

An abstract graphic on the left side of the image, composed of numerous thin, wavy green lines that swirl and overlap to form a complex, organic shape. The lines are a vibrant green color against the dark blue background.

Open. Together.



OCP
SUMMIT

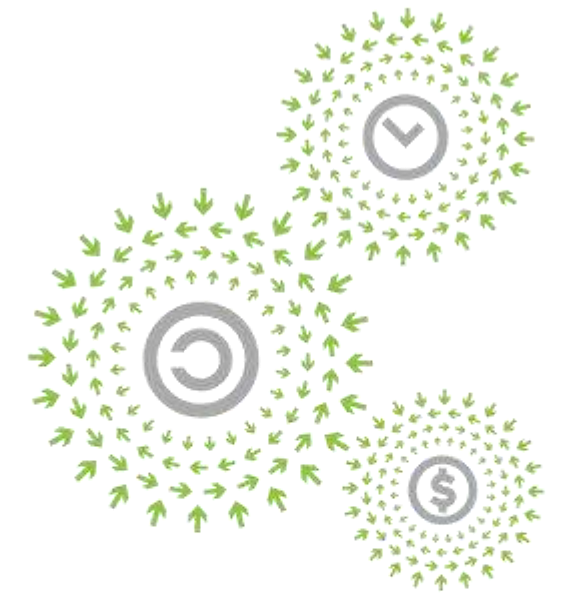


OPEN
Compute Project
SOLUTION PROVIDER®

Storage

MiTAC PCIe Gen4 JBOF - Crystal Lake

Eric.Kuo
VP of Global R&D Center
MiTAC Computing Technology



OPEN
PLATINUM™

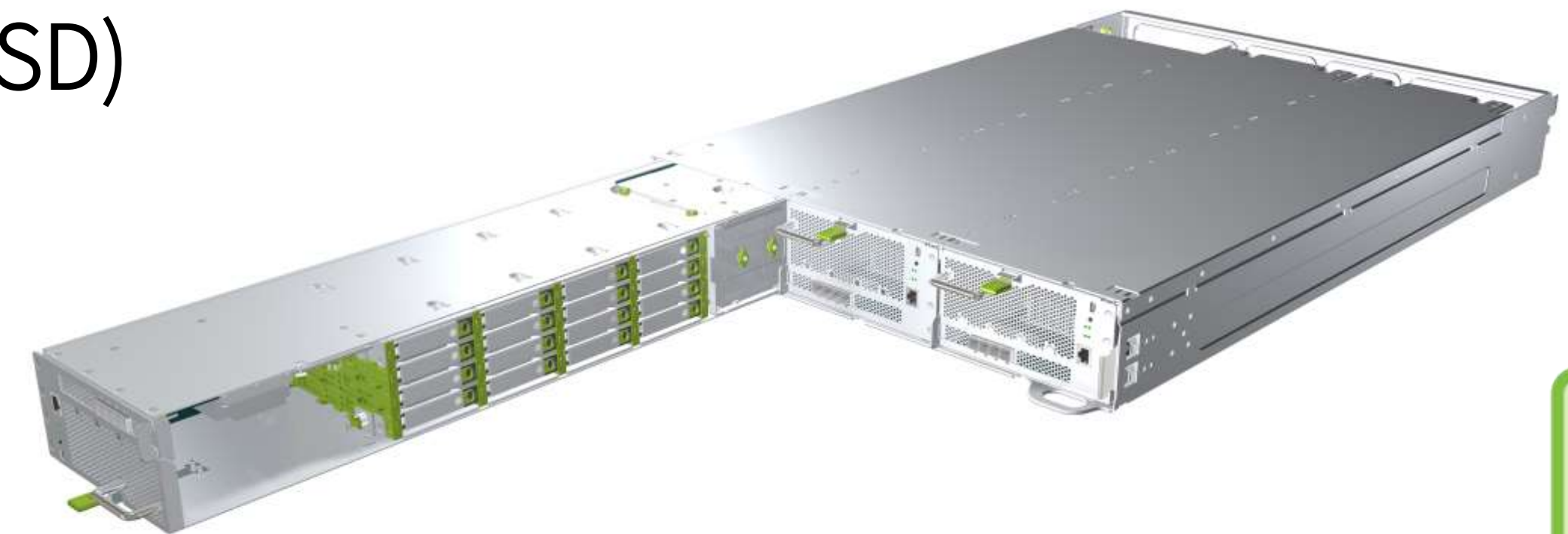


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Overview



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Specifications

- Scalable with Sled Form Factor in 20U shelf
- Easily deploy into both Open Rack V2 and EIA -310 Rack
- More Density (up to 48 SSDs with 3 sleds, U2. SSD)
- NVMe JBOF, PCIe Gen4

Crystal Lake for 21” and 19” Rack



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Shelf for Open Rack V2

Height	2 OU
Dimension	L31.5” x W21.14” x H3.67” (800 x537 x 93.2 mm)
Supported Sled	3

Shelf for EIA 19” Rack with ESA

Height	2 OU
Dimension	L30.13” x W17” x H3.65” (765.4x431.2 x 92.6 mm)
Supported Sled	2



Specifications

Sled Specification



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Specification	Detail
Storage	Up to (16) U.2 or (32) M.2 NVMe SSDs
PCIe Expansion	(1) MiniSAS HD, 16 Lanes
BMC	Aspeed AST25xx support IPMI2.0
Expander	PCIe Gen4 Switch
Management IO	(1) 1GbE RJ45 (1) Mini USB Port
Cooling system	(2) 6076 FAN



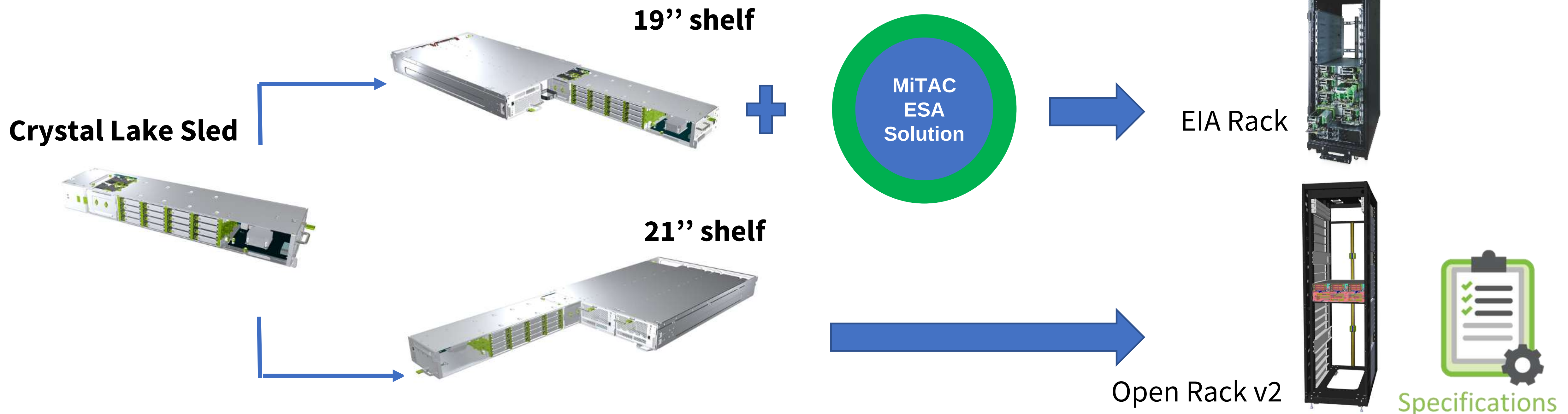
Specifications

What's New

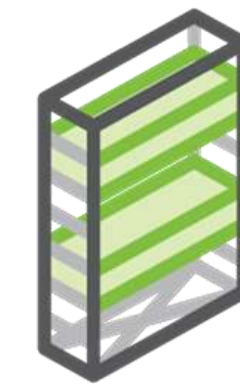
- Sled form factor for JBOF
- Can be deployed to 19" rack (EIA-310) and 21" rack (Open Rack v2)
- More Density (up to 48 NVMe SSD with 3 sleds, U.2)
- PCIe Gen 4 (will deliver PCIe Gen 3 version first in 2019)



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What Is ESA - Enclosure Sub Ass.



- ★ MiTAC ESA kit helps convert traditional EIA-310 racks to be adoptable with OCP solution;

It's no need to rebuild the whole data center facility to deploy OCP solutions!



RACK & POWER



More Power Saving



Less Expenditure



Quick Adoption



Interchangeable



Vendor Lock-in Free



Specifications

- ★ Spec has been contributed in 2018 July

Product Details: <https://www.youtube.com/watch?v=bJAJ4gutbYo>

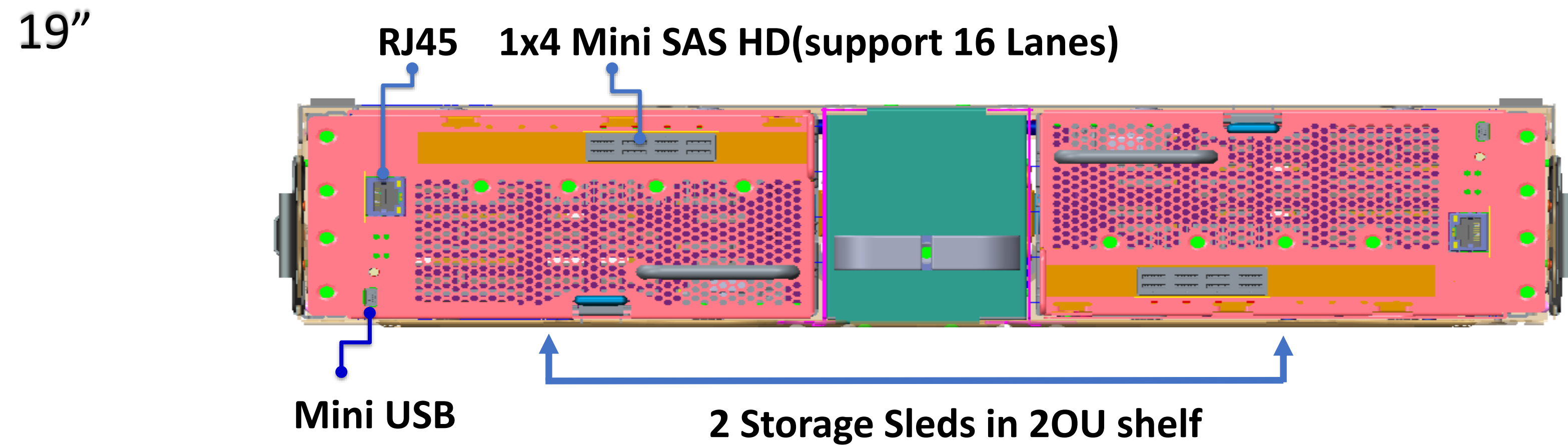
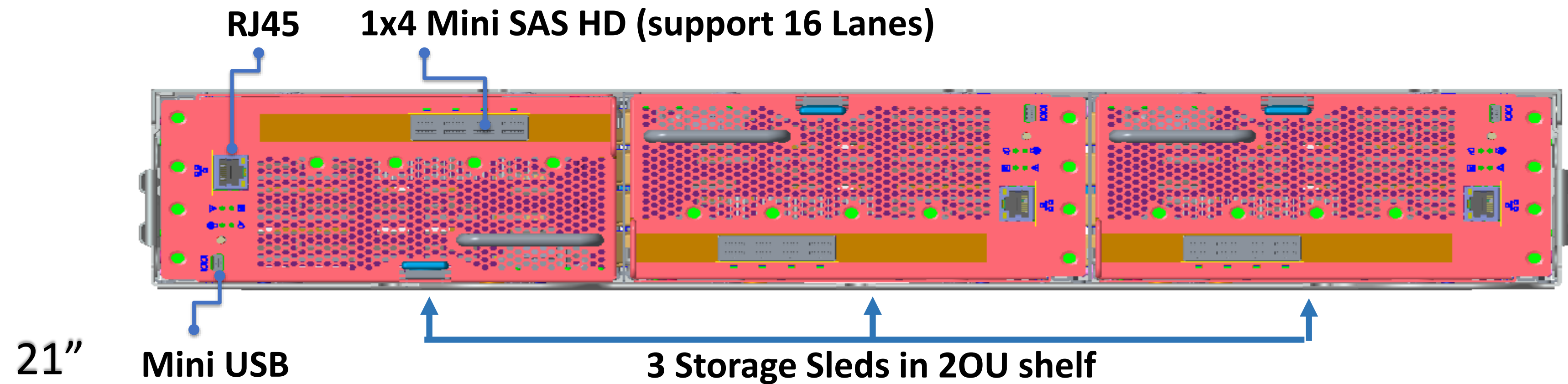


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Front View



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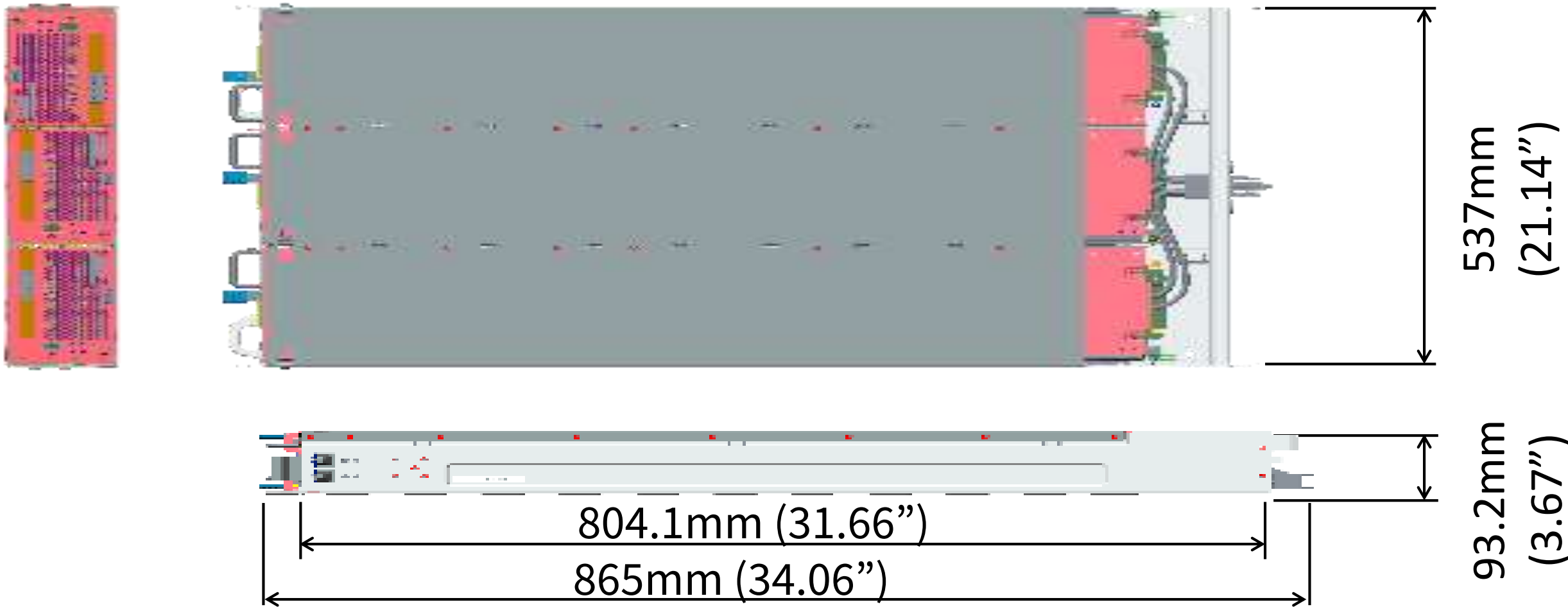
Specifications

System Outline Dimension

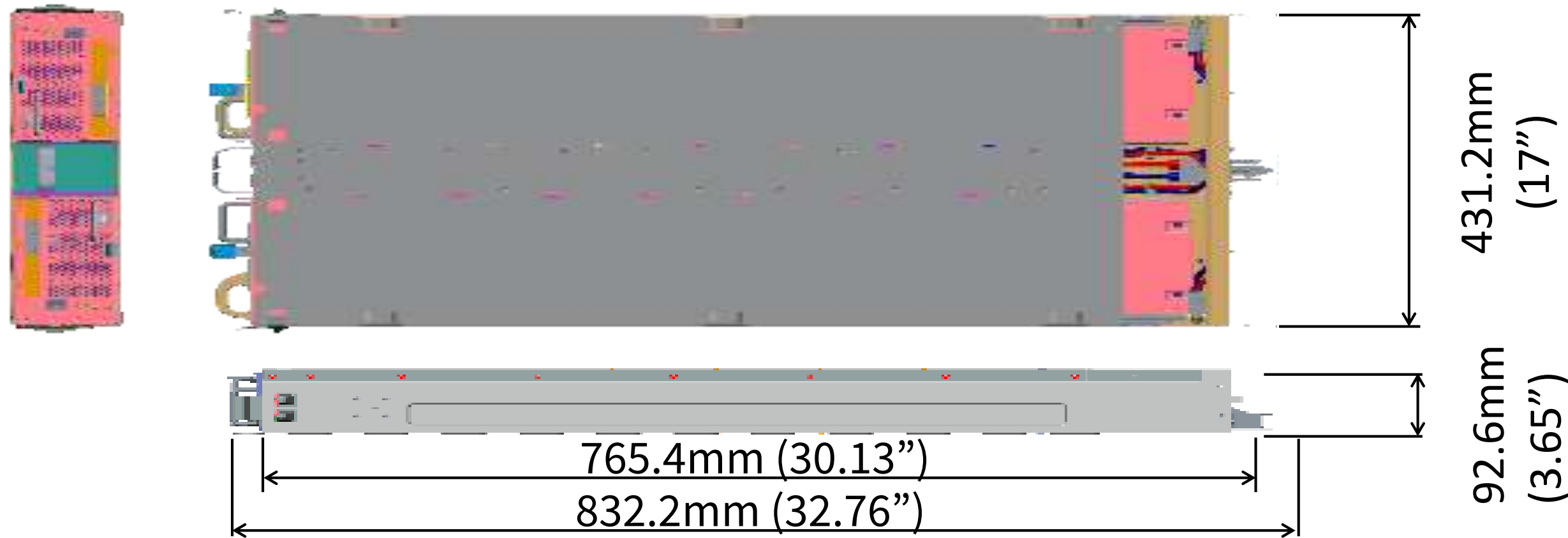


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21'' System



19'' System

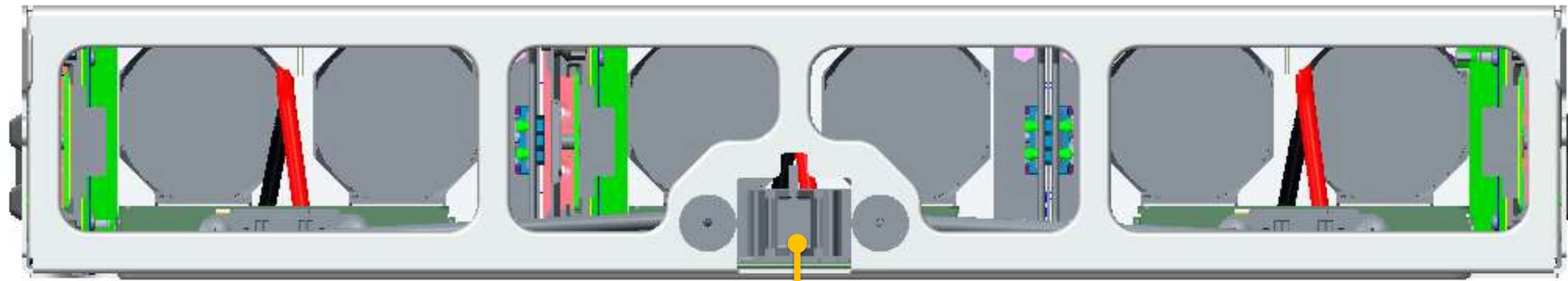


Specifications

System Rear View



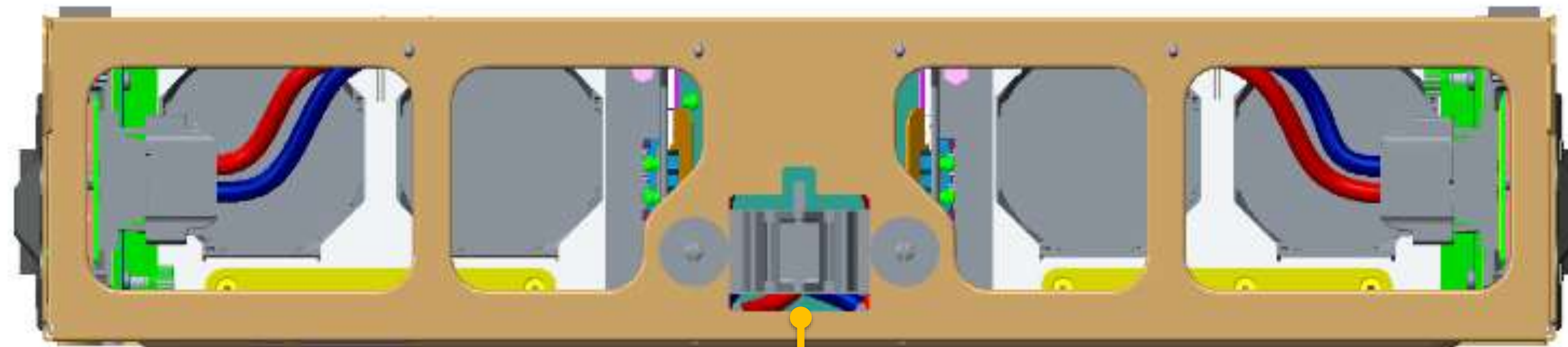
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21"

MEDUSA Connector

19"



MEDUSA Connector

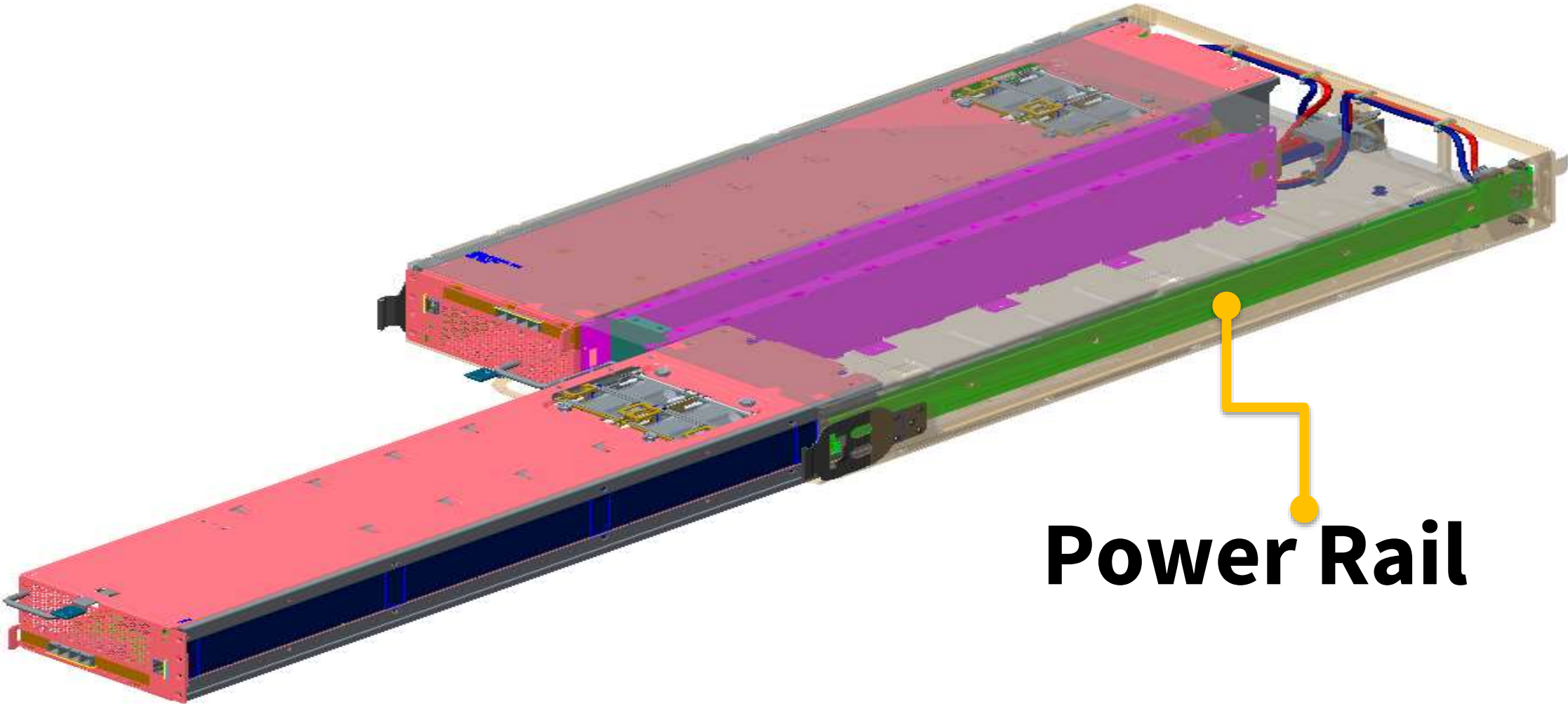


Specifications

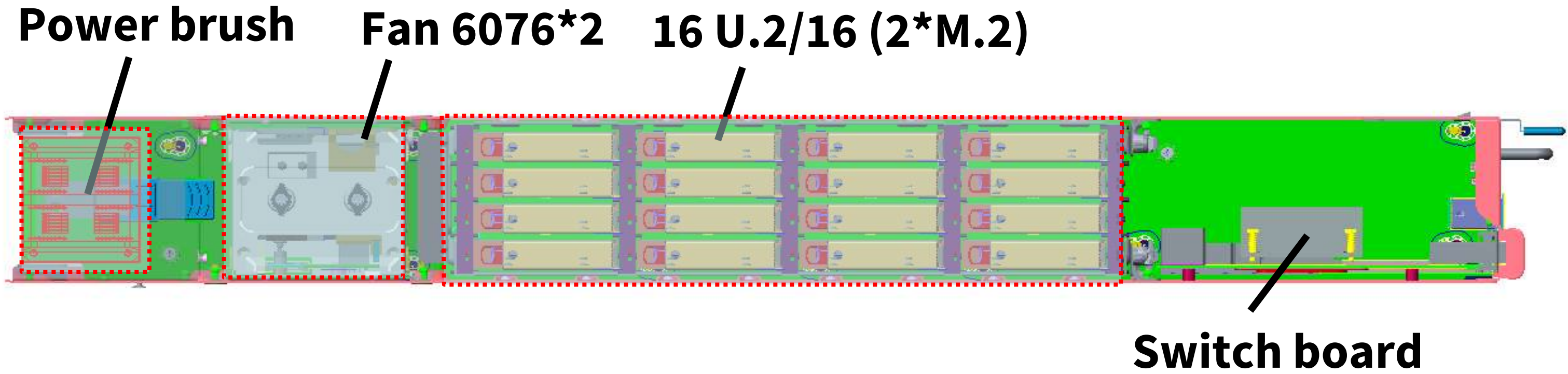
Power Rail And Sled Unit Placement



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Power Rail

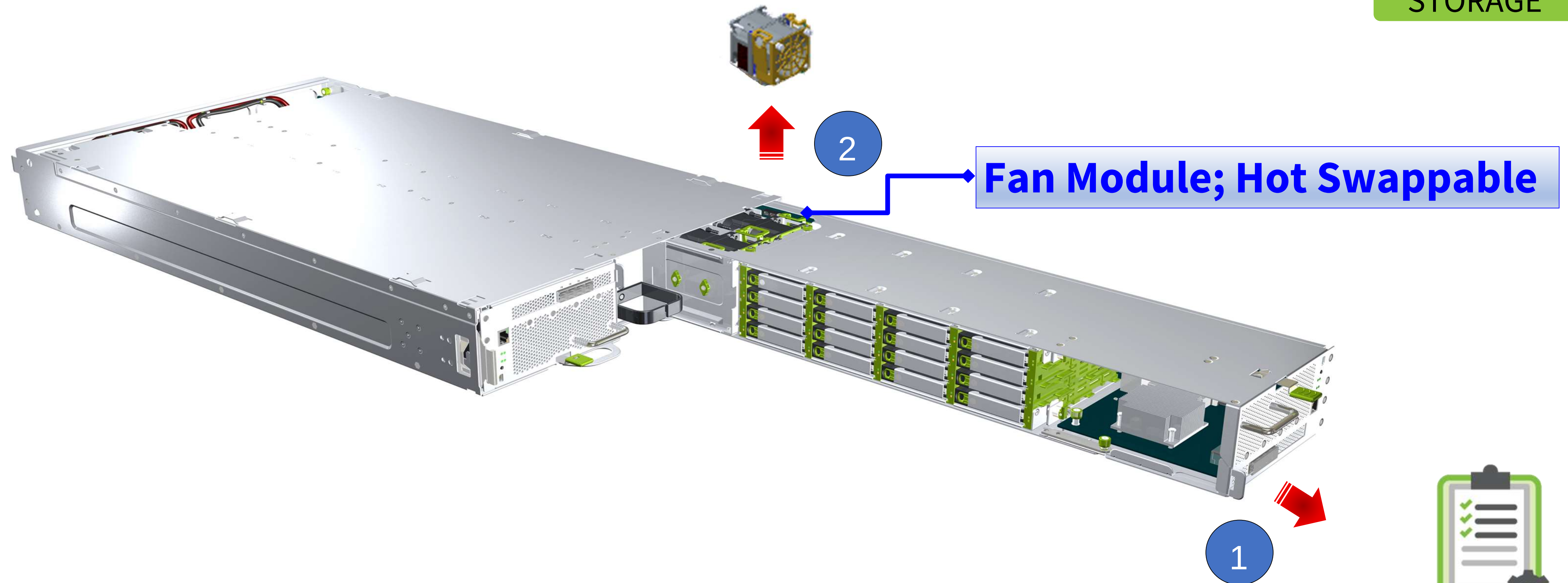


Specifications

FRU Part - Fan



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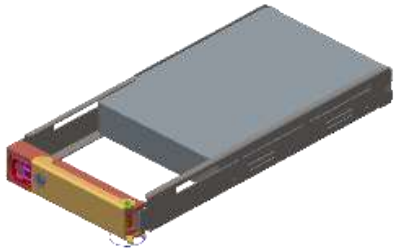
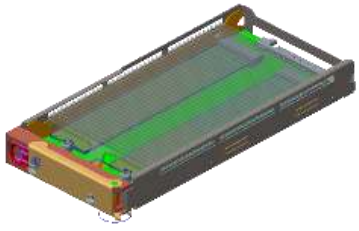


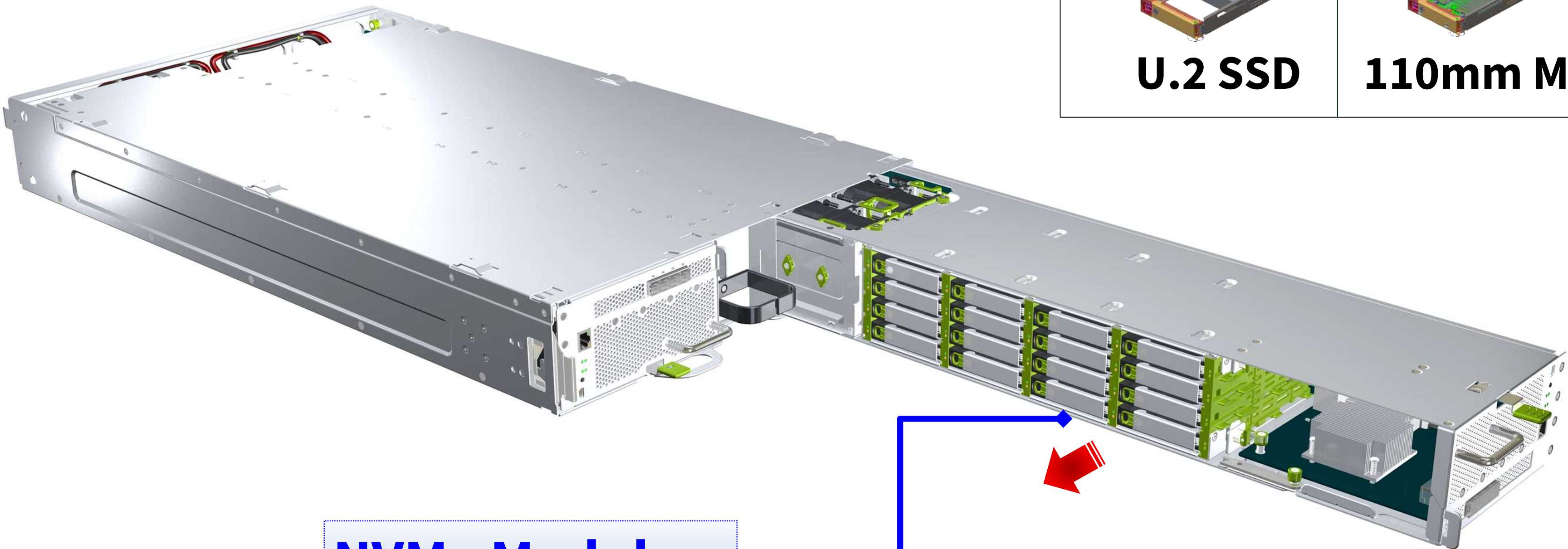
Specifications

FRU Part - HDD



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NVMe option	
 U.2 SSD	 110mm M.2



**NVMe Module ;
Hot swappable**



Specifications

PCB List for Sled



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Item	Boards	Description	Layers
1	SSD Board	Support NVMe SSD x16 (U.2)	12
2	Switch Board	PCI-e Gen4 solution	10
3	Power board	Support sled power	6
4	FAN Board	Support 6076 FAN x2; Hot Pluggable	6

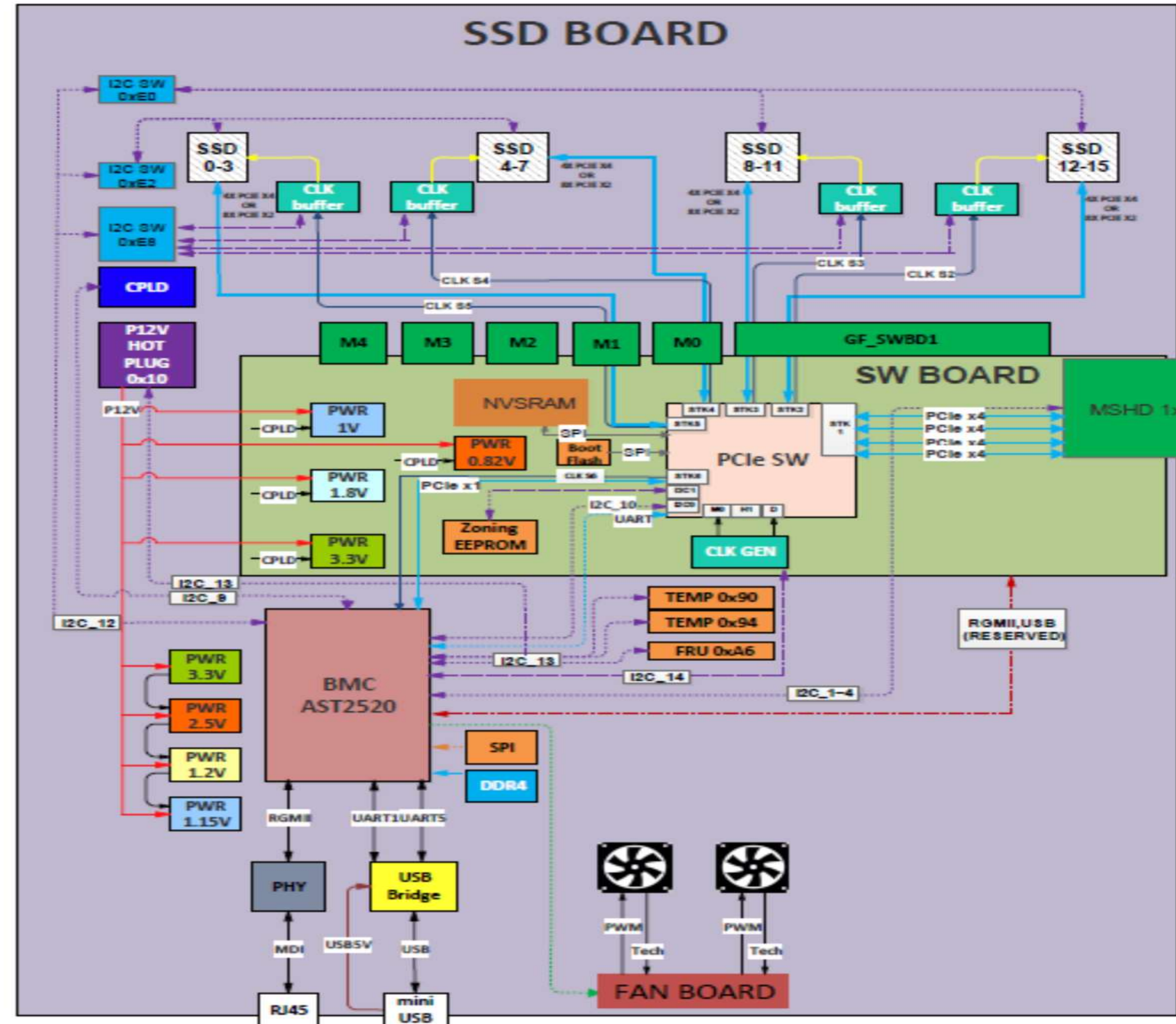


Specifications

Sled Block Diagram



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Specifications

Sled Power Budget



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Sled	Components	Power (W)	Q'ty	Total Power(W)
	6076 FAN	64.8	2	130
	BMC	2	1	2
	PCIe Gen4 swicth	53	1	53
	CPLD	2	1	2
	MISC	5	1	5
	NVMe SSD	25	16	400
	Total			592 W



Specifications

System Power Budget



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Crystal Lake Project for Open Rack V2

System	Components	Power (W)	Q'ty	Total Power(W)
	Sled	592	3	1776
	Total			1776 W

Crystal Lake Project for EIA 19" Rack

System	Components	Power (W)	Q'ty	Total Power(W)
	Sled	592	2	1184
	Total			1184 W



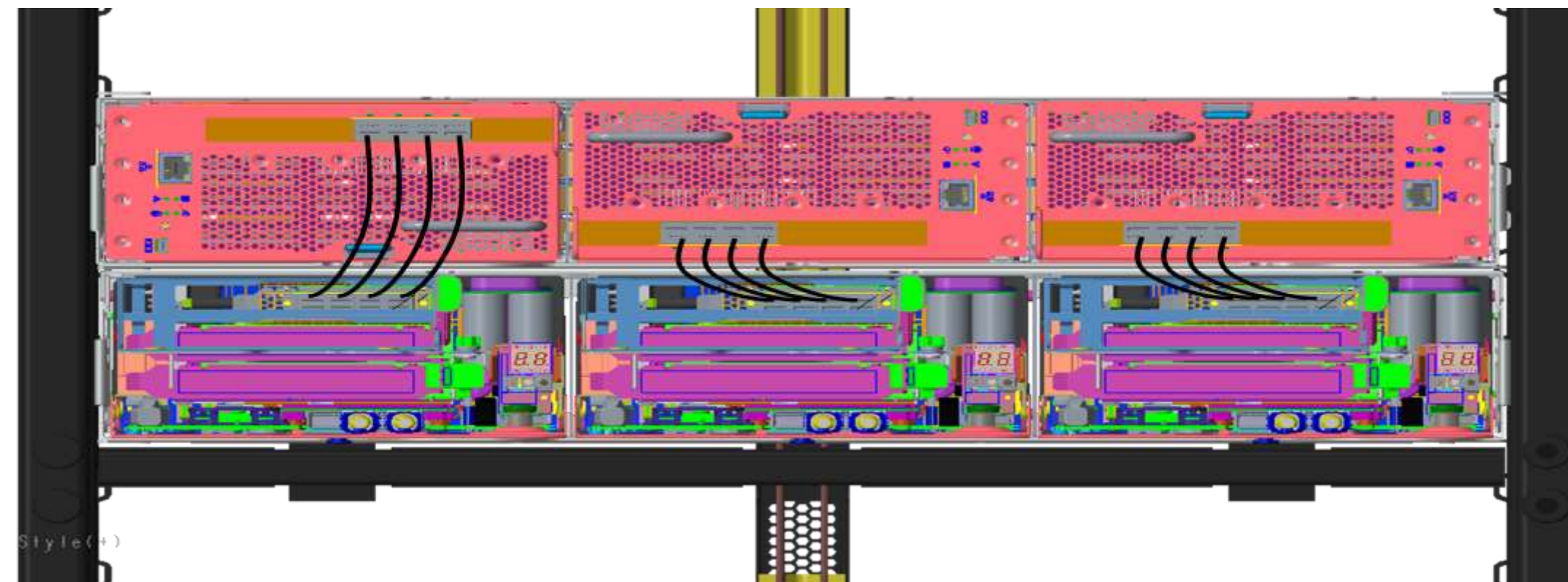
Specifications

Compute/JBOF Sled Topology , x16



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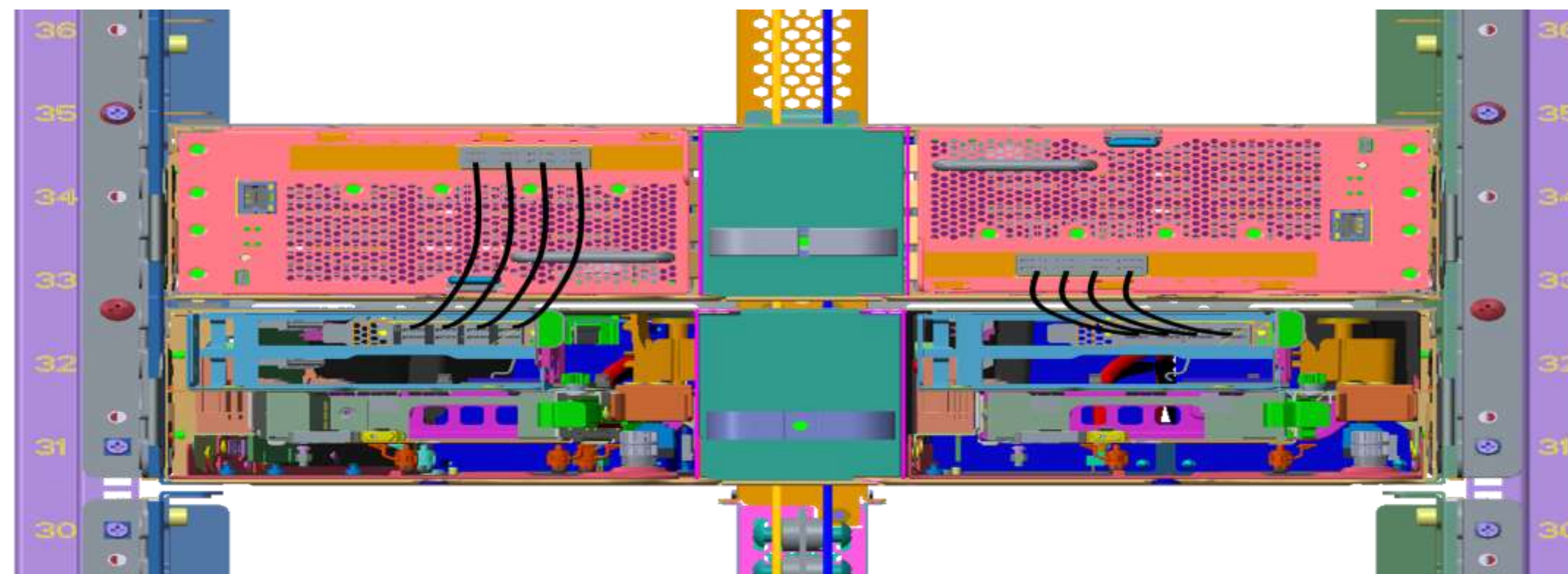
21'' System



← Crystal Lake

← Tioga Pass

19'' System



← Crystal Lake

← Tioga Pass



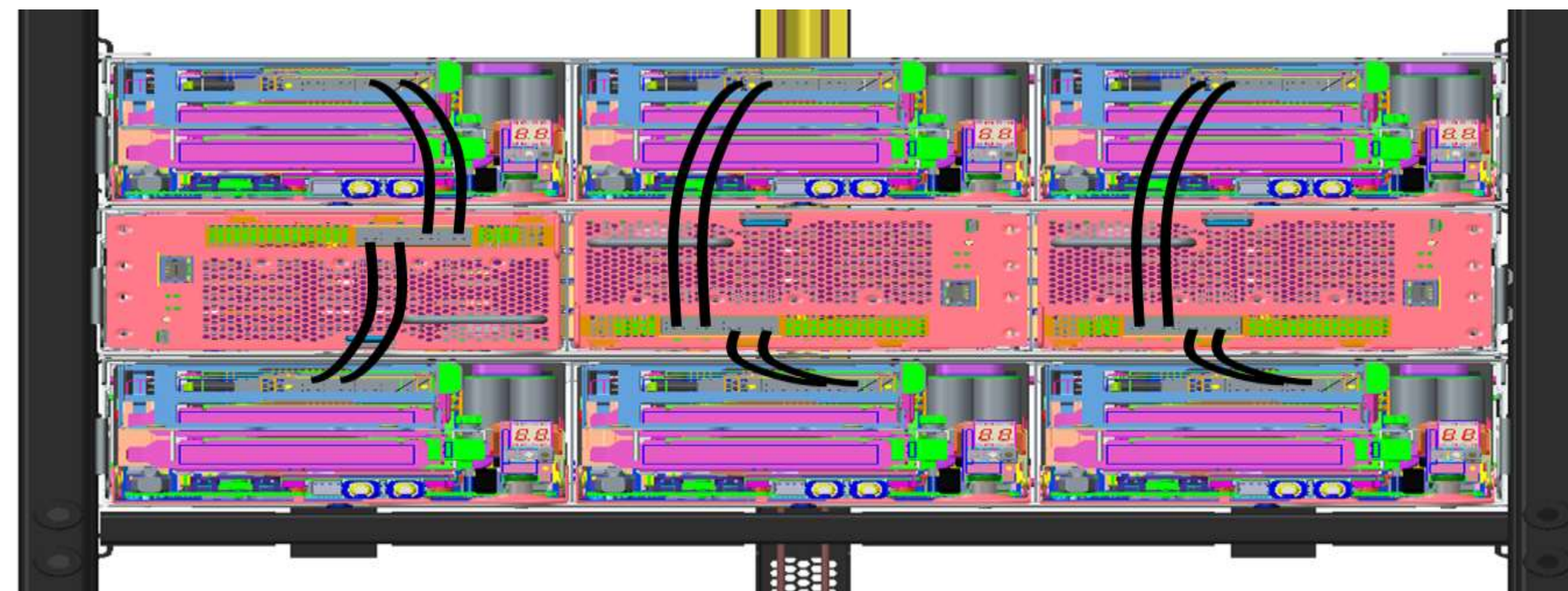
Specifications

Compute/JBOF Sled Topology, x8



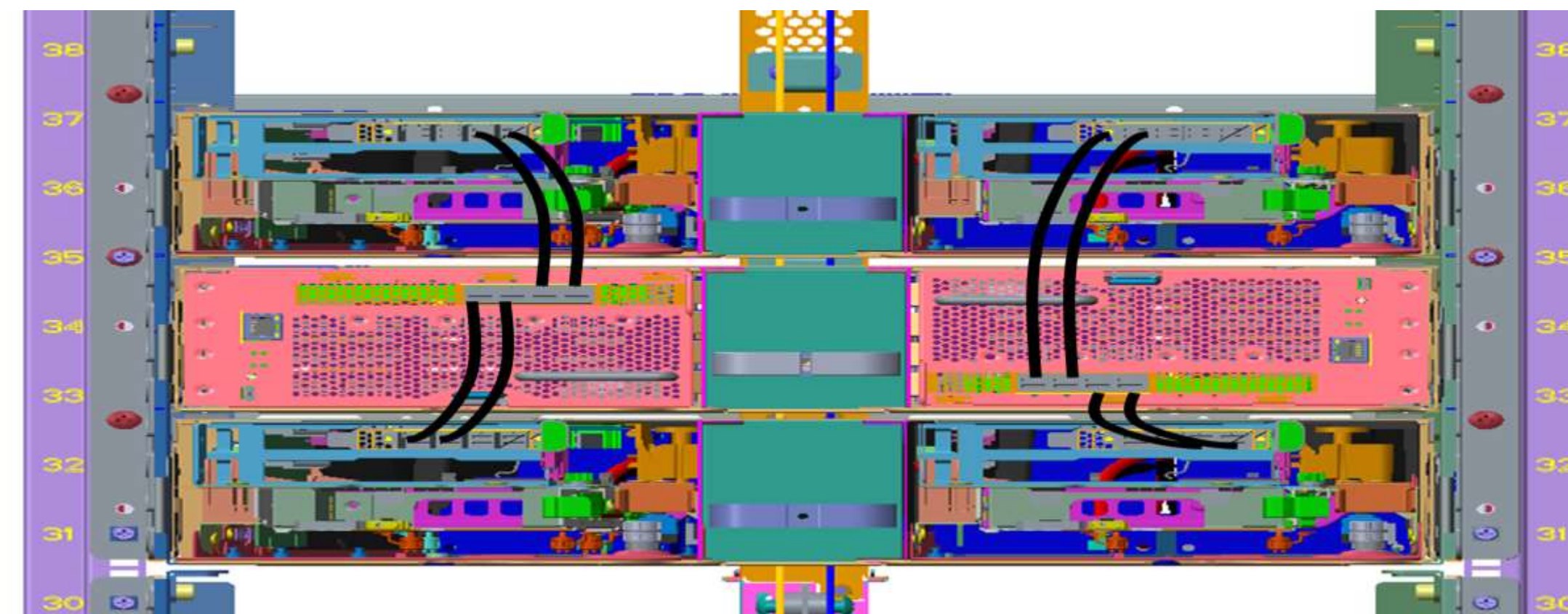
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21'' System



← **Tioga Pass**
← **Crystal Lake**
← **Tioga Pass**

19'' System

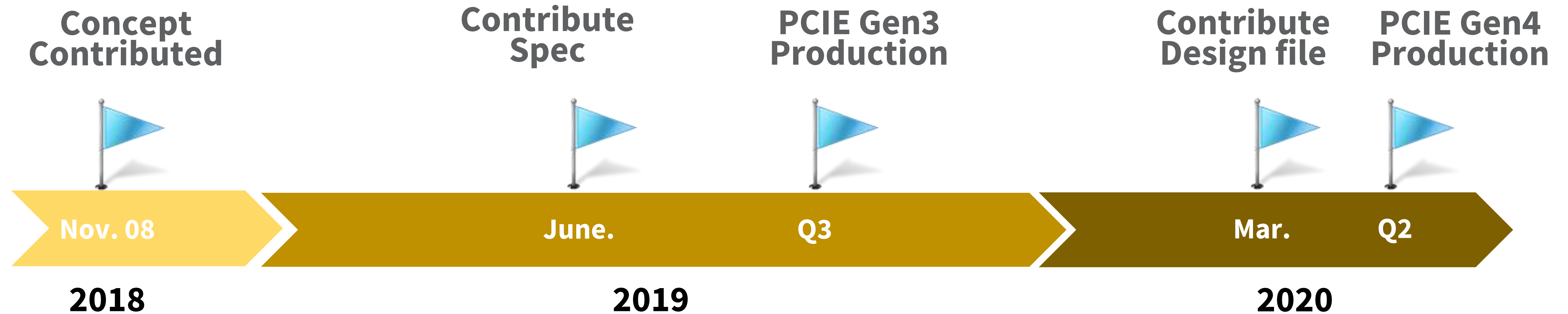


← **Tioga Pass**
← **Crystal Lake**
← **Tioga Pass**

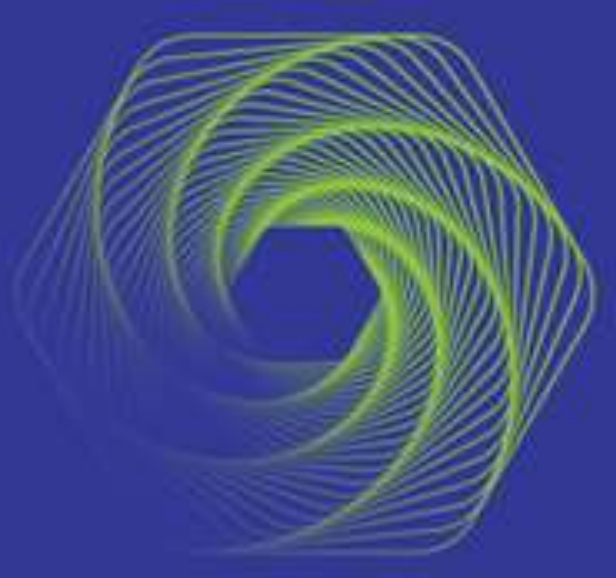


Specifications

Call to Action



- Project wiki to find the concept contribution in regular call : <https://www.opencompute.org/projects/storage>
- Mail us : Mitac_OCP@mic.com.tw
- Come see us @ Booth #D2



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OCP Global Summit | March 14–15, 2019

