

# H12 FatTwin Servers

## Optimized Designs for Compute and Storage Density



A+ Server  
F1114S-FT



A+ Server  
F1114S-RNTR



A+ Server  
F2014S-RNTR

### 4- to 8-Node-Per-Chassis Scalable Architecture

Achieve a better balance of computing and storage capacity:

- Highly configurable 4U, 4- and 8-node systems
- Single 2nd or 3rd Gen AMD EPYC™ Processor per node
- Up to 16 DIMMs per node for up to 4 TB of DDR4-3200 memory
- Flexible NVMe and SATA3 drive options
- Flexible networking with OCP 3.0 interfaces (AIOM)
- Redundant 2200W Titanium level power supplies

The newest of Supermicro multi-node systems, the A+ FatTwin™ server family supports up to eight AMD EPYC™ processor-powered servers in only four rack units. This family strikes a new balance of compute power, storage capacity, and data center accessibility in a multi-node form factor.

### Multi-node Servers for Large-Scale Deployment

These SuperMicro multi-node servers are designed for high-density environments where you need a large number of discrete servers with options including high-capacity storage and high-speed interconnects. You gain high efficiency and lower costs compared to discrete servers through shared power and cooling. AMD EPYC™ processors deliver up to 64 cores of performance per single-socket node, a density that once required two processors. The system-on-chip design eliminates the cost and complexity of chip sets, and the need to buy only a single processor further reduces capital and operating costs. This family of servers excels at workloads including the following:

- **Hyperconverged infrastructure**
- **Distributed, scale-out file systems**
- **Big data clusters**
- **Media streaming**
- **Cloud-based software-as-a-service (SaaS)**
- **High-performance computing** including EDA simulation, computational fluid dynamics, and weather modeling

- **Back-end infrastructure** for online gaming, voice recognition, and mapping services
- **Telco applications** in central-office locations using DC power supply options available in some models

### Designed for Cloud Datacenters

The A+Server F1114S-FT is designed for high-compute-density applications that need substantial storage capacity per node. The AMD EPYC processor provides direct connectivity through its on-chip SATA controllers to up to four 2.5" internal drives; two of these internal bays can be configured as NVMe-capable slots. This gives you the capability to choose the amount of disk capacity and performance to meet your needs. More storage can be configured through two M.2 SATA/NVMe drives. The server's nodes are cabled and accessible from the front, simplifying operations in datacenters with hot/cold aisle configurations. The AS F1114S-FT includes 16 DIMM slots for up to 4 TB of DDR4-3200 memory.

### Designed for Storage-Rich Applications

The A+ Server F1114S-RNTR and A+ Server F2014-RNTR are optimized to support massive amounts of storage. The processor's 128 lanes of PCI-E 4.0 bandwidth is distributed across the node to support direct connectivity to storage and I/O. AS -F1114S-RNTR server's front-facing drive bays support up to six 2.5" SATA3 or NVMe drives per node. The AS -F2014S-

RNTR server supports even more capacity with up to eight 3.5" drives, six front accessible and two accessed in the rear per node. The AMD EPYC processor's on-chip SATA controllers interface directly to the drive bays, while four PCI-E 4.0 lanes connect directly to each NVMe drive when configured. If a SAS/SATA RAID controller is needed, this can be installed into an internal x8 PCIe 4.0 expansion slot. Adding to the node's storage capacity are up to four M2 drives, each connected to the CPU with four PCIe lanes.



### Open Standard, High-Speed I/O

FatTwin nodes include a single Advanced I/O Module (AIOM) slot that is Open Compute Project (OCP) 3.0 compliant. This means that you can select industry-standard interfaces — such as dual 100 Gigabit Ethernet and 100G InfiniBand EDR — from the vendors you prefer, including Broadcom, Intel, Mellanox, and NVIDIA. With OCP 3.0-compliant I/O connectivity. This open standard gives you better thermal characteristics, easy serviceability, and TCO optimization.



H12 Generation	Single-Socket AS -F1114S-FT Node	Single-Socket AS -F1114S-RNTR Node	Single-Socket AS F2014S-RNTR Node
<b>Processor Support</b>	<ul style="list-style-type: none"> <li>Single SP3 socket for one AMD EPYC™ 7002 or 7003 Series processor</li> <li>Up to 64 cores, up to 280W TDP*</li> </ul>	<ul style="list-style-type: none"> <li>Single SP3 socket for one AMD EPYC™ 7002 or 7003 Series processor</li> <li>Up to 64 cores, up to 280W TDP*</li> </ul>	<ul style="list-style-type: none"> <li>Single SP3 socket for one AMD EPYC™ 7002 or 7003 Series processor</li> <li>Up to 64 cores, up to 280W TDP*</li> </ul>
<b>Memory Slots &amp; Capacity</b>	<ul style="list-style-type: none"> <li>16 DIMM slots for DDR4-3200 MHz RDIMM/LRDIMM</li> <li>Up to 4TB registered ECC</li> </ul>	<ul style="list-style-type: none"> <li>8 DIMM slots for DDR4-3200 MHz RDIMM/LRDIMM</li> <li>Up to 2TB registered ECC</li> </ul>	<ul style="list-style-type: none"> <li>8 DIMM slots for DDR4-3200 MHz RDIMM/LRDIMM]</li> <li>Up to 2TB registered ECC</li> </ul>
<b>On-Board Devices</b>	<ul style="list-style-type: none"> <li>System on Chip</li> <li>Flexible networking via AIOM, 1 per node</li> <li>6 Gbps SATA3 storage interface via AMD EPYC processor</li> <li>IMPI 2.0 with virtual-media-over-LAN and KVM-over-LAN support</li> <li>ASPEED AST2600 BMC graphics</li> </ul>	<ul style="list-style-type: none"> <li>System on Chip</li> <li>Flexible networking via AIOM, 1 per node</li> <li>6 Gbps SATA3 storage interface via AMD EPYC processor</li> <li>IMPI 2.0 with virtual-media-over-LAN and KVM-over-LAN support</li> <li>ASPEED AST2600 BMC graphics</li> </ul>	<ul style="list-style-type: none"> <li>System on Chip</li> <li>Flexible networking via AIOM, 1 per node</li> <li>6 Gbps SATA3 storage interface via AMD EPYC processor</li> <li>IMPI 2.0 with virtual-media-over-LAN and KVM-over-LAN support</li> <li>ASPEED AST2600 BMC graphics</li> </ul>
<b>I/O Ports</b>	<ul style="list-style-type: none"> <li>1 RJ45 dedicated IPMI LAN port</li> <li>2 USB 3.0 ports (rear)</li> <li>1 VGA, 1 COM port</li> <li>1 TPM 2.0 header</li> </ul>	<ul style="list-style-type: none"> <li>1 RJ45 dedicated IPMI LAN port</li> <li>2 USB 3.0 ports (rear)</li> <li>1 VGA, 1 COM port</li> <li>1 TPM 2.0 header</li> </ul>	<ul style="list-style-type: none"> <li>1 RJ45 dedicated IPMI LAN port</li> <li>2 USB 3.0 ports (rear)</li> <li>1 VGA, 1 COM port</li> <li>1 TPM 2.0 header</li> </ul>
<b>BIOS</b>	<ul style="list-style-type: none"> <li>256 Mb (32 MB) SPI Flash EEPROM with AMI BIOS</li> </ul>	<ul style="list-style-type: none"> <li>256 Mb (32 MB) SPI Flash EEPROM with AMI BIOS</li> </ul>	<ul style="list-style-type: none"> <li>256 Mb (32 MB) SPI Flash EEPROM with AMI BIOS</li> </ul>
<b>System Management</b>	<ul style="list-style-type: none"> <li>Integrated IPMI 2.0 plus KVM with dedicated LAN</li> <li>Supermicro Server Manager (SSM) and Supermicro Update Manager (SUM)</li> <li>Supermicro SuperDoctor® 5 and Watch Dog</li> </ul>	<ul style="list-style-type: none"> <li>Integrated IPMI 2.0 plus KVM with dedicated LAN</li> <li>Supermicro Server Manager (SSM) and Supermicro Update Manager (SUM)</li> <li>Supermicro SuperDoctor® 5 and Watch Dog</li> </ul>	<ul style="list-style-type: none"> <li>Integrated IPMI 2.0 plus KVM with dedicated LAN</li> <li>Supermicro Server Manager (SSM) and Supermicro Update Manager (SUM)</li> <li>Supermicro SuperDoctor® 5 and Watch Dog</li> </ul>
<b>Chassis</b>			
<b>Form Factor</b>	<ul style="list-style-type: none"> <li>4U rackmount, 8 nodes per chassis</li> </ul>	<ul style="list-style-type: none"> <li>4U rackmount, 8 nodes per chassis</li> </ul>	<ul style="list-style-type: none"> <li>4U rackmount, 4 nodes per chassis</li> </ul>
<b>Front Panel</b>	<ul style="list-style-type: none"> <li>On/off and Universal Information (UID) buttons</li> <li>Power status, HDD activity, network activity, and UID LEDs</li> </ul>	<ul style="list-style-type: none"> <li>On/off and Universal Information (UID) buttons</li> <li>Power status, HDD activity, network activity, and UID LEDs</li> </ul>	<ul style="list-style-type: none"> <li>On/off and Universal Information (UID) buttons</li> <li>Power status, HDD activity, network activity, and UID LEDs</li> </ul>
<b>Expansion Slots</b>	<ul style="list-style-type: none"> <li>2 PCI-E 4.0 (x16) low-profile slots</li> <li>1 PCI-E 4.0 (x16) AIOM</li> </ul>	<ul style="list-style-type: none"> <li>1 PCI-E 4.0 (x16) low-profile slots</li> <li>1 PCI-E 4.0 (x8) Internal RAID AOC</li> </ul>	<ul style="list-style-type: none"> <li>1 PCI-E 4.0 (x16) low-profile slots</li> <li>1 PCI-E 4.0 (x8) Internal RAID AOC</li> </ul>
<b>Drive Bays</b>	<ul style="list-style-type: none"> <li>Up to 2 internal 2.5" NVMe/SATA3 and 2 SATA3 drives</li> <li>2 M.2 NVMe/SATA3 slots per node, PCI-E 4.0 (x4)</li> </ul>	<ul style="list-style-type: none"> <li>6 hot-swap 2.5" drive bays:                             <ul style="list-style-type: none"> <li>2 hot-swap NVMe/SATA3</li> <li>4 SATA3 (optional NVMe)</li> </ul> </li> <li>M.2 Interface: 4 SATA/PCI-E 4.0 x4</li> </ul>	<ul style="list-style-type: none"> <li>8 hot-swap 2.5" drive bays:                             <ul style="list-style-type: none"> <li>6 front-panel SATA3 (optional NVMe support)</li> <li>2 rear SATA3/NVMe</li> </ul> </li> <li>M.2 Interface: 4 SATA/PCI-E 4.0 x4</li> </ul>
<b>Shared Power &amp; Cooling</b>	<ul style="list-style-type: none"> <li>8 heavy-duty 8-cm, 13.5K RPM rear fans per enclosure</li> <li>Redundant 2+2 2000W Titanium Level power supplies with PMBus</li> </ul>	<ul style="list-style-type: none"> <li>3x 4 cm 17.6K RPM middle fans per node</li> <li>Redundant 2+2 2200W Titanium Level power supplies with PMBus</li> </ul>	<ul style="list-style-type: none"> <li>2x 8 cm 13.5K RPM middle fans per node</li> <li>Redundant 2+2 2200W Titanium Level power supplies with PMBus</li> </ul>

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