

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

NEW

**4U Dual Processor (3rd Gen Intel® Xeon®) GPU System with NVIDIA HGX A100
8-GPU 40GB/80GB, NVLink, NVSwitch.**



Key Applications

- High Performance Computing
- 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. 10 PCI-E Gen 4.0 X16 LP Slots
AIOM/OCP 3.0 Support

5. Flexible networking options

6. 2 M.2 NVMe and SATA for boot drive only
6x 2.5" Hot-swap NVMe/SATA/SAS drive bays

7. 4 heavy duty fans with optimal fan speed control

8. 4x 2200W redundant Titanium level power supplies

Specifications

Product SKUs

SYS-420GP-TNAR	<ul style="list-style-type: none"> SuperServer SYS-420GP-TNAR (Black Front & Silver Body)
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Motherboard

Super X12DGO-6

Processor

CPU	<ul style="list-style-type: none"> Dual Socket P+ (LGA-4189) 3rd Gen Intel® Xeon® Scalable processors Support CPU TDP 270W
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Cores	<ul style="list-style-type: none"> Up to 40C/80T; Up to 60MB Cache
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GPU

Supported GPU	<ul style="list-style-type: none"> HGX A100 8-GPU SXM4 Multi-GPU Board
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CPU-GPU Interconnect	<ul style="list-style-type: none"> PCI-E 4.0 x16 CPU-to-GPU Interconnect
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GPU-GPU Interconnect	<ul style="list-style-type: none"> NVIDIA® NVLink™ with NVSwitch™
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System Memory

Memory	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> 1.2 V
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Error Detection	<ul style="list-style-type: none"> ECC
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On-Board Devices

SATA	<ul style="list-style-type: none"> SATA3 (6Gbps); RAID 0/1/5/10 support
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Chipset	<ul style="list-style-type: none"> Intel® C621A
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Network Connectivity	<ul style="list-style-type: none"> 2x 10GbE BaseT with Intel® X550-AT2 (optional)
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IPMI	<ul style="list-style-type: none"> Support for Intelligent Platform Management Interface v.2.0 IPMI 2.0 with virtual media over LAN and KVM-over-LAN support
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Input / Output

Video	<ul style="list-style-type: none"> 1 VGA port(s)
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System BIOS

BIOS Type	<ul style="list-style-type: none"> AMI 32MB SPI Flash EEPROM
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Chassis

Form Factor	<ul style="list-style-type: none"> 4U Rackmount
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Model	<ul style="list-style-type: none"> CSE-438G
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Dimensions and Weight

Height	<ul style="list-style-type: none"> 6.9" (174mm)
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Width	<ul style="list-style-type: none"> 17.6" (446mm)
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Depth	<ul style="list-style-type: none"> 35.4" (900mm)
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Package	<ul style="list-style-type: none"> 29.5" (H) x 27.4" (W) x 44.9" (D)
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Weight	<ul style="list-style-type: none"> Net Weight: 166 lbs (75.3 kg) Gross Weight: 225 lbs (102.1 kg)
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Available Color	<ul style="list-style-type: none"> Black Front & Silver Body
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Expansion Slots

PCI-Express (PCI-E)	<ul style="list-style-type: none"> Slot 1: PCI-E 4.0 x16 LP Slot 2: PCI-E 4.0 x16 LP Slot 3: PCI-E 4.0 x16 LP Slot 4: PCI-E 4.0 x16 LP Slot 5: PCI-E 4.0 x16 LP Slot 6: PCI-E 4.0 x16 LP Slot 7: PCI-E 4.0 x16 LP Slot 8: PCI-E 4.0 x16 LP Slot 9: PCI-E 4.0 x16 LP Slot 10: PCI-E 4.0 x16 LP
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Drive Bays / Storage

Hot-swap	<ul style="list-style-type: none"> 6x 2.5" hot-swap NVMe/SATA/SAS drive bays (6x 2.5" NVMe hybrid; 4x 2.5" NVMe dedicated)
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M.2	<ul style="list-style-type: none"> 2 M.2 NVMe OR 2 M.2 SATA3
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System Cooling

Fans	<ul style="list-style-type: none"> 4 heavy duty fans with optimal fan speed control
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Power Supply

4x 2200W Redundant Power Supplies, Titanium Level

Dimension (W x H x L)	<ul style="list-style-type: none"> 106.5 x 82.4 x 203.3 mm
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AC Input	<ul style="list-style-type: none"> 1200W: 100-127Vac / 11A-14A / 50-60Hz 2000W: 180-220Vac / 11A-13A / 50-60Hz (UL/CUL only) 1800W: 200-220Vac / 9.5A-10A / 50-60Hz 1980W: 220-230Vac / 9.8A-10A / 50-60Hz 2200W: 220-240Vac / 11A-12A / 50-60Hz (UL/CUL only) 2090W: 230-240Vac / 9.8A-10A / 50-60Hz
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Management

- Software**
- OOB Management Package (SFT-OOB-LIC)
 - Redfish API
 - IPMI 2.0
 - SSM
 - Intel® Node Manager
 - SPM
 - KVM with dedicated LAN
 - SUM
 - 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

- +12V**
- Max: 10A / Min: 9.5A (200Vac-220Vac) (CQC only)
 - Max: 10A / Min: 9.8A (220Vac-230Vac) (CQC only)
 - Max: 10A / Min: 9.8A (230Vac-240Vac) (CQC only)
 - Max: 10A / Min: 9.8A (230Vdc-240Vdc) (CQC only)

- Output Type**
- Backplanes (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-X12DGO-6	1	Super X12DGO-6 Motherboard
	CSE-438G	1	4U Chassis
Add-on Card / Module	AOM-438G-AIOM-P	1	AIOM adapter card for CSE-438G,RoHS
Add-on Card / Module	AOM-438G-FAN-P	1	Fan adaptor for SC1018G,RoHS
Add-on Card / Module	AOM-DGO-IO-P	1	I/O riser card for 4U 8 SXM4 GPU system 420GP-TEVRT,RoHS
Add-on Card / Module	AOM-SXM4-IO-P	1	PCIE Gen4 switch board for 4U 8 SXM4 GPU system,RoHS
Backplane	BPN-GPU-438G	1	Midplane for 4U AMD/Intel Delta GPU system,RoHS
Backplane	BPN-NVME4-F418-B6S6	1	1U 6-Slot SFF Backplane Supports 6xSAS3/SATA3/NVMe4 Storage Devices. The Backplane is for X12 FatTwin Product Line.,HF,RoHS
Cable 1	CBL-GNZ2-12105F-85	1	GENZ 2C x16 (STR) to 2x Slimline x4 (STR),FFC,FOLD,105.
Cable 2	CBL-GNZ2-1281F-85	1	GENZ 2C x16 (STR),Slimline x8 (STR) to 2x 2x Slimline x4
Cable 3	CBL-PWCD-0900	4	PWCD,US/EU/Canada/China/Australia,IEC60320 C14 TO C13,4FT,17
Cable 4	CBL-PWEX-1114-30	1	Microfit,PH3.0,(2x4F to 2x4F),30CM,9A/pin,16AWG,RoHS
Cable 5	CBL-PWEX-1117-40	2	MiniFit,2x2,PH4.2,F to MiniFit,2x2,PH4.2,F,40CM,8A/pin,
Cable 6	CBL-SAST-1238FLP-85	1	SlimlineLP x8 (STR) to SlimlineLP x8 (STR),FFC,BNDL,38C
Cable 7	CBL-SAST-1242-100	2	Slimline x4 (STR) to MiniSAS HD x4 (STR),INT,43CM,100 O
Cable 8	CBL-SAST-1258FLP-85	1	SlimlineLP x8 (STR) to SlimlineLP x8 (STR),FFC,BNDL,58C
FAN 1	FAN-0196L4-1	4	92x92x76 mm, 13.3K-12.2K RPM Counter-rotating Fan, w/ SMC Fan Board
Power Supply	PWS-2K21G-2R	4	AC-DC 2200W at high and 1200W at low line multi-output
Riser Card	RSC-G-66G4	1	1U LHS GPU Riser card with two PCI-E 4.0 x16 slots,RoHS
Software	SFT-OOB-LIC	1	License key for enabling OOB BIOS management
Heatsink / Retention	SNK-P0077V	2	X12 ICX/CPX CPU Heatsink (78x113x25.5mm), VC Base, Cu Fin
*Cable 9	CBL-OTHR-0794	1	VGA,DB 15pin,F to 2x8,PH2.54,10CM,30 AWG,RoHS

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
Network Card(s)	AOC-MCX516A-CCAT	-	Mellanox MCX516A-CCAT 2-port 100GbE QSFP28 PCIe 3.0 x16 CX-5. HF, RoHS
	AOC-MCX512A-ACAT	-	Mellanox MCX512A-ACAT PCIe 2-port 25GbE SFP28 Gen3x8 CX-5 EN. RoHS
	AOC-653106A-HDAT	-	Mellanox ConnectX-6 VPI 200Gb/s InfiniBand & Ethernet Adapter Card 2-port, QSFP56 PCIe 3.0/4.0 x16. HF, RoHS
	AOC-STG-i4S	-	Standard low-profile 4-port SFP+
	AOC-653105A-HDAT	-	Mellanox ConnectX-6 VPI 200Gb/s InfiniBand & Ethernet Adapter Card 1-port, QSFP56, PCIe 3.0/4.0 x16, RoHS

	AOC-STG-I2T	-	Standard low-profile 2-port 10GbE, based on Intel X540 Twinville
	AOC-653105A-ECAT	-	Mellanox MCX653105A-ECAT PCIe 1-port IB-HDR100 & 100GbE QSFP56 Gen3.0/4.0 x16 CX-6 VPI. HF, RoHS.
	AOC-S25G-i2S	-	Standard low-profile 2-port 25GbE SFP28, based on Intel XXV710+ Marvell Unionville, RoHS
	AOC-623106AN-CDAT	-	ConnectX-6 Dx 100GbE 2-port QSFP56 PCIe 4.0 x16, RoHS
	AOC-S25G-M2S	-	Standard low-profile 2-port 25GbE SFP28, based on Mellanox ConnectX-4 LX EN chipset, RoHS
	AOC-MCX556A-ECAT	-	MCX556A-ECAT, CX-5 VPI, EDR IB, 100GbE, 2-port, QSFP28, PCIe3 x16
Network Card(s) AIOM	<u>AOC-ATG-i2TM</u>	-	AIOM 2-port 10GBase-T, Intel X550,RoHS
	<u>AOC-A25G-b2SM</u>	-	AIOM 2-port 25GbE SFP28, Broadcom BCM57414,RoHS
	AOC-ATG-i2SM	-	AIOM 2-port 10GbE SFP+, based on X710-BM2,RoHS
	AOC-AG-I4M	-	AIOM 4-port 1GbE RJ45, based on i350-AM4, RoHS
	AOC-AG-I2M	-	AIOM 2-port 1GbE RJ45, based on i350-AM2, RoHS
	AOC-AH25G-M2S2TM	-	AIOM 2-port 25GbE SFP28 based on Mellanox CX-4 Lx EN, and Dual-Port 10GbeE RJ45 based on Intel X550-AT2, RoHS
	AOC-653436A-HDAB	-	Mellanox MCX653436A-HDAB OCP3.0 2-port HDR/200GbE QSFP56 Gen 3/4x6 CX-6 VPI with custom bracket, RoHS
	AOC-ATG-I4SM	-	AIOM 4-port 10GbE SFP+, based on Intel XL710-BM1,RoHS
	AOC-MCX4621A-ACAB	-	Mellanox MCX4621A-ACAB OCP 3.0, 2-port 25GbE SFP28, Gen3 x8 CX-4 Lx, RoHS.
	<u>AOC-ATG-i2T2SM</u>	-	AIOM 4-port 10GbE, 2-port RJ45 & 2-port SFP+, based on Intel X710-TM4, RoHS
	AOC-623436AN-CDAB	-	Mellanox MCX623436AN-CDAB OCP 3.0 2-port 100GbE QSFP56 Gen4x16 CX-6, RoHS
	Optional NVMe Kit	BPN-NVME4-HS119N-S4R	1
MCP-220-00178-0B		4	Hot-swap thin-profile, 2.5" tool-less NVMe drive tray w/ orange tab
CBL-SAST-1224LP-85		2	SlimLine LP x8 to SlimLine LP x8, 24-cm cable
CBL-PWEX-1231		1	MicroFit, 2x2 36-cm GPU cable
RAID Controller /Cable	CBL-SAST-0568 • eStore	2	Internal Mini-SAS HD to Mini-SAS HD 35cm,30AWG,12Gb/s
	AOC-S3108L-H8iR-16DD	1	8 int 12Gb/s ports, 8xGen3, ROC - LP,16 HDD w/ exp
Software	<u>SFT-DCMS-Single</u>	1	DataCenter Management Package (per node license)
Storage	AOC-S3908L-H8iR & 1x CBL-SAST-1262-100	1	8 int 12Gb/s ports, x8 Gen4, ROC - LP, 240 HDD w/ exp, RoHS
Trusted Platform Module Options	AOM-TPM-9671V-S-O	1	SPI capable vertical TPM 1.2 provisioned for server,RoHS
	AOM-TPM-9670V-S-O	1	SPI capable vertical TPM 2.0 provisioned for server,RoHS