

# SUPERMICRO®

## Storage Server Solutions

### Double-Sided High-Density Storage Architecture

High-Performance **6Gb/s SAS2** Expanders, RAID Cards and Serverboards

Redundant **Platinum/Gold Level High Efficiency (94%+) Power Supplies**



SC847 Front View



Rear View - Server Model (36 HDDs in 4U space)



Rear View - JBOD Model (45 HDDs in 4U space)

### The Industry's Most Optimized Line of Storage Server Building Block Solutions®

- **6Gb/s SAS (SAS 2.0) Expanders, RAID Cards and Serverboard choices**
- **High Storage Density (up to 45 HDDs in 4U), High Capacity Hot-Swap SAS/SATA HDDs - Ideal for SAN, NAS, Cloud, or iSCSI Applications**
- **Platinum/Gold Level Redundant Power Supplies (94%+ Efficiency)**
- **Widest Line of Supermicro's DP, UP, UIO, 18 DIMMs, 24 DIMMs, and MP Serverboards Supported**
- **Up to 7x PCI Expansion Slots**
- **100% Cooling Redundancy in 3U/4U**
- **Cable-less, Tool-less and Roller Rail Designs - Easy Installation and Maintenance**
- **Maximize Performance-Per-Watt, Reduce Total Cost of Ownership (TCO)**



[www.supermicro.com/storage](http://www.supermicro.com/storage)



**Double-Sided,  
Up to 36/45 Hot-Swap 3.5" HDDs in 4U**



**24 Hot-Swap 3.5" HDDs in 4U**



**24 Hot-Swap 3.5" HDDs in 4U**



Chassis Model:	SC847A/E1/E2/E16/E26-R920LPB/UB SC847A/E1/E2/E16/E26-R1400LPB/UB	SC848A-R1200B	SC846A/E1/E16/E26-R1200B
<b>Key Features:</b>	<ul style="list-style-type: none"> <li>New, Double-Sided Storage saves 2U of rack space with support of up to 36 to 45 HDDs in a 4U form factor</li> <li>Choose between Expander or Multilane solution with Redundant (1+1) Platinum/Gold-level 1400W Power Supplies with PMBus support</li> </ul>	<ul style="list-style-type: none"> <li>4-way processor support, with Redundant (2+1) Gold-level 1200W Power Supplies</li> <li>Up to 24 x 3.5" Hot-Swap HDDs support with 7 Full-Height, Full-Length expansion slots, along with 7 Hot-Swap cooling fans</li> </ul>	<ul style="list-style-type: none"> <li>24 Hot-Swap 3.5" HDDs and 2 fixed Internal hard drive bays in a 4U form factor.</li> <li>100% cooling Redundancy with adjustable air shroud. Support for Single or Dual processors</li> </ul>
<b>Form Factor:</b>	4U Storage Chassis, 27.5" depth	4U Storage Chassis, 26" depth	4U Storage Chassis, 26" depth
<b>Motherboard Support:</b>	ATX, E-ATX and UIO Motherboards up to 13.68" x 13"	4-way MP motherboards up to 16" x 14.3"	ATX, E-ATX and UIO Motherboards up to 13.68" x 13"
<b>Processor Support:</b>	Dual & Single Intel® & AMD processors	Quad Intel® & AMD Opteron Processors	Dual & Single Intel® & AMD processors
<b>Expansion Slots:</b>	<b>LPB:</b> 7x low-profile expansion slots <b>UB:</b> 4x full-height, half-length and 3x low-profile expansion slots	7x full-height, full-length PCI / AOC expansion slots	7x full-height, full-length PCI / AOC expansion slots
<b>Drive Bays:</b>	<b>36x</b> (24 front + 12 rear) hot-swap 3.5" HDDs for server chassis <b>45x</b> (24 front + 21 rear) hot-swap 3.5" HDDs for JBOD chassis SAS or enterprise SATA HDD only recommended <b>A:</b> Mini-i-Pass (SFF 8087) connectivity multi-lane <b>E1:</b> Single SAS expander w/ iPass connector <b>E2:</b> Dual SAS2 expanders w/ iPass connector <b>E16:</b> Single SAS2 expander w/ iPass connector <b>E26:</b> Dual SAS2 expanders w/ iPass connector	<b>24x</b> 3.5" Hot-swap SAS/SATA Drive Bays SAS or enterprise SATA HDD only recommended	<b>24x</b> 3.5" Hot-swap SAS/SATA Drive Bays SAS or enterprise SATA HDD only recommended <b>A:</b> Mini-i-Pass (SFF 8087) connectivity multi-lane <b>E1:</b> Single SAS expander w/ iPass connector <b>E16:</b> Single SAS2 expander w/ iPass connector <b>E26:</b> Dual SAS2 expanders w/ iPass connector
<b>Power Supply:</b>	Redundant <b>920W Platinum-Level</b> (94%+) power supplies with PMBus function Redundant <b>1400W Gold-Level</b> (93%+) power supplies with PMBus function	Redundant <b>1200W Gold-Level</b> (93%+) high-efficiency power supplies with PMBus function	Redundant <b>1200W Gold-Level</b> (93%+) high-efficiency power supplies with PMBus function
<b>Cooling System:</b>	7x 8cm hot-swap cooling fans, redundant cooling	7 (4+3) x 80 x 38mm hot-swap cooling fans	3x 5000 RPM Hot-swap Cooling PWM Fans 2x 5000 RPM Hot-swap Rear Exhaust PWM Fans
<b>Dimensions (WxHxD)/ Gross Weight:</b>	17.2" x 7" x 27.5" (437 x 178 x 699mm) 75 to 80 lbs (34-36.3 kg)	17.2" x 7" x 26" (437 x 178 x 660mm) 91 lbs (41.3 kg)	17.2" x 7" x 26" (437 x 178 x 660mm) 75 lbs (34 kg)

**Optimized Serverboards**

SAS2



**X8DT6(-F)**

Intel® Xeon® processor 5500 series, Intel® 5520 chipset with QPI up to 6.4 GT/s

Ext. ATX 12"W x 13"H  
12 DIMMs  
3x PCI-E 2.0 x8  
1x PCI-E 2.0 x4  
1x PCI-E x4

6 PCI-E 2.0



**X8DTE(-F)**

Intel® Xeon® processor 5500 series, Intel® 5520 chipset with QPI up to 6.4 GT/s

Ext. ATX 12"W x 13"H  
12 DIMMs  
4x PCI-E 2.0 x8  
1x PCI-E 2.0 x4  
1x PCI-E x4

UIO



**X8DTU(-F)**

Intel® Xeon® processor 5500 series, Intel® 5520 chipset with QPI up to 6.4 GT/s

Proprietary 12.075"W x 13.05"H  
12 DIMMs  
For UIO chassis with Riser Card:  
1x PCI-E 2.0 x16 +  
1x PCI-E 2.0 x8; or  
3x PCI-E 2.0 x8

18 DIMMs / PCI-X



**X8DTN+**

Intel® Xeon® processor 5500 series, Intel® 5520 chipset with QPI up to 6.4 GT/s

Ext. ATX 13.68"W x 13"H  
18 DIMMs  
2x PCI-E 2.0 x8 (1 in x16)  
1x PCI-E x4 (in x8)  
2x PCI-X 133/100MHz  
1x PCI-X 133MHz  
1x UIO slot (PCI 2.0 x8)

18 DIMMs / 7 PCI-E 2.0



**X8DAH+(-F)**

Intel® Xeon® processor 5500 series, **Dual** Intel® 5520 chipset with QPI up to 6.4 GT/s

Ext. ATX 13.68"W x 13"H  
18 DIMMs  
2x PCI-E 2.0 x16  
4x PCI-E 2.0 x8 (1 in x16)  
1x PCI-E 2.0 x4 (in x8)

Note: For JBOD mode, a storage power-up control board (CSE-PTJBOD-CBI) required

# Maximum Performance-Per-Watt, High Density, High Capacity Storage Chassis

16 Hot-Swap 3.5" HDDs in 3U

16 Hot-Swap 3.5" HDDs in 3U

12 Hot-Swap 3.5" HDDs in 2U

24/16 Hot-Swap 2.5" HDDs in 2U



## SC936A/E1/E2/E16/E26-R1200B

## SC836A/E1/E2/E16/E26-R1200B

## SC826A-R1200UB/LPB

## SC216A/E1/E2/E16/E26-R1200UB/LPB SC213A-R720UB/LPB

- 16 vertically-mounted Hot-Swap 3.5" HDD's in 3U form factor
- In addition to Multilane connectivity and Single SAS Expander, the E2 model provides a Dual SAS Expander ideal for high-data-availability

- 16 horizontally-mounted Hot-Swap 3.5" HDD's in 3U form factor
- Redundant (1+1) Gold-level Power Supplies with support for 7 Full-Height, Full-Length expansion slots

- 12x 3.5" HDDs in a 2U form factor with single or dual processor support
- The 1200W chassis models come with palletized package designed to protect the system during shipment

- 2.5" SAS or Enterprise SATA HDD support (up to 16 HDDs in the SC213 and up to 24 HDDs in SC216) in a 2U form factor
- 7 Low-Profile or UIO expansion slots available, along with Single or Dual processor support

3U Storage Chassis, 25.5" depth

3U Storage Chassis, 25.5" depth

2U Storage Chassis, 25.5" depth

2U Storage Chassis, 24.8" depth

ATX, E-ATX and UIO Motherboards up to 13.68" x 13"

ATX, E-ATX and UIO Motherboards up to 13.68" x 13"

ATX, E-ATX and UIO Motherboards up to 12" x 13", 13.68" x 13"

ATX, E-ATX and UIO Motherboards up to 13.68" x 13" E-ATX

Dual & Single Intel® Xeon® & AMD processors

Dual & Single Intel® & AMD processors

Dual & Single Intel® & AMD processors

Dual & Single Intel® & AMD processors

7x full-height, full-length PCI / AOC expansion slots

7x full-height, full-length PCI / AOC expansion slots

**LPB:** 7x low-profile expansion slots  
**UB:** 4x full-height, half-length and 3x low-profile expansion slots

**LPB:** 7x low-profile expansion slots  
**UB:** 4x full-height, half-length and 3x low-profile expansion slots

16x 3.5" Hot-swappable SAS Drive Bays  
SAS or enterprise SATA HDD only recommended  
**A:** Mini-i-Pass (SFF 8087) connectivity multi-lane  
**E1:** Single SAS expander w/ iPass connector  
**E2:** Dual SAS expanders w/ iPass connector  
**E16:** Single SAS2 expander w/ iPass connector  
**E26:** Dual SAS2 expanders w/ iPass connector

16x 3.5" Hot-swappable SAS / SATA Drive Bays  
SAS or enterprise SATA HDD only recommended  
**A:** Mini-i-Pass (SFF 8087) connectivity multi-lane  
**E1:** Single SAS expander w/ iPass connector  
**E2:** Dual SAS expanders w/ iPass connector  
**E16:** Single SAS2 expander w/ iPass connector  
**E26:** Dual SAS2 expanders w/ iPass connector

12x hot-swap 3.5" SAS/SATA drive bays  
SAS or enterprise SATA HDD only recommended  
**A:** Mini-i-Pass (SFF 8087) connectivity multi-lane  
**E1:** Single SAS expander w/ iPass connector  
**E2:** Dual SAS expanders w/ iPass connector  
**E16:** Single SAS2 expander w/ iPass connector  
**E26:** Dual SAS2 expanders w/ iPass connector

**SC216:** 24x hot-swap 2.5" SAS/SATA drive bays  
**SC213:** 16x hot-swap 2.5" SAS/SATA drive bays  
SAS or enterprise SATA HDD only recommended  
**A:** Mini-i-Pass (SFF 8087) connectivity multi-lane  
**E1:** Single SAS expander w/ iPass connector  
**E2:** Dual SAS expanders w/ iPass connector  
**E16:** Single SAS2 expander w/ iPass connector  
**E26:** Dual SAS2 expanders w/ iPass connector

Redundant 1200W Gold-Level (93%+) high-efficiency power supplies with PMBus function

Redundant 1200W Gold-Level (93%+) high-efficiency power supplies with PMBus function

Redundant 1200W Gold-Level (93%+) high-efficiency power supplies with PMBus function

**SC216:** Redundant 1200W Gold-Level (93%+) High-Efficiency power supplies with PMBus function  
**SC213:** Redundant 720W Gold-Level (93%+) High-Efficiency power supplies with PMBus function

3x 8cm 4-pin PWM Fans  
2x 8cm Rear 4-pin Exhaust PWM Fans

3x 80mm Hot-swap 4-pin PWM Fans  
2x 80mm Rear-exhaust 4-pin PWM Fans

3x 80mm 6300 RPM PWM cooling fans

3x 80mm 6300 RPM PWM cooling fans

17.2" x 5.2" x 25.5" (437 x 132 x 648mm)  
67 lbs (34 kg)

17.2" x 5.2" x 25.5" (437 x 132 x 648mm)  
72 lbs (32.7 kg)

17.2" x 3.5" x 25.5" (437 x 89 x 648mm)  
57 lbs (25.9 kg)

17.2" x 3.5" x 24.8" (437 x 89 x 630mm)  
54 lbs (24.5 kg)

SAS2 / 7 PCI-E 2.0



7 PCI-E 2.0



SAS2 / 16 DIMMs



16 DIMMs



SAS2 / 16 DIMMs



### X8DTH-6(F)

Intel® Xeon® processor 5500 series, **Dual** Intel® 5520 chipset with QPI up to 6.4 GT/s

Ext. ATX 12"W x 13"H  
12 DIMMs  
7x PCI-E 2.0 x8 (all in x16 slots)

### X8DTH-i(F)

Intel® Xeon® processor 5500 series, **Dual** Intel® 5520 chipset with QPI up to 6.4 GT/s

Ext. ATX 12"W x 13"H  
12 DIMMs  
7x PCI-E 2.0 x8 (all in x16 slots)

### H8DA6+(-F)

Six-Core/Quad-Core AMD Opteron™ processor 2400/2300 series; **Dual** AMD SR5690/SP5100 chipset support

Ext. ATX 13.68"W x 13.05"H  
16 DIMMs  
4 PCI-E 2.0 16  
2 PCI-E 2.0 x4 (in x8 slot)  
1 PCI

### H8DI3+(-F)

Six-Core/Quad-Core AMD Opteron™ processor 2400/2300 series; AMD SR5690/SP5100 chipset support

Ext. ATX 12"W x 13.05"H  
16 DIMMs  
2x PCI-E 2.0 x8 (in x16)  
1x PCI-E 2.0 x4 (in x8)  
1x PCI-E x8  
2x 64-bit PCI-X 133/100

### H8QI6-F

Six-Core/Quad-Core AMD Opteron™ processor 8400/8300 series; **Dual** AMD SR5690/SP5100 chipset support

Ext. ATX 16.4"W x 13"H  
16 DIMMs  
3 PCI-E 2.0 x16  
1 PCI-E 2.0 x8  
2 PCI-E 2.0 x4 (in x8 slot)  
1 UIO slot

## Defining the reference standard for 6Gb/s SAS Storage Server Building Block Solutions®

Supermicro's high-performance 6Gb/s SAS (SAS 2.0) storage solutions raise the bar in high-performance enterprise storage networking by doubling the bandwidth, offering superior scalability, and enhanced features. 6Gb/s SAS (SAS 2.0) technology offers a number of significant improvements over 3Gb/s SAS and SATA such as a 6Gb per second data transfer rate, zoning, and support for cable lengths of up to 10 meters to ensure storage integrity in large cluster and datacenter deployments. In addition to being fully backward compatible, the 6Gb/s SAS controllers interact with the Expanders and other infrastructure devices to improve system diagnostics, status, management, configuration and initialization. This further enhances the system robustness and enablement of large topologies by providing multi-device interoperability and improvement in system availability.

### Platinum/Gold Level (94%+) Efficiency

Supermicro has mastered the power supply design challenge to produce high-quality, high-performance solutions with peak efficiency ratings of 94% and higher. This makes Supermicro systems the leading green standard for server chassis solutions.

### 100% Redundant Cooling Systems

With patented 100% redundant cooling designs, Supermicro systems can run continuously at their full potential, even when a fan failure occurs. With expertly engineered high-performance fans and unique air shrouds, Supermicro offers dramatically reduced downtime due to thermal issues.



### Onboard IPMI 2.0

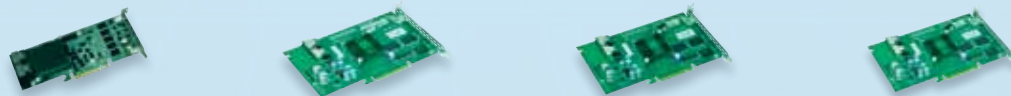
Many Supermicro X8 motherboards now offer IPMI 2.0 capabilities onboard through a dedicated LAN port to support both Virtual Media over LAN and KVM-over-LAN. This convenient remote management feature is provided through an onboard BMC (Baseboard Management Controller) that improves reliability and maintainability while reducing costs.

### RoHS Compliant

Supermicro is proud to rally a migration to earth-friendly server products that contain minimal amounts of hazardous substances. With the RoHS Directive changing the electronics industry worldwide, Supermicro produces environmentally safe products that meet or exceed RoHS requirements.

## 6Gb/s SAS (SAS 2.0) UIO RAID Controllers

Supermicro's 6Gb/s SAS (SAS 2.0) products provide superior performance, advanced scalability, better compatibility, and a zero price premium when compared to previous generation SAS solutions. The second-generation 6Gb/s SAS link speed doubles the data transfer rate to 6.0 Gbps and is backward compatible with 3Gb/s SAS (SAS1).



Model	AOC-USAS2LP-H8iR	AOC-USAS2-L8i	AOC-USAS2-L8e	AOC-USAS2-L8iR
Type	UIO	UIO	UIO	UIO (coming soon!)
Controller/IOP	LSISAS 2108	LSISAS 2008	LSISAS 2008	LSISAS 2008
SAS Port	8 ports, 6Gb/s per port 8 Internal, Low Profile	8 ports, 6Gb/s per port 8 Internal	8 ports, 6Gb/s per port 8 Internal	8 ports, 6Gb/s per port 8 Internal
RAID	RAID 0, 1, 5, 6, 10, 50, 60	RAID 0, 1, 10, 1E	IT mode / HBA	RAID 0, 1, 5, 10
Onboard Cache	512 MB DDR2 on-card cache w/battery backup option	-	-	-

## Network Adapters



Model	AOC-UINF-m2	AOC-UIBQ-m2	AOC-UIBQ-m1	AOC-UTG-i2	AOC-UG-i4	AOC-PG-i2+	AOC-EXPX9502FXSR
Type	UIO	UIO	UIO	UIO	UIO	Proprietary	Standard
Description	Low-profile dual-port InfiniBand 20Gb	Low-profile dual-port InfiniBand 40Gb	Low-profile single-port InfiniBand 40Gb	Full-height dual-port 10GbE*	Full-height quad-port 1GbE*	Low-profile dual-port 1GbE*	Low-profile dual-port 10GbE
Interface	PCI-E x8 2.0 (5GT/s)	PCI-E x8 2.0 (5GT/s)	PCI-E x8 2.0 (5GT/s)	PCI-E x8	PCI-E x8	PCI-E x4	PCI-E x8
Port	2 CX4 ports	2 QSFP ports	1 QSFP port	2 CX4 ports	4 RJ45 ports	2 RJ45 ports	2 XFP ports
Speed	20 Gb/port	40Gb/port	40 Gb/port	10 Gb/port	1 Gb/port	1 Gb/port	10 Gb/port
Controller	Mellanox® ConnectX-2 DDR	Mellanox® ConnectX-2 QDR	Mellanox® ConnectX-2 QDR	Intel® 82598EB	2x Intel® 82571EB	Intel® 82576EB	Intel® 82598EB

\* Standard form factor is available as bundled solution with Supermicro server and motherboards.