

G291-281

HPC System - 2U DP 8 x Gen3 GPU Server



Features

Able to support up to 8 double slot GPGPU or co-processor cards, the G291 Series enables world-leading HPC within a 2U chassis.

- Supports up to 8 x double slot GPU cards
- NVIDIA® validated GPU platform; Supports for NVIDIA® Tesla®
- 2nd Gen. Intel® Xeon® Scalable Processors
- 6-Channel RDIMM/LRDIMM DDR4, 24 x DIMMs
- Supports Intel® Optane™ DC Persistent Memory
- 2 x 10Gb/s BASE-T LAN ports
- 1 x Dedicated management port
- 8 x 2.5" SATA/SAS hot-swap HDD/SSD bays
- 8 x PCIe Gen3 expansion slots for GPUs
- 2 x PCIe x16 Half-length low-profile slots for add-on cards
- Aspeed® AST2500 remote management controller
- 2+0 2000W 80 PLUS Titanium power supply

Intel® Xeon® Scalable Family Processors

GIGABYTE's Intel® Xeon® Scalable Processor family servers are available in dual socket configurations, and are compatible with the full family of different SKUs (Bronze, Silver, Gold and Platinum) that are workload optimized to support different applications, from enterprise IT database, cloud and storage to the most high-demand HPC workloads.

Compute:

- Up to 28 cores / 56 threads per socket
- Up to 38.5 MB L3 cache (non-inclusive)
- Up to 3x UPI socket interconnects @10.4 GT/s
- CPU TDP 70W – 205W

Memory:

- 6 channels, 2 DIMMs per channel
- Up to 12 DIMMs per socket
- Up to 2933MHz max memory speed
- Intel Optane DC Persistent Memory ready



I/O:

- 48 PCIe 3.0 lanes per socket



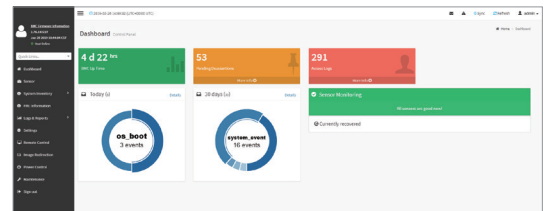
NVIDIA® Tesla® V100 Support

GIGABYTE's Intel® Xeon® Scalable servers 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 a AMI MegaRAC SP-X platform for BMC server management, with a feature rich and easy to use browser-based graphical user interface.

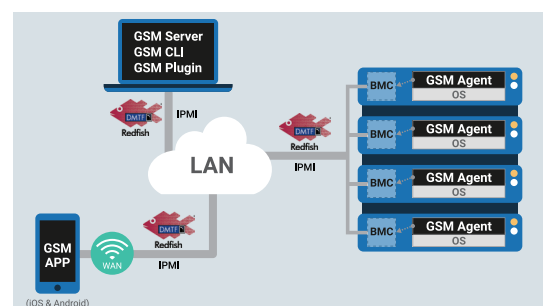
- **RESTful API support** (including the latest DMTF standards of Redfish) allows the administrator to integrate with 3rd party applications for server management
- **HTML5-based iKVM** remote management client included as a standard feature, no additional add-on license required to purchase
- **Detailed 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 (WxHxD)	2U 448 x 87.5 x 800 mm	Power Supply	2+0 2000W 80 PLUS Titanium power supply AC Input: - 1000W: 100-127V/ 12-9.5A, 50-60Hz - 1800W: 200-220V/ 10-9.5A, 50-60Hz - 1980W: 220-230V/ 10-9.8A, 50-60Hz - 2000W: 230-240V/ 10-9.8A, 50-60Hz DC Output: - Max 1000W@100-127V: - 1980W@220-230V: +12.12V/ 95.6A +12V/ 165.0A +12Vsb/ 3.5A +12Vsb/ 2.1A - 1800W@200-220V: - 2000W@200-240V: +12V/ 150.0A +12V/ 166.7A +12Vsb/ 2.1A +12Vsb/ 2.1A
Motherboard	MG51-G21	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 FRU Information 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
CPU	2nd Generation Intel® Xeon® Scalable Intel® Xeon® Scalable Processors Intel® Xeon® Platinum Processor, Intel® Xeon® Gold Processor, Intel® Xeon® Silver Processor and Intel® Xeon® Bronze Processor NOTE: If only 1 CPU is installed, some PCIe or memory functions might be unavailable	OS Compatibility	For Cascade Lake processors: Windows Server 2012 R2 with Update Windows Server 2016 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 12.3 (x64) or later SUSE Linux Enterprise Server 15 (x64) or later Ubuntu 18.04 LTS (x64) or later VMware ESXi 6.0 Update3 or later VMware ESXi 6.5 Update2 or later VMware ESXi 6.7 Update1 or later Citrix XenServer 7.1.0 CU2 or later Citrix XenServer 7.5.0 or later Citrix Hypervisor 8.0.0 or later
Socket	2 x LGA 3647, Socket P, TDP up to 205W	Weight	Net Weight: 30 kg / Gross Weight: 36 kg
Chipset	Intel® C621 Express Chipset	System Fans	8 x 80x80x38mm (16300rpm)
Memory	24 x DIMM slots DDR4 memory supported only 6-channel memory per processor architecture RDIMM modules up to 64GB supported LRDIMM modules up to 128GB supported Supports Intel® Optane™ DC Persistent Memory (DCPMM) 1.2V modules: 2933(1DPC)/2666/2400/2133 MHz NOTE: 1. 2933MHz for 2nd Generation Intel® Xeon® Scalable Processors only 2. Intel® Optane™ DC Persistent Memory for 2nd Generation Intel® Xeon® Scalable Processors only 3. The maximum number of DCPMM that can be installed is based on a maximum operating (ambient) temperature of 35°C 4. To enquire about installing a greater number of DCPMM, please consult with your GIGABYTE technical or sales representative	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)
LAN	2 x 10Gb/s BASE-T LAN ports (Intel® X550-AT2) 1 x 10/100/1000 management LAN	Packaging Content	1 x G291-281 2 x CPU heatsinks 1 x Rail kit 2 x Non-Fabric CPU carrier
Video	Integrated in Aspeed® AST2500 2D Video Graphic Adapter with PCIe bus interface 1920x1200@60Hz 32bpp, DDR4 SDRAM	Part Numbers	Barebone with rail kit: 6NG291281MR-00 - Motherboard: 9MG51G21NR-00 - Tool-less rail kit: 25HB2-A86102-K0R - Power supply: 25EP0-220003-C2S - Fan module: 25ST2-883827-D0R - 2 x NVMe cable kits: 6N0ASP035PR-W6 (optional) - 2 x 7mm internal SSD cable kit: 6NG291281SR-00-100 (optional)
Storage	8 x 2.5" SATA/SAS hot-swappable HDD/SSD bays SAS card is required to enable the drive bays	Front I/O	1 x Power button with LED, 1 x ID button with LED, 2 x LAN activity LEDs, 1 x HDD activity LED, 1 x System status LED, 1 x Reset button
SATA	1 x 7-pin SATA III 6Gb/s with SATA DOM supported By using pin_8 or external cable for power function	Rear I/O	2 x USB 3.0, 1 x VGA, 2 x RJ45, 1 x MLAN, 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
SAS	Supported via add-on SAS Card	Backplane I/O	8 x SAS/SATA ports Bandwidth: SATAIII 6Gb/s or SAS 12Gb/s per port
RAID	Intel® SATA RAID 0/1/10/5	TPM	1 x TPM header with SPI interface Optional TPM2.0 kit: CTM010
Expansion Slots	8 x PCIe x16 slots (Gen3 x16 bus) for GPUs 2 x PCIe x16 (Gen3 x16 bus) Half-length low-profile slots OCP type add-on card as an option - Maximum limitation of GPU card: 285mm (L) x 111.5mm (W) x 39.5mm (H) - System is validated for population with a uniform GPU model - Support is not provided for mixed GPU populations		
Internal I/O	1 x 18-pin power connector, 1 x 14-pin power connector, 2 x 8-pin power connectors, 2 x 4-pin power connectors, 1 x USB 3.0 header, 1 x TPM header, 1 x VROC connector, 1 x HDD back plane board header, 1 x 12-pin front panel header, 1 x 23-pin front panel header, 1 x JTAG header, 2 x SATA SGPIO headers, 1 x Front VGA header, 1 x Serial header, 1 x IPMB connector, 1 x P12V standby connector, 1 x PMBus selection jumper, 1 x Clear CMOS jumper, 1 x LT debug jumper		

* All specifications are subject to change without notice. Please visit our website for the latest information.

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