HPC System - 2U UP 4 x GPU Server

AMD EPYC™ 7002 Series Processor (Rome)
The next generation of AMD EPYC has arrived, providing incredible compute, IO and bandwidth capability – designed to meet the huge demand for more compute in big data analytics, HPC and cloud computing.

- Built on 7nm advanced process technology, allowing for denser compute capabilities with lower power consumption
- Up to 64 core per CPU, built using Zen 2 high performance cores and AMD’s innovative chiplet architecture
- Supporting PCIe Gen 4.0 with a bandwidth of up to 64GB/s, twice of PCIe Gen 3.0
- Embedded security protection to help defend your CPU, applications, and data

AMD Radeon Instinct™ MI50 Support
This GIGABYTE server features support for AMD's Radeon Instinct™ MI50 compute card, designed to deliver high levels of performance for deep learning, high performance computing (HPC), cloud computing, and rendering systems.

NVIDIA® Tesla® V100 Support
GIGABYTE’s AMD EPYC server systems and motherboards are fully compatible and qualified to use with NVIDIA’s Tesla® V100 GPU, an advanced data center GPU built to accelerate AI, HPC, and graphics. Powered by NVIDIA’s Volta™ architecture and with 640 Tensor Cores, the Tesla® V100 has broken the 100 teraflops (TFLOPS) barrier of deep learning performance — enabling data scientists, researchers, and engineers to tackle challenges that were once impossible.

GIGABYTE Management Console (AMI MegaRAC SP-X)
This GIGABYTE server product utilizes an AMI MegaRAC SP-X platform for BMC server management, with a feature rich and easy to use browser-based graphical user interface. Notable features include:

- RESTful API support (including the latest DMTF standards of Redfish) allows the administrator to integrate with 3rd party applications for server management
- HTML5-based iKVM remote management client included as a standard feature, no additional add-on license required to purchase
- Detailed FRU information from SMBIOS
- Pre-event automatic video recording feature from 10 to 30 seconds
- SAS / RAID controller monitoring feature

GIGABYTE Server Management (GSM)
GIGABYTE Server Management (GSM) is GIGABYTE’s proprietary multiple server remote management software platform, available as a free download from each GIGABYTE server product page. GSM is compatible with either IPMI or Redfish (RESTful API) connection interfaces, and comprises the following sub-programs:

- GSM Server
- GSM CLI
- GSM Agent
- GSM Mobile
- GSM Plugin
Specification

Dimensions
2U
(WxHxD)
438 x 87.5 x 820 mm

Motherboard
MZ12-HD1

CPU
AMD EPYC™ 7002 series processor family
Single processor, 7nm technology
Up to 64-core, 128 threads per processor
TDP up to 225W, cTDP up to 240W
Fully support 280W
Compatible with AMD EPYC™ 7001 series processor

Socket
Socet SP3

Chipset
System on Chip

Memory
8 x DIMM slots
DDR4 memory supported only
8-Channel memory architecture
RDIMM modules up to 64GB supported
LRDIMM modules up to 128GB supported
Memory speed: Up to 3200 MHz

LAN
2 x 1GbE LAN ports (1 x Intel® I350-AM2)
1 x 10/100/1000 management LAN

Video
Integrated in Aspeed® AST2500
2D Video Graphic Adapter with PCIe bus interface
1920x1200@60Hz 32bpp, DDR4 SDRAM

Storage
Front side: 4 x 3.5" SATA hot-swap HDD/SSD bays
2.5" HDD/SSD supported
SATA devices supported only
Rear side: 2 x 2.5" NVMe/SAS/SATA hybrid hot-swap
HDD/SSD bays
SAS card is required for SAS devices support

SATA
Supported

SAS
Depend on SAS Card

RAID
-

Expansion Slots
4 x PCIe x16 slots (Gen3 x16 bus) for GPUs
Riser Card CRS5027:
- 1 x PCIe x16 slot (Gen3 x16 or x8), FHHL
- 1 x PCIe x8 slots (Gen3 x0 or x8), FHHL
1 x OCP 2.0 mezzanine slot with PCIe Gen3 x16 bandwidth
(Type1, P1, P2, P3, P4)
1 x onboard M.2 slot:
- M-key, PCIe Gen3 x4
- Supports NGFF-2242/2260/2280/22110 cards
- CPU TDP is limited to 180W if using M.2 device
- System is validated for population with a uniform GPU model
- Support is not provided for mixed GPU populations

Internal I/O
1 x TPM header, 1 x Front panel header

Front I/O
1 x USB 3.0, 1 x Power button with LED, 1 x ID button with LED,
1 x Reset button, 1 x NMi button, 1 x System status LED,
1 x HDD activity LED, 2 x LAN activity LEDs

Rear I/O
2 x USB 3.0, 1 x VGA, 2 x RJ45, 1 x MLAN, 1 x ID LED

Backplane I/O
Front side_CBPG041: 4 x SATA/SAS ports
Rear side_CBPG2021: 2 x NVMe/SATA/SAS ports
Speed and bandwidth: SATA 6Gb/s, SAS 12Gb/s or PCIe x4

TPM
1 x TPM header with SPI interface
Optional TPM2.0 kit: CTM010

Power Supply
2 x 80 PLUS Platinum 1600W redundant PSUs
AC Input:
- 100-127V~/ 12A, 47-63Hz
- 200-240V~/ 9.48A, 47-63Hz
DC Output:
- Max 1000W/ 100-127V
+12V/ 82A
+12Vsb/ 2.1A
- Max 1600W/ 200-240V
+12V/ 132A
+12Vsb/ 2.1A

System Management
Aspeed® AST2500 management controller
GIGABYTE Management Console (AMI MegaRAC SP-X)
Dashboard
JAVA Based Serial Over LAN
HTML5 KVM
Sensor Monitor (Voltage, RPM, Temperature, CPU Status ...etc.)
Sensor Reading History Data
SEL Log in Linear Storage / Circular Storage Policy
Hardware Inventory
Fan Profile
System Firewall
Power Consumption
Power Control
LDAP / AD / RADIUS Support
Backup & Restore Configuration
Remote BIOS/BMC/CPLD Update
Event Log Filter
User Management
Media Redirection Settings
PAM Order Settings
SSL Settings
SMTP Settings
Windows Server 2016 (X2APIC/256T not supported)
Windows Server 2019
Red Hat Enterprise Linux 7.6 (x64) or later
Red Hat Enterprise Linux 8.0 (x64) or later
SUSE Linux Enterprise Server 15 SP1 (x64) or later
Ubuntu 16.04.6 LTS (x64) or later
Ubuntu 18.04.3 LTS (x64) or later
VMware ESXi 6.5 EP15 or later
VMware ESXi 6.7 Updated or later
Citrix Hypervisor 6.1.0

Weight
Net Weight: 18.2 kg
Gross Weight: 28.5 kg

System Fans
5 x 80x80x38mm (16,300rpm)

Operating Properties
Operating temperature: 10°C to 35°C
Operating humidity: 8%-80% (non-condensing)
Non-operating temperature: -40°C to 60°C
Non-operating humidity: 20%-95% (non-condensing)

Packaging
1 x G242-Z10
1 x CPU heatsink
1 x Rail kit

Part Numbers
Barebone with rail kit: 5NG242Z10MR-00
- Motherboard: 9MZ12HD1NR-00
- Rail kit: 25HB2-3A0202-K0R
- CPU heatsink: 25ST1-15320E-J1R
- Back plane board_4-port: 9CBPG041NR-00
- Back plane board_2-port: 9CBP2021NR-00
- Front panel board: 9CFP1000NR-00
- Power supply: 25EP0-216007-LOS

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