

GPU SuperServer SYS-420GP-TNR

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

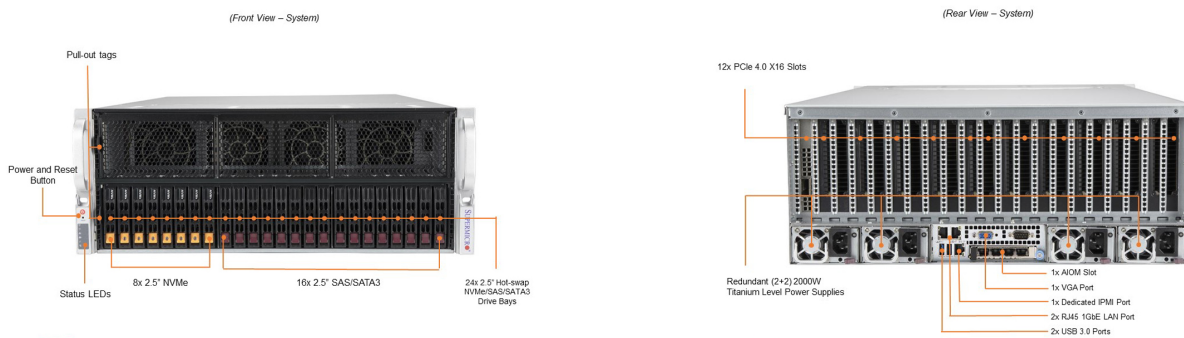
Key Features

- Dual Socket P+ (LGA-4189) 3rd Gen Intel® Xeon® Scalable Processors;
- Intel® C621A Chipset;
- 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;
- 12 PCI-E Gen 4.0 X16 FHFL Slots; AIOM/OCP 3.0 Support;
- Flexible networking options;
- Total 24x 2.5" Hot-swap drive bays; 2x M.2 NVMe for boot drive only; 8x HOT SWAP 2.5" NVMe; 8x HOT SWAP 2.5" SATA/SAS (AOC required); 8x HOT SWAP 2.5" SATA;
- 8 Hot-Swap Heavy Duty Fans with Optimal Fan Speed Control;
- 4x 2000W redundant Titanium level power supplies;

[More details here](#)



Form Factor	4U Rackmount Enclosure: 437 x 178 x 737mm (17.2" x 7" x 29") Package: (27" x 26.57" x 41")
Processor	3rd Gen Intel® Xeon® Scalable processors Dual Socket LGA-4189 (Socket P+) supported TDP up to 270W; 3 UPI
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 Intel® Data Center GPU Flex 140/170 Supports both active and passive cooled GPUs CPU-GPU Interconnect: PCI-E 4.0 x16 Switch Dual-Root GPU-GPU Interconnect: NVIDIA® NVLink™ Bridge (optional)
System Memory	32 DIMM slots Up to 8TB ECC LRDIMM, DDR4-3200MHz
Drive Bays	24x 2.5" hot-swap NVMe/SATA/SAS drive bays; 8x 2.5" NVMe dedicated;
Expansion Slots	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
On-Board Devices	SATA: SATA3 (6Gbps); RAID 0/1/5/10 support 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)



Cooling System	8 heavy duty fan(s)
Power Supply	2000W Redundant Power Supplies with PMBus Dimension (W x H x L): 73.5 x 40 x 203 mm Output Type: 25 Pairs Gold Finger Connector
System BIOS	BIOS Type: AMI 32MB SPI Flash EEPROM
Management	SuperDoctor® 5; Watch Dog; NMI; SUM; KVM with dedicated LAN; SPM; Intel® Node Manager; SSM; IPMI 2.0; Redfish API; OOB Management Package (SFT-OOB-LIC)
PC Health Monitoring	CPU: Monitors for CPU Cores, Chipset Voltages, Memory 7 +1 Phase-switching voltage regulator FAN: Fans with tachometer monitoring Status monitor for speed control Pulse Width Modulated (PWM) fan connectors Temperature: Monitoring for CPU and chassis environment Thermal Control for fan connectors
Dimensions and Weight	Height: 7" (178 mm) Width: 17.2" (437 mm) Depth: 29" (737 mm) Gross Weight: 100 lbs (45.3 kg) Net Weight: 65.5 lbs (29.7 kg) Packaging: 26.57" x 27" x 41" Available Color: Black Front & Silver Body
Operating Environment	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)
Motherboard	Super X12DPG-OA6
Chassis	CSE-418G2TS-R4016BP

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>QS4HR3/2/1</u>	-	3/2/1 Year Onsite 24x7x4 Service	
GPU Cables	CBL-PWEX-1040	1 per GPU	GPU power cable. 8pin MALE CPU to 2x 6pin FEMALE / 2x 1pin FEMALE. 5cm 20AWG/16AWG. - NVIDIA A4000	
	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	
GPU Dummy Tray	MCP-240-00096-0N	1	GPU / Add-on Card Dummy Assembly (2 Slots)	
Network and Cables	<u>AOC-ATG-i2T2SM</u>	1	AIOM Quad-Port 10GbE (2x RJ45 & 2x SFP+) based on Intel X710-TM4, RoHS	
	AOC-A25G-m2SM	1	AIOM 2-port 25GbE SFP28, Mellanox CX-6 LX w/ 0.5U height bracket, 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-S25G-i2S	1	Standard Low Profile 25G dual port SFP28, based on Intel XXV710	
	AOC-S25G-M2S	1	2 Port 25 Gigabit SFP28 PCIe X8 Ethernet card. Based on Mellanox ConnectX-4 LX EN	
	AOC-A100G-b2C	1	AIOM Dual Port 100GbE QSFP28, based on Broadcom BCM57508, RoHS	
	AOC-ATG-i4SM	1	AIOM Quad-Port 10GbE SFP+, based on Intel XL710-BM1, RoHS	
	<u>AOC-ATG-i2TM</u>	1	AIOM 2-port 10GBase-T RJ45, Intel X550, RoHS	
	AOC-A25G-M2S	1	AIOM Dual-Port 25GbE SFP28, Mellanox CX-6 LX w/ 1U height bracket, RoHS	
	CBL-NTWK-0942-MQ28C30M	1	ETHERNET, QSFP28, 100GbE, PASSIVE, LSZH, 3m, Mellanox	
	AOC-ATG-i2SM	1	AIOM Dual-Port 10GbE SFP+, based on X710-BM2, RoHS	
	AOC-683105AN-HDAT	1	Nvidia MCX683105AN-HDAT PCIe 1-port HDR 200G QSFP56 Gen4x16 Cx-6 DE, RoHS	
	CBL-NTWK-0942-MQ28E50M	1	InfiniBand, EDR, QSFP28, 100GbE, PASSIVE, 28 AWG, 5M, Mellanox, RoHS	
	AOC-STGS-i2T	1	Intel X550-AT2 2 RJ45 (10Gb/port) Gen3 x4 Standard Low Profile	
	AOC-S25G-i2S	1	Standard Low Profile 25G dual port SFP28, based on Intel XXV710+ Marvell Unionville, RoHS	
	CBL-NTWK-0942-MQ28E20M	1	InfiniBand, EDR, QSFP28, 100GbE, PASSIVE, 28 AWG, 2M, Mellanox, RoHS	
	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-S40G-i2Q	1	Intel XL710-BM2 2-port QSFP+ (40Gb/port) Gen3 x8 Standard Low Profile	
	AOC-S100GC-i2C	1	Standard PCIe 4.0 x 16 dual port 100GbE with QSFP28 based on Intel E810-CAM2, RoHS	
	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-653106A-ECAT	1	ConnectX-6 VPI Card. 100Gb/s InfiniBand & Ethernet Adapter Card, Dual ports, QSFP56, PCIe 3.0/4.0 x16. HF, RoHS.	
	Note	** Requires x1 CBL-SAST-1281-100	-	-
		*** Requires MCP-240-00203-0N	-	-
		* Requires x2 CBL-SAST-1281-100	-	-
	Software	SFT-DCMS-Single	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
		MCP-240-00203-0N	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	