

SUPERMICR[®]

GPU

Supercomputing Server Solutions

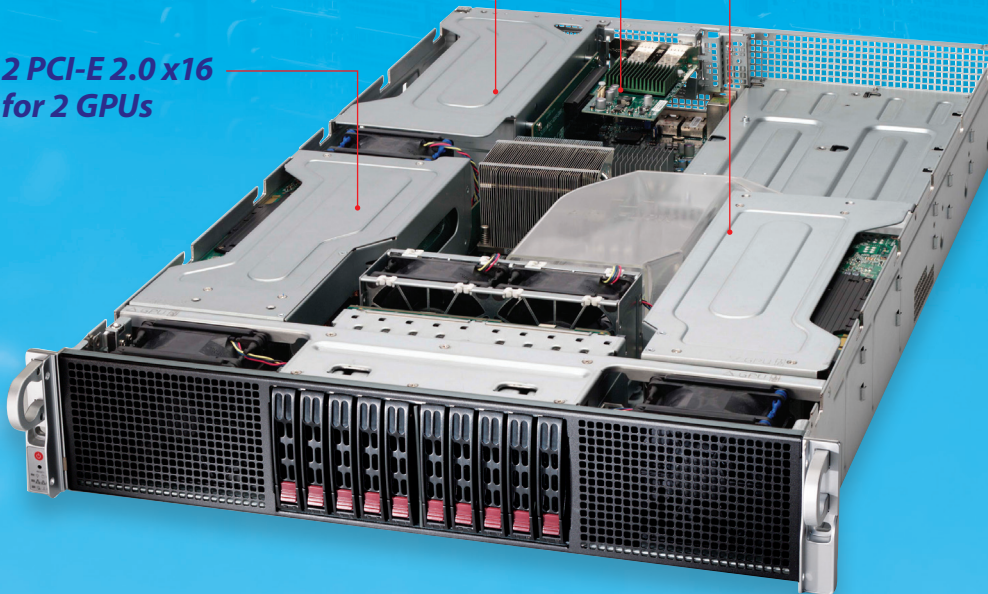
Up to 6/4 Double-Width GPUs in 2U

PCI-E 2.0 x8 low-profile add-on card

3 PCI-E 2.0 Slots or 2 GPUs

2 PCI-E 2.0 x16
for 2 GPUs

2 PCI-E 2.0 x16
for 2 GPUs



Medical Imaging



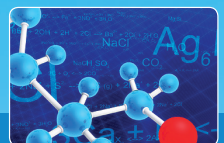
Oil & Gas Exploration



3D Rendering & Gaming



Astrophysics



Quantum Chemistry



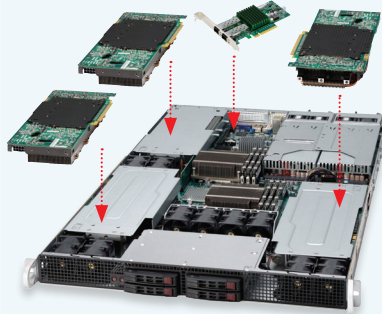
Financial Simulation

- **PERFORMANCE:** Up to 6/4 GPUs to maximize computing power
- **MAX. BANDWIDTH:** 4 PCI-E 2.0 x16, 2 PCI-E 2.0 x8, 2 PCI-E 2.0 x4 or other flexible configurations
- **MANAGEABILITY:** Server management & GPU status monitoring through IPMI 2.0
- **RELIABILITY:** Redundant power supplies & intelligent cooling control
- **EFFICIENCY:** Breakthrough system architecture to optimize TCO, with Platinum Level power supplies, advanced cooling, and high-end motherboard components

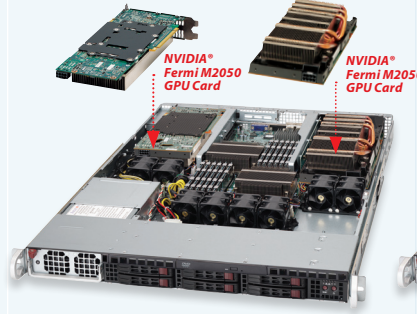




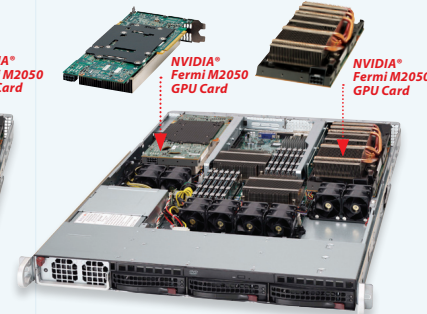
Enterprise Level
3x GPUs with redundant power supplies in 1U



Enterprise Level
2x GPUs with intelligent cooling control included in 1U



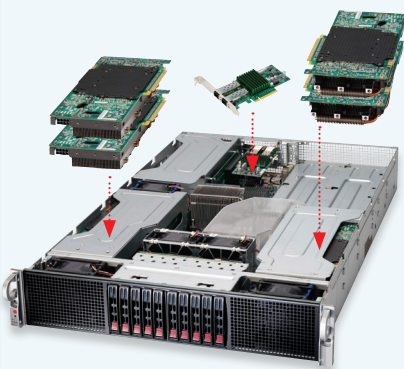
2x GPUs with intelligent cooling control included!



MODEL	SuperServer 1026GT-TRF-FM307 SuperServer 1026GT-TRF	SuperServer 1026GT-TF-FM205/FM207 SuperServer 1026GT-TF-FM105/FM107 SuperServer 1026GT-TF	SuperServer 6016GT-TF-FM205/FM207 SuperServer 6016GT-TF-FM105/FM107 SuperServer 6016GT-TF
Salient Features	<ul style="list-style-type: none"> Up to 3 double-width GPUs GPU health monitoring with fan speed control Platinum Level 94%+ high efficiency redundant 1800W power supplies Enterprise level IPMI management tool with GPU cooling control and status information 	<ul style="list-style-type: none"> Up to 2 double-width GPUs GPU health monitoring with fan speed control Gold Level 93%+ efficiency 1400W power supplies Enterprise level IPMI management tool with GPU cooling control and status information 	<ul style="list-style-type: none"> Up to 2 double-width GPUs GPU health monitoring with fan speed control Gold Level 93%+ efficiency 1400W power supplies Enterprise level IPMI management tool with GPU cooling control and status information
Processor Support	Intel® Xeon® Processor 5600/5500 Series	Intel® Xeon® Processor 5600/5500 Series	Intel® Xeon® Processor 5600/5500 Series
Chipset	Dual Intel® 5520 chipset with QPI up to 6.4GT/s + PLX8648	Intel® 5520 chipset with QPI up to 6.4GT/s	Intel® 5520 chipset with QPI up to 6.4GT/s
GPUs/Add-on Cards	1026GT-TRF-FM307: 3 NVIDIA® Fermi M2070 GPU cards are included	1026GT-TF-FM205/FM207: 2 NVIDIA® Fermi M2050/M2070 GPU cards are included 1026GT-TF-FM105/FM107: 1 NVIDIA® Fermi M2050/M2070 GPU card is included	6016GT-TF-FM205/FM207: 2 NVIDIA® Fermi M2050/M2070 GPU cards are included 6016GT-TF-FM105/FM107: 1 NVIDIA® Fermi M2050/M2070 GPU card is included
Motherboard	SUPER [®] X8DTG-QF+	SUPER [®] X8DTG-DF	SUPER [®] X8DTG-DF
System Memory (max.)	Up to 96 GB of DDR3 Reg. ECC 1333/1066/800 MHz SDRAM in 6 DIMMs	Up to 192 GB of DDR3 Reg. ECC; 48 GB Unb. ECC/Non-ECC 1333/1066/800 MHz SDRAM in 12 DIMMs	Up to 192 GB of DDR3 Reg. ECC; 48 GB Unb. ECC/Non-ECC 1333/1066/800 MHz SDRAM in 12 DIMMs
Expansion Slots	3 PCI-E 2.0 x16 (1026GT-TRF only) Center slot via riser card (low-profile): 1 PCI-E 2.0 x8 (in x16 slot)	2 PCI-E 2.0 x16 (1026GT-TF only) Center slot via riser card (low-profile): 1 PCI-E 2.0 x4 (in x16 slot)	2 PCI-E 2.0 x16 (6016GT-TF only) Center slot via riser card (low-profile): 1 PCI-E 2.0 x4 (in x16 slot)
Onboard SATA RAID	Intel® ICH10R for 6 SATA (3 Gbps): RAID 0, 1, 5, 10 (Windows) RAID 0,1,10 (Linux)	Intel® ICH10R for 6 SATA (3 Gbps): RAID 0, 1, 5, 10 (Windows) RAID 0,1,10 (Linux)	Intel® ICH10R for 6 SATA (3 Gbps): RAID 0, 1, 5, 10 (Windows) RAID 0,1,10 (Linux)
Onboard LAN/VGA/I/O	Dual LAN with Intel® 82576 Gigabit Ethernet Matrox G200eW Graphics	Dual LAN with Intel® 82576 Gigabit Ethernet Matrox G200eW Graphics	Dual LAN with Intel® 82576 Gigabit Ethernet Matrox G200eW Graphics
Manageability	IPMI 2.0 + KVM with dedicated LAN Watch Dog, SuperDoctor® III	IPMI 2.0 + KVM with dedicated LAN Watch Dog, SuperDoctor® III	IPMI 2.0 + KVM with dedicated LAN Watch Dog, SuperDoctor® III
Drive Bays	4x 2.5" hot-swap SATA drive bays	6x 2.5" hot-swap SATA drive bays	3x 3.5" hot-swap drive trays 1x Slim DVD drive (optional)
Power Supply	1800W Redundant Platinum Level high-efficiency power supply with I ² C & PMBus	1400W Gold Level high-efficiency power supply with I ² C & PMBus	1400W Gold Level high-efficiency power supply with I ² C & PMBus
Cooling System	10x 4cm heavy duty counter-rotating fan with optimal fan speed control	8x 4cm heavy duty counter-rotating fan with optimal GPU & CPU fan speed control	8x 4cm heavy duty counter-rotating fan with optimal GPU & CPU fan speed control
Form Factor	1U rackmount: 17.2"W (437mm) x 1.7"H (43mm) x 30.6"D (777mm)	1U rackmount: 17.2"W (437mm) x 1.7"H (43mm) x 28.2"D (716mm)	1U rackmount: 17.2"W (437mm) x 1.7"H (43mm) x 28.2"D (716mm)

Powering HPC and Cloud Computing Environments

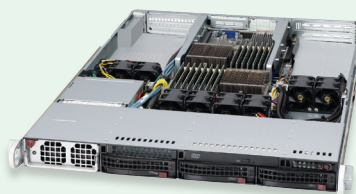
**2U GPU optimized server with
Up to 6/4 Double-Width GPUs**



**Tower/4U GPU server with 4 GPU cards
Included**



**AMD 1U solution with
2x GPU support**



**GPU Optimized
4U AMD solution**



**SuperServer 2026GT-TRF-FM407
SuperServer 2026GT-TRF**

- GPU optimized 2U solution
- 6/4 GPUs installed per system
- Platinum Level 94%+ efficiency 1800W redundant power supplies
- Enterprise level IPMI management tool with GPU cooling control and status information

**SuperServer 7046GT-TRF-FC405
SuperServer 7046GT-TRF-FC407
SuperServer 7046GT-TRF**

- GPU optimized 4U/tower solution
- 4 GPUs installed per system
- Gold Level 93%+ efficiency 1400W redundant power supplies
- Enterprise level IPMI management tool

A+ Server1022GG-TF

- Supports up to 2 GPU cards
- 256 GB DDR3 1600/1333/1066/800 SDRAM
- Enterprise level IPMI management tool with GPU cooling control and status information
- Gold Level 93%+ efficiency 1400W power supplies

A+ Server 4022G-6F

- GPU optimized 4U/tower solution
- Supports up to 6 expansion cards
- Supports PCI-Express 2.0
- Enterprise level IPMI management tool with GPU cooling control and status information
- Platinum Level 94%+ efficiency 920W power supplies

Intel® Xeon® Processor 5600/5500 Series

Intel® Xeon® Processor 5600/5500 Series

AMD® Opteron™ Processor 6000 Series

AMD® Opteron™ Processor 6000 Series

Dual Intel® 5520 chipset with QPI up to 6.4GT/s + PLX8648

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

HyperTransport™ Technology
Dual AMD SR5690/SP5100 chipset

HyperTransport™ Technology
Dual AMD SR5690/SP5100 chipset

2026GT-TRF-FM407: 4 Enterprise Level NVIDIA® M2070 GPU cards are installed

7046GT-TRF-FC405: 4 Enterprise Level NVIDIA® C2050 GPU cards are installed in 4 PCI-E 2.0 x16 slots
7046GT-TRF-FC407: 4 Enterprise Level NVIDIA® C2070 GPU cards are installed in 4 PCI-E 2.0 x16 slots

Supports 2x double-width full-height/length GPUs

Supports 3x double-width full-height/length GPUs

SUPER® X8DTG-QF+

SUPER® X8DTG-QF

SUPER® H8DGG-QF

SUPER® H8DG6-F

Up to **96** GB of DDR3 Reg. ECC
1333/1066/800 MHz SDRAM in 6 DIMMs

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

Up to **256** GB of DDR3 Reg. ECC
1600/1333/1066/800MHz SDRAM in 16 DIMMs

Up to **256** GB of DDR3 1600/1333/1066/800 Reg. ECC in 16 DIMMs

4 full-height & full-length PCI-E 2.0 x16 (2026GT-TR only)
Left slot: 1 full-height & full-length PCI-E 2.0 x8
1 full-height & full-length PCI-E 2.0 x4
1 full-height & full-length PCI-E x4
Center slot via riser card:
1 low profile PCI-E 2.0 x8

4 PCI-E 2.0 x16 (7046GT-TRF only)
1 PCI-E 2.0 x4 (in x16 slot)
1 PCI-E 2.0 x4 (in x8 slot)
1 PCI-E x4 (in x16 slot)
2 PCI (7046GT-TRF only)

Right/Left slot: 2x PCI-E 2.0 x16, supports up to 2 x GPUs
Center slot via riser card (low-profile):
- PCI-E 2.0 x8 (in x16 slot)

3 PCI-E 2.0 x16
1 PCI-E 2.0 x8
2 PCI-E 2.0 x4 (using x8 slot)

Intel® ICH10R for 6 SATA (3 Gbps):
RAID 0, 1, 5, 10 (Windows)
RAID 0,1,10 (Linux)

Intel® ICH10R for 6 SATA (3 Gbps):
RAID 0, 1, 5, 10 (Windows)
RAID 0,1,10 (Linux)

3 SATA (3 Gbps):
RAID 0, 1

LSI® 2008 SAS2 controller; Optional AOC -SAS2 RAID 5-KEY support
AMD SP5100 for 8 SAS/SATA2 (3 Gbps):
RAID 0, 1, 5, 10 (Windows)
RAID 0,1,10 (Linux)

Dual LAN with 2 x Intel® 82576 Gigabit Ethernet
Matrox G200eW Graphics

Dual LAN with 2 x Intel® 82574L Gigabit Ethernet
Matrox G200eW Graphics
7.1 Channel HD audio
Dual IEEE 1394a ports

Dual LAN with Intel® 82576 Gigabit Ethernet
Matrox G200eW Graphics

Dual LAN with Intel® 82576 Gigabit Ethernet
Matrox G200eW Graphics

IPMI 2.0 + KVM with dedicated LAN
Watch Dog, SuperDoctor® III

IPMI 2.0 + KVM with dedicated LAN
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IPMI 2.0 + KVM with dedicated LAN
Watch Dog, SuperDoctor® III

10x 2.5" hot-swap SATA drive bays

8x 3.5" hot-swap drive trays
90-degree rotatable module - 3 x 5.25" drive bays and 1 x 3.5" fixed drive bay

3x 3.5" hot-swap drive trays
1x Slim DVD drive (optional)

8x 3.5" hot-swap SAS or SATA drive trays
90-degree rotatable module - 2 x 5.25" drive bays and 1 x 3.5" fixed drive bay

1800W Platinum Level high-efficiency redundant power supply with I²C & PMBus

1400W Gold Level high-efficiency redundant power supply with I²C & PMBus

1400W Gold Level high-efficiency power supply with I²C & PMBus

920W Platinum Level high-efficiency power supply I²C & PMBus
4 sets of 6-pin 12V for GPU or graphics cards

5x 8cm heavy duty fans with optimal fan speed control with air shroud

4x 9.2cm hot-swap cooling fans with optimal CPU fan speed control & **2x** 8cm hot-swap exhaust PWM fans

8x 4cm heavy duty counter-rotating fan with optimal CPU fan speed control

3x 8cm hot-swap cooling fans with optimal CPU fan speed control & **2x** 8cm hot-swap exhaust PWM fans

2U rackmount: 17.2"W (437mm) x 3.47"H (88mm) x 30"D (762mm)

4U rackmount: 17.2"W (437mm) x 7"H (178mm) x 25.5"D (648mm)

1U rackmount: 17.2"W (437mm) x 1.7"H (43mm) x 28.2"D (716mm)

4U rackmount: 17.2"W (437mm) x 7"H (178mm) x 25.5"D (648mm)

SUPERMICRO® GPU Supercomputing Server Solutions

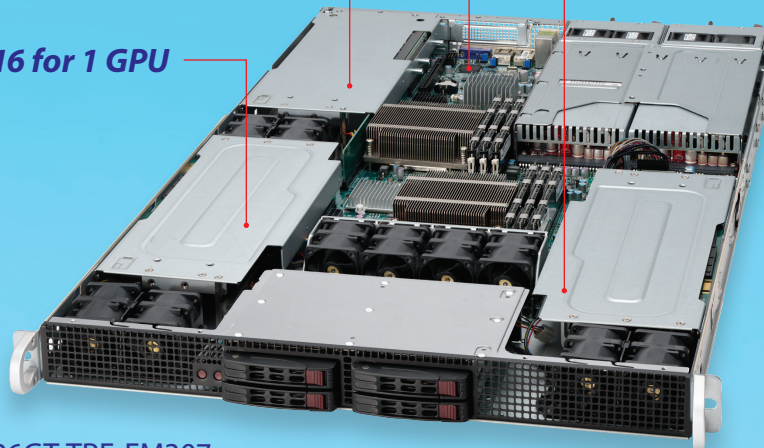
Supermicro 1U, 2U, and 4U GPU Servers establish in High-Performance Supercomputing and Green IT. Generating massively parallel processing power and unrivaled networking flexibility with PCI-E 2.0 expansion slots, dual Gigabit Ethernet, and QDR (40Gbps) InfiniBand ports, these systems deliver the highest quality with extreme optimization for the most computing-intensive applications. Supermicro's unique server designs with Platinum Level power supplies, energy-saving motherboards and enterprise class server management optimize cooling for even the most demanding applications, providing the perfect technology platform for these impressive GPU Supercomputing Servers. Integrating the latest NVIDIA® Tesla™ M2090 GPU Computing Modules, the world's fastest parallel computing processor for HPC, Supermicro SuperComputing Servers deliver up to 10x higher application performance. They are ideal platforms for seismic processing, biochemistry simulations, weather and climate modeling, signal processing, computational finance, CAE, CFD, and data analysis. These advantages and key partnerships make Supermicro the 1st choice for GPU SuperComputing.

PCI-E 2.0 x8 low-profile add-on card

1 PCI-E 2.0 x16 for 1 GPU

1 PCI-E 2.0 x16 for 1 GPU

1 PCI-E 2.0 x16 for 1 GPU



SuperServer® 1026GT-TRF-FM307

1U GPU solution

- Optimized for 3x double-width GPUs, designed for high-end heterogeneous computing applications
- 1800W Redundant Platinum Level high-efficiency power supply
- Expansion Slots: 3 double-width high-end graphics cards (optimized) + 1 low-profile slot
- 10x 4cm heavy duty counter-rotating cooling fans with intelligent fan speed control

What is GPU Computing?

GPU computing is the use of a GPU (graphics processing unit) to perform general purpose scientific and engineering computing. The concept for GPU computing is to use CPU and GPU together in a heterogeneous computing model - the sequential part of the application runs on the CPU and the computing intensive part runs on the GPU. From the user's perspective, the application just runs faster because it is using the high performance of the GPU to boost performance at 1/10th the cost and 1/20th the power consumption of the latest multi-core CPUs.

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