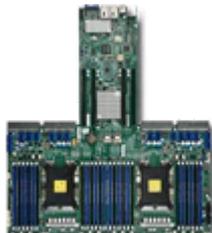


SuperServer 4029GP-TRT3

4U Dual Processor (Intel), Single-Root Cascade GPU System with Up to 8 PCI-E GPUs



Integrated Board



X11DPG-OT-CPU



X11DPG-O-PCIE

Views: | [Angled View](#) | [Top View](#) |
| [Front View](#) | [Rear View](#) |

▶ [Drivers & Utilities](#) ▶ [BIOS](#) ▶ [IPMI](#) ▶ [Tested Memory](#) ▶ [Drive Options](#) ▶ [NVMe Options](#) ▶ [Tested M.2 List](#) ▶ [Manuals](#) ▶ [OS Certification Matrix](#) ▶ [Compatible GPU List](#) ▶ [4U PCIe Root Architectures](#)

Key Applications

- AI/ML, Deep Learning Training and Inference
- High Performance Computing (HPC)
- Big Data Analytics
- Astrophysics Simulation
- Chemistry Simulation
- Research Laboratory/National Laboratory

Key Features

1. Single Root System, Cascade Mode for maximum GPU peer to peer communication
2. Dual Socket P (LGA 3647) support 2nd Gen Intel® Xeon® Scalable processors (Cascade Lake/Skylake)‡
3. 24 DIMMs; up to 6TB 3DS ECC DDR4-2933MHz† RDIMM/LRDIMM, Supports Intel® Optane™ DCPMM††
4. 11 PCI-E 3.0 x16 (FH, FL) slots, 1 PCI-E 3.0 x8 (FH, FL in x16 slot)
5. Up to 24 Hot-swap 2.5" drive bays
8x 2.5" SATA drives supported with included H/W, 2x 2.5" NVMe drives supported with included H/W
6. 2x 10GBase-T LAN ports via Intel C622
7. 8 Hot-swap 92mm RPM cooling fans
8. 2000W (2+2) Redundant Power Supplies **Titanium Level (96%+)**

Note: Image above may show a varied configuration of optional parts. Please refer to parts list for standard parts included.

Specifications

Product SKUs

- SYS-4029GP-TRT3** ■ SuperServer 4029GP-TRT3

Motherboard

Super X11DPG-OT-CPU

Processor

- CPU** ■ Dual Socket P (LGA 3647)
 ■ 2nd Gen Intel® Xeon® Scalable Processors and Intel® Xeon® Scalable Processors[‡], 3 UPI up to 10.4GT/s
 ■ Support CPU TDP 70-205W

- Cores** ■ Up to 28 Cores

- Note** [‡] BIOS version 3.2 or above is required to support 2nd Gen Intel® Xeon® Scalable processors (codenamed Cascade Lake-R)

GPU

- Supported GPUs** ■ 8 Double-Width/Single-Width PCI-E 3.0 x16 Card (Full Height Full Length)
 ■ 9 Single-Width GPUs
 ■ NVIDIA V100, T4, Quadro RTX
 ■ Supports both active and passive cooled GPUs
 ■ [Compatible GPU list](#)

- CPU-GPU Interconnect** ■ PCI-E Gen 3 x16 Switch Single-Root
 ■ [PCIe Root Architecture Chart](#)

- GPU-GPU Interconnect** ■ PCI-E, NVIDIA® NVLink™ Bridge (Optional)

System Memory

- Memory Capacity** ■ 24 DIMM slots
 ■ Up to 6TB 3DS ECC DDR4-2933MHz[†] RDIMM/LRDIMM
 ■ Supports Intel® Optane™ DCPMM^{††}

- Memory Type** ■ 2933[†]/2666/2400/2133MHz ECC DDR4 RDIMM/LRDIMM

- Note** [†] 2933MHz in two DIMMs per channel can be achieved by using memory purchased from Supermicro
^{††} Cascade Lake only. Contact your Supermicro sales rep for more info.

On-Board Devices

- Chipset** ■ Intel® C622 chipset

- SATA** ■ SATA3 (6Gbps) with RAID 0, 1, 5, 10

- Network Controllers** ■ Dual Port 10GbE from C622

- IPMI** ■ Support for Intelligent Platform Management Interface v.2.0
 ■ IPMI 2.0 with virtual media over LAN and KVM-over-LAN support

- Graphics** ■ ASPEED AST2500 BMC

Chassis

- Form Factor** ■ 4U Rackmountable
 ■ Rackmount Kit (MCP-290-00057-0N)

- Model** ■ **CSE-418GTS-R4000BP2**

Dimensions

- Height** ■ 7.0" (178mm)

- Width** ■ 17.2" (437mm)

- Depth** ■ 29" (737mm)

- Weight** ■ Net Weight: 65.5 lbs (29.7 kg)
 ■ Gross Weight: 100 lbs (45.3 kg)

- Available Colors** ■ Black

Drive Bays / Storage

- Hot-swap** ■ Up to 24x 2.5" SAS/SATA drive bays
 ■ 8x 2.5" SATA supported natively
 ■ 2x 2.5" NVMe supported natively

- M.2** ■ 1 NVMe based M.2 SSD
 ■ Form Factors: 2260, 2280, 22110

Expansion Slots

- PCI-Express** ■ 11 PCI-E 3.0 x16 (FHFL) slots - supporting up to 9 GPUs
 ■ 1 PCI-E 3.0 x8 (FH, FL, in x16) slot

System Cooling

- Fans** ■ 8x 92mm heavy duty counter-rotating fans

Power Supply

2000W Redundant Power Supplies with PMBus

- Total Output Power** ■ 1000W: 100 – 120Vac
 ■ 1800W: 200 – 220Vac
 ■ 1980W: 220 – 230Vac
 ■ 2000W: 230 – 240Vac
 ■ 2000W: 200 – 240Vac (UL/CUL only)

- Dimension (W x H x L)** ■ 73.5 x 40 x 265 mm

- Input** ■ 100-120Vac / 12.5-9.5A / 50-60Hz
 ■ 200-220Vac / 10-9.5A / 50-60Hz
 ■ 220-230Vac / 10-9.8A / 50-60Hz
 ■ 230-240Vac / 10-9.8A / 50-60Hz
 ■ 200-240Vac / 11.8-9.8A / 50-60Hz (UL/cUL only)

- +12V** ■ Max: 83.3A / Min: 0A (100-120Vac)
 ■ Max: 150A / Min: 0A (200-220Vac)
 ■ Max: 165A / Min: 0A (220-230Vac)
 ■ Max: 166.7A / Min: 0A (230-240Vac)
 ■ Max: 166.7A / Min: 0A (200-240Vac) (UL/cUL only)

- 12Vsb** ■ Max: 2.1A / Min: 0A

- Output Type** ■ 25 Pairs Gold Finger Connector

Certification



Titanium Level
[Test Report]

Input / Output

SATA	<ul style="list-style-type: none"> 8 SATA3 (6Gbps) ports
LAN	<ul style="list-style-type: none"> 2 RJ45 10GBase-T LAN ports 1 RJ45 Dedicated IPMI LAN port
USB	<ul style="list-style-type: none"> 4 USB 3.0 ports (rear)
Video	<ul style="list-style-type: none"> 1 VGA Connector
COM Port	<ul style="list-style-type: none"> 1 COM port (header)

System BIOS

BIOS Type	<ul style="list-style-type: none"> AMI 32Mb SPI Flash ROM
------------------	--

Management

Software	<ul style="list-style-type: none"> Intel® Node Manager <u>IPMI 2.0</u> KVM with dedicated LAN <u>SSM, SPM, SUM</u> <u>SuperDoctor® 5</u> Watchdog
-----------------	---

PC Health Monitoring

CPU	<ul style="list-style-type: none"> Monitors for CPU Cores, Chipset Voltages, Memory. 4+1 Phase-switching voltage regulator
FAN	<ul style="list-style-type: none"> Fans with tachometer monitoring Status monitor for speed control Pulse Width Modulated (PWM) fan connectors
Temperature	<ul style="list-style-type: none"> Monitoring for CPU and chassis environment Thermal Control for fan connectors

Operating Environment

RoHS	<ul style="list-style-type: none"> RoHS Compliant
Environmental Spec.	<ul style="list-style-type: none"> Operating Temperature: 10°C ~ 35°C (50°F ~ 95°F) Non-operating Temperature: -40°C to 60°C (-40°F to 140°F) Operating Relative Humidity: 8% to 90% (non-condensing) Non-operating Relative Humidity: 5% to 95% (non-condensing)

Parts List

Parts List - (Items Included)

	Part Number	Qty	Description
Motherboard / Chassis	MBD-X11DPG-OT-CPU	1	Super X11DPG-OT-CPU Motherboard
	MBD-X11DPG-O-PCIE	1	Super X11DPG-O-PCIE Motherboard
	CSE-418GTS-R4000BP2	1	CSE-418GTS-R4000BP2 Chassis
Backplane	BPN-SAS3-216A-N4	1	24-port 2U SAS3 12Gbps hybrid backplane, support up to 20x 2.5-inch SAS3/SATA3 HDD/SSD and 4x SAS3/SATA3/NVMe Storage Devices
Cable 1	CBL-0449L	2	HDD power extension for X8OBN, special 8 pin to 4 HDD. 45cm. 18AWG
Cable 2	CBL-PWEX-1028	8	GPU,2x4F/CPU to 2x4F/CPU,P4.2, 30CM,16AWG, 10A/pin, -40~105C
Cable 3	CBL-SAST-0507-01	2	MINI SAS HD-MINI SAS,6G,INT,80CM,SB,28AWG
Cable 4	CBL-SAST-0972	2	OcuLink V. 1.0 source to MiniSAS HD,INT,PCIe, 70CM,34AWG,RoH
Parts	MCP-130-41802-0B	1	Black plastic palm cover for X10DRG-O-PCIE
Riser Card	RSC-X9DRG-O	4	RSC-X9DRG-O
Heatsink / Retention	SNK-P0068APS4	2	2U Active CPU Heat Sink Supporting Narrow Bolster Plate Mounting Mechanism for X11 Purley Platform
* Power Supply	PWS-2K05A-1R	4	1U 2000W Redundant Titanium Power Supply W/PMbus 73.5x40x265mm,RoHS/REACH
* Cable 5	CBL-0071L	1	CBL,FRONT CNTL,16 TO 16 PIN,RA,RND TUBE,75CM,28AWG
* Cable 6	CBL-0174L	4	PWCD,US,NEMA5-15P TO IEC60320 C13,6FT,14AWG,15A,125V,RoHS/REACH
* FAN 1	FAN-0199L4	8	92x92x38 mm, 11.5K RPM, SC418G Middle Fan w/ Housing,RoHS/REACH,PBF
* Drive Tray(s)	MCP-220-00047-0B	24	Black gen 3rd hot-swap 2.5inch HDD tray
* Rear Window	MCP-240-84802-0N	1	21 slot rear window for SC418X
* Parts	MCP-260-41801-0N	1	IO shield for X9DRG-O in SC418G
* Front Panel	MCP-280-82601-0N	1	Front control board adapter (TB826) for SC216,826,936,846
* Rail Set	MCP-290-00057-0N	1 set	Rail set, quick/quick, default for 4U 17.2"; W
* Rail Set	MCP-290-00060-0N	1	Threaded rail adapter default for round hole rack
* Drive Tray(s)	MCP-290-21301-0B	3	Black 2.5" HDD dummy cover for SC213,216 (Cover 8 HDD)
* Rail Set	MCP-290-00115-0N	1	Inner rail, quick-release type
* Rail Set	MCP-290-00117-0N	1	Outer rail, quick-release type
* FAN 2	MCP-340-00044-0N	1	92x92x38 mm, 11.5K RPM, 4-pin PWM Bare Fan

Notes:

1. Parts with * are inside the chassis
2. Excessive parts might not be shipped, including but not limited to excessive drive trays, fans, riser brackets, air shrouds, IO shields, cables.....etc.

Optional Parts List

	Part Number	Qty	Description
0.5U LID	MCP-230-41803-0N	1	Top cover for GTX card support
1U LID	MCP-230-41806-0N	1	Top cover for NVLINK BRIDGE support
2.5" NVMe Drive Trays	MCP-220-00121-0B	1 per drive	Black Gen-3 2.5" NVMe drive tray. Orange tab with lock
	MCP-220-00167-0B		Black Gen-3 2.5" NVMe drive tray. Orange tab with lock, Tool-less
GPU Dummy Tray	MCP-240-00096-0N	1	GPU / Add-on Card Dummy Assembly (2 Slots)
GPU Cables	CBL-PWEX-0665	1 per GPU***	GPU power cable (for NVIDIA P40, M40, M60, AMD MI25). 8pin FEMALE BLK to 8pin FEMALE WHT. 30cm 18AWG.
	CBL-PWEX-1017	1 per GPU	GPU power cable (for NVIDIA QUADRO, GTX). 8pin FEMALE CPU BLUE to 2x 6pin FEMALE / 2x 1pin FEMALE. 20cm 18AWG/20AWG

			10AWG/20AWG.
	CBL-PWEX-1040*	1 per GPU	GPU power cable (for NVIDIA QUADRO, GTX). 8pin MALE CPU to 2x 6pin FEMALE / 2x 1pin FEMALE. 5cm 20AWG/16AWG.
	CBL-PWEX-1028**	1 per GPU	GPU power cable (for NVIDIA TESLA V100). 8pin FEMALE CPU BLUE to 8pin FEMALE CPU BLUE. 30cm 20AWG/16AWG.
Note:	* Use with CBL-PWEX-1028 ** 8 qty. included with each system *** 2 qty. required for each MI25		
Storage Control Cards and Cables	AOC-S3008L-L8I ²	1	Broadcom 3008 STD LP 8 internal ports, 12Gb/s per port - SAS HBA Adapter Card, RAID 0,1,1E,10
	AOC-S3008L-L8E ²	1	Broadcom 3008 STD LP 8 internal ports, 12Gb/s per port - SAS HBA Adapter Card, HBA only
	AOC-S3108-H8IR ^{2, 4, 8}	1	Broadcom 3108 STD LP 8 internal ports, 12Gb/s per port - SAS HBA Adapter Card, RAID 0,1,5,6,10,50,60
	AOC-S3108L-H8IR-16DD ^{4, 8}	1	Broadcom 3108 STD LP 8 internal ports, 12Gb/s per port - SAS HBA Adapter Card, RAID 0,1,5,6,10,50,60. Maximum 16 HDD support with expander backplane
	AOC-SAS3-9361-16I ^{3, 5}	1	Broadcom 9361 STD LP 16 internal ports, 12Gb/s per port - SAS HBA Adapter Card, RAID 0,1,5,6,10,50,60.
	AOC-SAS3-9361-24I ^{5, 6}	1	Broadcom 9361 STD LP 24 internal ports, 12Gb/s per port - SAS HBA Adapter Card, RAID 0,1,5,6,10,50,60.
	CBL-SAST-0531	2	n/a
	BTR-TFM4G-LSI00418 ⁷	1	LSI Remote CVKit with DVFlash Module CVFM04 for 9361 and 9380 Controller Series
	BTR-TFM8G-LSICVM02	1	LSI Supercap w/ 8GB CV + 24" cable for LSI S3108-H8IR. Optional installation kit: - MCP-240-00127-0N - BKT-BBU-BRACKET-05
	MCP-240-00127-0N	1	Remote Mounting Bracket for Supercap. Installs in 2.5" drive tray.
	BKT-BBU-BRACKET-05	1	Remote Mounting Board for Supercap. Full Height mounting bracket. Low Profile mounting bracket also included.
	BPN-SAS3-216EL1	1	SAS3 12Gb/s Single Expander Backplane with x24 2.5" SATA/SAS HDD/SSD.
	Note:	2. Requires x2 CBL-SAST-0531 3. Requires x4 CBL-SAST-0531 4. Use BTR-TFM8G-LSICVM02 for Supercap 5. Use BTR-TFM4G-LSI00418 for Cache Vault 6. Requires x6 CBL-SAST-0531 7. Requires BKT-BBU-BRACKET-05 8. Optional BPN-SAS3-216EL1 Expander Backplane support. Will lose x2 U.2 NVMe support	
Network and Cables	AOC-STG-i4S	1	4 Port 10G SFP+ PCI-E x8 Ethernet card. Based on Intel X710-AMI
	AOC-STG-i2T	1	2 Port 10G RJ45 PCI-E x8 Ethernet card. Based on Intel X540
	AOC-S25G-B2S	1	2 Port 25G SFP28 PCI-E x8 Ethernet card. Based on Broadcom BCM57414
	AOC-S25G-M2S	1	2 Port 25G SFP28 PCI-E x8 Ethernet card. Based on Mellanox ConnectX-4 LX EN
	AOC-MCX4121A-ACAT	1	2 Port 25G SFP28 PCI-E X8 Ethernet card. Based on Mellanox ConnectX-4 LX EN
	AOC-S40G-I1Q	1	1 Port 40G QSFP+ PCI-E X8 Ethernet card. Based on Intel X710
	AOC-S40G-I2Q	1	2 Port 40G QSFP+ PCI-E X8 Ethernet card. Based on Intel X710
	AOC-MCX456A-ECAT	1	2 Port 100G QSFP28 PCI-E X16 EDR IB card. Based on Mellanox Connect-4 VPI
	AOC-MCX556A-ECAT	1	2 Port 100G QSFP28 PCI-E X16 EDR IB card. Based on Mellanox Connect-5 VPI
	CBL-NTWK-0944-MS28C30M	1	Ethernet Cable, SFP28,28GbE,PASSIVE,30 AWG,3M,Mellanox
	CBL-NTWK-0944-MS28C20M	1	Ethernet Cable, SFP28,28GbE,PASSIVE,30 AWG,2M,Mellanox
	AOC-E10GSFPSR	1	Ethernet Transceiver, SFP+ 1000Base-SX / 10GBase-SR
	CBL-NTWK-0446-01	1	Ethernet Cable, QSFP, 40GbE, PASSIVE, 28 AWG, 3M

	CBL-N1WK-0942-MQ28E20M	1	IB Cable, QSFP28, 100GbE, PASSIVE, 28 AWG, 2M
Global Services & Support	OS4HR3/2/1	-	3/2/1-year onsite 24x7x4 service
	OSNBD3/2/1	-	3/2/1-year onsite NBD service
Software	SFT-OOB-LIC • eStore	1	OOB Management Package (per node license)
Software	SFT-DCMS-Single	1	DataCenter Management Package (per node license)

