5-Node MicroCloud

High-Density Multi-Node System for AI and 3D Graphics

(front)
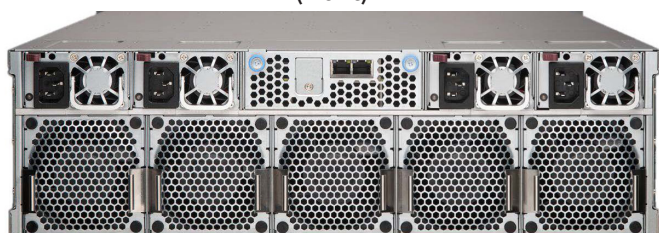
A+ Server 3015MR-H5TNR (rear)

3U, 5-Node-Per-Chassis MicroCloud System with GPU Acceleration

Maximize resource savings through shared power and cooling with the following resources *per node*:

- Single AMD EPYC™ 4005/4004 Series processor
- Up to 192 GB DDR5-5600 memory
- Single dual-slot GPU or two single-slot GPUs
- Four internal 2.5" bays for up to two NVMe and two SATA drives.
- One M.2 NVMe drive
- Flexible networking options with PCIe 5.0 MicroLP interfaces
- Redundant Titanium level shared power supplies

The demands of generative AI, training and inference, 3D graphics rendering, and video transcoding are shifting the need for computing resources more heavily onto GPU accelerators. Whether in the enterprise or cloud environment, dedicated, bare-metal servers are in demand to deliver the utmost in performance. Powered by AMD EPYC™ 4005/4004 Series processors, the 3U, multi-node AS -3015MR-H5TNR MicroCloud system easily meets these demands. You reap the benefits of shared power and cooling infrastructure, and affordable pricing that is favorable compared to the same number of 1U servers. With hot-swappable nodes, the system is easy to maintain and also easy to upgrade with future nodes.

Multi-Node System for GPU-Accelerated Hosting

This 5-node Supermicro MicroCloud system is designed for applications that need a large number of GPU-accelerated discrete servers, virtualized or nonvirtualized, including:

- **Generative AI** that needs GPU power to create responses to customer requests in real time
- **AI inference** executes models in production using GPUs to reduce response time and to meet the need for real-time engagement with customers
- **Model training** is the most intensive phase of the AI lifecycle, and GPU acceleration is a requirement for iterative training of large AI models
- **3D graphics and video rendering** requires massive amounts of vector processing to help creative teams iterate designs more quickly.
- **Cloud gaming** powered by the EPYC 4005/4004 Series, this ultimate gaming processor boasts boost frequencies up to 5.7 GHz

Your Choice of GPU Acceleration

To deliver the acceleration capabilities that match workload requirements, you can choose graphics processors from AMD and NVIDIA, in full-length and either full- or double-width form factors with up to 350W total power consumption. The GPU slot is provided with 16 lanes of PCIe 5.0 connectivity to a single device, or 8 lanes per device for two accelerators.

Powered AMD EPYC 4005/4004 Series Processors

The AMD EPYC 4005/4004 Series delivers high performance at an affordable price. They leverage AMD's hybrid, multi-chip architecture to deliver a series with from 4 to 16 cores, and a thermal design that enables boost frequencies up to 5.7 GHz. With one or two eight-core 'Zen 4' CPU dies, this processor features a matching I/O die tailored to the needs of small

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businesses, offering balanced performance at the entry level, while not sacrificing essential features such as the built-in AMD Secure Processor or the choice of AMD 3D V-Cache™ technology for L3 cache sizes up to 128 MB per CPU. Whether you prize overall system price or cost per core, the processor's attractive price is designed to help you deploy high-value, essential dedicated servers in hosting environments. Choosing the EPYC 4005/4004 Series gives you a fast and practical solution that is tested and validated with the leading server operating systems, so your systems can run the same software as AMD's high-end server processors.

Flexible Node Configurations

Each node incorporates a single Supermicro low-profile interface slot for network connectivity up to 10 Gigabit Ethernet. Internal I/O includes four 2.5" drive slots can host up to two NVMe and two SATA drives, an M.2 boot-drive slot, and a single 16-lane low-profile or two 8-lane PCIe 5.0 low-profile slots.

Open Management

Regardless of your data center's management approach, our open management APIs and tools are ready to support you. In addition to a dedicated IPMI port, and a Web IPMI interface per node, Supermicro® SuperCloud Composer software helps you configure, maintain, and monitor all of your systems using single-pane-of-glass management. Supermicro Server Manager (SSM) and Supermicro Update Manager (SUM) can be used to handle basic administration tasks. If your DevOps teams prefer to use their own tools, industry-standard Redfish® APIs provide access to higher-level tools and scripting languages.

H14 Generation	Single-Socket AS -3015MR-H5TNR Node
Processor Support	• Single AM5 socket for one AMD EPYC™ 4005/4004 Series processor • Up to 16 cores, up to 170W TDP per socket†
Memory Slots & Capacity	• 2 DIMM per channel DDR5 memory support • 4 DIMM slots for up to 192 GB ECC or non-ECC DDR5-5600 UDIMMs
On-Board Devices	• KVM connector with 2x USB 2.0, VGA, and 1 COM port • On board TPM 2.0 + extra header • One dedicated IPMI port
I/O Ports	Choice of one Supermicro micro low-profile interface card: • Dual RJ45 1 GbE ports (AOC-CGP-i2) • Dual RJ45 10 GbE ports (AOC-CTGS-i2T) • Dual SFP+ 10GbE ports (AOC-CTG-i24) • Dual SFP28 25GbPE ports (AOC-C25G-I25) Universal information (UID) LED and power button

Internal Drives	• 1 M.2 NVMe slot
	• 4 2.5" drives supported
	  − 2 NVMe U.2 drives
	  − 2 SATA drives

Expansion Slots	• 1 x16 PCIe 5.0 low-profile slot
BIOS	• AMI 256 Mb (32 MB) SPI Flash ROM • ASPEED AST2600 BMC graphics
System Management	• Redfish APIs • Supermicro SuperCloud Composer • Supermicro Server Manager (SSM) and Supermicro Update Manager (SUM)
Chassis	
Form Factor	• 3U rackmount • 10 and 5 slots for front 10 server nodes
Rear Panel	• Dedicated 1+1 GbE with built-in server management tool (IPMI 2.0, KVM/media over LAN) with 1+1 dedicated LAN ports • 1 GbE IPMI port per node (Optional) • System-level on/off and Universal Information (UID) buttons • Power status and UID LEDs • FH double width GPU capability
Shared Power & Cooling	• 5 x 8cm heavy duty fans with optimal speed control • (N+1) 12000W 80+ Titanium Level power supplies with PMBus

†Certain CPUs with high TDP may be supported only under specific conditions. Please contact Supermicro Technical Support for additional information about specialized system optimization

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