 2 M.2 NVMe/SATA support onboard  
Optional NVMe Boot Controller via AOC-SMG3-2M2-B

---

5. Network connectivity via AIOM (OCP 3.0 compliant)

---

6. 6 Hot-swap 2.5" drive bays; 6 PCI-E 4.0 NVMe/SAS/SATA 2.5" drives

---

7. 4 cooling fans per 2U enclosure, 16.5K RPM; Shared Cooling Design  
Liquid Cooling Support

---

8. 2600W Redundant Power Supplies Titanium Level (96%+); Shared Power Design

---

...





# Specifications

## Product SKUs

|                        |                                       |
|------------------------|---------------------------------------|
| <b>SYS-220BT-HNC8R</b> | ▪ SuperServer SYS-220BT-HNC8R (Black) |
|------------------------|---------------------------------------|

## Motherboard

|                        |
|------------------------|
| <b>Super X12DPT-B6</b> |
|------------------------|

## Processor (per Node)

|            |   |
|------------|---|
| <b>CPU</b> | ▪ Dual Socket P+ (LGA 4189)<br>▪ 3rd Gen Intel® Xeon® Scalable processors<br>▪ Support CPU TDP 205W * |
|------------|---|

|              |           |
|--------------|-----------|
| <b>Cores</b> | ▪ 36C/72T |
|--------------|-----------|

|             |   |
|-------------|---|
| <b>Note</b> | ▪ *Certain CPUs with high TDP may be supported only under specific conditions. Please contact Supermicro Technical Support for additional information about specialized system optimization |
|-------------|---|

## System Memory (per Node)

|               |   |
|---------------|---|
| <b>Memory</b> | ▪ Memory Capacity: 16 DIMM slots (16 DRAM + 4 PMem)<br>▪ Up to 4TB: 16x 256 GB DRAM<br>▪ Up to 6TB: 8x 256 GB DRAM and 8x 512 GB PMem<br>▪ Memory Type: 3200MHz ECC DDR4 RDIMM<br>▪ Intel® Optane™ persistent memory 200 series |
|---------------|---|

## On-Board Devices (per Node)

|            |  |
|------------|--|
| <b>SAS</b> | ▪ SAS3 (12Gbps) via Broadcom® 3808 (IT mode) |
|------------|--|

|                |                |
|----------------|----------------|
| <b>Chipset</b> | ▪ Intel® C621A |
|----------------|----------------|

|                             |            |
|-----------------------------|------------|
| <b>Network Connectivity</b> | ▪ Via AIOM |
|-----------------------------|------------|

|             |  |
|-------------|--|
| <b>IPMI</b> | ▪ Support for Intelligent Platform Management Interface v.2.0<br>▪ IPMI 2.0 with virtual media over LAN and KVM-over-LAN support |
|-------------|--|

## Input / Output (per Node)

|            |                                 |
|------------|---------------------------------|
| <b>LAN</b> | ▪ 1 RJ45 Dedicated BMC LAN port |
|------------|---------------------------------|

|            |                              |
|------------|------------------------------|
| <b>USB</b> | ▪ 2 USB 3.0 port(s) (2 rear) |
|------------|------------------------------|

|              |                 |
|--------------|-----------------|
| <b>Video</b> | ▪ 1 VGA port(s) |
|--------------|-----------------|

|               |                           |
|---------------|---------------------------|
| <b>Others</b> | ▪ M.2 for boot drive only |
|---------------|---------------------------|

## System BIOS

## Chassis

|                    |                |
|--------------------|----------------|
| <b>Form Factor</b> | ▪ 2U Rackmount |
|--------------------|----------------|

|              |                   |
|--------------|-------------------|
| <b>Model</b> | ▪ CSE-217BQ-000NP |
|--------------|-------------------|

## Dimensions and Weight

|               |                |
|---------------|----------------|
| <b>Height</b> | ▪ 3.47" (88mm) |
|---------------|----------------|

|              |                  |
|--------------|------------------|
| <b>Width</b> | ▪ 17.68" (449mm) |
|--------------|------------------|

|              |                  |
|--------------|------------------|
| <b>Depth</b> | ▪ 28.75" (730mm) |
|--------------|------------------|

|                |                                       |
|----------------|---------------------------------------|
| <b>Package</b> | ▪ 9.76" (H) x 24.65" (W) x 45.28" (D) |
|----------------|---------------------------------------|

|               |  |
|---------------|--|
| <b>Weight</b> | ▪ Net Weight: 54.5 lbs (24.7 kg)<br>▪ Gross Weight: 85 lbs (38.6 kg) |
|---------------|--|

|                        |         |
|------------------------|---------|
| <b>Available Color</b> | ▪ Black |
|------------------------|---------|

## Front Panel

|                |                                       |
|----------------|---------------------------------------|
| <b>Buttons</b> | ▪ Power On/Off button<br>▪ UID button |
|----------------|---------------------------------------|

|             |  |
|-------------|--|
| <b>LEDs</b> | ▪ HDD activity LED<br>▪ Network activity LEDs<br>▪ Power status LED<br>▪ Universal Information (UID) LED |
|-------------|--|

## Expansion Slots (per Node)

|                            |  |
|----------------------------|--|
| <b>PCI-Express (PCI-E)</b> | ▪ Slot 1: PCI-E 4.0 x16 LP<br>▪ Slot 2: PCI-E 4.0 x16 LP<br>▪ Internal Slot: M.2 |
|----------------------------|--|

## Drive Bays / Storage (per Node)

|                 |   |
|-----------------|---|
| <b>Hot-swap</b> | ▪ 6x 2.5" hot-swap NVMe/SATA/SAS drive bays (6x 2.5" NVMe hybrid) |
|-----------------|---|

|            |                             |
|------------|-----------------------------|
| <b>M.2</b> | ▪ 2 M.2 NVMe OR 2 M.2 SATA3 |
|------------|-----------------------------|

## System Cooling

|             |                                      |
|-------------|--------------------------------------|
| <b>Fans</b> | ▪ 4x 16.5K RPM Heavy Duty 8cm Fan(s) |
|-------------|--------------------------------------|

## Power Supply

1U 2600W Redundant Titanium PWS, 45(W) X 40(H) X 480(L)

|                           |   |
|---------------------------|---|
| <b>Total Output Power</b> | ▪ 2600W : 208 - 240 Vac<br>▪ 2600W : 220 - 240 Vdc for CQC only |
|---------------------------|---|

|                              |                    |
|------------------------------|--------------------|
| <b>Dimension (W x H x L)</b> | ▪ 45 x 40 x 480 mm |
|------------------------------|--------------------|

|                 |   |
|-----------------|---|
| <b>AC Input</b> | ▪ 208-240Vac / 12.5A-15A / 50-60Hz<br>▪ 220-240Vdc / 12.5A-13.5A (CQC only) |
|-----------------|---|

|             |                         |
|-------------|-------------------------|
| <b>+12V</b> | ▪ Max: 216.6A / Min: 0A |
|-------------|-------------------------|

**BIOS Type** ■ AMI 32MB Flash ROM

## Management

- Software**
- Supemicro Out of Band (OOB) License (Included per Node)
  - SuperCloud Composer
  - SSM
  - Intel® Node Manager
  - SPM
  - KVM with dedicated LAN
  - IPMI 2.0
  - SUM
  - Watch Dog
  - SuperDoctor® 5

- Power Configurations**
- ACPI / APM Power Management

## PC Health Monitoring

- CPU**
- 7+1 Phase-switching voltage regulator
  - Monitors for CPU Cores, Chipset Voltages, Memory.

- FAN**
- Fans with tachometer monitoring
  - Pulse Width Modulated (PWM) fan connectors
  - Status monitor for speed control

- Temperature**
- Monitoring for CPU and chassis environment

**12V SB** ■ Max: 4.5A / Min: 0A

**Certification**



**Titanium Level**

**[ Test Report ]**

## Operating Environment

**RoHS** ■ RoHS Compliant

- Environmental Spec.**
- Operating Temperature: 10°C ~ 35°C (50°F ~ 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)

## Parts List

| Parts List - (Items Included) |                       |     |  |
|-------------------------------|-----------------------|-----|--|
|                               | Part Number           | Qty | Description  |
| Motherboard / Chassis         | MBD-X12DPT-B6         | 4   | Super X12DPT-B6 Motherboard  |
|                               | CSE-217BQ-000NP       | 1   | 2U Chassis   |
| Add-on Card / Module          | AOC-SMG3-2H8M2-BW-P   | 4   | 2x Hybrid M.2 riser carrier card for X12 BigTwin,RoHS  |
| Backplane                     | BPN-NVME4-217BHQ-S6   | 1   | 2U 24-Slot 4-Node BigTwin Backplane Supports up to 6xNVMe4/SAS4/SATA3 per Node                                     |
| Cable 1                       | CBL-PWCD-0376-IS      | 2   | PWCD,US,IEC60320 C19 TO C20,940mm (3ft),14AWG,15A,250V,Black   |
| Cable 2                       | CBL-SAST-1221-100     | 4   | Slimline x8 (STR) to 2x Slimline x4 (STR),INT,21/16CM,1  |
| Drive Tray(s)                 | MCP-220-00144-0B-BULK | 24  | Black Gen3 hot-swap 2.5 inch HDD tray with lock, orange tab  |
| Air Shroud                    | MCP-310-21730-0B      | 4   | BigTwin 2U4N plastic air shroud for X12DPT-B   |
| Riser Card                    | RSC-PR-6-X2           | 4   | 1U RHS TwinPro Riser card with one PCI-E 4.0 x16 slot,HF,RoH   |
| Storage Controller Card       | SCC-B8SB80-B1         | 4   | 1U SCC w/ 8xSAS ports, SAS3808 FatTwin, BigTwin X12, HF,RoHS   |
| Storage Controller Card       | SCC-F6N6T-B1          | 4   | 1U Storage Controller card for X12 2U4N BigTwin  |
| Software                      | SFT-OOB-LIC           | 4   | License key for enabling OOB BIOS management   |
| Heatsink / Retention          | SNK-P0077PW           | 4   | 1U Passive CPU HS 92mm Width for X12 Whitley Platform  |
| Heatsink / Retention          | SNK-P0077VM           | 4   | X12 ICX/CPX CPU Heatsink (78x113x25.5mm), VC Base w/ Channel   |
| *Power Supply                 | PWS-2K60A-1R          | 2   | 1U 2600W Redundant Titanium PWS, 45(W) X 40(H) X 480(L)  |
| *Power Distributor            | PDB-PT217-BGTWN       | 1   | 2U Big Twin Power Distributor Board Support Redundant 2KW  |
| *FAN 1                        | FAN-0183L4            | 4   | 80x80x38 mm, 16.5K RPM, Non-hot-swappable Middle Cooling Fan for X11 Twin Pro, X10 and X11 Big Twin Series Servers |
| *Rail Set                     | MCP-290-00172-0N      | 1   | 2U non-tip rail set, quick release, default for 2,3U 17.6";W   |
| *Fan Holder                   | MCP-320-21702-0N      | 2   | Bigtwin fan holder (with 4.1mm rubber feet)(hold 2 80x38 fans)   |

### Notes:

1. Parts with \* are inside the chassis
2. Excessive parts might not be shipped, including but not limited to excessive drive trays, fans, riser brackets, air shrouds, IO shields, cables.....etc.

| Optional Parts List                 |                         |     |   |
|-------------------------------------|-------------------------|-----|---|
|                                     | Part Number             | Qty | Description   |
| HDD Dummy Tray                      | MCP-220-00185-0N        | 4   | 2.5" HDD tray dummy cover for 2 slot  |
| M.2 NVMe RAID Controller            | <u>AOC-SMG3-2M2-B-P</u> | -   | 2x M.2 NVMe RAID Controller Card, x8 Gen3   |
| SPI Capable TPM 1.2                 | <u>AOM-TPM-9671H-S</u>  | -   | SPI Capable TPM 1.2 Provisioned for Server, Horizontal Form Factor                        |
| SPI Capable TPM 2.0                 | <u>AOM-TPM-9670H-S</u>  | -   | SPI Capable TPM 2.0 Provisioned for Server, Horizontal Form Factor                        |
| SPI Capable TPM 2.0 with FIPS 140-2 | AOM-TPM-9670H-FIPS      | -   | SPI Capable TPM 2.0 Provisioned for Server, Horizontal Form Factor, Supporting FIPS 140-2 |
| SuperCloud Composer License         | SFT-SDDC-SINGLE         | -   | SDDC Monitor License - Single License per Monitored host                                  |

|                                |                        |   |  |
|--------------------------------|------------------------|---|--|
| <b>System Management Suite</b> | <u>SFT-DCMS-Single</u> | - | Supermicro System Management Software Suite node |
| <b>VROC Intel SSD Only</b>     | <u>AOC-VROCINTMOD</u>  | - | Intel VROC, RAID 0, 1, 5, 10 (Intel SSD Only)    |
| <b>VROC Premium</b>            | <u>AOC-VROCPREMOD</u>  | - | Intel VROC Premium, RAID 0, 1, 5, 10             |
| <b>VROC Standard</b>           | <u>AOC-VROCSTNMOD</u>  | - | Intel VROC Standard, RAID 0, 1, 10               |