

# X13 CloudDC

## All-in-one Rackmount Platform for Cloud Data Centers



### High-density, Tool-less Mechanical Design for Rapid Cloud Deployment and Easy Maintenance

Ultimate flexibility on I/O and storage with 2 or 6 PCIe 5.0 slots and dual AIOM slots (OCP 3.0 compliant) for maximum data throughput. Supermicro X13 CloudDC systems are designed for convenient serviceability with tool-less brackets, hot-swap drive trays and redundant power supplies that ensure rapid deployment and more efficient maintenance in data centers. High-efficiency Titanium Level redundant power supplies provide resiliency and lower carbon footprint.

### Designed for Data Centers

X13 CloudDC systems are designed for cost-effective service delivery in cloud computing environments with dual and single processor configurations available to support a range of demanding workloads:

- Internet infrastructure including web hosting, domain name, and email services
- Virtualization
- Public and private cloud computing
- Content-delivery networks (CDNs)
- Deep learning inferencing
- Financial services applications

### 1U and 2U rackmounts with NVMe and GPU support

- Single and dual socket 5th/4th Gen Intel® Xeon® Scalable processors
- 16 DIMM slots supporting DDR5-5600MHz
- 2.5" and 3.5" storage options with up to 12 U.2 NVMe/SAS/SATA drives and all-hybrid options
- 2 PCIe 5.0 slots in 1U or 6 PCIe 5.0 slots in 2U
- Dual PCIe 5.0 AIOM slots supporting up to 400G networking

### Advanced I/O

The X13 CloudDC family of systems supports up to 2 PCIe 5.0 expansion slots in 1U or 6 slots in 2U plus an additional 2 OCP 3.0-compliant Supermicro Advanced I/O Modules (AIOMs). This flexible I/O configuration enables highly customizable networking configurations for a range of workloads, including support for 100GbE to connect to today's standard data center networks, as well as 400Gbps InfiniBand connectivity for extremely high-bandwidth, low-latency cluster interconnections. For accelerated workloads, up to 2 double-width or 4 single-width GPUs are supported in 2U.

### Innovative, Tool-Less Design

Cloud data centers are all about scale, with a constant flow of new servers for scaling capacity in line with business requirements as well as ongoing upgrades and maintenance to refresh existing infrastructure. Supermicro X13 CloudDC servers feature cold-aisle accessible drive bays and tool-less brackets, rear-panel components, PCIe slots and AIOM cards to facilitate fast and hassle-free servicing and upgrades. The chassis lid can also be opened by hand and mid-chassis fans pop out easily for replacement.

## Powered by 5th Gen Intel® Xeon® Processors

Just like the X13 CloudDC family, the new 5th Gen Intel Xeon processors are optimized for the data center, with built-in accelerator engines designed to improve performance and efficiency for common data center workloads. Intel's Data Streaming Accelerator (Intel DSA) offloads common data movement tasks to reduce overhead and increase CPU and

memory workload performance, while Intel QuickAssist Technology (Intel QAT) offloads popular compression and cryptographic algorithms, increasing core workload capacity. The new range of processors also includes better performance per watt at the same power envelope compared to the previous generation, and more single CPU-optimized SKUs to deliver maximum compute in UP configurations.



| CloudDC                 | SYS-121C-TN10R/TN2R   | SYS-611C-TN4R   | SYS-621C-TN12R   |
|-------------------------|---|---|--|
| Processor Support       | Dual 5th/4th Gen Intel® Xeon® Scalable processors<br>Up to 270W TDP (air cooled) <sup>†</sup>   | Dual 5th/4th Gen Intel® Xeon® Scalable processors<br>Up to 270W TDP (air cooled) <sup>†</sup>   | Dual 5th/4th Gen Intel® Xeon® Scalable processors<br>Up to 350W TDP (air cooled) <sup>†</sup>  |
| Memory Slots & Capacity | 16 DIMM slots; up to 4TB DDR5-5600MT/s  | 16 DIMM slots; up to 4TB DDR5-5600MT/s  | 16 DIMM slots; up to 4TB DDR5-5600MT/s   |
| I/O Ports               | Networking via AIOM<br>1 VGA port<br>1 dedicated RJ45 IPMI LAN port<br>2 USB 2.0 ports (front; SYS-121C-TN10R)<br>2 USB 3.0 ports (rear)<br>1 COM ports (rear)  | Networking via AIOM<br>1 VGA port<br>1 dedicated RJ45 IPMI LAN port<br>2 USB 3.0 ports (rear)<br>1 COM ports (rear)                           | Networking via AIOM<br>1 VGA port<br>1 dedicated RJ45 IPMI LAN port<br>2 USB 3.0 ports (rear)<br>1 COM ports (rear)  |
| Motherboard             | X13DDW-A  | X13DDW-A  | X13DDW-A   |
| Form Factor             | 1U Rackmount<br>597mm/23.5" depth   | 1U Rackmount<br>650mm/25.6" depth   | 2U Rackmount<br>648mm/25.5" depth  |
| Expansion Slots         | 2 PCIe 5.0 x16 FHHL slots   | 2 PCIe 5.0 x16 FHHL slots   | Slot 1: PCIe 5.0 x8 FHHL (optional x16 by merging slot 2)<br>Slot 2: PCIe 5.0 x8 FHHL<br>Slot 3: PCIe 5.0 x16 FHHL<br>Slot 4: PCIe 5.0 x8 FHHL<br>Slot 5: PCIe 5.0 x8 FHHL (optional x16 by merging slot 4)<br>Slot 6: PCIe 5.0 x16 FHHL |
| Drive Bays              | 10 hot-swap 2.5" NVMe/SATA/SAS hybrid drive bays; optional RAID support via RAID controller AOC (SYS-121C-TN10R)<br>8 hot-swap 2.5" NVMe/SATA/SAS hybrid drive bays; optional RAID support via RAID controller AOC (SYS-121C-TN2R)<br>1 DVD-ROM (SYS-121C-TN2R; optional) | 4 hot-swap 3.5" NVMe/SATA/SAS hybrid drive bays; optional RAID support via RAID controller AOC<br>2 fixed 2.5" 7mm peripheral bays (optional) | 12 hot-swap 3.5" NVMe/SATA/SAS hybrid drive bays; optional RAID support via RAID controller AOC  |
| Cooling                 | 6 heavy duty 4cm fans   | 6 heavy duty 4cm fans   | 3 heavy duty 8cm fans  |
| Power Supply            | Redundant 860W Titanium level (96%)   | Redundant 860W Titanium level (96%)   | Redundant 1200W Titanium level (96%)   |

<sup>†</sup> CPUs with high TDP supported under specific conditions. Contact Technical Support for details



| CloudDC                 | SYS-111C-NR  | SYS-521C-NR  |
|-------------------------|--|--|
| Processor Support       | Single 5th/4th Gen Intel® Xeon® Scalable processor<br>Up to 350W TDP (air cooled) <sup>†</sup>   | Single 5th/4th Gen Intel® Xeon® Scalable processor<br>Up to 350W TDP (air cooled) <sup>†</sup>   |
| Memory Slots & Capacity | 16 DIMM slots; up to 4TB DDR5-5600MT/s   | 16 DIMM slots; up to 4TB DDR5-5600MT/s   |
| I/O Ports               | Networking via AIOM<br>1 VGA port<br>1 RJ45 dedicated IPMI LAN port<br>2 USB 2.0 ports (2 front)<br>2 USB 3.2 Gen 1 ports (rear)<br>1 COM port | Networking via AIOM<br>1 VGA port<br>1 RJ45 dedicated IPMI LAN port<br>2 USB 2.0 ports (2 headers)<br>2 USB 3.2 Gen 1 ports (rear)<br>1 COM port   |
| Motherboard             | X13SEDW-F  | X13SEDW-F  |
| Form Factor             | 1U Rackmount<br>597mm/23.5"  | 2U Rackmount<br>648mm/25.5"  |
| Expansion Slots         | Slot 1: PCIe 5.0 x16 FHHL<br>Slot 2: PCIe 5.0 x16 FHHL<br>Slot A1: PCIe 5.0 x16 OCP 3.0 AIOM NIC<br>Slot A2: PCIe 5.0 x16 OCP 3.0 AIOM NIC     | Slot 1: PCIe 5.0 x8 FHFL (optional x16 by merging slot 2)<br>Slot 2: PCIe 5.0 x8 FHFL<br>Slot 3: PCIe 5.0 x16 FHHL<br>Slot 4: PCIe 5.0 x8 FHFL<br>Slot 5: PCIe 5.0 x8 FHFL (optional x16 by merging slot 4)<br>Slot 6: PCIe 5.0 x16 FHHL<br>Slot A1: PCIe 5.0 x16 OCP 3.0 AIOM NIC<br>Slot A2: dummy AIOM slot |
| Drive Bays              | 10 hot-swap 2.5" NVMe/SATA/SAS drive bays  | 12 hot-swap 3.5" SATA/SAS drive bays; 2x 3.5" NVMe hybrid;   |
| Cooling                 | 6 (4cm x 4cm x 5.6cm) heavy duty fans  | 3 (8cm x 8cm x 3.8cm) heavy duty fans  |
| Power Supply            | Redundant 860W Titanium level (96%)  | Redundant 1200W Titanium level (96%)   |

<sup>†</sup> CPUs with high TDP supported under specific conditions. Contact Technical Support for details.