SuperStorage

Industry-Leading Enterprise Storage System and Expansion Solutions

Top-Loading
Capacity Maximized

Simply Double
Performance and Capacity Optimized

General-purpose Storage
Versatile and Flexible

Advantages
- 205W TDP dual CPUs supported
- 24 DIMMs for up to 3TB ECC DDR4-2400MHz memory
- Up to 6 PCI-E 3.0 slots
- 100/40/25G Ethernet, and 100G Intel® Omni-Path onboard SIOM network options
- Mixed, hot-swappable NVMe, SAS3 and SATA3 drives supported
- SAS3 via Broadcom 3108 (HW RAID) or 3008 (IT Mode)
- All-Flash NVMe optimized models deliver up to 7M IOPS
- Scalable to over 1PB per 4U or 10PB in a 42U rack

May 2017

www.supermicro.com/storage
SuperStorage
Application optimized high-performance, expandable storage solutions.

Top-Loading
Capacity Maximized

Simply Double
Best Balanced Performance and IOPS

General-purpose Storage
Versatile and Flexible

Complete Portfolio of open industry standard storage offerings optimized for Microsoft, VMWare, RedHat and Software Defined Storage solutions
Maximum Performance - Full NVMe support, in hybrid expander and direct attach storage backplane with up to 20 GB/s throughput
Maximum Efficiency - High capacity 2U, 3U and 4U form factors with industry leading density. Highest efficiency Titanium rated power supplies (95% power efficient)
Mission Critical Reliability - fully redundant, fault-tolerant architecture with hot swappable drive bays, power supplies and cooling fans. The HA capable JBOD hardware is perfect for mission critical applications

Supermicro Software-Defined Storage Solutions

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<th>Storage Architectures</th>
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Broad Coverage for Use Cases, Solutions, and Storage Architectures

To learn more, please visit [www.supermicro.com/solutions/Software_Defined_Storage.cfm](http://www.supermicro.com/solutions/Software_Defined_Storage.cfm)
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<td>SSG-6038R-E1CR16T</td>
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<td>SSG-5018A-AR12L</td>
<td>SSG-5018A-AR12L</td>
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</table>
Supermicro top-loading, capacity-maximized storage server family is ideal for use cases such as data replication, data backup, archive and cold storage, video streaming and surveillance, providing customers with more choices to deploy software-defined data centers.

The new 45-bay SuperStorage system comes with the industry's most flexible design and features tiered storage packing hot, warm and cold storage in one compact 4U box.

It's the only 45-bay storage server supporting hot-swap NVMe SSDs (6 x U.2) for I/O intensive workloads, highest performance CPUs, up to 3TB of DDR4 memory, and a wide range on-board networking options with SIOM cards.

Right-sized for every data center deployment with short depth (less than 26”), easy-to-deploy 45-bay, mainstream 60-bay and extremely dense 90-bay storage servers.
## Technical Specifications

### 45/60/90-Bay Top-Loading Storage Server Systems

<table>
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<tr>
<th></th>
<th>SSG-6048R-E1CR45L/H</th>
<th>SSG-6048R-E1CR60N/L</th>
<th>SSG-6048R-E1CR90L</th>
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<tr>
<td><strong>Processor</strong></td>
<td>Dual Intel® Xeon® processor ES-2600 v4/v3 product families with QPI up to 9.6GT/s</td>
<td>Dual Intel® Xeon® processor ES-2600 v4/v3 product families with QPI up to 9.6GT/s</td>
<td>Dual Intel® Xeon® processor ES-2600 v4/v3 product families with QPI up to 9.6GT/s</td>
</tr>
<tr>
<td><strong>Serverboard</strong></td>
<td>SUPER® X10DSC+</td>
<td>SUPER® X10DSC+</td>
<td>SUPER® X10DSC-T4P4S</td>
</tr>
<tr>
<td><strong>Chipset</strong></td>
<td>Intel® C612</td>
<td>Intel® C612</td>
<td>Intel® C612</td>
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<tr>
<td><strong>Memory</strong></td>
<td>Up to 3TB ECC registered DDR4-2400MHz in 24 DIMM slots</td>
<td>Up to 3TB ECC registered DDR4-2400MHz in 24 DIMM slots</td>
<td>Up to 1TB ECC registered DDR4-2400MHz in 8 DIMM slots</td>
</tr>
<tr>
<td><strong>Expansion Slots</strong></td>
<td>- 2 PCI-E 3.0 x16 (FHFL) slots&lt;br&gt;- 1 PCI-E 3.0 x8 (FHFL) slot</td>
<td>- 2 PCI-E 3.0 x16 (FHFL) slots&lt;br&gt;- 1 PCI-E 3.0 x8 (FHFL) slot</td>
<td>N/A</td>
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<tr>
<td><strong>RAID Controller</strong></td>
<td>- L: Broadcom® SAS3008 (IT Mode) for SAS3 (12Gbps); RAID 0,1,1E and 10&lt;br&gt;- N: Broadcom® SAS3108 for SAS3 (12Gbps); RAID 0,1,1E and 10</td>
<td>- L: Broadcom® SAS3008 (IT Mode) for SAS3 (12Gbps); RAID 0,1,1E and 10&lt;br&gt;- N: Broadcom® SAS3108 for SAS3 (12Gbps); RAID 0,1,1E,5,6,10 and 50</td>
<td>Dual Broadcom® SAS3008 (IT Mode) for SAS3 (12Gbps) ports; RAID 0,1,1E and 10</td>
</tr>
<tr>
<td><strong>Drive Bays</strong></td>
<td>- 45 hot-swap 3.5”/2.5” SAS/SATA drive bays&lt;br&gt;- Optional 6 hot-swap NVMe internal drive bays</td>
<td>- 60 hot-swap 3.5”/2.5” SAS/SATA3 drive bays&lt;br&gt;- Optional 6 NVMe internal drive bays</td>
<td>90 hot-swap 3.5”/2.5” SAS/SATA3 drive bays</td>
</tr>
<tr>
<td><strong>Peripheral Storage</strong></td>
<td>2 hot-swap 2.5” SATA rear drive bays</td>
<td>2 hot-swap 2.5” SATA3 rear drive bays</td>
<td>2 hot-swap 2.5” SATA3 rear drive bays</td>
</tr>
<tr>
<td><strong>Networking</strong></td>
<td>On-board SIOM flexible networking options</td>
<td>On-board SIOM flexible networking options</td>
<td>4x 10G SFP+ Ethernet ports</td>
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<tr>
<td><strong>On-board Video</strong></td>
<td>ASPEED AST2400 VGA</td>
<td>ASPEED AST2400 VGA</td>
<td>ASPEED AST2400 VGA</td>
</tr>
<tr>
<td><strong>Management</strong></td>
<td>- IPMI 2.0 with dedicated LAN port&lt;br&gt;- Supermicro Rack Scale Design support&lt;br&gt;- Built-in front 3.5&quot; LCD display for health monitoring</td>
<td>- IPMI 2.0 with dedicated LAN port&lt;br&gt;- Supermicro Rack Scale Design support&lt;br&gt;- Built-in front 3.5&quot; LCD display for health monitoring</td>
<td>- IPMI 2.0 with dedicated LAN port&lt;br&gt;- Supermicro Rack Scale Design support&lt;br&gt;- Built-in front 3.5&quot; LCD display for health monitoring</td>
</tr>
<tr>
<td><strong>Power Supply</strong></td>
<td>Redundant 1600W Platinum Level (94%+ efficiency)</td>
<td>Redundant 2000W Titanium Level (96%+ efficiency)</td>
<td>4 Redundant 1000W Titanium Level (96%+ efficiency)</td>
</tr>
<tr>
<td><strong>Cooling</strong></td>
<td>5x 8cm hot-swap redundant PWM cooling fans</td>
<td>5x 8cm hot-swap redundant PWM cooling fans</td>
<td>5x 8cm hot-swap redundant PWM cooling fans</td>
</tr>
<tr>
<td><strong>Form Factor</strong></td>
<td>4U rackmount</td>
<td>4U rackmount</td>
<td>4U rackmount</td>
</tr>
<tr>
<td><strong>Dimensions</strong></td>
<td>17.2”W x 7”H x 25.9”D (437 x 178 x 658mm); 32.5”D (825.5mm) with cable management arm installed</td>
<td>17.2”W x 7”H x 30.2”D (437 x 178 x 767mm); 35.2”D (895mm) with cable management arm installed</td>
<td>17.6”W x 7”H x 38.2”D (447 x 178 x 970.3mm)</td>
</tr>
<tr>
<td><strong>Weight</strong></td>
<td>120 lbs (gross); 85 lbs (net)</td>
<td>170.5 lbs (gross); 118 lbs (net)</td>
<td>235 lbs (gross); 160 lbs (net)</td>
</tr>
</tbody>
</table>
The Simply Double 2U SuperStorage systems include twice the number of hot-swap drive bays as 2U industry standard systems, thus offering up to twice the storage capacity and IOPS in the same amount of space. The additional drive bays are arrayed in a patented Riser Bay that is located on the top of the Simply Double systems for easy access and servicing. With twice the storage density, customers can greatly improve the price/performance of their storage deployments to maximize ROI.

The Supermicro 2U Simply Double SuperStorage systems are available in server or JBOD models (see page 13) that offer either 2.5" or 3.5" drive bays, and that also support all-flash NVMe or SAS 3.0 SSD/HDDs. Additional value-added features include an additional two rear hot-swap drive bays, 3 PCI-E 3.0 slots, redundant Titanium Level (96%-+) high-efficiency power supplies, and support for flexible on-board networking modules (see page 14 for available SIOM networking options).

This broad and feature rich product line allows customers to select and customize the perfect solution that is optimized for their specific requirements, from IOPS intensive applications to deployments that require the highest storage capacity.
## Technical Specifications

**Simply Double SuperStorage Server Systems**

### 3.5” SAS3/SATA3
- **Processor:** Dual Intel® Xeon® processor E5-2600 v4/v3 product families with QPI up to 9.6GT/s, 145W TDP
- **Serverboard:** SUPER® X10DSC+
- **Chipset:** Intel® C612
- **Memory:** Up to 3TB ECC registered DDR4-2400MHz in 24 DIMM slots
- **Expansion Slots:**
  - 2 PCI-E 3.0 x16 (FH, 10.5”) slots
  - 1 PCI-E 3.0 x8 (LP) slot
- **RAID Controller:** L: Broadcom® SAS3008 (IT Mode) for SAS3 (12Gbps); RAID 0,1,1E and 10
  - N: Broadcom® SAS3108 for SAS3 (12Gbps); RAID 0,1,1E,5,6,10 and 50
- **Backplane:** ‘E1C’ Single Expander
- **Drive Bays:** 24 hot-swap 3.5” SAS3/SATA3 drive bays
- **Peripheral Storage:** 2 hot-swap 2.5” SATA3 rear drive bays
- **Networking:** On-board SIOM flexible networking options
- **On-board Video:** ASPEED AST2400 VGA
- **Management:** IPMI 2.0 with dedicated LAN port
- **Power Supply:** Redundant 1600W Titanium Level (96%+ efficiency)
- **Cooling:** 5x 8cm hot-swap redundant PWM cooling fans
- **Form Factor:** 2U rackmount
- **Dimensions:** 17.2”W x 3.5”H x 34”D (437 x 89 x 863.6mm); 41”D (1041.4mm) with cable management arm installed

### All-Flash NVMe
- **Processor:** Dual Intel® Xeon® processor E5-2600 v4/v3 product families with QPI up to 9.6GT/s, 145W TDP
- **Serverboard:** SUPER® X10DSC+
- **Chipset:** Intel® C612
- **Memory:** Up to 3TB ECC registered DDR4-2400MHz in 24 DIMM slots
- **Expansion Slots:**
  - 2 PCI-E 3.0 x16 (FH, 10.5”) slots
  - 1 PCI-E 3.0 x8 (LP) slot
- **RAID Controller:** L: Broadcom® SAS3008 (IT Mode) for SAS3 (12Gbps); RAID 0,1,1E and 10
  - N: Broadcom® SAS3108 for SAS3 (12Gbps); RAID 0,1,1E,5,6,10 and 50
- **Backplane:** ‘E1C’ Single Expander
- **Drive Bays:** 48 hot-swap 2.5” U.2 NVMe drive bays
- **Peripheral Storage:** Optional 2 additional hot-swap 2.5” SATA3 rear drive bays
- **Networking:** On-board SIOM flexible networking options
- **On-board Video:** ASPEED AST2400 VGA
- **Management:** IPMI 2.0 with dedicated LAN port
- **Power Supply:** Redundant 1600W Titanium Level (96%+ efficiency)
- **Cooling:** 5x 8cm hot-swap redundant PWM cooling fans
- **Form Factor:** 2U rackmount
- **Dimensions:** 17.2”W x 3.5”H x 30.2”D (437 x 89 x 767mm); 35.2”D (895mm) with cable management arm installed

### 2.5” SAS3/SATA3
- **Processor:** Dual Intel® Xeon® processor E5-2600 v4/v3 product families with QPI up to 9.6GT/s, 145W TDP
- **Serverboard:** SUPER® X10DSC+
- **Chipset:** Intel® C612
- **Memory:** Up to 3TB ECC registered DDR4-2400MHz in 24 DIMM slots
- **Expansion Slots:**
  - 2 PCI-E 3.0 x16 (FH, 10.5”) slots
  - 1 PCI-E 3.0 x8 (LP) slot
- **RAID Controller:** L: Broadcom® SAS3008 (IT Mode) for SAS3 (12Gbps); RAID 0,1,1E and 10
  - N: Broadcom® SAS3108 for SAS3 (12Gbps); RAID 0,1,1E,5,6,10 and 50
- **Backplane:** ‘E1C’ Single Expander
- **Drive Bays:** 48 hot-swap 2.5” U.2 NVMe drive bays
- **Peripheral Storage:** Optional 2 additional hot-swap 2.5” SATA3 rear drive bays
- **Networking:** On-board SIOM flexible networking options
- **On-board Video:** ASPEED AST2400 VGA
- **Management:** IPMI 2.0 with dedicated LAN port
- **Power Supply:** Redundant 1000W Titanium Level (96%+ efficiency)
- **Cooling:** 5x 8cm hot-swap redundant PWM cooling fans
- **Form Factor:** 2U rackmount
- **Dimensions:** 17.2”W x 3.5”H x 30.2”D (437 x 89 x 767mm); 35.2”D (895mm) with cable management arm installed

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**Supermicro® SuperStorage Server and JBOD Solutions - May 2017**
Supermicro’s high-performance storage servers include everything needed for a rock solid storage foundation. Individual models are designed to meet the demands of the toughest storage environments, from latency sensitive caching applications to the massive capacity needed for large files used in media libraries and Big Data.

SuperStorage supports both scale-up and scale-out deployment strategies allowing CPU and storage resources scale to meet diverse application requirements.

SuperStorage offers a no compromise storage platform with flexible market entry points from 2U, 3U and 4U form factors using 2.5” and 3.5” HDDs.

### General-purpose Storage

The foundation of a flexible and efficient storage deployment.

The all-flash NVMe SuperServer and SuperStorage systems deliver a massive improvement in storage performance over systems based on traditional hard disk drives (HDD) and solid state drives (SSD) using legacy storage interfaces including SAS3 and SATA3. The NVMe optimized servers are also more power efficient than the traditional systems and have hot-plug capability for improved serviceability and availability.

To learn more please download the white paper: [www.supermicro.com/white_paper/white_paper_NVMe2.pdf](http://www.supermicro.com/white_paper/white_paper_NVMe2.pdf)
2U SuperStorage Server Systems with 3.5” Drive Bays

<table>
<thead>
<tr>
<th>Model</th>
<th>Processor</th>
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<th>RAID Controller</th>
<th>Backplane</th>
<th>Drive Bays</th>
<th>Peripheral Storage</th>
<th>Networking</th>
<th>Power Supply</th>
<th>Form Factor</th>
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<tbody>
<tr>
<td>SSG-6028R-E1C12N</td>
<td>Dual Intel® Xeon® processor E5-2600 v4/v3 product families with QPI up to 9.6GT/s, 145W TDP</td>
<td>Intel® C612</td>
<td>Up to 3TB ECC registered DDR4-2400MHz in 24 DIMM slots</td>
<td>Broadcom® SAS3108 for SAS3 (12Gbps)</td>
<td>“E1C”/ Single Expander</td>
<td>12 hot-swap 3.5” SAS3/SATA3 drive bays</td>
<td>Optional internal drive bracket</td>
<td>4x 10GBase-T Ethernet ports</td>
<td>Redundant 920W Platinum Level (94%+ efficiency)</td>
<td>2U rackmount</td>
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<td>SSG-6028R-E1C12T</td>
<td>Dual Intel® Xeon® processor E5-2600 v4/v3 product families with QPI up to 9.6GT/s, 145W TDP</td>
<td>Intel® C612</td>
<td>Up to 2TB ECC registered DDR4-2400MHz in 16 DIMM slots</td>
<td>On-board Broadcom® SAS3108 for SAS3 (12Gbps)</td>
<td>“E1C”/ Single Expander</td>
<td>12 hot-swap 3.5” SAS3/SATA3 drive bays</td>
<td>Optional 2 hot-swap 2.5” SATA3 rear drive bays</td>
<td>2x 10GBase-T Ethernet ports</td>
<td>Redundant 920W Platinum Level (94%+ efficiency)</td>
<td>2U rackmount</td>
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<td>SSG-6028R-E1C12H/L</td>
<td>Dual Intel® Xeon® processor E5-2600 v4/v3 product families with QPI up to 9.6GT/s</td>
<td>Intel® C612</td>
<td>Up to 2TB ECC registered DDR4-2400MHz in 16 DIMM slots</td>
<td>Broadcom® SAS3008 (IT Mode) for SAS3 (12Gbps)</td>
<td>“E1C”/ Single Expander</td>
<td>12 hot-swap 3.5” SAS3/SATA3 drive bays</td>
<td>Optional 2 hot-swap 2.5” SATA3 rear drive bays</td>
<td>2x 10GBase-T Ethernet ports</td>
<td>4 Redundant 1000W Titanium Level (96%+ efficiency)</td>
<td>2U rackmount</td>
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2U SuperStorage Server Systems with 2.5” Drive Bays

<table>
<thead>
<tr>
<th>Model</th>
<th>Processor</th>
<th>Chipset</th>
<th>Memory</th>
<th>RAID Controller</th>
<th>Backplane</th>
<th>Drive Bays</th>
<th>Peripheral Storage</th>
<th>Networking</th>
<th>Power Supply</th>
<th>Form Factor</th>
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<tr>
<td>SSG-2028R-E1C24N</td>
<td>Dual Intel® Xeon® processor E5-2600 v4/v3 product families with QPI up to 9.6GT/s, 145W TDP</td>
<td>Intel® C612</td>
<td>Up to 3TB ECC registered DDR4-2400MHz in 24 DIMM slots</td>
<td>Broadcom® SAS3108 for SAS3 (12Gbps)</td>
<td>“E1C”/ Single Expander</td>
<td>24 hot-swap 2.5” SAS3/SATA3 drive bays</td>
<td>Optional internal drive bracket</td>
<td>4x 10GBase-T Ethernet ports</td>
<td>Redundant 920W Platinum Level (94%+ efficiency)</td>
<td>2U rackmount</td>
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<td>SSG-2028R-E1C24H/L</td>
<td>Dual Intel® Xeon® processor E5-2600 v4/v3 product families with QPI up to 9.6GT/s, 145W TDP</td>
<td>Intel® C612</td>
<td>Up to 2TB ECC registered DDR4-2400MHz in 16 DIMM slots</td>
<td>On-board Broadcom® SAS3108 for SAS3 (12Gbps)</td>
<td>“E1C”/ Single Expander</td>
<td>24 hot-swap 2.5” SAS3/SATA3 drive bays</td>
<td>Optional 2 hot-swap 2.5” SATA3 rear drive bays</td>
<td>2x 10GBase-T Ethernet ports</td>
<td>Redundant 920W Platinum Level (94%+ efficiency)</td>
<td>2U rackmount</td>
</tr>
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<td>SSG-2028R-ACR24H/L</td>
<td>Dual Intel® Xeon® processor E5-2600 v4/v3 product families with QPI up to 9.6GT/s</td>
<td>Intel® C612</td>
<td>Up to 2TB ECC registered DDR4-2400MHz in 16 DIMM slots</td>
<td>3 Broadcom® SAS3008 (IT Mode) for SAS3 (12Gbps)</td>
<td>“E1C”/ Single Expander</td>
<td>24 hot-swap 2.5” SAS3/SATA3 drive bays</td>
<td>Optional 2 hot-swap 2.5” SATA3 rear drive bays</td>
<td>2x 10GBase-T Ethernet ports</td>
<td>Redundant 920W Platinum Level (94%+ efficiency)</td>
<td>2U rackmount</td>
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2U/3U SuperStorage Server Systems with 3.5” Drive Bays

Low-latency with Triple HW RAID | Hardware RAID with JBOD expansion | Flexible Scale-up & Scale-out

<table>
<thead>
<tr>
<th>Model</th>
<th>Processor</th>
<th>Chipset</th>
<th>Memory</th>
<th>PCI-E 3.0 Slots</th>
<th>RAID Controller</th>
<th>Backplane</th>
<th>Drive Bays</th>
<th>Peripheral Storage</th>
<th>Networking</th>
<th>Power Supply</th>
<th>Form Factor</th>
</tr>
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<tbody>
<tr>
<td>SSG-6028R-E1CR16T</td>
<td>Dual Intel® Xeon® processor E5-2600 v4/v3 product families with QPI up to 9.6GT/s, 145W TDP</td>
<td>Intel® C612</td>
<td>Up to 2TB ECC registered DDR4-2400MHz in 16 DIMM slots</td>
<td>7 slots</td>
<td>On-board Broadcom® SAS3108 for SAS3 (12Gbps)</td>
<td>“E1C”/ Single Expander</td>
<td>16 hot-swap 3.5” SAS3/SATA3 drive bays</td>
<td>2 hot-swap 2.5” SATA3 rear drive bays</td>
<td>2x 10GBase-T Ethernet ports</td>
<td>Redundant 1000W Titanium Level (96%+ efficiency)</td>
<td>2U rackmount</td>
</tr>
<tr>
<td>SSG-6038R-E1CR16N</td>
<td>Dual Intel® Xeon® processor E5-2600 v4/v3 product families with QPI up to 9.6GT/s, 145W TDP</td>
<td>Intel® C612</td>
<td>Up to 2TB ECC registered DDR4-2400MHz in 24 DIMM slots</td>
<td>6 slots (slot 3 &amp; 4 occupied by controller and expander ports)</td>
<td>Broadcom® SAS3108 for SAS3 (12Gbps)</td>
<td>“E1C”/ Single Expander</td>
<td>16 hot-swap 3.5” SAS3/SATA3 drive bays</td>
<td>Optional internal drive bracket</td>
<td>4x 10GBase-T Ethernet ports</td>
<td>Redundant 920W Platinum Level (94%+ efficiency)</td>
<td>3U rackmount</td>
</tr>
<tr>
<td>SSG-6038R-E1CR16H/L</td>
<td>Dual Intel® Xeon® processor E5-2600 v4/v3 product families with QPI up to 9.6GT/s</td>
<td>Intel® C612</td>
<td>Up to 2TB ECC registered DDR4-2400MHz in 16 DIMM slots</td>
<td>7 slots (slot 1 &amp; 2 occupied by controller and expander ports)</td>
<td>Broadcom® SAS3108 for SAS3 (12Gbps)</td>
<td>“E1C”/ Single Expander</td>
<td>16 hot-swap 3.5” SAS3/SATA3 drive bays</td>
<td>Dual JBOD expansion ports</td>
<td>2x 10GBase-T Ethernet ports</td>
<td>Redundant 920W Platinum Level (94%+ efficiency)</td>
<td>3U rackmount</td>
</tr>
</tbody>
</table>

1U Storage Systems with 3.5” Drive Bays

<table>
<thead>
<tr>
<th>Model</th>
<th>Processor</th>
<th>Chipset</th>
<th>Memory</th>
<th>PCI-E 3.0 Slots</th>
<th>RAID Controller</th>
<th>Backplane</th>
<th>Drive Bays</th>
<th>Peripheral Storage</th>
<th>Networking</th>
<th>Power Supply</th>
<th>Form Factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>SSG-5018A-AR12L</td>
<td>Intel® Atom™ processor C2750</td>
<td>System-on-chip</td>
<td>Up to 256GB ECC registered DDR4-2400MHz in 4 DIMM slots</td>
<td>1x PCI-E 2.0 x4 (in x8, LP, HL)</td>
<td>System-on-chip</td>
<td>“E1C”/ Single Expander</td>
<td>12 hot-swap 3.5” SATA3 drive bays</td>
<td></td>
<td></td>
<td>1U rackmount</td>
<td></td>
</tr>
</tbody>
</table>

Cost-optimized Cold Storage
4U SuperStorage Server Systems with 3.5” Drive Bays

**Hardware RAID with JBOD Expansion**

- Processor: Dual Intel® Xeon® processor E5-2600 v4/v3 product families with QPI up to 9.6GT/s, 145W TDP
- Chipset: Intel® C612
- Memory: Up to 2TB ECC registered DDR4-2400MHz in 24 DIMM slots
- PCI-E 3.0 Slots: 7 slots (slot 1 & 2 occupied by controller and expander ports)
- RAID Controller: Broadcom® SAS3108 for SAS3 (12Gbps)
- Backplane: E1C’ Single Expander
- Drive Bays: 24 hot-swap 3.5” SAS3/SATA3 drive bays
- Peripheral Storage: 4: Optional 2 hot-swap 2.5” SAtA3 rear drive bays
- Networking: 4x 10GBase-T Ethernet ports
- Power Supply: Redundant 920W Platinum Level (94%+ efficiency)
- Form Factor: 4U rackmount

**Flexible Scale-up & Scale-out**

- Processor: Dual Intel® Xeon® processor E5-2600 v4/v3 product families with QPI up to 9.6GT/s, 145W TDP
- Chipset: Intel® C612
- Memory: Up to 2TB ECC registered DDR4-2400MHz in 16 DIMM slots
- PCI-E 3.0 Slots: 7 slots (slot 1 & 2 occupied by controller and expander ports)
- RAID Controller: Broadcom® SAS3108 for SAS3 (12Gbps)
- Backplane: E1C’ Single Expander
- Drive Bays: 24 hot-swap 3.5” SAS3/SATA3 drive bays
- Peripheral Storage: 4: Optional 2 hot-swap 2.5” SAtA3 rear drive bays
- Networking: 2x 10GBase-T Ethernet ports
- Power Supply: Redundant 920W Platinum Level (94%+ efficiency)
- Form Factor: 4U rackmount

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**4U Double-sided SuperStorage Server Systems with 3.5” Drive Bays**

With Double-sided Storage® architecture, drives can be stacked and packed in the front and rear of the server chassis for improved storage density.

**Hardware RAID with JBOD Expansion**

- Processor: Dual Intel® Xeon® processor E5-2600 v4/v3 product families with QPI up to 9.6GT/s, 145W TDP
- Chipset: Intel® C612
- Memory: Up to 2TB ECC registered DDR4-2400MHz in 24 DIMM slots
- PCI-E 3.0 Slots: 7 slots (slot 1,2 and 3 occupied by controllers)
- RAID Controller: Broadcom® SAS3108 for SAS3 (12Gbps)
- Backplane: E1C’ Single Expander
- Drive Bays: 36 hot-swap 3.5” SAS3/SATA3 drive bays
- Peripheral Storage: 2: Optional internal drive bracket
- Networking: 4x 10GBase-T Ethernet ports
- Power Supply: Redundant 1280W Platinum Level (95%+ efficiency)
- Form Factor: 4U rackmount

**Flexible Scale-up & Scale-out**

- Processor: Dual Intel® Xeon® processor E5-2600 v4/v3 product families with QPI up to 9.6GT/s
- Chipset: Intel® C612
- Memory: Up to 2TB ECC registered DDR4-2400MHz in 16 DIMM slots
- PCI-E 3.0 Slots: 7 slots (slot 1,2 and 3 occupied by controllers)
- RAID Controller: Broadcom® SAS3108 for SAS3 (12Gbps)
- Backplane: E1C’ Single Expander
- Drive Bays: 24 hot-swap 3.5” SAS3/SATA3 drive bays
- Peripheral Storage: 4: Optional internal drive bracket
- Networking: 2x 10GBase-T Ethernet ports
- Power Supply: Redundant 1280W Platinum Level (95%+ efficiency)
- Form Factor: 4U rackmount

**4U 72x 3.5”**

- Processor: Dual Intel® Xeon® processor E5-2600 v4/v3 product families with QPI up to 9.6GT/s
- Chipset: Intel® C612
- Memory: Up to 2TB ECC registered DDR4-2400MHz in 16 DIMM slots
- PCI-E 3.0 Slots: 7 slots (slot 1,2 and 3 occupied by controllers)
- RAID Controller: Broadcom® SAS3108 for SAS3 (12Gbps)
- Backplane: E1C’ Single Expander
- Drive Bays: 72x 3.5” SAS3/SATA3 drives in 36 hot-swap drive bays
- Peripheral Storage: 2: Optional internal drive bracket
- Networking: 2x 10GBase-T Ethernet ports
- Power Supply: Redundant 2000W Titanium Level (96%+ efficiency)
- Form Factor: 4U rackmount
Storage Expansion

A broad range of versatile JBOD solutions for rapid storage expansion and high availability.

Expanding storage capacity can be done easily and rapidly, and without any system downtime. Supermicro offers three classes of JBOD chassis for maximum flexibility:

- **Cost Optimized JBOD Chassis**
  Reliable high-bandwidth architecture supporting SAS3/SATA3 and featuring integrated single expander.

- **High Availability JBOD Chassis**
  Fully redundant power, fans and expander modules for SAS3/SATA3 drives provide data protection and minimize downtime.

- **Super Storage Bridge Bay (SBB) JBOD Chassis**
  Optimized for mission-critical, enterprise-level storage applications, Super SBB features a fully redundant, fault-tolerant “cluster-in-a-box” system.

**Top-loading JBOD Expansion**

SuperStorage System

Many SuperStorage models feature JBOD expansion ports out-of-box, making it ready to rapidly expand capacity without system interruption.

<table>
<thead>
<tr>
<th>4U 90-Bay JBOD</th>
<th>4U 60-Bay JBOD</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th><strong>SC946ED-R2KJBOD</strong></th>
<th><strong>SC946SE1C/E2C-R1K66JBOD</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Backplane</td>
<td>• <strong>E1C</strong> Single expander supporting SAS3/SATA3</td>
</tr>
<tr>
<td>Drive Bays</td>
<td>• <strong>E2C</strong> Dual expander supporting SAS3/SATA3</td>
</tr>
<tr>
<td>90 hot-swap 3.5”/2.5” SAS3/SATA3 drive bays</td>
<td>60 hot-swap 3.5”/2.5” SAS3/SATA3 drive bays</td>
</tr>
<tr>
<td>Host Connectivity</td>
<td>• <strong>E1C</strong> 8 Mini-SAS HD ports</td>
</tr>
<tr>
<td>8 Mini-SAS HD ports</td>
<td>• <strong>E2C</strong> 8 Mini-SAS HD ports</td>
</tr>
<tr>
<td>Power Supply</td>
<td>Redundant 1600W Platinum Level (94%+ efficiency)</td>
</tr>
<tr>
<td>Redundant 1000W Titanium Level (96%+ efficiency)</td>
<td></td>
</tr>
<tr>
<td>Form Factor</td>
<td>4U rackmount</td>
</tr>
</tbody>
</table>

| JBOD Chassis | 12 SuperStorage Server and JBOD Solutions |
**Simply Double JBOD Expansion**

<table>
<thead>
<tr>
<th>Model</th>
<th>Backplane</th>
<th>Drive Bays</th>
<th>Host Connectivity</th>
<th>Power Supply</th>
<th>Form Factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>CSE-826SE1C-R1K02JBOD</td>
<td>Single expander supporting SAS3/SATA3</td>
<td>24 hot-swap 3.5”/2.5” SAS3/SATA3 drive bays</td>
<td>4 Mini-SAS HD ports</td>
<td>Redundant 1000W Titanium Level (96%+ efficiency)</td>
<td>2U rackmount</td>
</tr>
</tbody>
</table>

**Standard JBOD Chassis with Single or Dual Expander Backplane**

<table>
<thead>
<tr>
<th>Model</th>
<th>Backplane</th>
<th>Drive Bays</th>
<th>Host Connectivity</th>
<th>Power Supply</th>
<th>Form Factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>CSE-826SE1C/E2C-R741JBOD</td>
<td>- E1C Single expander supporting SAS3/SATA3</td>
<td>24 hot-swap 2.5” SAS3/SATA3 drive bays</td>
<td>4 Mini-SAS HD ports</td>
<td>Redundant 740 Platinum Level (94%+ efficiency)</td>
<td>2U rackmount</td>
</tr>
<tr>
<td>CSE-826SE1C/E2C-R1K03JBOD</td>
<td>- E1C Single expander supporting SAS3/SATA3</td>
<td>12 hot-swap 3.5” SAS3/SATA3 drive bays</td>
<td>4 Mini-SAS HD ports</td>
<td>Redundant 740 Platinum Level (94%+ efficiency)</td>
<td>3U rackmount</td>
</tr>
<tr>
<td>CSE-846E1C/E2C-R1K03JBOD</td>
<td>- E1C Single expander supporting SAS3/SATA3</td>
<td>24 hot-swap 3.5” SAS3/SATA3 drive bays</td>
<td>4 Mini-SAS HD ports</td>
<td>Redundant 1000W Titanium Level (96%+ efficiency)</td>
<td>4U rackmount</td>
</tr>
</tbody>
</table>

**Double-sided JBOD Expansion with Single or Dual Expander Backplane**

<table>
<thead>
<tr>
<th>Model</th>
<th>Backplane</th>
<th>Drive Bays</th>
<th>Host Connectivity</th>
<th>Power Supply</th>
<th>Form Factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>CSE-417BE1C/E2C-R1K23JBOD</td>
<td>- E1C Single expander supporting SAS3/SATA3</td>
<td>72 hot-swap 2.5” SAS3/SATA3 drive bays</td>
<td>4 Mini-SAS HD ports</td>
<td>Redundant 1200W Titanium Level (96%+ efficiency)</td>
<td>4U rackmount</td>
</tr>
<tr>
<td>CSE-847E1C/E2C-R1K28JBOD</td>
<td>- E1C Single expander supporting SAS3/SATA3</td>
<td>44 hot-swap 3.5” SAS3/SATA3 drive bays</td>
<td>4 Mini-SAS HD ports</td>
<td>Redundant 1280W Platinum Level (94%+ efficiency)</td>
<td>4U rackmount</td>
</tr>
<tr>
<td>CSE-847DE1C/E2C-R2K04JBOD</td>
<td>- E1C Single expander supporting SAS3/SATA3</td>
<td>90x 3.5” SAS3/SATA3 drives in 45 hot-swap drive bays</td>
<td>4 Mini-SAS HD ports</td>
<td>Redundant 2000W Titanium Level (96%+ efficiency)</td>
<td>4U rackmount</td>
</tr>
</tbody>
</table>
# Storage Bridge Bay (SBB)

A broad range of high availability hardware for next generation storage operating systems.

Optimized for mission-critical enterprise-level storage applications, Supermicro’s innovative Super SBB family offers a fully redundant fault-tolerant architecture with JBOD expansion. Hot-swappable canisters for all active components, redundant high efficiency power supplies, and hot pluggable cooling fans, truly enable non-disruptive operations. Dual processor server modules feature advanced node-to-node connectivity, enabling low-latency fail-over cluster performance. The Dual-ported NVMe models take IOPs performance to unprecedented levels, while the robust SAS3 (12GB/s) models support cascaded configurations with both high bandwidth (x8 SAS) connectivity, and high resiliency with fully isolated SAS domains, required for mission-critical deployments. The Super SBB family products are highly available, highly reliable storage systems perfect for the next generation storage platforms in development by OEMs and startups.

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## SuperStorage Server and JBOD Solutions

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<table>
<thead>
<tr>
<th>Systems</th>
<th>Processor Description</th>
<th>Memory Description</th>
<th>PCI-E 3.0 Slots</th>
</tr>
</thead>
<tbody>
<tr>
<td>SSG-2028R-DE2CR24L</td>
<td>Dual Intel® 'Xeon' processor E5-2600 v4/v3 product families with QPI up to 9.6GT/s per node, 145W TDP</td>
<td>Up to 1TB ECC registered DDR4-2400MHz in 8 DIMM slots per node</td>
<td>3 PCIe 1.0 x8 (LP) slots per node</td>
</tr>
<tr>
<td>SSG-6038R-DE2CR16L</td>
<td>Dual Intel® 'Xeon' processor E5-2600 v4/v3 product families with QPI up to 9.6GT/s per node, 145W TDP</td>
<td>Up to 1TB ECC registered DDR4-2400MHz in 8 DIMM slots per node</td>
<td>3 PCIe 1.0 x8 (LP) slots per node</td>
</tr>
<tr>
<td>SSG-6048R-DE2CR24L</td>
<td>Dual Intel® 'Xeon' processor E5-2600 v4/v3 product families with QPI up to 9.6GT/s per node, 145W TDP</td>
<td>Up to 1TB ECC registered DDR4-2400MHz in 8 DIMM slots per node</td>
<td>3 PCIe 1.0 x8 (LP) slots per node</td>
</tr>
</tbody>
</table>

**Networking**
- 2x 10GBase-T Ethernet ports per node
- 100Mbps private Ethernet LAN between redundant nodes

**Drive Bays**
- Shared 24 hot-swap 2.5" SAS3/SATA3 drive bays between redundant nodes
- Shared 16 hot-swap 3.5" SAS3/SATA3 drive bays between redundant nodes
- Shared 24 hot-swap 3.5" SAS3/SATA3 drive bays between redundant nodes

**Host Connectivity**
- 2 Mini-SAS HD ports per node

**Power Supply**
- Redundant 1200W Titanium Level (96%+ efficiency)
- Redundant 1200W Titanium Level (96%+ efficiency)
- Redundant 1600W Titanium Level (96%+ efficiency)

**Form Factor**
- 2U rackmount
- 3U rackmount
- 4U rackmount

**JBODs**
- SSG-927R-E2CJB
- SSG-937R-E2CJB
- SSG-947R-E2CJB

**Drive Bays**
- Shared 24 hot-swap 2.5" SAS3/SATA3 drive bays between redundant nodes
- Shared 16 hot-swap 3.5" SAS3/SATA3 drive bays between redundant nodes
- Shared 24 hot-swap 3.5" SAS3/SATA3 drive bays between redundant nodes
SuperStorage Hardware RAID controllers support options for cache backup using super capacitors for reliable data protection even through power outages. Broadcom® CacheCade™ offers a performance boost to optimize hot-file storage applications using a small number of SSDs.

- **CacheVault™ for Broadcom® 3108 AOC – Flash Backed Cache – BTR-TFM8G-AvagoCVM02**
- **BRACKET-05**
- **2.5" drive bay Mount For CacheVault™ – MCP-240-00127-0N**
- **Broadcom® CacheCade™ AOC-CHCD-PRO2-KEY**

For a complete list please visit [www.supermicro.com/products/accessories/index.cfm?Type=20](http://www.supermicro.com/products/accessories/index.cfm?Type=20)

### On-board SIOM Networking Options

<table>
<thead>
<tr>
<th></th>
<th>AOC-MGP-i2</th>
<th>AOC-MGP-i4</th>
<th>AOC-MTGN-i2S</th>
<th>AOC-MTGF-i4S</th>
<th>AOC-MTG-i2T</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Port</strong></td>
<td>2 RJ45 ports</td>
<td>4 RJ45 ports</td>
<td>2 SFP+ ports</td>
<td>4 SFP+ ports</td>
<td>2 RJ45 ports</td>
</tr>
<tr>
<td><strong>Speed</strong></td>
<td>1Gbps Ethernet</td>
<td>1Gbps Ethernet</td>
<td>10Gb Ethernet</td>
<td>10Gbps Ethernet</td>
<td>10Gbps Ethernet</td>
</tr>
</tbody>
</table>

### Rear/Internal Drive Kits

<table>
<thead>
<tr>
<th></th>
<th></th>
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<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>2.5&quot; Rear HDD Kit (2U) includes:</td>
<td>2.5&quot; Rear HDD Kit (3U) includes:</td>
<td>2.5&quot; Rear HDD Kit (4U) includes:</td>
<td>2.5&quot; Internal Drive Bracket Required Additional Ports:</td>
<td>2.5&quot; or 3.5&quot; Internal drive bracket Required Additional Ports:</td>
<td>Includes two internal slots for M.2 NVMe™ SSDs (22x110mm, 22x80mm, 22x60mm) allowing any system to yield high-performance and low power storage expandability.</td>
</tr>
<tr>
<td>2x SATA Cables</td>
<td>2x SATA Cables</td>
<td>2x SATA Cables</td>
<td>2x SATA Cables (CBL-0179L)</td>
<td>2x SATA Cables (CBL-0289L)</td>
<td>-Supported systems: Any system with a free PCI-E 3.0 x8 low-profile slot</td>
</tr>
<tr>
<td>Mounting Hardware</td>
<td>Mounting Hardware</td>
<td>Mounting Hardware</td>
<td>SAT6 Power (CBL-0289L)</td>
<td>SAT6 Power (CBL-0082L)</td>
<td>-Supported systems: Any system with a free PCI-E 3.0 x8 low-profile slot</td>
</tr>
</tbody>
</table>

### Caching and Backup Battery Options for SAS Controllers

SuperStorage Hardware RAID controllers support options for cache backup using super capacitors for reliable data protection even through power outages. Broadcom® CacheCade™ offers a performance boost to optimize hot-file storage applications using a small number of SSDs.

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- **2.5" drive bay Mount For CacheVault™ – MCP-240-00127-0N**
- **Broadcom® CacheCade™ AOC-CHCD-PRO2-KEY**

For a complete list please visit [www.supermicro.com/products/accessories/index.cfm?Type=20](http://www.supermicro.com/products/accessories/index.cfm?Type=20)