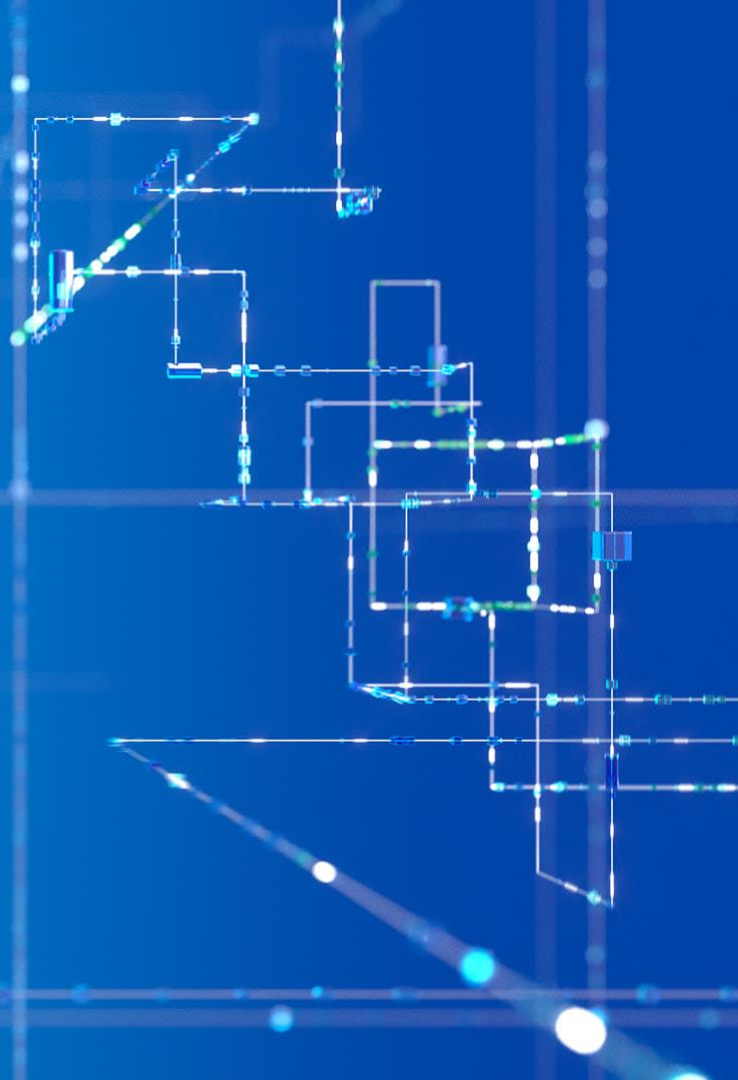
GIGABYTE™

GIGA COMPUTING

Intel Server Solution 2023

Mar.2023



Product Portfolio

R-Series

Affordable and expandable rackmount servers, offering ease-of-use, low power consumption and quiet operation

H-Series

Compact and scalable systems providing higher density computing power in a smaller footprint for cloud and other scale-out computing applications

G-Series

Versatile and scalable high performance computing with leading efficiency and performance. Ideal for datacenters

S-Series

Storage optimized servers that offer a high data density design, configuration flexibility, and HA and reliability features for data integrity

W-Series

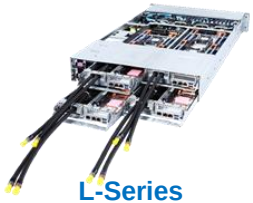
A range of tower servers suitable for an office environment, from entry level to high end computing and HPC

E-Series

Edge computing is a distributed computing paradigm which brings computation and data storage closer to the location where it is needed, to improve response times and save bandwidth

OCP-Series

A datacenter solution simple in design, but also highly efficient in power consumption, computing power and configuration



L-Series

Following high core count CPU & high TDP developed, traditional air cooling can not afford anymore. L-series provide more efficient cooling to the system and keep the high computing performance at all times.

I-Series

More than L-series, Immersion cooling uses different ways to cool down. Not just CPU, but also the whole system's component. Special enclosure and tray design make all systems stay at the lowest temperature to compute.

End to end of Intel Products

Intel Product Line Up

High End

Low End

intel. XEON GOLD

intel. XEON PLATINUM

intel. XEON SILVER

intel. XEON BRONZE

intel. XEON MAX SERIES

intel. XEON D

intel. XEON E

GIGABYTE™

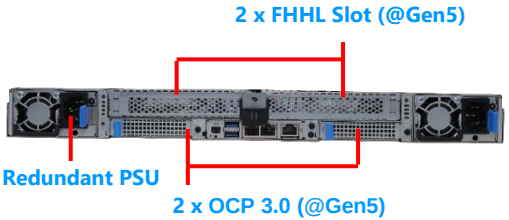
More than 70 SKUs of 4th Gen Intel® Xeon® Scalable processor servers have been released as first wave in launch time frame. Including the second wave release plan, all GIGABYTE server series will support 4th Gen Intel® Xeon® Scalable processor to different workloads and applications in 2023.

Intel® Xeon® D-1700 processors is our new SoC server board targeting IOT and Networking. We created mini-ITX architecture for flexible usage.

Intel® Xeon® E-2300 Processors is our new entry server board line-up targeting SMB and Web hosting. We will create R and E series entry servers in the end of this year.

Gigabyte 3rd Gen Server Architecture (R)

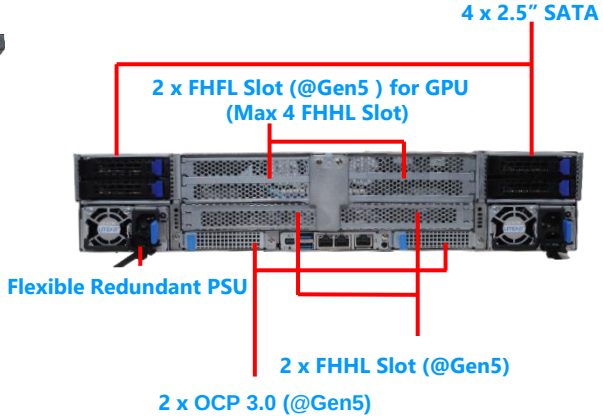
New: 2.5 Inch & E1.S Mixed SKU



G-SC Module with 2 x 1GbE

R183 Series

New: PCIe Gen5 All Flash Array SKU

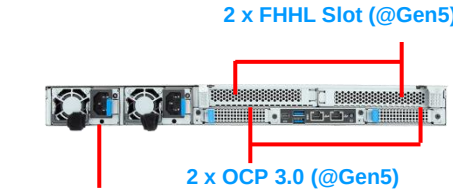


G-SC Module with 2 x 1GbE

R283 Series

Gigabyte 3rd Gen Server Architecture (R)

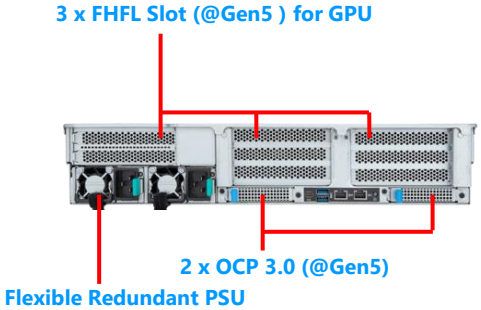
New: UP rich I/O SKU



1 x 1GbE on board

R163 Series

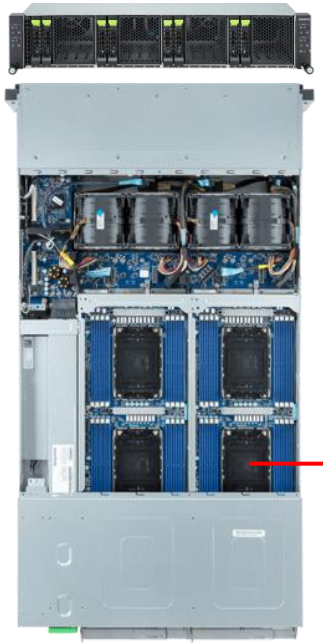
New: UP rich I/O GPU sku



1 x 1GbE on board

R263 Series

Gigabyte 3rd Gen Server Architecture(H)

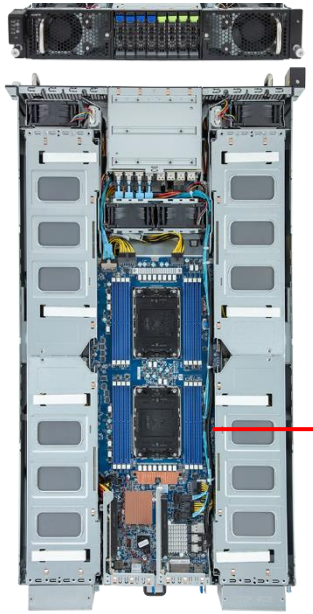


New: Thermal Optimized SKU

4 x DP Nodes in 2U

H263 Series

Gigabyte 3rd Gen Server Architecture(G)

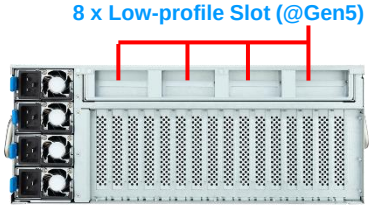


New: PCIe Gen5
& Thermal Optimized SKU

8 x Double-slot GPU in 2U
(DP 24 DIMM SKUs)

G293 Series

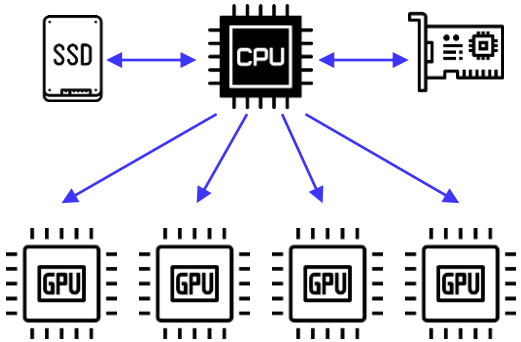
New: PCIe Gen5
& Thermal Optimized SKU



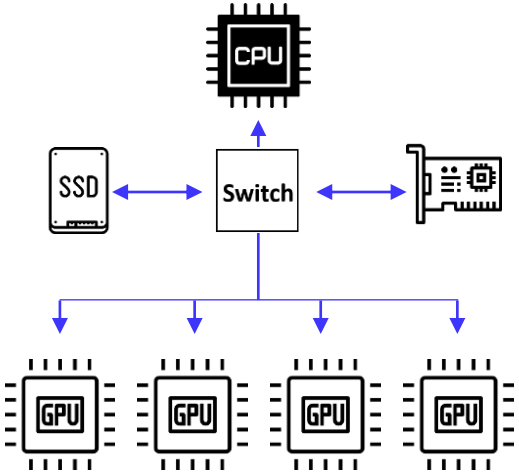
8-10 x Double-slot GPU in 4U
(DP 32 DIMMs SKUs)

G493 Series

One to One Communication

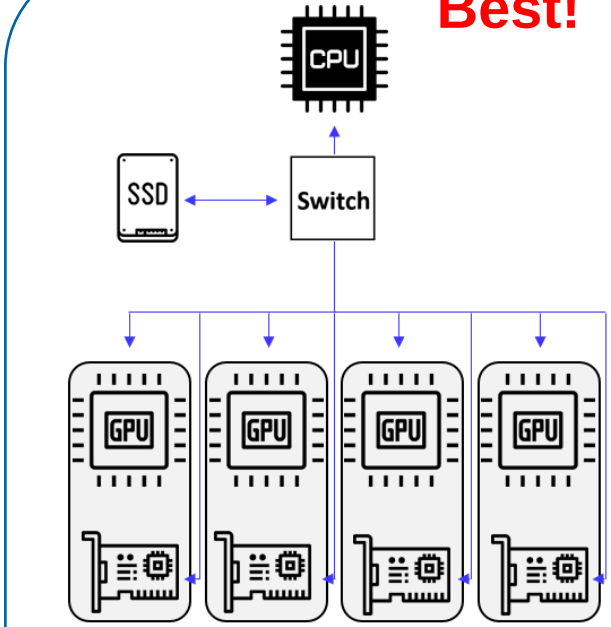


IO devices and GPUs communication on CPU



Support GPU direct
IO devices and GPUs communication via PCIe Switch

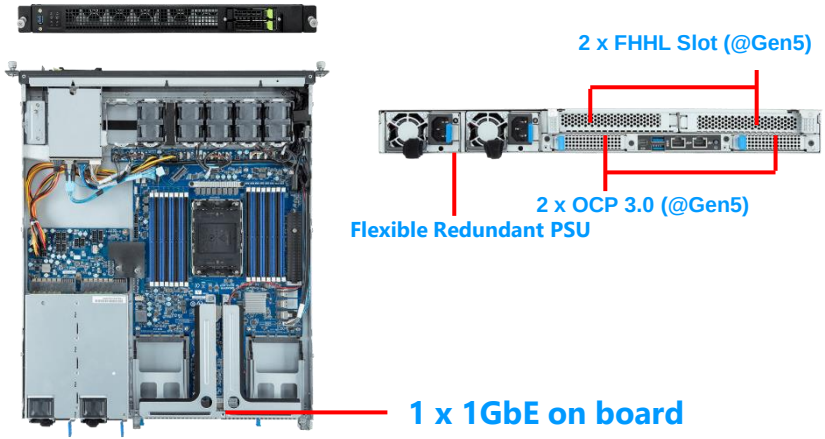
Best!



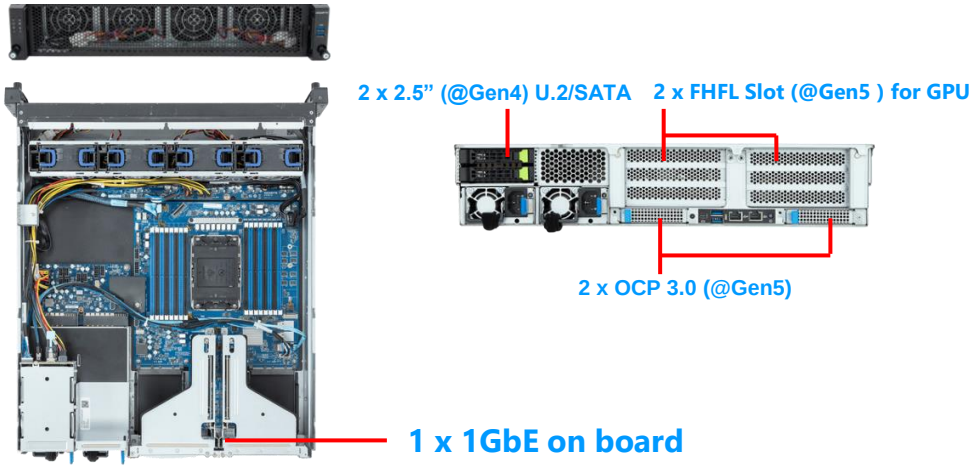
Support GPU direct
GPU to IO device ratio is one to one

: (IO device NIC or InfiniBand)

Gigabyte 3rd Gen Server Architecture(E)

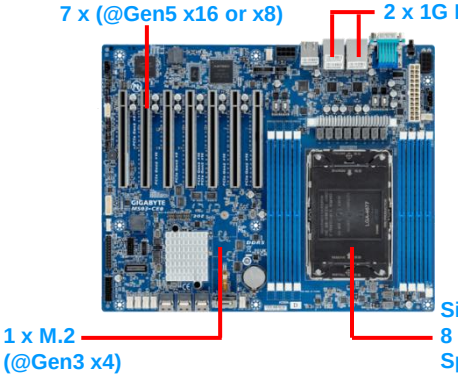


E163 Series

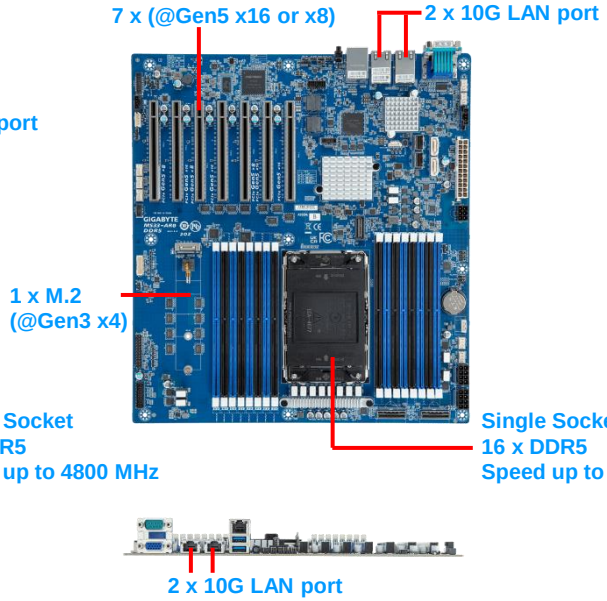


E263 Series

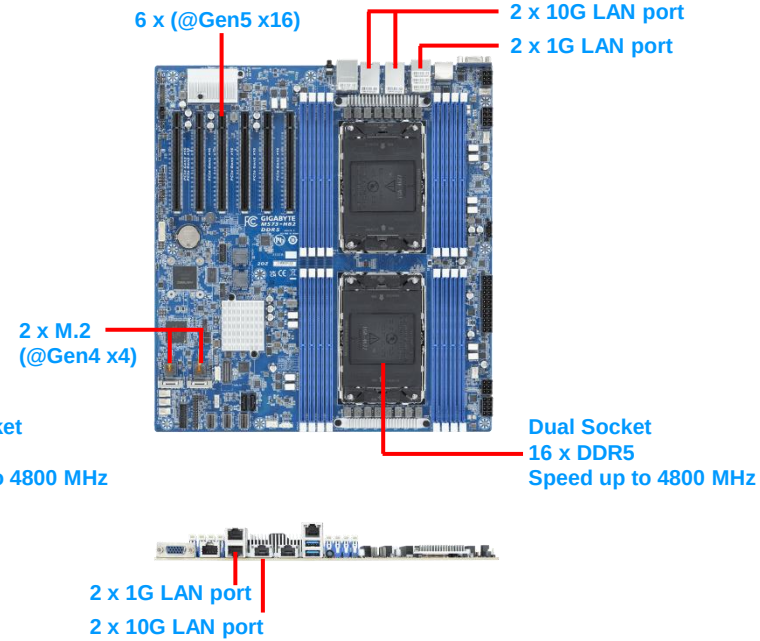
Gigabyte 3rd Gen Server Board (M)



MS03 Series ATX



MS33 Series EATX



MS73 Series EATX

Total Hardware Solution – Accessories

Storage Adapters

BROADCOM GIGABYTE

CSA4710
HBA 8 Port
Low-profile

CSA4820
HBA 16 Port
Low-profile

Ethernet NIC Adapters

BROADCOM GIGABYTE

CLNCA12
1G Dual
OCP3.0 NIC

CLNCB22
10G Dual
OCP3.0 NIC

CLNCD42
25G Dual
OCP3.0 NIC

GIGABYTE

All Server Line-up Supported

Fit Broadcom's Storage and Ethernet NIC Solutions into GIGABYTE's Servers

GIGABYTE created own OCP3.0 & LP cards with Broadcom's chips

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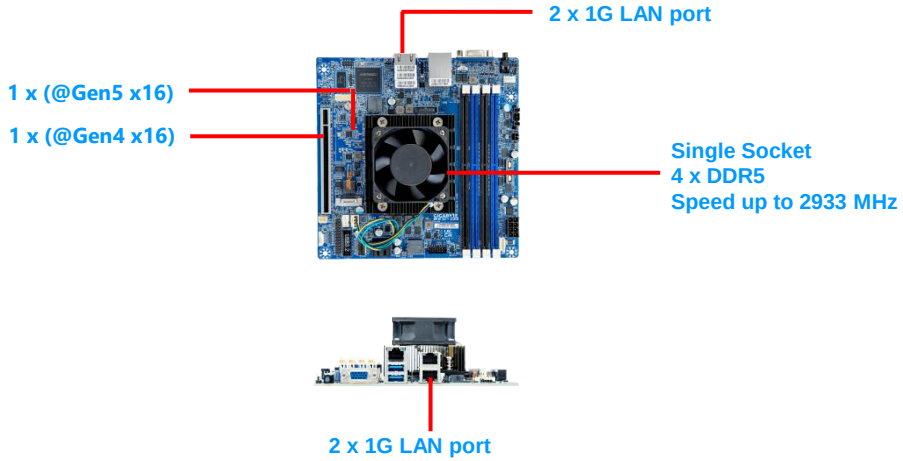
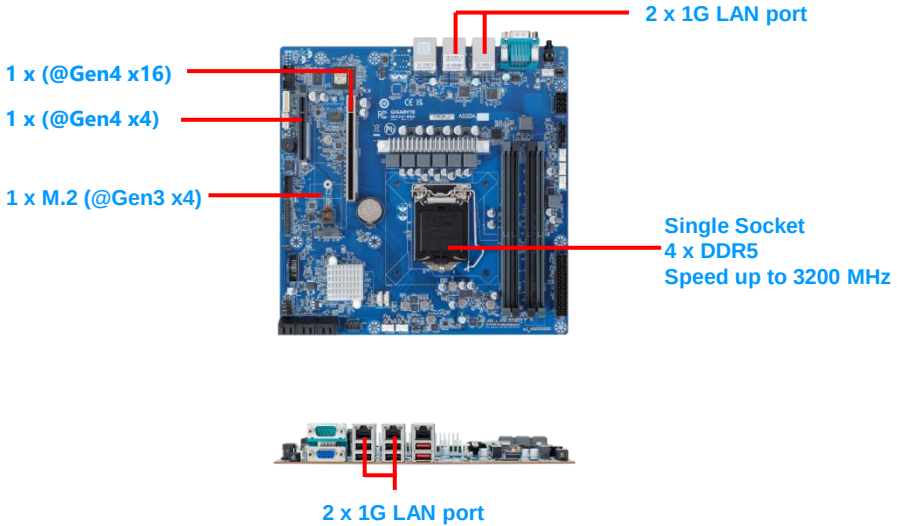
Entry Server Board Solution

Gigabyte Entry Server Board (M)



MB12 Series (mini-ITX)

Gigabyte Entry Server Board (M)



MX33 Series (mATX)

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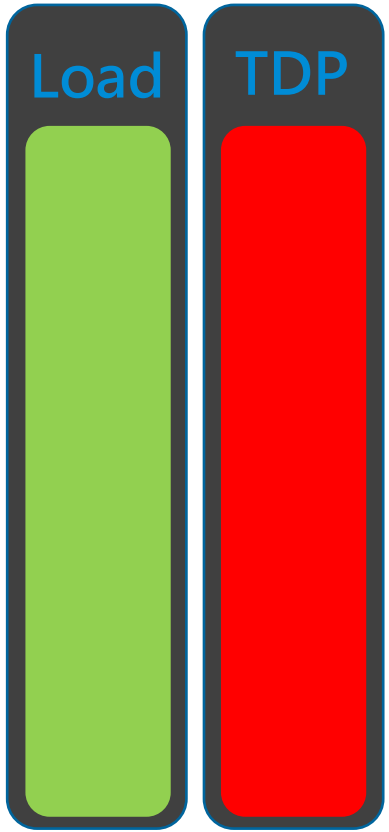
Advanced Cooling Solution

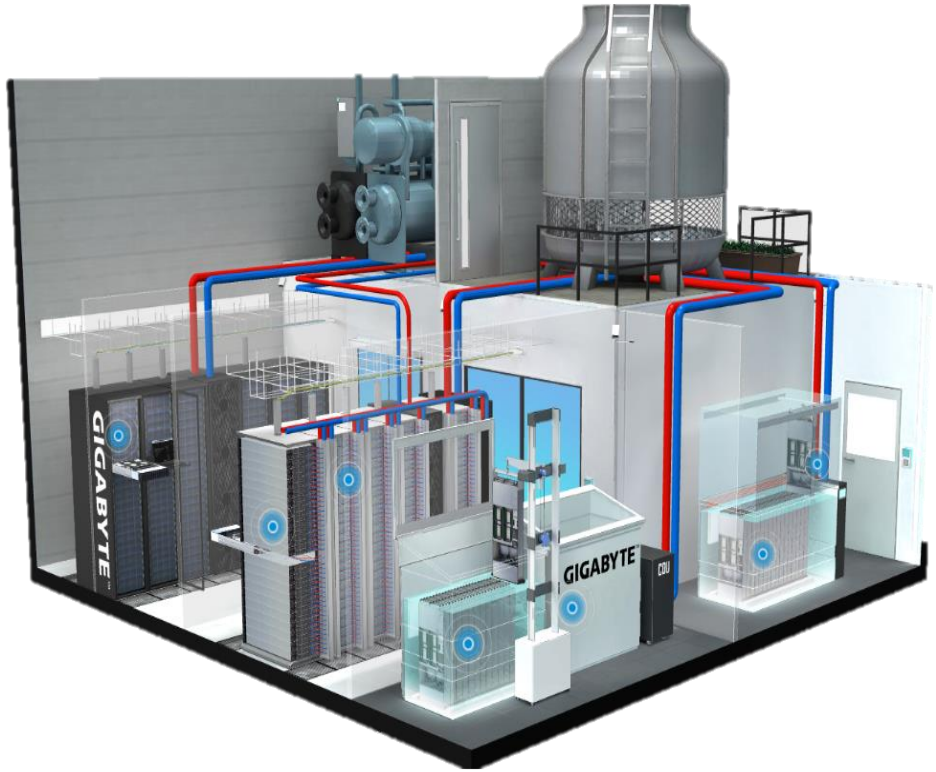
Advanced Cooling Solution

Immersion cooling

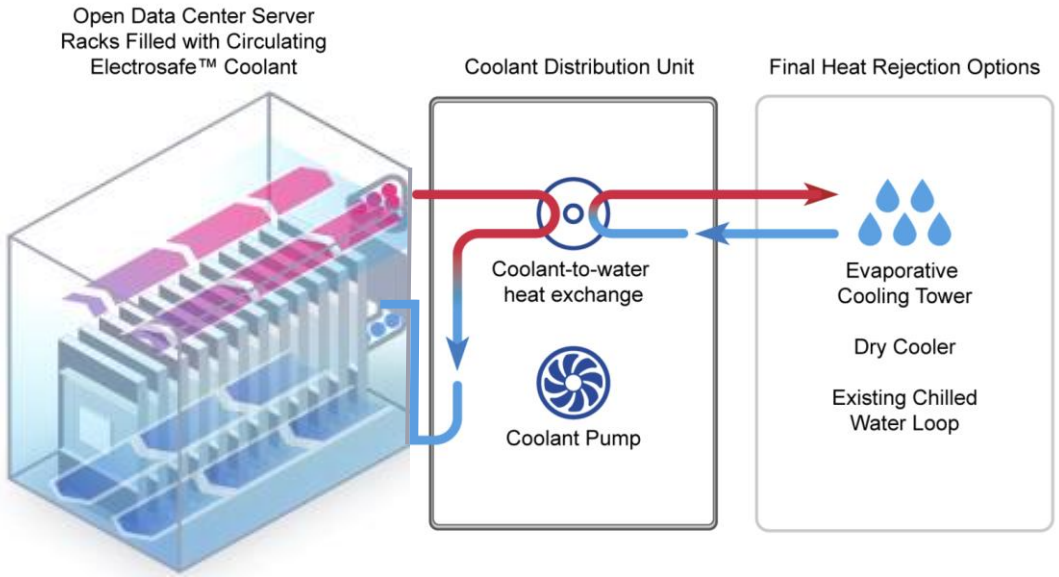
Direct Liquid Cooling

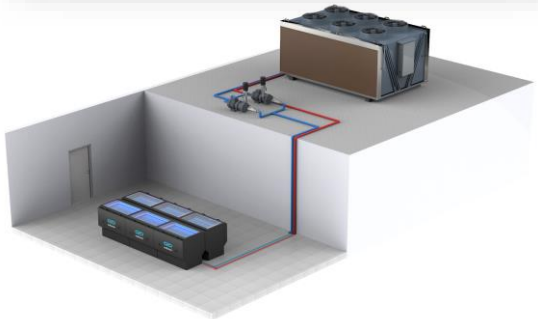
Air Cooling





1 Phase Immersion Cooling Architecture



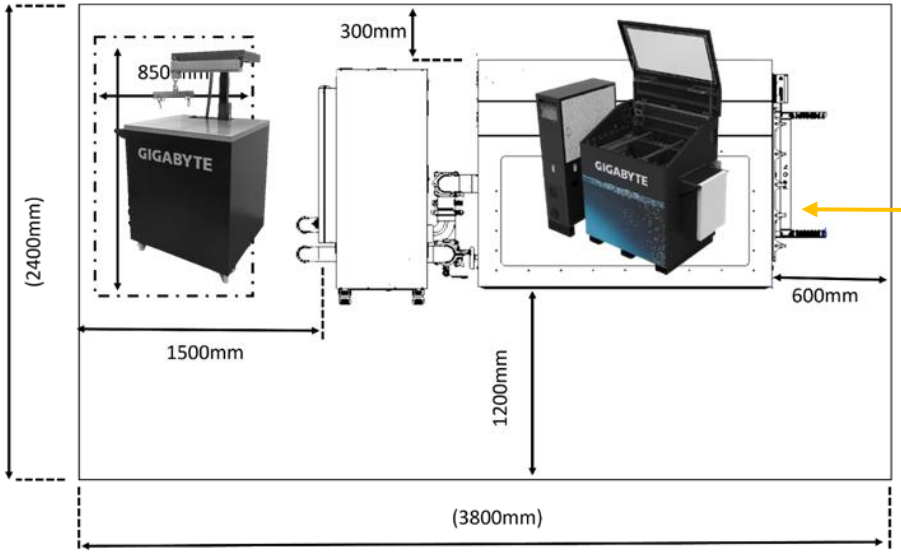


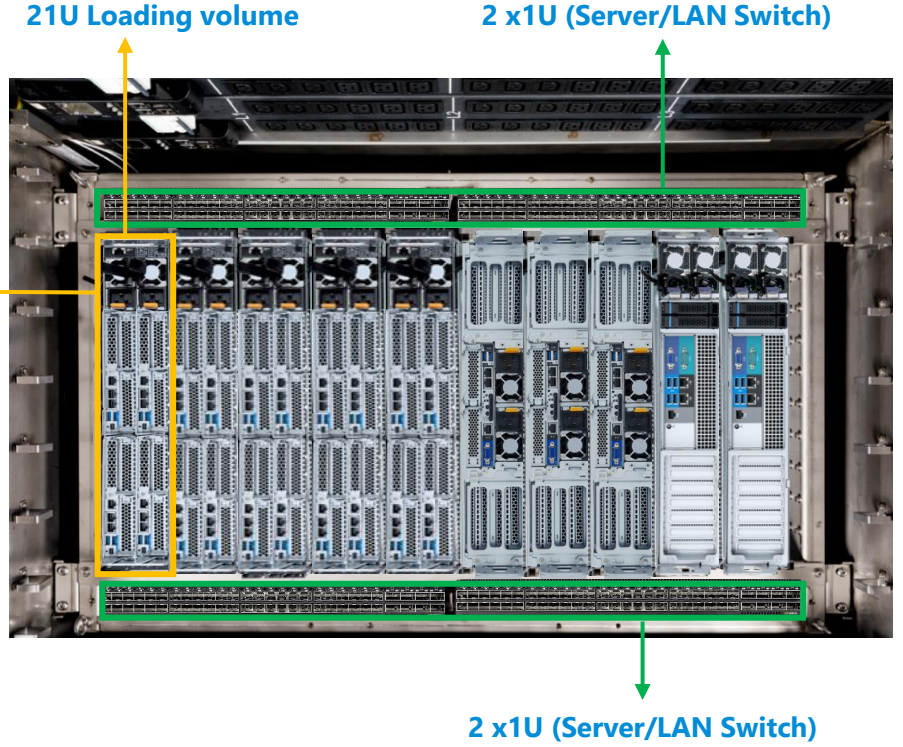
- Heated coolant exits top of rack. Coolant returns to rack from heat exchanger at user-specified temperature.

1-Phase Immersion Cooling Solution – 25U Tank

Item	SPEC
Server Support (U)	21U (Inner) + 4U (1U)
Cooling Power (kW)	80 kW
Unit Size (m)	Tank = 0.91(L) x 1.28(W) x 1.49(H) CDU = 0.90(L) x 0.55(W) x 1.62(H)
Unit Weight (kg)	Tank = 1100 kg (w/o Coolant) CDU = 300 kg
Coolant Tank Volume (L)	800 Litter
Power Plug	CE Type x 3 Plug 3P+N+E 63A IEC 60309
Power	AC 380-400V 63A 50/60Hz
Depth Supported	900 mm
Cooling Pipe Size	BSP 2”
Cooling Water Temp(˚C) - Inlet	35˚C
Cooling Water Flow (LPM)	240 LPM

1-Phase Immersion cooling Solution – Situation



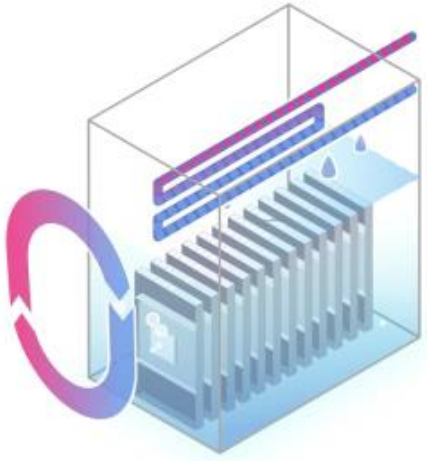


1-Phase Immersion Cooling Solution – 4U7KW tank

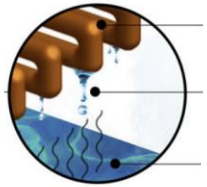
Item	SPEC
Server support (U)	4U
Cooling Power (kW)	7kW
Tank Size (m)	1.0(W) x 1.2(D) x 1.42(H)
Tank Weight (kg)	400 kg (w/o coolant)
Coolant Volume (L)	171 Litter (151kg)
Power Plug	CE Type x 1 Plug, 2P + N +E 16A IEC 60309
Power	CE Type x 1 Plug, AC 380-400V 50Hz
Power Usage	1.5 kW
Ambient Temp (°C)	5°C ~ 30°
Max Flow Rate	35 LPM
Oil Inlet Temp	30°C

2-Phase Immersion Cooling Architecture

Two-Phase Immersion Cooling
- Up to 250 kW/Rack



The Passive 2-Phase Immersion Cooling Cycle



Vapor condenses on coil or lid condenser

Fluid recirculates passively to bath

Vapor rises to top

Heat generated on chip and fluid turns into vapor

Flexible Business

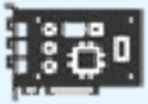
Server Board Only

Barebone (L6)

CPU

Memory

Storage



Accessory

Accelerator

Server System (L10)

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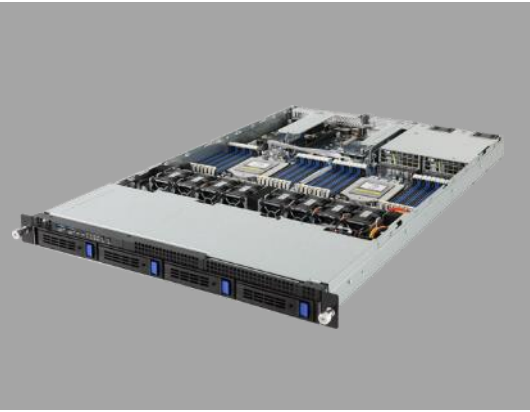
Use Case & Success Stories

Taipei Music Center

Edge Computing Brings The Next Level of Entertainment

Taipei Music Center (TMC) is currently the only pop music compound in Asia. TMC shall provide the latest software and hardware for music creation, cutting-edge technology and international industry information to the diversified background talents and audiences. GIGABYTE **H281** a 2U 4 nodes hyper-converged system plays a key role of MEC server to lower end-to-end latency and enhance immersive user experience. Via VR 360 Live Video Steaming System, it takes music performance and entertainment industry to the next level.

Flipkart



India’s Top E-Commence Platform Expands Data Center

Flipkart.com is India’s leading e-commerce marketplace with over 30 million products across multiple categories. Flipkart launched their 2nd data center with GIGABYTE **R181** rack servers. It is part of one of the largest private cloud infrastructure deployments in the country to strengthen its technology infrastructure and to store and manage the enormous data that gets generated from online sales, involving customers and sellers data.

Flipkart

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