

GPU SuperServer SYS-420GP-TNR (Complete System Only)

NEW

4U Dual Processor (3rd Gen Intel® Xeon®), Dual-Root GPU System with Up to 10 PCIe GPUs



Key Applications

- High Performance Computing
- Rendering
- VDI
- AI/Deep Learning Training



Key Features

1. Dual Socket P+ (LGA-4189) 3rd Gen Intel® Xeon® Scalable Processors
2. Intel® C621A Chipset
3. 32 DIMM Slots;
Up to 8TB DRAM;
Up to 8TB Intel® Optane™ Persistent Memory (up to 12TB with DRAM);
3200/2933/2666 ECC DDR4 LRDIMM; RDIMM;
Intel® Optane™ Persistent Memory 200 series
4. 12 PCI-E Gen 4.0 X16 FHFL Slots
AIOM/OCF 3.0 Support
5. Flexible networking options
6. 2x M.2 NVMe for boot drive only
8x HOT SWAP 2.5" NVMe
8x HOT SWAP 2.5" SATA
8x HOT SWAP 2.5" SATA/SAS (AOC required)
Total 24x 2.5" Hot-swap drive bays
7. 8 Hot-Swap Heavy Duty Fans with Optimal Fan Speed Control

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Specifications

Product SKUs

SYS-420GP-TNR	SuperServer SYS-420GP-TNR (Black Front & Silver Body)
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Motherboard

Super X12DPG-OA6

Processor

CPU	- Dual Socket P+ (LGA-4189) 3rd Gen Intel® Xeon® Scalable processors - Support CPU TDP 270W
Cores	Up to 40C/80T; Up to 60MB Cache

GPU

Supported GPU	- Up to 10 Double-Width/Single-Width PCI-E 3.0/4.0 x16 Card (Full Height Full Length) - NVIDIA A100, V100, A40, T4, Quadro RTX - Supports both active and passive cooled GPUs
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CPU-GPU Interconnect	PCI-E 4.0 x16 Switch Dual-Root
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GPU-GPU Interconnect	NVIDIA® NVLink™ Bridge (optional)
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System Memory

Memory	- Memory Capacity: 32 DIMM slots - Up to 8TB: 32x 256 GB DRAM - Up to 12TB: 16x 512 GB PMem - Memory Type: 3200/2933/2666MHz ECC DDR4 RDIMM/LRDIMM - Intel® Optane™ persistent memory 200 series
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Memory Voltage	1.2 V
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Error Detection	ECC
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On-Board Devices

SATA	SATA3 (6Gbps); RAID 0/1/5/10 support
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Chassis

Form Factor	4U Rackmount
Model	CSE-418G2TS-R4016BP

Dimensions and Weight

Height	7" (178mm)
Width	17.2" (437mm)
Depth	29" (737mm)
Package	26.57" (H) x 27" (W) x 41" (D)
Weight	- Net Weight: 65.5 lbs (29.7 kg) - Gross Weight: 100 lbs (45.3 kg)
Available Color	Black Front & Silver Body

Front Panel

Buttons	- Power On/Off button - System Reset button
LEDs	- Hard drive activity LED - Network activity LEDs - Power status LED - System Overheat & Power Fail LED

Expansion Slots

PCI-Express (PCI-E)	- Slot 1: PCI-E 4.0 x16 FHFL - Slot 2: PCI-E 4.0 x16 FHFL - Slot 3: PCI-E 4.0 x16 FHFL - Slot 4: PCI-E 4.0 x16 FHFL - Slot 5: PCI-E 4.0 x16 FHFL - Slot 6: PCI-E 4.0 x16 FHFL - Slot 7: PCI-E 4.0 x16 FHFL - Slot 8: PCI-E 4.0 x16 FHFL - Slot 9: PCI-E 4.0 x16 FHFL - Slot 10: PCI-E 4.0 x16 FHFL - Slot 11: PCI-E 4.0 x16 FHFL - Slot 12: PCI-E 4.0 x16 FHFL
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Drive Bays / Storage

Hot-swap	24x 2.5" hot-swap NVMe/SATA/SAS drive bays (8x 2.5" NVMe dedicated)
M.2	2 M.2 NVMe OR 2 M.2 SATA3

System Cooling

Chipset	■ Intel® C621A
Network Connectivity	■ 2x 1GbE BaseT with Intel® I350
IPMI	■ Support for Intelligent Platform Management Interface v.2.0 ■ IPMI 2.0 with virtual media over LAN and KVM-over-LAN support
Input / Output	
Video	■ 1 VGA port(s)
System BIOS	
BIOS Type	■ AMI 32MB SPI Flash EEPROM
Management	
Software	■ OOB Management Package (SFT-OOB-LIC) ■ Redfish API ■ <u>IPMI 2.0</u> ■ <u>SSM</u> ■ Intel® Node Manager ■ <u>SPM</u> ■ KVM with dedicated LAN ■ <u>SUM</u> ■ NMI ■ Watch Dog ■ SuperDoctor® 5
Power Configurations	■ ACPI Power Management ■ Power-on mode for AC power recovery
PC Health Monitoring	
CPU	■ 7 +1 Phase-switching voltage regulator ■ Monitors for CPU Cores, Chipset Voltages, Memory
FAN	■ Fans with tachometer monitoring ■ Pulse Width Modulated (PWM) fan connectors ■ Status monitor for speed control
Temperature	■ Monitoring for CPU and chassis environment ■ Thermal Control for fan connectors

Fans	■ 8 heavy duty fans with optimal fan speed control
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Power Supply

2000W Redundant Power Supplies with PMBus

Dimension (W x H x L)	■ 73.5 x 40 x 203 mm
AC Input	■ 1000W: 100-127Vac / 50-60Hz ■ 1800W: 200-220Vac / 50-60Hz ■ 1980W: 220-230Vac / 50-60Hz ■ 2000W: 220-240Vac / 50-60Hz ■ 2000W: 230-240Vac / 50-60Hz ■ 2000W: 230-240Vdc (For CCC Only)
+12V	■ Max: 83A / Min: 0A (100Vac-127Vac) ■ Max: 150A / Min: 0A (200Vac-220Vac) ■ Max: 165A / Min: 0A (220Vac-230Vac) ■ Max: 166A / Min: 0A (230Vac-240Vac)
12V SB	■ Max: 3.5A / Min: 0A
Output Type	■ 25 Pairs Gold Finger Connector
Certification	  Titanium Level [Test Report]
Operating Environment	
Environmental Spec.	■ 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-X12DPG-OA6	1	Super X12DPG-OA6 Motherboard
	CSE-418G2TS-R4016BP	1	4U Chassis
Add-on Card / Module	AOM-PCIE4-418P-1-P	1	GPU board for 4U PCIE GPU system,HF,RoHS
Add-on Card / Module	AOM-PIO-I2G	1	AOM-PIO-I2G
Backplane	BPN-NVME4-216N-S24	1	2U 24-slot all-hybrid direct-attached backplane, support 24x 2.5
Cable 1	CBL-PWCD-0900	4	PWCD,US/EU/Canada/China/Australia,IEC60320 C14 TO C13,4FT,17
Cable 2	CBL-PWEX-0925	2	2x4,P3.0 to 2x4,P4.2,YL/RED,9.5A,55cm,16AWG,RoHS
Cable 3	CBL-PWEX-0929	1	2x4,PH4.2 to MicroFit,2x4,PH3,YL/RED,9.5A/pin,80CM,16AWG
Cable 4	CBL-PWEX-1028	10	GPU,2x4F/CPU to 2x4F/CPU,P4.2, 30CM,16AWG, 10A/pin, -40~105C
Cable 5	CBL-PWEX-1080	1	Mini-Fit 2x2 F, to Mini-Fit 2x2 F, 10A/pin,7cm,16AWG,RoH
Cable 6	CBL-SAST-1215-85	4	Slimline x8 (STR) to Slimline x8 (STR),INT,15CM,85 OHM,
Cable 7	CBL-SAST-1231-85	6	Slimline x8 (STR) to Slimline x8 (STR),INT,30CM, 85 OHM
Cable 8	CBL-SAST-1235-85	6	Slimline x8 (STR) to Slimline x8 (STR),INT,35CM,85 OHM
Cable 9	CBL-SAST-1244-85	2	Slimline x8 (STR) to Slimline x8 (STR),45CM,85 OHM,RoHS
Cable 10	CBL-SAST-1266-100	2	Slimline x4 (STR) to Slimline x4 (STR) x4,INT 66CM,100
Drive Tray(s)	MCP-220-00047-0B	16	Black gen 3rd hot-swap 2.5inch HDD tray
Drive Tray(s)	MCP-220-00167-0B	8	Gen 3 2.5-inch Tool-less NVMe drive tray (clip design),RoHS
Software	SFT-OOB-LIC	1	License key for enabling OOB BIOS management
Heatsink / Retention	SNK-P0080AP4	2	4U Active CPU Heat Sink for X12 Generation DP Workstations and 4U Servers
*Power Supply	PWS-2K08A-1R	4	1U 2000W 100-240VAC Titanium Ultra power supply 73.5x40x203mm
*Cable 11	CBL-0071L	1	ROUND 16 TO 16 PIN RIBBON FP CABLE 30"L, LF
*Cable 12	CBL-OTHR-0794	1	VGA,DB 15pin,F to 2x8,PH2.54,10CM,30 AWG,RoHS
*Cable 13	CBL-PWEX-1069	8	PWEX,FAN,1X4/P2.5 TO 1X4/P2.54,30CM,22AWG,5A/pin,RoHS
*FAN 1	FAN-0199L4-1	8	92x92x38 mm, 11.5K RPM Cooling fan w/ 5A Fan Connector,RoHS
*Front Panel	FPB-TMP-002	1	Thermal Sensor board with 40cm I2C cable
*Drive Tray(s)	MCP-220-21602-0B	3	Black 2.5"; HDD dummy cover for SC213,216 (8 HDD Hex hole)
*Rear Window	MCP-240-84802-0N	1	21 slot rear window for SC418X
*Parts	MCP-260-41802-0N	1	IO shield for X12DPG-OA 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
*Rail Set	MCP-290-00115-0N	1	Inner rail, quick-release type
*Rail Set	MCP-290-00117-0N	1	Outer rail, quick-release type

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
2.5" NVMe Drive Trays	MCP-220-00167-0B	1 per drive	Black Gen-3 2.5" NVMe drive tray. Orange tab with lock. Tool-less.
	MCP-220-00121-0B	1 per drive	Black Gen-3 2.5" NVMe drive tray. Orange tab with lock.
2.5" SATA Drive Trays	MCP-220-00047-0B	1 per drive	Black gen 3rd hot-swap 2.5inch HDD tray
Global Services & Support	<u>OSNBD3/2/1</u>	-	3/2/1 Year Onsite NBD Service
	<u>OS4HR3/2/1</u>	-	3/2/1 Year Onsite 24x7x4 Service
GPU Cables	CBL-PWEX-1028 (* 10 qty. included with each system.)*	1 per GPU	GPU power cable. 8 pin FEMALE CPU BLUE to 8 pin FEMALE CPU BLUE. 30CM. 16AWG. - NVIDIA A100 40GB / 80GB - NVIDIA A16 - NVIDIA A30 - NVIDIA A40 - NVIDIA A6000
	CBL-PWEX-0665	1 per GPU	GPU power cable. 8 pin FEMALE CPU BLUE to 8 pin FEMALE 20CM. 20AWG/16AWG. - NVIDIA A10 - NVIDIA A5000
	CBL-PWEX-1040	1 per GPU	GPU power cable. 8pin MALE CPU to 2x 6pin FEMALE / 2x 1pin FEMALE. 5cm 20AWG/16AWG. - NVIDIA A4000
GPU Dummy Tray	MCP-240-00096-0N	1	GPU / Add-on Card Dummy Assembly (2 Slots)
Network and Cables	AOC-ATG-i4SM	1	AIOM Quad-Port 10GbE SFP+, based on Intel XL710-BM1,RoHS
	MCX653105A-ECAT	1	Mellanox MCX653105A-ECAT PCIe 1-port IB-HDR100 & 100GbE QSFP56 Gen3.0/4.0 x16 CX-6 VPI. HF, RoHS.
	AOC-A25G-M2S	1	AIOM Dual-Port 25GbE SFP28, Mellanox CX-6 LX w/ 1U height bracket,RoHS
	AOC-ATG-i2SM	1	AIOM Dual-Port 10GbE SFP+, based on X710-BM2,RoHS
	AOC-S25G-M2S	1	2 Port 25 Gigabit SFP28 PCI-E X8 Ethernet card. Based on Mellanox ConnectX-4 LX EN
	<u>AOC-ATG-i2TM</u>	1	AIOM 2-port 10GBase-T RJ45, Intel X550,RoHS
	AOC-S25G-i2S	1	Standard Low Profile 25G dual port SFP28, based on Intel XXV710+ Marvell Unionville,RoHS
	CBL-NTWK-0942-MQ28C30M	1	ETHERNET,QSFP28,100GbE,PASSIVE,LSZH,3m,Mellanox
	AOC-653105A-HDAT	1	Mellanox ConnectX-6 VPI 200Gb/s InfiniBand & Ethernet Adapter Card Single port, QSFP56, PCIe 3.0/4.0 x16, RoHS

	AOC-S100GC-i2C	1	Standard PCIe 4.0 x 16 dual port 100GbE with QSFP28 based on Intel E810-CAM2,RoHS
	CBL-NTWK-0942-MQ28E50M	1	InfiniBand, EDR, QSFP28,100GbE,PASSIVE, 28 AWG, 5M, Mellanox,RoHS
	AOC-653106A-ECAT	1	ConnectX-6 VPI Card. 100Gb/s InfiniBand & Ethernet Adapter Card, Dual ports, QSFP56, PCIe 3.0/4.0 x16. HF, RoHS.
	AOC-A25G-m2SM	1	AIOM 2-port 25GbE SFP28, Mellanox CX-6 LX w/ 0.5U height bracket,RoHS
	CBL-NTWK-0942-MQ28E20M	1	InfiniBand, EDR, QSFP28, 100GbE, PASSIVE, 28 AWG, 2M, Mellanox,RoHS
	AOC-S25G-I2S	1	Standard Low Profile 25G dual port SFP28, based on Intel XXV710
	MCX653106A-HDAT	1	Mellanox ConnectX-6 VPI 200Gb/s InfiniBand & Ethernet Adapter Card dual ports, QSFP56 PCIe 3.0/4.0 x16. HF, RoHS
	AOC-A100G-b2C	1	AIOM Dual Port 100GbE QSFP28, based on Broadcom BCM57508,RoHS
Note	** Requires x1 CBL-SAST-1281-100	-	-
	* Requires x2 CBL-SAST-1281-100	-	-
	*** Requires BKT-BBU-BRACKET-05	-	-
Software	<u>SFT-DCMS-Single</u>	1	DataCenter Management Package (per node license)
Storage Control Cards and Cables	<u>AOC-S3916L-H16IR-32DD</u> *	1	16 int 12Gb/s ports, x8 Gen4, ROC - LP, 32 HDD w/ exp,RoHS
	BKT-BBU-BRACKET-05	1	Remote Mounting Board for Supercap / Cache Vault. Occupies single PCIE SLOT.
	BTR-CVPM05 ***	1	Supermicro Broadcom CACHEVAULT FOR AOC-S3916L-H16IR
	CBL-SAST-1281-100	1	Slimline x8 (STR) to 2x Slimline x4 (STR),80CM,100 OHM,
	<u>AOC-S3808L-L8IT</u> **	1	8 int 12Gb/s SAS3 ports, x8 Gen4, HBA - LP, 122 HDD w/ exp,RoHS