H12 CLOUDDC
Ultimate Scalability and Flexibility for Cloud Data Centers

Single-Socket 1U and 2U Options

Flexible configurations for I/O and storage designed for cloud data centers

- Single-socket servers with up to 64 cores and 128 threads of AMD EPYC processor performance
- Tool-less design for rapid deployment and easy maintenance
- Up to 4 TB of memory with 16 DDR4-3200 DIMMs
- Dual AIOM slots for flexible networking
- 12 (in 2U) or 10 (in 1U) SATA drive bays with optional NVMe support
- 4 (in 2U), or 2 (in 1U) PCI-E 4.0 x16 slots

Optimized for cloud data centers, our H12 CloudDC servers provide next-generation technology that can help you deliver cost-optimized services in an increasingly competitive economy.

Cloud-Optimized Single-Socket Servers

H12 CloudDC servers are single-socket systems optimized for AMD EPYC™ 7003 and 7002 series processors with up to 64 cores and 128 threads—ready to power a wide range of cloud workloads. The capacity for up to 4 TB of memory accessed through eight high-speed channels provides the right balance of CPU-to-memory resources to power workloads ranging from financial services to virtualization. Internally, the system utilizes 128 PCI-E 4.0 lanes that support high-speed, high-bandwidth networking and storage. The processor's I/O capacity also extends to up to four PCI-E expansion slots each with 16-lane capability.

Advanced I/O

New to the H12 CloudDC line is support for up to two OCP 3.0-compliant Supermicro Advanced I/O Modules (AIOMs). These enable you to dial in the type and bandwidth of network connectivity that meets your business needs. Supermicro AIOMs support a wide range of Ethernet speeds up to 100 Gbps to connect with the network you have in place today, as well as 200 Gbps InfiniBand connectivity for extremely high-bandwidth, low-latency cluster interconnections.

Key Applications

An evolution of our popular WIO product line, the H12 CloudDC servers are designed for cost-effective service delivery in cloud computing environments, including the following workloads:

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

Designed for AMD EPYC Processors

A single AMD EPYC processor gives you a no-compromise single-socket system. A single AMD EPYC processor delivers the core density that once required two processors to achieve. With AMD you get more cores per dollar, more virtual instances on a server, and more subscribers in your data center. The processor's 128 lanes of PCI-E 4.0 connectivity eliminates the need to scale up computing power just to accommodate more I/O bandwidth. The system-on-chip nature of the processor eliminates the need for external chip sets that contribute to design complexity and power consumption. Best of all, you only

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need to purchase and power a single processor for a high-performing, highly configurable system.

Innovative, Tool-Less Design

Cloud data centers are all about scale, with a constant flow of new servers that scale capacity to new heights and also refresh existing infrastructure. Most of the time servers don't need to be touched. But when it is time to update server connectivity with a faster network, or respond to a rare component failure with a replacement part, the value of the H12 CloudDC product line can't be overstated.

The front-panel-accessible drives and their brackets are hot swappable and require no tools. Rear-panel components including power supplies, PCI-E devices, and AIOM cards are all tool-less. The chassis lid can be opened by hand and mid-chassis fans pop out for replacement.

Open Architecture

Our open architecture approach for memory and storage gives you the convenience of preinstalled, Supermicro-qualified devices or the freedom to populate the chassis on your own. Whatever your choice, our approach gives you flexibility, easy maintenance, and operating cost reduction.

Open Management

Our approach to management enables you to deliver the scale your organization requires. SuperCloud Composer software helps you configure, maintain, and monitor all of your systems using single-pane-of-glass management. If your DevOps teams prefer to use their own tools, our accessible RedFish-compliant API provides access to higher-level tools and scripting languages. Regardless of your data center's management approach, our open management APIs and tools are ready to support you.

H12 Generation	AS-1114CS-TNR*	AS-2014CS-TR*
Form Factor	• 1U rackmount	• 2U rackmount
Mechanical	• Tool-less drive trays and brackets	• Tool-less drive trays and brackets
Processor Support	• Single SP3 socket for AMD EPYC™ 7002 and 7003 Series processors, up to 64 cores, up to 280W TDP†	• Single SP3 socket for AMD EPYC™ 7002 and 7003 Series processors, up to 64 cores, up to 280W TDP†
Memory Slots & Capacity	• 16 DIMM slots for DDR4-3200 MHz RDIMM/LRDIMM; up to 4 TB registered ECC	• 16 DIMM slots for DDR4-3200 MHz RDIMM/LRDIMM; up to 4 TB registered ECC

Expansion Slots	• 2 PCI-E 4.0 x16 (FHHL) slots,
	• 2 AIOM slots for flexible networking
	    (One x8 AIOM slot and one x16 AIOM slot)
		• 4 PCI-E 4.0 x16 (FH, 10.5" L) slots
		• 2 AIOM slots for flexible networking
		    (One x8 AIOM slot and one x16 AIOM slot)

Storage	• 10 Hot-swap 2.5" SATA3/SAS3/NVMe drive bays, optional 10x SAS3/NVMe support via additional SAS/NVMe kit
	• M.2 Interface: 2 PCI-E 4.0 x4
	• M.2 Form Factor: 2242, 2260, 2280, 22110
	• M.2 Key: M-Key
		• 12 Hot-swap 3.5" SATA3/SAS3/NVMe drive bays:
		    12 SATA3 by default, or
		    8 SATA3 + 4NVMe via optional cables, or
		    12 SAS3 via optional SAS kit;
		• Optional 2x 2.5" peripheral drive bays via rear drive bay kits
		• M.2 Interface: 2 PCI-E 4.0 x4
		• M.2 Form Factor: 2242, 2260, 2280, 22110
		• M.2 Key: M-Key

I/O Ports	• 2 USB 3.0 ports (rear) and 2 USB 2.0 ports (front) • 1 VGA, 1 COM, • ASPEED AST2600 BMC graphics	• 2 USB 3.0 ports (rear), • 1 VGA, 1 COM, • ASPEED AST2600 BMC graphics
System Management	• Integrated IPMI 2.0 plus KVM with dedicated LAN • Software out-of-band license key (SFT-OOB-LIC) included for OOB BIOS management	• Integrated IPMI 2.0 plus KVM with dedicated LAN • Software out-of-band license key (SFT-OOB-LIC) included for OOB BIOS management
System Cooling	• 6 Counter-rotating 40x40x56mm PWM fans	• 3x 80x80x38mm middle cooling fans
Power Supply	• Redundant 860W Titanium Level PSUs††	• Redundant 920W Platinum Level PSUs††

† Certain high TDP CPUs may be supported only under specific conditions. Please contact Supermicro Technical Support for additional information about specialized system optimization.
†† Full redundancy based on configuration and application load.
* Sold only as a completely assembled system

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