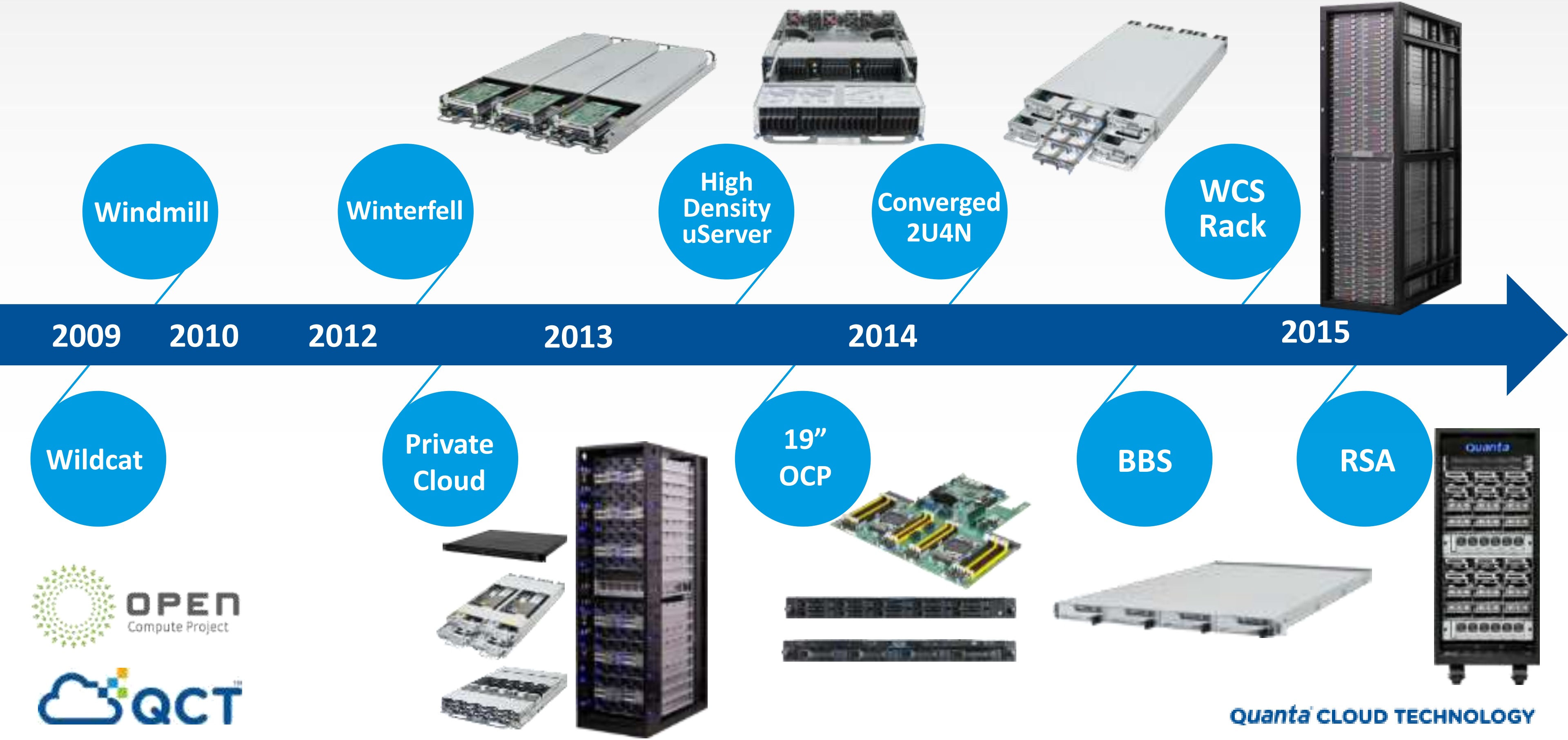
OPEN
Compute Project

OCP U.S. SUMMIT 2016

From *Decathlete & Roadrunner* To *Carmel & Monterey*

Alan Chang
Product Manager of QCT

QCT’s Open Compute Project Product Line



OPEN Compute Project

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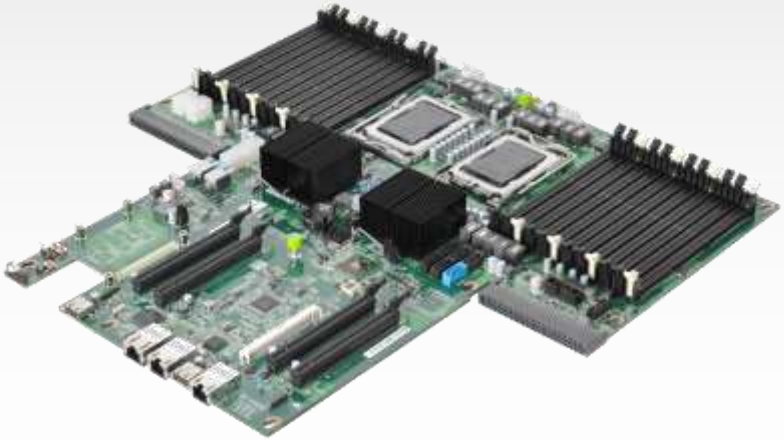
Quanta CLOUD TECHNOLOGY



QCT's Roadrunner Implementation

S215- X2M2Z Overview

AMD Interlagos/Abu Dhabi 2S

(24) x DIMM DDR3
(1) PCIe Gen2 x8 LP/MD2
(1) PCIe Gen2 x8 SHHL
(1) OCP network mezz (Intel/Mellanox)
(12) 3.5" or (24)2.5" SAS/SATA
Single or Redundant 1100W PSU

QCT's Decathlete Implementation

D51B-1U Spec Overview

Form Factor (WxHxD): 438mm x 742mm x 43.2

CPU: (2) Intel® Xeon E5-2600 V3 family, up to 135W

Chipset: Intel® C610

DIMM slot: (24) DDR4 RDIMM/LRDIMM

Front Storage: up to (4) 3.5" + (2) 2.5" or (10) 2.5" drives , SAS12Gb/s

Network: Dual 1GbE or 10GbE RJ45 LoM

Optional OCP mezzanine card

Expansion Slot:

- Riser 1-Option 1: (1) PCIe Gen3 x8 Golden Finger for Quanta SAS mezz
- Riser 1-Option 2: (1) PCIe Gen3 x16 Slot
- Riser 2: (1) PCIe Gen3 x16 Slot
- OCP mezz slot: (1) PCIe x8 Connector

QCT's Decathlete Implementation

D51B-2U Spec Overview

Form Factor (WxHxD): 430mm x 720mm x 87.5mm

CPU: (2) Intel® Xeon E5-2600 V3 family, up to 145W

Chipset: Intel® C610

DIMM slot: (24) DDR4 RDIMM/LRDIMM

Front Storage: up to (12) 3.5" or (24) 2.5" drives , SAS12Gb/s

Network: Dual 1GbE or 10GbE RJ45 LoM
Optional OCP mezzanine card

Expansion Slot:

Riser 1-Option 1: (1) PCIe Gen3 x8 Golden Finger for Quanta SAS mezz
(1) PCIe Gen3 x8 Slot
(1) PCIe Gen3 x8 Slot

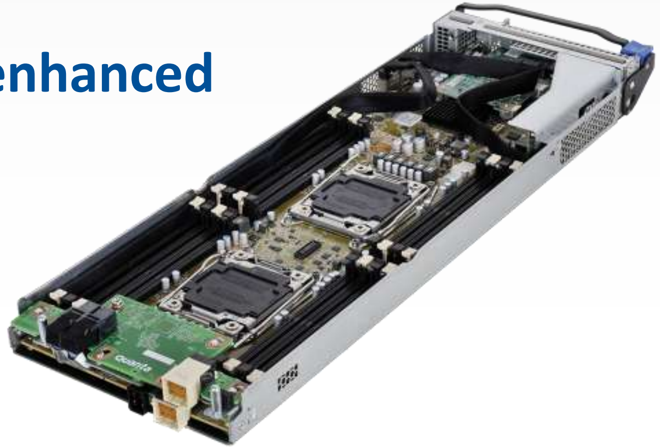
Riser 1-Option 2: (1) PCIe Gen3 x16 Slot
(1) PCIe Gen3 x8 Slot

Riser 2: (1) PCIe Gen3 x16 Slot
(1) PCIe Gen3 x8 Slot

OCP mezz slot: (1) PCIe x8 Connector (CPU0)

Carmel Concept

- **Open Rack Motherboard in EIA 19” System**
  - -- System dimension 444mm(17.48”) x 87.5mm(3.44”) x 790mm(31.1”)
  - -- 2U2Node and 2U4Node configuration.
- **New Generation Platform with performance enhanced**
  - -- Supporting the latest Intel® Xeon E5-2600 v4 Processor
  - -- Up to 1024G 2666MHz DDR4 memory



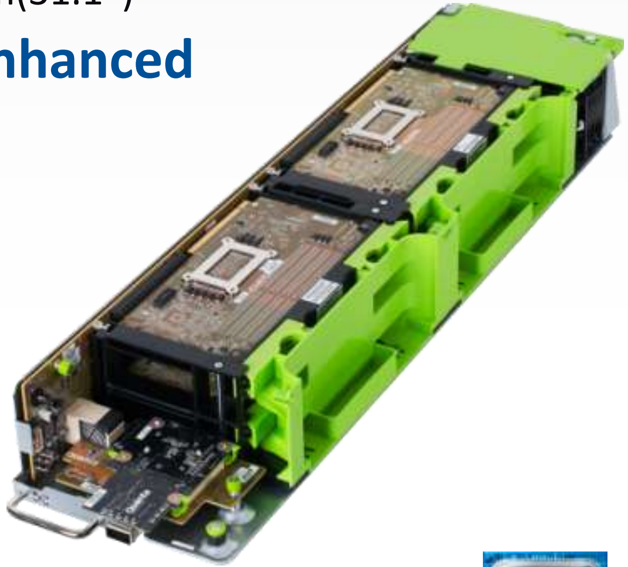
- **Uniform Scale-out Building Block**
  - -- Scale out on Capacity and Computing
- **High Reliability, Serviceability and Availability**
  - -- Incredible level of business continuousness
- **Air Cooling thermal design for existing infrastructure**
  - -- 35C ambient allows runs in most existing datacenters

QCT

intel XEON inside

Monterey Concept

- **Open Rack Motherboard in EIA 19” System**
  - -- System dimension 444mm(17.48”) x 87.5mm(3.44”) x 790mm(31.1”)
- **New Generation Platform with performance enhanced**
  - -- Supporting the latest Intel® Xeon D Processor family
  - -- Up to 64G 2133MHz DDR4 memory
- **Multi-Host Networking Aggregation**
  - -- Mellanox CX4-LX NIC card to support (4) SoC I/O aggregation
- **Ultra Dense Chassis Design**
  - -- High density 2U8N compact design in 19” EIA form factor
  - -- Hot-plug power supply design keeps system consistently



QCT

intel XEON inside

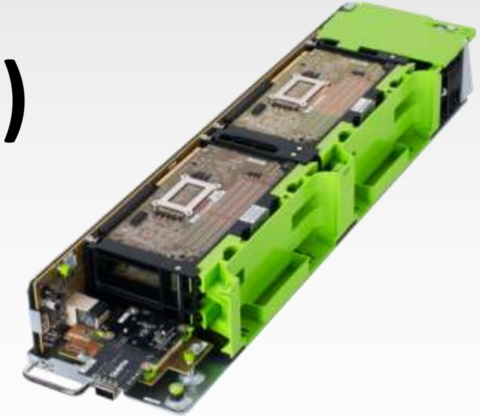
Carmel Hardware Spec (2U4N)

Dimension(WxHxD): 444mmx 87.5mmx 790mm
Node: up to **4** nodes in a system
CPU: 2x Intel® Xeon® processor E5-2600v4 family,
up to 145W per node
Chipset: Intel® C610
DIMM slot: 16 x DDR4 RDIMM/LRDIMM per node
HDD: 6x 2.5" HDD/SSD per node
12G SAS HDD/SSD support via HBA or RAID adapter
Expansion(per node):
1x PCIe x8 G3 slot for OCP mezzanine card
1 x PCIe x16 G3 riser slot low-profile card
PSU:
2x 1600 Platinum high efficiency PSU, 200-240V
2x 1200 Platinum high efficiency PSU, 100-240V

Carmel Hardware Spec (2U2N)

Dimension(WxHxD): 444mmx 87.5mmx 790mm
Node: up to **4** nodes in a system
CPU: 2x Intel® Xeon® processor E5-2600v4 family,
up to 145W per node
Chipset: Intel® C610
DIMM slot: 16 x DDR4 RDIMM/LRDIMM per node
HDD: 12x 2.5” HDD/SSD per node
12G SAS HDD/SSD support via HBA or RAID adapter
Expansion(per node):
1x PCIe x8 G3 slot for OCP mezzanine card
3 x PCIe x8 G3 riser slot low-profile card
PSU:
2x 1600 Platinum high efficiency PSU, 200-240V
2x 1200 Platinum high efficiency PSU, 100-240V

Monterey Hardware Spec (2U8N)



Dimension(WxHxD): 444mmx 87.5mmx 790mm
Node: up to **8** nodes in a system
CPU: (1)x Intel® Xeon® D-1500 family per node (45watt),
4 nodes per blade
DIMM slot: 4x DDR4 RDIMM per node
HDD: 2x 2.5” HDD/SSD per node
1x M.2 2280/22110 per node
PSU:
2x 1600 Platinum high efficiency PSU, 200-240V
2x 1200 Platinum high efficiency PSU, 100-240V

Carmel/ Monetary Common Chassis

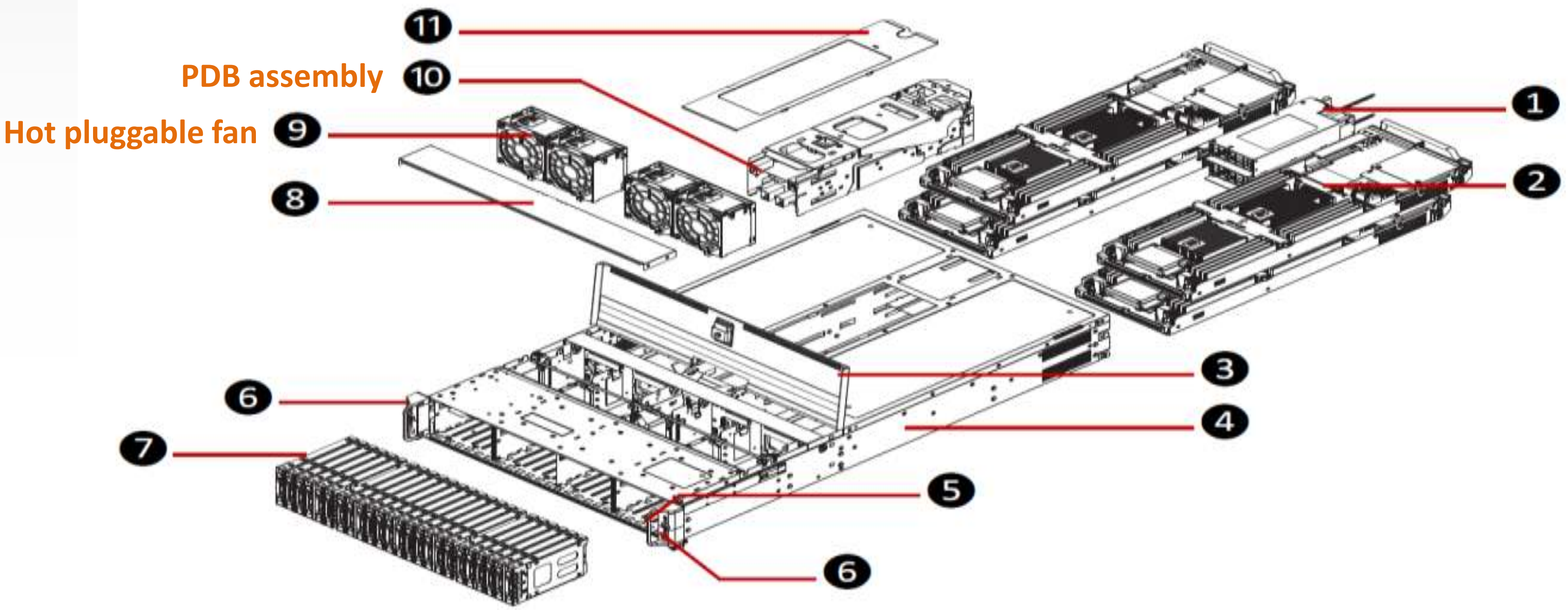
EIA Chassis Dimension

444mm(17.48”) x 87.5mm(3.44”) x 790mm(31.1”)

- Up to 24x SFF drive available

Carmel/ Monetary Common Chassis

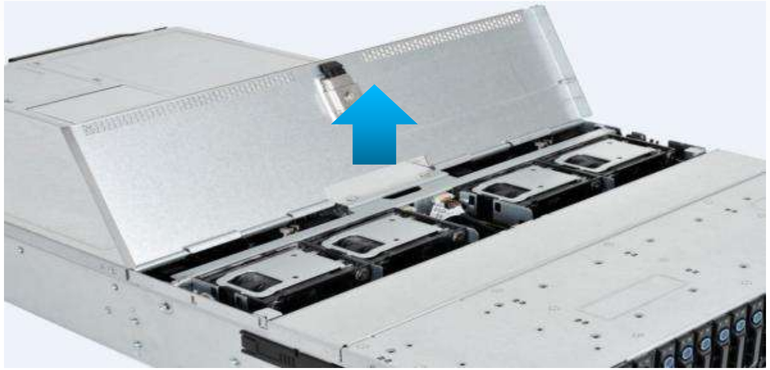
Modular Design for Serviceability

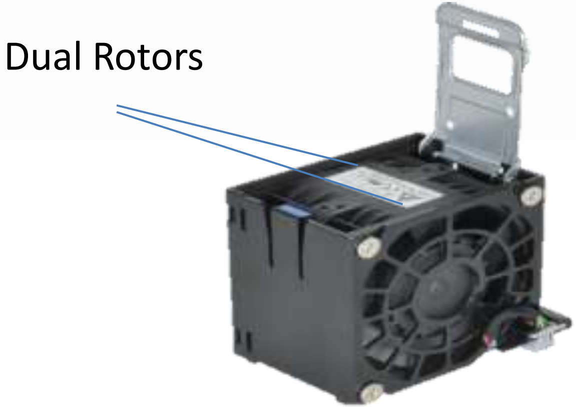


N+1 Rotor Redundancy

- Prevent Service Down Time

- Straightforward to remove and replace fan by **hot pluggable fan** design
- Provide quick service without down time



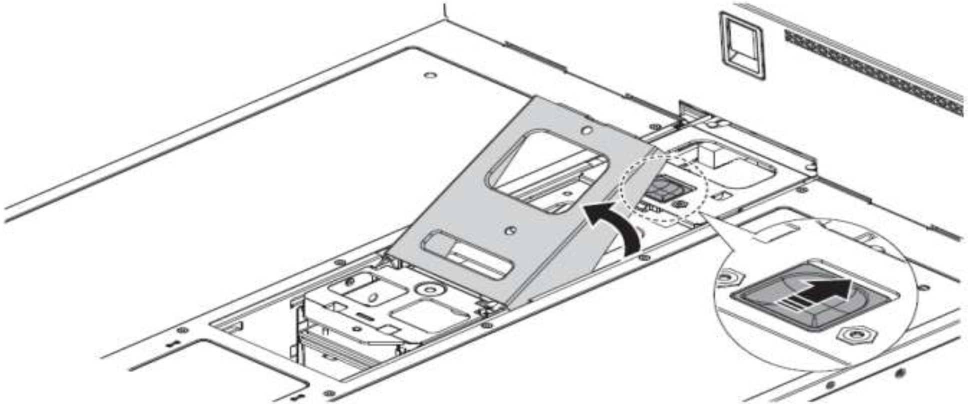


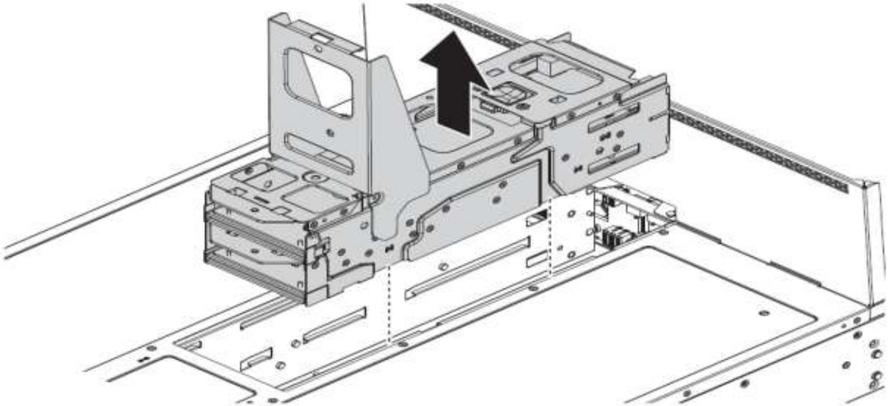
Hot Pluggable, Prevent Down Time

High Serviceability

- Moduli zed PDB Cage Design

- Easy to replace
- Save service time



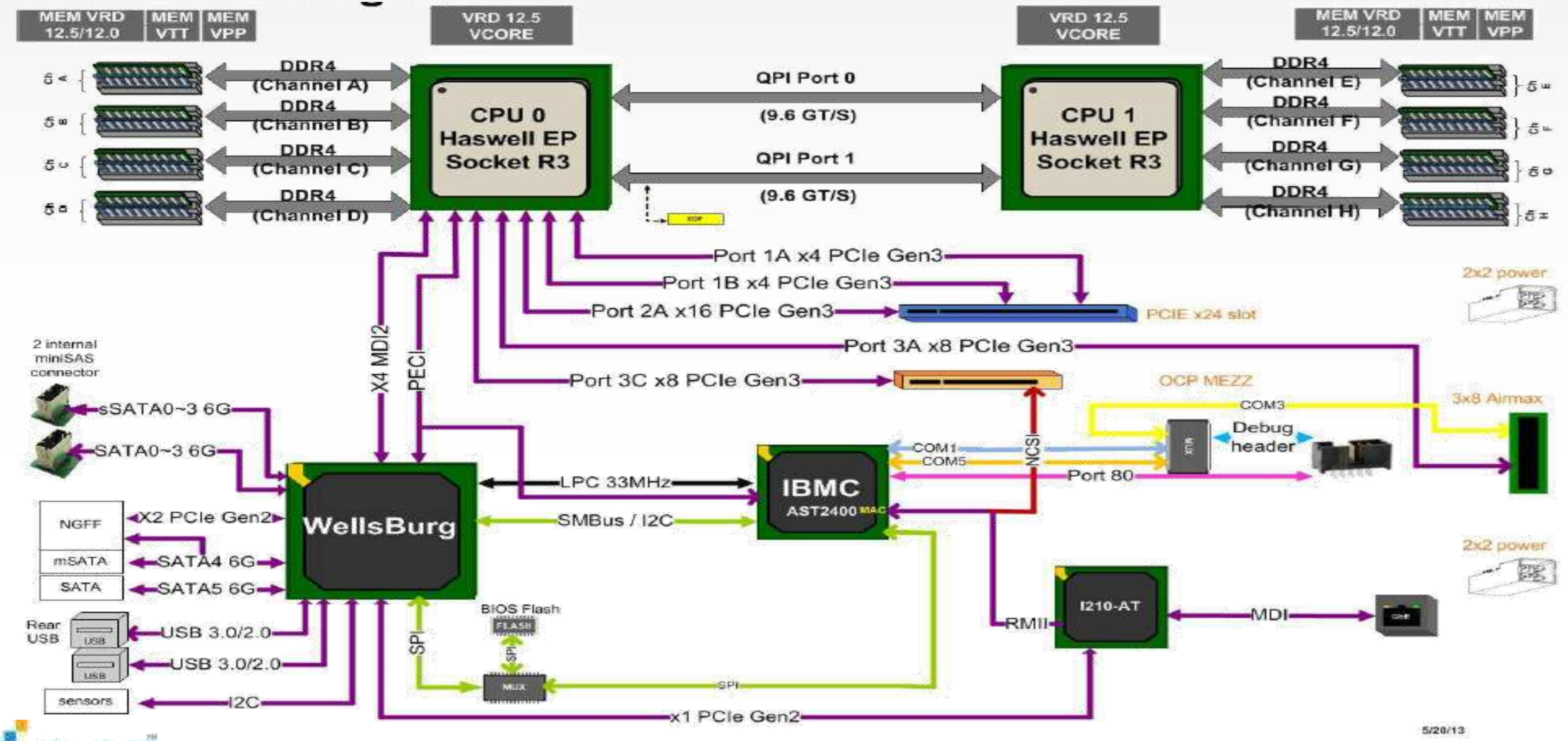


*PDB is Power Distribution Board

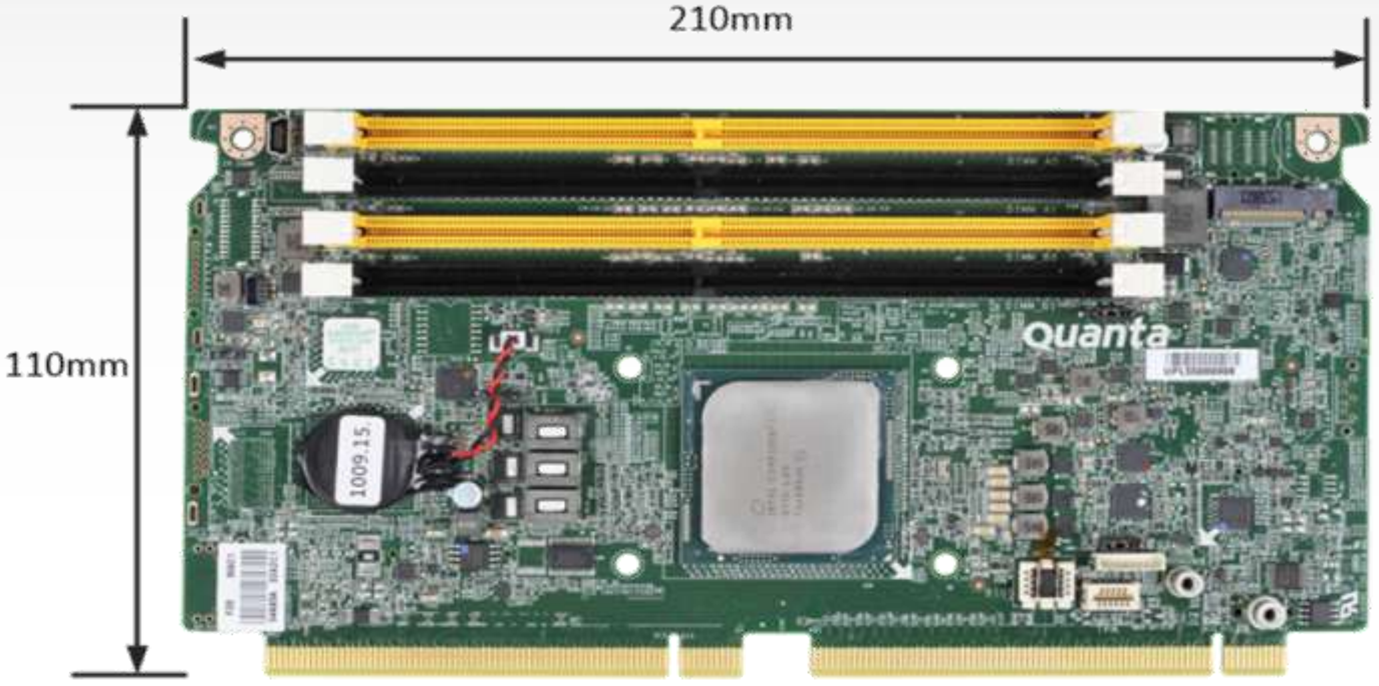
Carmel Motherboard Overview

Mother Board Overview(6.5”x20”)

Carmel Motherboard Block Diagram

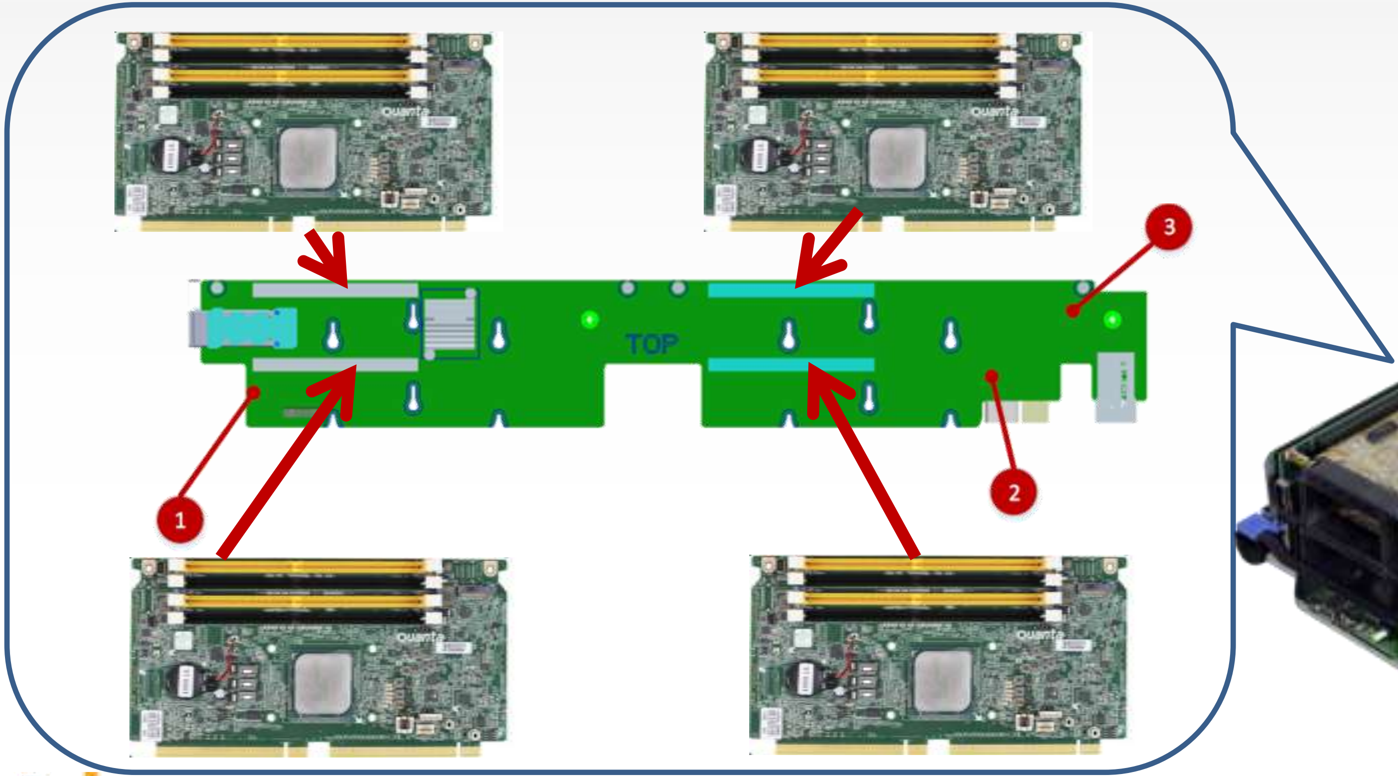


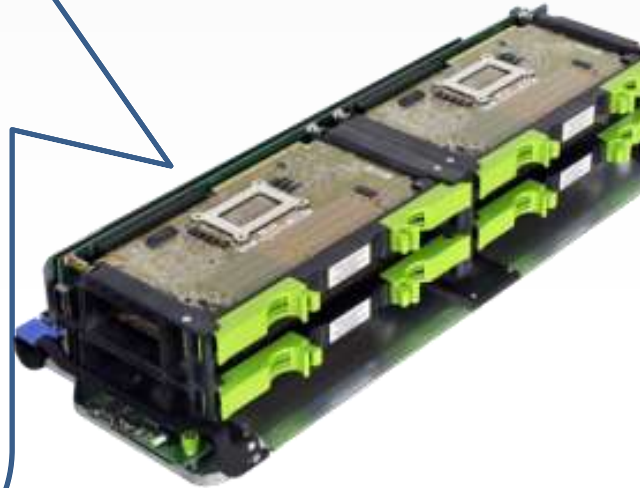
Monterey Motherboard Overview (aka Monolake)



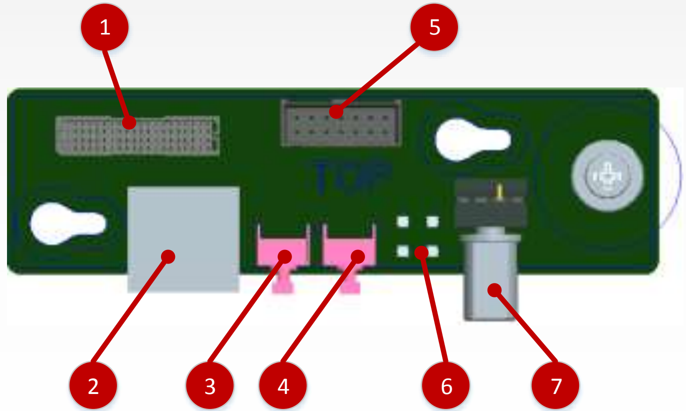
Mono Lake 1S Server Design Specification:
http://www.opencompute.org/wiki/Server/SpecsAndDesigns

Blade Assembly



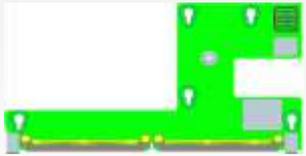


Rear IO Board



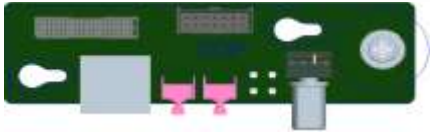
Item	Description
1	Side-band connector to Side-Plane
2	USB connector
3	Power Button
4	Reset Button
5	Debug Header
6	Node LED
7	Rotary Switch

Sled Design Overview



Interposer Board

Side- Plane



Rear IO Board

Mono Lake
1S Server

Q & A

Are you ready to take the next step ??

Come visit our Booth at C4

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