GIGABYTE™

R281-3C1
Rack Server - 2U DP 12-Bay

Features

- 2nd Gen. Intel® Xeon® Scalable Processors
- 6-Channel RDIMM/LRDIMM DDR4, 24 x DIMMs
- Supports Intel® Optane™ DC Persistent Memory
- Dual 1Gb/s LAN ports (Intel® I350-AM2)
- 1 x Dedicated management port
- 12 x 3.5" and 2 x 2.5" SATAIII hot-swappable HDD/SSD bays
- Onboard 12Gb/s SAS expander
- 8 x PCIe Gen3 expansion slots
- 2 x OCP Gen3 x16 mezzanine slots
- Aspeed® AST2500 remote management controller
- Dual 1200W 80 PLUS Platinum redundant 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

I/O:
- 48 PCIe 3.0 lanes per socket

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

## Intel® Optane™ DC Persistent Memory Ready

GIGABYTE's 2nd Gen. Intel® Xeon® Scalable family servers come ready to support Intel Optane DC Persistent Memory, a revolutionary new product that re-defines traditional memory & storage architectures by enabling a large persistent memory tier between DRAM and SSDs, that's higher capacity than DRAM and faster than SSDs, enabling the user to bring more data closer to the CPU for faster time for insight.

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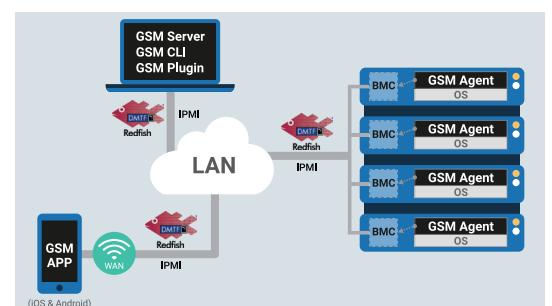
- **RESTful API support** (including the latest DMTF standards of Redfish) allows the administrator to integrate with 3rd party applications for server management
- **HTML5-based iKVM** remote management client included as a standard feature, no additional add-on license required to purchase
- **Detailed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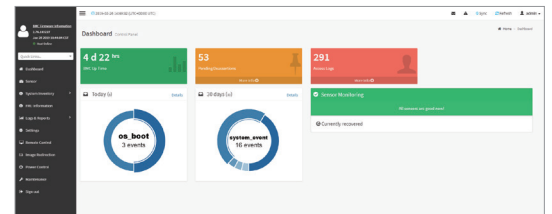
GIGABYTE Server Management (GSM)

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**

Dimensions (WxHxD)	2U 438 x 87.5 x 730
Motherboard	MR91-FS0
CPU	2nd Generation Intel® Xeon® Scalable Processors Intel® Xeon® Platinum Processor, Intel® Xeon® Gold Processor, Intel® Xeon® Silver Processor and Intel® Xeon® Bronze Processor CPU TDP up to 205W NOTE: If only 1 CPU is installed, some PCIe or memory functions might be unavailable
Socket	2 x LGA 3647, Socket P
Chipset	Intel® C621 Express Chipset
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
LAN	2 x 1Gb/s BASE-T LAN ports (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: 12 x 3.5" or 2.5"SATA/SAS hot-swap HDD/SSD bays Rear side: 2 x 2.5" SATA hot-swap HDD/SSD bays SAS card is required for SAS devices support LSI SAS35x24 expander Bandwidth: SATAIII 6Gb/s or SAS 12Gb/s per port Default configuration supports: 2 x SATA drives Suggested SAS cards: CRA4448, CRA4548, CRAO438, CRAO558
SATA	2 x 7-pin SATA III 6Gb/s with SATA DOM supported By using pin_8 or external cable for power function
SAS	Depends on SAS add-on Card
RAID	Depends on SAS add-on Card

Expansion Slots	Riser Card CRS2131: 1 x PCIe x16 slot (Gen3 x16 or x8), FHFL
	                1 x PCIe x8 slots (Gen3 x0 or x8), FHFL
	                1 x PCIe x8 slots (Gen3 x8), FHHL
	
	Riser Card CRS2132: 1 x PCIe x16 slot (Gen3 x16 or x8), FHFL
	                1 x PCIe x8 slots (Gen3 x0 or x8), FHFL
	                1 x PCIe x8 slots (Gen3 x8), FHHL
	
	Riser Card CRS2124: 1 x PCIe x8 slots (Gen3 x0 or x8), LPHL
	                1 x PCIe x16 slot (Gen3 x16 or x8), LPHL
	
	2 x OCP mezzanine slots
	- PCIe Gen3 x16, Type1, P1, P2, P3, P4, K2, K3

Internal I/O	2 x Power supply connectors, 4 x SlimSAS connectors, 2 x SATA 7-pin connectors, 2 x CPU fan headers, 1 x USB 3.0 header, 1 x TPM header, 1 x VROC connector, 1 x Front panel header, 1 x HDD back plane board header, 1 x IPMB connector, 1 x Clear CMOS jumper, 1 x BIOS recovery jumper
Front I/O	2 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, 1 x COM (RJ45 type), 2 x RJ45, 1 x MLAN, 1 x ID button with LED
Backplane I/O	Front side_CBP20C3: 12 x SATA/SAS ports Rear side_CBP2020: 2 x SATA/SAS ports Bandwidth: SATAIII 6Gb/s or SAS 12Gb/s per port
TPM	1 x TPM header with LPC interface Optional TPM2.0 kit: CTM000

Power Supply	2 x 80 PLUS Platinum 1200W redundant PSUs AC Input: - 100-240V~/ 12-7A, 50-60Hz DC Input: - 240Vdc/ 6A DC Output: - Max 1000W/ 100-240V~ +12V/ 80.5A +12Vsb/ 3A - Max 1200W/ 200-240V~ or 240Vdc input +12V/ 97A +12Vsb/ 3A
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
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
Weight	20 kg
System Fans	4 x 80x80x38mm (14'900rpm)
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 Content	1 x R281-3C1, 2 x CPU heatsinks, 1 x Rail kit, 2 x Non-Fabric CPU carrier
Part Numbers	Barebone package: 6NR2813C1MR-00 - Motherboard: 9MR91FS0NR-00 - Rail kit: 25HB2-3A0202-K0R - CPU heatsink: 25ST1-353105-T1R - Back plane board_12-port: 9CBP21C0NR-00 - Back plane board_2-port: 9CBP2020NR-00 - Front panel board: 9CFP2001NR-00 - Power supply: 25EP0-212002-F3S - RJ45 type COM cable: 25CR0-200400-Y4R (in option) - Riser card - CRS2131: 9CRS2131NR-00 - Riser card - CRS2132: 9CRS2132NR-00 - Riser card - CRS2124: 9CRS2124NR-00 - SAS cable for PCIe type SAS card: 25CFM-800821-A4R - SAS cable for OCP type SAS card: 25CFM-850820-A4R (in option) - Cable for rear HDD to expander: 25CFM-05K820-A4R