

SUPERMICRO®

6Gb/s SAS 2.0

High-Performance Enterprise Server & Storage Solutions



The industry's broadest line of 6Gb/s SAS (SAS 2.0) Server & Storage Building Block Solutions®

- 6Gb/s SAS on wide range of SuperServers and Storage Server Chassis based upon Intel® Westmere and AMD G34 processors
- Enterprise-ready data storage with high-reliability, quality and performance at an affordable price point
- Serverboards with onboard 6Gb/s SAS, RAID and IPMI for cost reduction and seamless integration
- 6Gb/s per port Add-On-Cards (UIO based), 2.5" and 3.5" HDD support enhances flexibility and facilitates optimized designs
- End-to-End 6Gb/s SAS (Serverboards, Add-On-Cards, Expander Backplanes and HDDs) that boost performance (more than double performance improvement over 3Gb/s SAS)
- Support for both Software and Hardware RAID (RoC). Support for RAID levels including RAID 0, 1, 5, 6, 10, 50, 60
- Fully backward compatible with previous generation SAS/SATA solutions for managed transition to 6Gb/s SAS



94%/93% Power Efficiency
For TCO improvement and earth-friendly computing



2.5" HDD



3.5" HDD



2.5" HDD



3.5" HDD



920W Platinum Level Power and 100% Cooling Redundancy



MODEL	SuperServer 6016T-URF4+ SuperServer 1026T-URF4+ SuperServer 6016T-6F	SuperServer 1016I-M6F SuperServer 5016I-M6F	SuperServer 6036T-6RF
Key Features	<ul style="list-style-type: none"> HPC cluster computer nodes, datacenter, data farm, front-end server and other computing intensive applications Up to 3 add-on cards Higher I/O performance Flexible UIO SAS or connectivity cards IPMI 2.0 + KVM with dedicated LAN Redundant 700W/563W Gold Level high-efficiency power supplies 	<ul style="list-style-type: none"> HPC cluster computer nodes, datacenter, data farm, front-end server and other computing intensive applications Outstanding price/performance Cost effective, low power consumption Cloud computing Virtualized servers IPMI 2.0 + KVM with dedicated LAN 560W Silver Level / 350W high-efficiency power supply 	<ul style="list-style-type: none"> HPC cluster computer nodes, datacenter, data farm, front-end server and other computing intensive applications Up to 5 add-on cards Higher I/O performance Connectivity cards 8x 3.5" SAS drive bays IPMI 2.0 + KVM with dedicated LAN Redundant 920W Platinum Level high-efficiency power supply
Processor Support	Dual Intel® Xeon® Processor 5600/5500 Series	Intel® Xeon® processor 3400 series	Dual Intel® Xeon® Processor 5600/5500 Series
Chipset	Intel® 5520 chipset with QPI up to 6.4GT/s	Intel® 3420 chipset	Intel® 5520 chipset with QPI up to 6.4GT/s
System Memory (max.)	192 GB of DDR3 Reg. ECC; 48 GB Unb. ECC/Non-ECC 1333/1066/800 MHz SDRAM SS1026T-URF4+ / SS6016T-URF4+: 18 DIMMs SS6016T-6F: 12 DIMMS	16 GB UDIMM or 32 GB RDIMM ECC DDR3; 1333/1066/800 MHz SDRAM in 6 DIMMs	192 GB of DDR3 Reg. ECC; 48 GB Unb. ECC/Non-ECC 1333/1066/800 MHz SDRAM in 12 DIMMS
Expansion Slots	SS1026T-URF4+ / SS6016T-URF4+: Left Slot (Full-height / Half-length): 1 UIO slot, 1 PCI-E 2.0 x16 Right Slot (Low-profile): 1 PCI-E 2.0 x8 SS6016T-6F: 1 PCI-E 2.0 x8	1 PCI-E 2.0 x8 (in x16 slot)	3 PCI-E 2.0 x8 1 PCI-E 2.0 x4 (in x8 slot) 1 PCI-E x4 (in x8 slot)
Onboard SAS RAID	SS1026T-URF4+ / SS6016T-URF4+: With optional UIO SAS card SS6016T-6F: LSI® 2008 6Gb/s SAS (SAS2) controller RAID 0,1,10; Optional AOC-SAS2-RAID5-KEY to enable RAID 5	LSI® 2008 6Gb/s SAS (SAS2) controller RAID 0,1,10; Optional AOC-SAS2-RAID5-KEY to enable RAID 5	LSI® 2008 8-port 6Gb/s SAS (SAS2) RAID 0,1,10; Optional AOC-SAS2-RAID5-KEY to enable RAID 5
Networking/VGA/Audio	SS1026T-URF4+ / SS6016T-URF4+: Quad LAN with Intel® 82576 Gigabit Ethernet controller SS6016T-6F: Dual Gigabit Ethernet LAN via 2x Intel® 82574L	Dual Gigabit Ethernet LAN via 2x Intel® 82574L	Dual Gigabit Ethernet LAN via 2x Intel® 82574L
Manageability	IPMI 2.0 with dedicated LAN SuperDoctor® III, Watch Dog	IPMI 2.0 + KVM with dedicated LAN SuperDoctor® III, Watch Dog	IPMI 2.0 + KVM with dedicated LAN SuperDoctor® III, Watch Dog
Drive Bays	SS1026T-URF4+: 8x 2.5" hot-swap drives with optional SAS2 UIO card SS6016T-URF4+: 4x 3.5" hot-swap drives with optional SAS2 UIO card SS6016T-6F: 4x 3.5" hot-swap SAS2 drive bays	SS1016I-M6F: 8x 2.5" hot-swap SAS2 drive bays SS5016I-M6F: 4x 3.5" hot-swap SAS2 drive bays	8x 3.5" hot-swap SAS2 drive bays 2x 5.25" drive bays
Power Supply	SS1026T-URF4+ / SS6016T-URF4+: Redundant 700W Gold Level high-efficiency power supply SS6016T-6F: 563W Gold Level high-efficiency power supply	SS1016I-M6F: 560W Silver Level high-efficiency power supply SS5016I-M6F: 350W Gold Level high-efficiency power supply	Redundant 920W Platinum Level efficiency power supply
Cooling System	SS1026T-URF4+ / SS6016T-URF4+: 5 counter rotating fans w/ optimal fan speed control; 1 air shroud SS6016T-6F: 4 counter rotating fans w/ optimal fan speed control; 1 air shroud	4x 4cm high-efficiency PWM fans	3x 8cm hot-swap PWM cooling fans and 2x 8cm rear-exhaust PWM fans with air shroud, optimal fan speed control & 100% cooling redundancy
Form Factor	1U Rackmount SS6016T-6F: 17.2"x1.7"x25.6" (437x43x650mm) SS6016T-URF4+: 17.2"x1.7"x26.6" (437x43x676mm) SS1026T-URF4+: 17.2"x1.7"x27.75" (437x43x705mm)	1U Rackmount SS1016I-M6F: 17.2"x1.7" x20" (437x43x508mm) SS5016I-M6F: 17.2"x1.7"x19.8" (437x43x503mm)	3U Rackmount 17.7"x5.2"x25.6" (450x132x650mm)

More Than Double Performance Improvement over 3Gb/s SAS

920W Platinum Level Power and 100% Cooling Redundancy



Whisper-Quiet Workstation (28dB)



A+ Twelve/Eight-Core Solution



A+ Six-Core Solution GPU Supercomputing Server/Workstation



SuperServer 7046T-6F SuperServer 7046T-H6R

- High-end server, business critical applications, front-end server, database applications, video server
- High performance 4U server
- Exceptional I/O bandwidth: 7 PCI-Express 2.0 x8 (all in x16 slot)
- 8x hot-swap SAS drive bays
- 920W **Platinum Level** / Redundant 800W high-efficiency power supply

SuperWorkstation 7046A-6

- High-end workstation, business critical applications, front-end server, database applications, video server
- Whisper-Quiet workstation (28dB) with high-end graphics support
- Exceptional I/O bandwidth: 4 PCI-E + 3 PCI-X slots
- 8x hot-swap SAS drive bays
- 7.1 HD audio
- 2 IEEE 1394a ports
- 865W low-noise high efficiency power supply

A+ Server 2042G-6RF

- Enterprise level 4-way system
- Up to 6 SAS/SATA drive bays
- 2 PCI-Express x16 and HyperTransport
- 512 GB DDR3 1333/1066/800 SDRAM
- 2 Gigabit Ethernet ports
- IPMI 2.0 management with dedicated LAN
- Redundant 1400W **Gold Level** power supply

A+ Server 4021GA-62+RF

- GPU computing for HPC applications, Scientific computing, Personal supercomputer, High-end workstation
- Six-Core AMD® Opteron™ processor with HT3 Hyper Transport Link
- 4x PCI-E 2.0 x16 for 4 double-width GPU cards
- LSI® 2008 6Gb/s SAS (SAS2) support
- 7.1 HD audio
- 2 IEEE 1394a ports
- Redundant 1400W **Gold Level** power supply

Dual Intel® Xeon® Processor 5600/5500 Series

Dual Intel® Xeon® Processor 5600/5500 Series

Twelve/Eight-Core AMD Opteron™ 6100 Series Processors

Dual Six-Core AMD® Opteron™ 2000 Series Processors

Dual Intel® 5520 chipset with QPI up to 6.4GT/s

Intel® 5520 chipset with QPI up to 6.4GT/s

HyperTransport™ technology
AMD SR5690/SR5670 & SP5100

HyperTransport™ technology
Dual AMD SR5690

192 GB of DDR3 Reg. ECC;
48 GB Unb. ECC/Non-ECC
1333/1066/800 MHz SDRAM in 12 DIMMs

192 GB of DDR3 Reg. ECC;
48 GB Unb. ECC/Non-ECC
1333/1066/800 MHz SDRAM in 12 DIMMs

512 GB ECC Reg. DDR3
1333/1066/800 SDRAM in 32 DIMM sockets

128GB of DDR2 Reg. ECC
800/667/533 MHz SDRAM in 16 DIMMs

SS7046T-6F:
3 PCI-E 2.0 x8
1 PCI-E 2.0 x4
1 PCI-E x4
SS7046T-H6R:
7 PCI-E 2.0 x8 (all in x16 slot)

1 PCI-E 2.0 x16
2 PCI-E 2.0 x4 (in x8 slot)
1 PCI-E x4 (in x8 slot)
3 PCI-X 133/100MHz

2 PCI-E 2.0 x16 (low profile)
1 PCI-E 2.0 x8 (low profile)
1 UIO or PCI-E 2.0 x8 (low profile)

4 PCI-E 2.0 x16 for 4 double-width GPU cards or;
4 PCI-E 2.0 x16
2 PCI-E 2.0 x4 (in x8 slot)
1 PCI

LSI® 2008 8-port 6 Gb/s SAS (SAS2)
RAID 0,1,10;
Optional AOC-SAS2-RAID5-KEY to enable RAID 5

LSI® 2008 8-port 6Gb/s SAS (SAS2)
RAID 0,1,10;
Optional AOC-SAS2-RAID5-KEY to enable RAID 5

LSI® 2008 6Gb/s SAS (SAS2)
RAID 0,1,10;
Optional AOC-SAS2-RAID5-KEY to enable RAID 5

LSI® 2008 6Gb/s SAS (SAS2)
RAID 0,1,10;
Optional AOC-SAS2-RAID5-KEY to enable RAID 5

SS7046T-6F:
Dual Gigabit Ethernet LAN with Intel® 82574L
SS7046T-H6R:
Dual Gigabit Ethernet LAN with Intel® 82576

Dual Gigabit Ethernet LAN via 2x Intel® 82574L
7.1 HD audio
Dual IEEE 1394a ports

Dual LAN with Intel 82576 Gigabit Ethernet controller
Matrox G200eW graphics controller

Dual Gigabit Ethernet LAN with Intel® 82576
7.1 HD audio
Dual IEEE 1394a ports

SuperDoctor® III, Watch Dog

SuperDoctor® III, Watch Dog

IPMI 2.0, KVM and virtual media over LAN
SuperDoctor® III, Watch Dog

IPMI 2.0, KVM and virtual media over LAN
SuperDoctor® III, Watch Dog

8x 3.5" hot-swap SAS2 drive bays

8x 3.5" hot-swap SAS2 drive bays
2x 5.25" peripheral drive bays
1x 5.25" bay for 3.5" device

6x 3.5" hot-swap SAS2 or SATA drive bays
1x slim DVD-ROM drive

8x 3.5" hot-swap SAS2 or SATA drive bays
3x 5.25" peripheral drive bays

SS7046T-6F:
920W **Platinum Level** high-efficiency power supply (optional redundant)
SS7046T-H6R:
Redundant 800W high-efficiency power supply

865W Bronze Level **Whisper-Quiet (28dB)** high-efficiency power supply

Redundant 1400W **Gold Level** high efficiency power supply with I2C built-in

Redundant 1400W **Gold Level** power supply with Power Management (PMBus) support

3x 8cm hot-swap PWM cooling fans and 2x 8cm rear-exhaust PWM fans with air shroud, optimal fan speed control & 100% cooling redundancy

4x 8cm Whisper-Quiet PWM cooling fans and 1x 9cm Whisper-Quiet rear exhaust fan with air shroud, optimal fan speed control

6 x 8cm heavy duty fans with air shroud & optimal fan speed control

2x 9cm hot-swap PWM cooling fans (additional two fans optional)
1x 9cm hot-swap PWM exhaust fans

4U Tower/Rackmount
17.2"x7"x25.5" (437x178x648mm)

4U Tower/Rackmount
17.8"x7"x25.5" (452x178x648mm)

2U Rackmount
17.2"x3.5"x27.9" (437x89x709mm)

4U Tower/Rackmount
17.8"x7"x29.4" (452x178x746mm)

Supermicro's high-performance 6Gb/s SAS (SAS 2.0) solutions raise the bar in high-performance enterprise data storage by doubling the bandwidth, offering superior scalability, and enhanced features. 6Gb/s SAS 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. 6Gb/s SAS controllers interact with the Expanders and other infrastructure devices to improve HDD connectivity and maximize PCI-E slots. 6Gb/s SAS along with IMPI improves system diagnostics, status, management, configuration and initialization. 6Gb/s SAS enhances system robustness and enables large topologies by providing multi-device interoperability, reducing system downtime and the possibility of system congestion caused by I/O bottlenecks.

Motherboards with onboard 6Gb/s SAS (SAS 2.0) & Optional RAID5 Key

Supermicro's extensive line of products with onboard 6Gb/s SAS technology includes 1U, 2U, 3U and 4U rack mount or Tower servers and workstations with both 2.5" and 3.5" hard drive support. Based on the X8DTH-6(F), X8DT6(-F), X8DTU-6F+/6TF+, X8DTL-6(F), X8DA6, X8SI6-F, H8DA6+(-F), H8QI6-F and H8QG6-F motherboards, Supermicro 6Gb/s SAS systems feature the industry's leading thermal and power designs to deliver optimal performance-per-watt and performance-per-dollar.



AOC-SAS2-RAID5-KEY

- IMR mode supports RAID 0,1,10,5
- Supports 16 physical Devices
- Supports 1.5, 3.0 and 6.0 Gb/s SAS and SATA data transfer rates
- OS Support : Windows XP, 2k3, 2k8, Vista, RedHat Enterprise and SUSE Linux

Xeon [®] 5600/5500	Xeon [®] 5600/5500	Xeon [®] 5600/5500 2108 ROC	Xeon [®] 5600/5500	Xeon [®] 5600/5500	Xeon [®] 3400	Istanbul	Istanbul 2108 ROC	Magny Cours
X8DTH-6(F)	X8DT6(-F)	X8DTU-6F+/6TF+	X8DTL-6(F)	X8DA6	X8SI6-F	H8DA6+(-F)	H8QI6-F	H8QG6-F
12 DIMMs 7 PCI-E 2.0 x8 (all in x16 slots)	12 DIMMs 3 PCI-E 2.0 x8 1 PCI-E 2.0 x4 (in x8) 1 PCI-E x4 (in x8)	18 DIMMs For 1U with Riser Card: 1 PCI-E 2.0 x8 + UIO, or 1 PCI-E 2.0 x16 For 2U with Riser Card: 4 PCI-E 2.0 x8	6 DIMMs 1 PCI-E 2.0 x8 (in x16) 2 PCI-E 2.0 x4 (in x8) 1 PCI-E x4 (in x8) 2 PCI 33	12 DIMMs 1 PCI-E 2.0 x16 2 PCI-E 2.0 x4 (in x8) 1 PCI-E x4 (in x8) 3 PCI-X 133/100MHz	6 DIMMs 1 PCI-E 2.0 x8 (in x16) 1 PCI-E x4 (in x8) 1 32-bit PCI slot	16 DIMMs 4 PCI-E 2.0 16 2 PCI-E 2.0 x4 (in x8) 1 PCI	16 DIMMs 3 PCI-E 2.0 x16 1 PCI-E 2.0 x8 2 PCI-E 2.0 x4 (in x8) 1 UIO	32 DIMMs 2 PCI-E 2.0 x16 2 PCI-E 2.0 x8 1 UIO

SAS 2.0 Storage Chassis (Direct Attach and Expander Backplanes)



SC847 Double-Sided, Up to 45x Hot-swap 3.5" HDDs in 4U	SC846 24x Hot-swap 3.5" HDDs in 3U	SC936 16x Hot-swap 3.5" HDDs in 3U	SC836 16x Hot-swap 3.5" HDDs in 3U	SC826 12x Hot-swap 3.5" HDDs in 2U	SC216 24x Hot-swap 2.5" HDDs in 1U

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

Supermicro UIO Servers, combined with riser cards and 6Gb/s SAS UIO RAID controller cards, can provide numerous server configurations to fit specific application needs. Customers can choose from many UIO chassis, such as the 1U SC119TQ-R700UB with 2.5" HDDs or SC819TQ-R700UB with 3.5" HDDs and from four 6Gb/s SAS UIO RAID controller cards to configure an optimized system.



Model	AOC-USAS2LP-H8iR	AOC-USAS2-L8iR	AOC-USAS2-L8i	AOC-USAS2-L8e
Type	UIO	UIO	UIO	UIO
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, 5, 10	RAID 0, 1, 10, 1E	IT mode / HBA
Onboard Cache	512 MB DDR2 on-card cache w/battery backup option	-	-	-