



OPEN
Compute Project



OCP U.S. SUMMIT 2017

Santa Clara, CA



What's New in OCP from QCT

Alan Chang

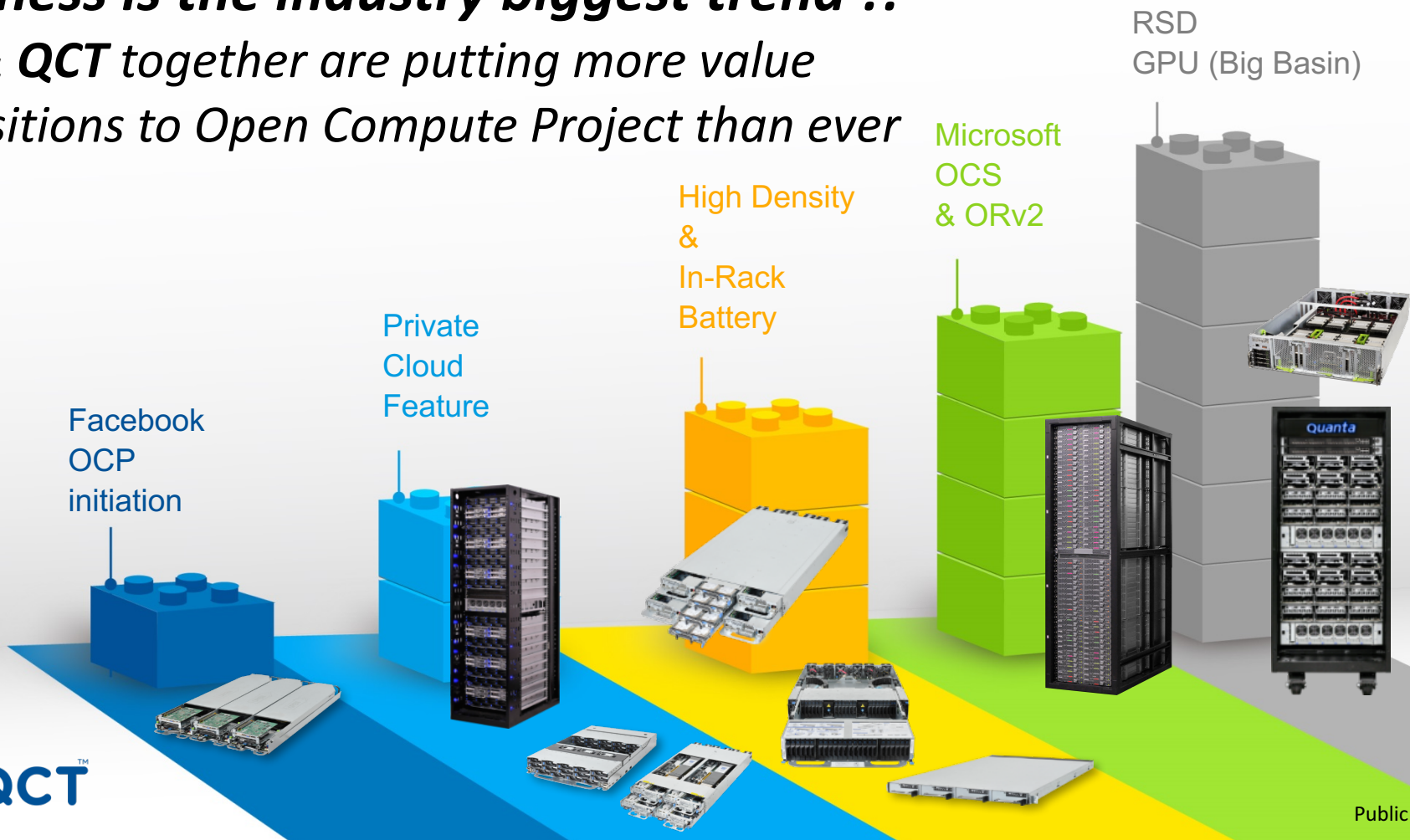
Product Marketing Manager

QCT(Quanta Cloud Technology)

OPEN HARDWARE. OPEN SOFTWARE. OPEN FUTURE.



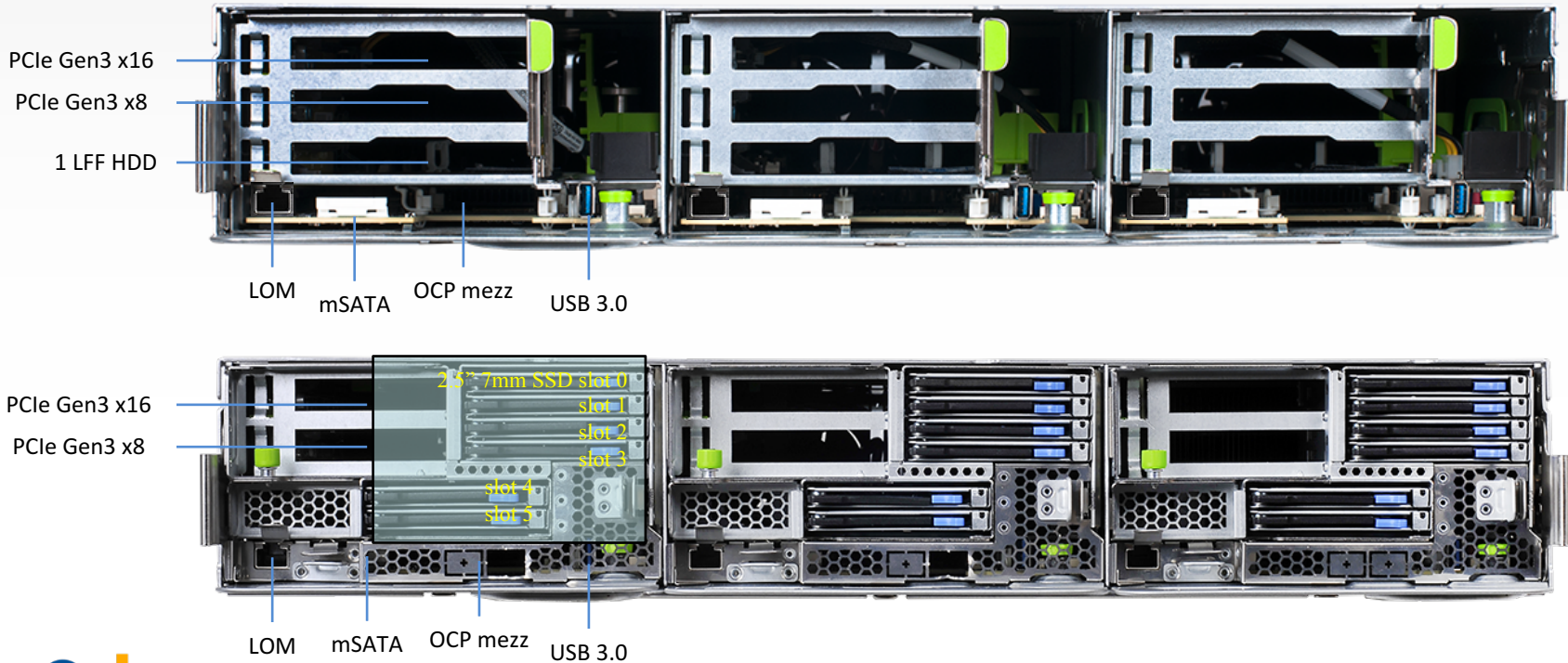
Openness is the industry biggest trend !!
Intel & QCT together are putting more value propositions to Open Compute Project than ever



One Infrastructure with Wide Application Coverage



Leopard Cave – Multiple Options

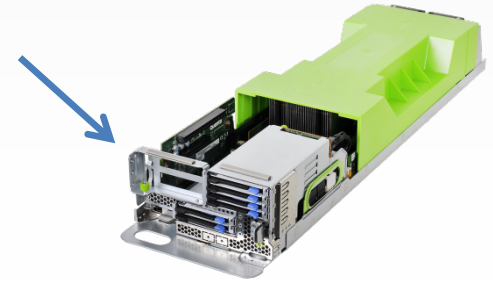


One System Design, with Flexible Storage Options



High Performance Compute Blade
Intel®Xeon® E5-2600 v4 family

1x LFF drive with 2x LP PCIe slots



High Performance Compute Blade
Intel®Xeon® E5-2600 v4 family

6x SFF drives with 2x LP PCIe slots

Compute – Rackgo X Yosemite Valley

Ultra Dense Front-end Compute Solution

- **High-end Performance at Low-end power consumption**

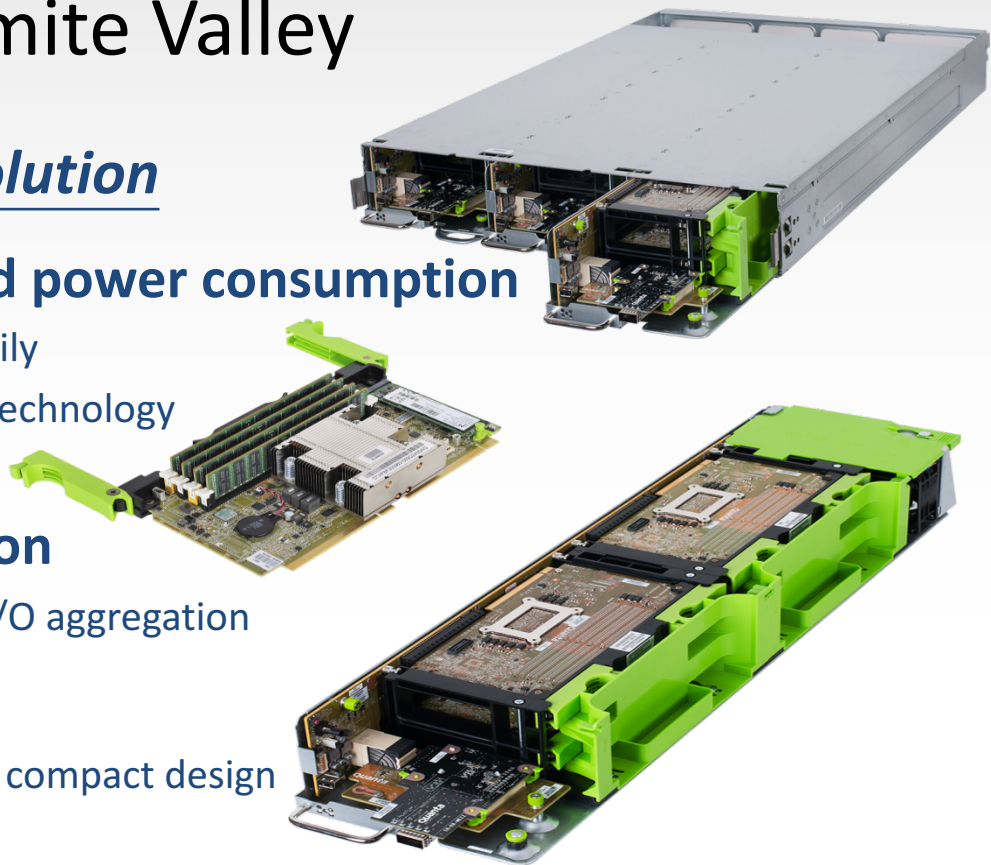
- Supporting the Intel® Xeon® D Processor family
- Introducing the first Xeon® cores with 14nm technology
- Up to 128G 2133MHz DDR4 memory

- **Multi-Host Networking Aggregation**

- Mellanox CL4-LX NIC card to support (4) SoC I/O aggregation

- **Ultra Dense Chassis Design**

- High Density 2 OU 3 Blade (4x SoC per Blade) compact design



One Infrastructure, Wide vertical coverage, True RSD



Leopard Cave

High Performance Compute Server
-Intel® Xeon® processor E5-2600
product family

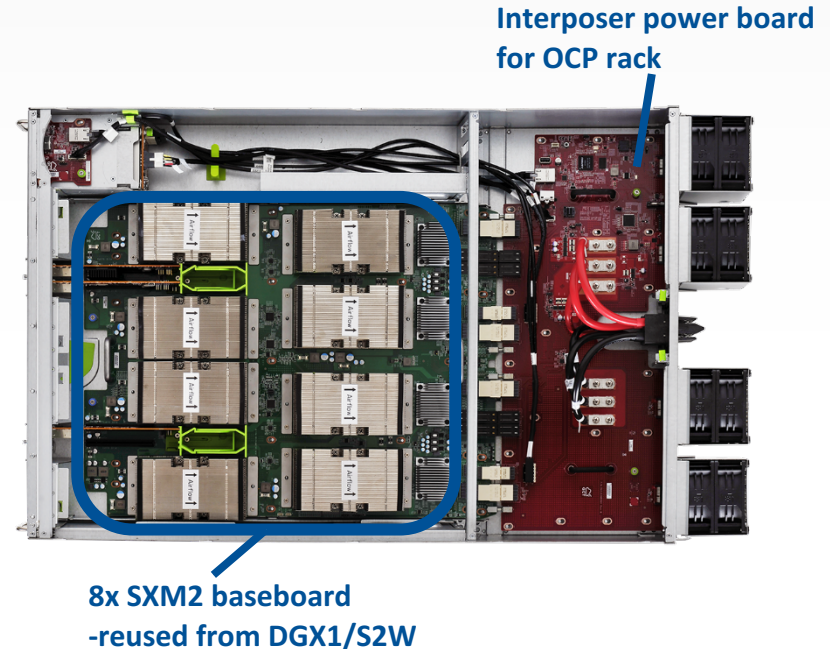
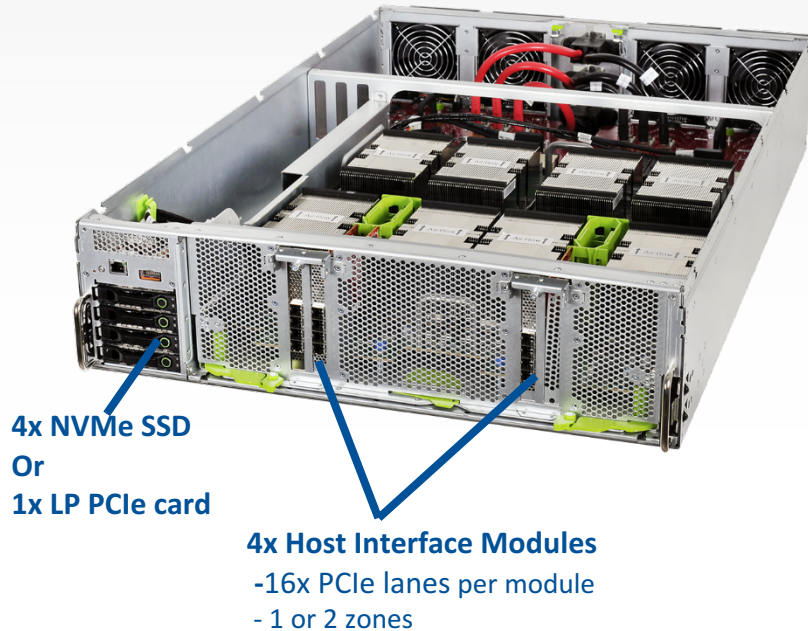
Lightning Bolt

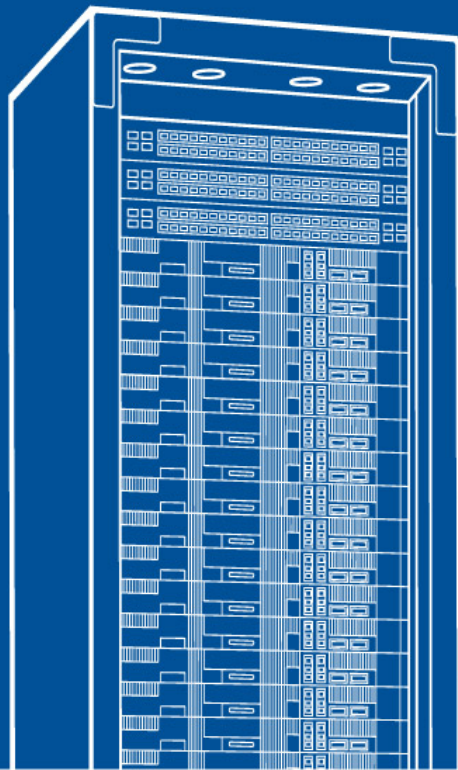
All Flash NVMe System (16 SSDs/sled)
-Intel® SSD DC P3520 Series
-Intel® Xeon® processor D-1500 product
family

Yosemite Valley

High Density uServer (4 nodes/sled)
-Intel® Xeon® processor D-1500
product family

Big Basin – World's First SXM2 JBOG





RSD introduction



Data Center Challenges & Pain Points

Infrastructure has not kept up with increasing biz demands

RSD addresses to all biz needs in a disruptive way.

Problem	Business Needs
Less than 50% server utilization	<ul style="list-style-type: none">• Reduce operational and capital expenses.
Data growth doubles every 18 months	<ul style="list-style-type: none">• Deliver new services in minutes, not months
New services can take a week or more to provision	<ul style="list-style-type: none">• Optimize data center based on real-time analytics.• Address application workload needs with agility.• Scale capacity without interruption.

1 Worldwide and Regional Public IT Cloud Services 2013–2017 Forecast. IDC (August 2013) idc.com/getdoc.jsp?containerId=242464

2 IDC's Digital Universe Study, sponsored by EMC, December 2012

Why Disaggregation?

Today – Servers



Rack Scale - Pooled Resources



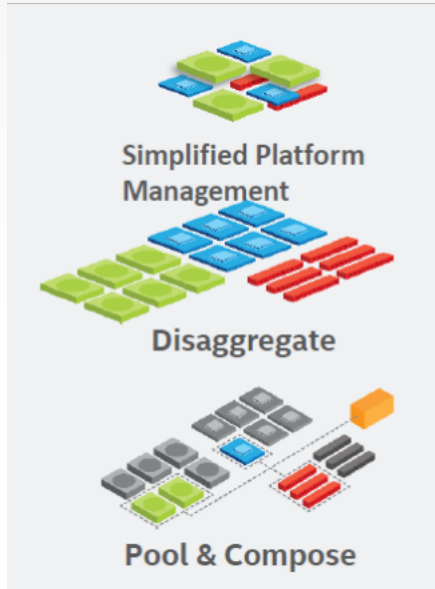
Transition from integrated compute/network/storage to pools

Value Propositions

- **Cost savings** due to resource pooling & avoiding replacement of the full system due to disaggregated components
- **Simpler Logistics** by avoiding to replace 1000s of racks every couple of years
- **Datacenter level management** allows interoperability of SW and HW layers for rapid deployment

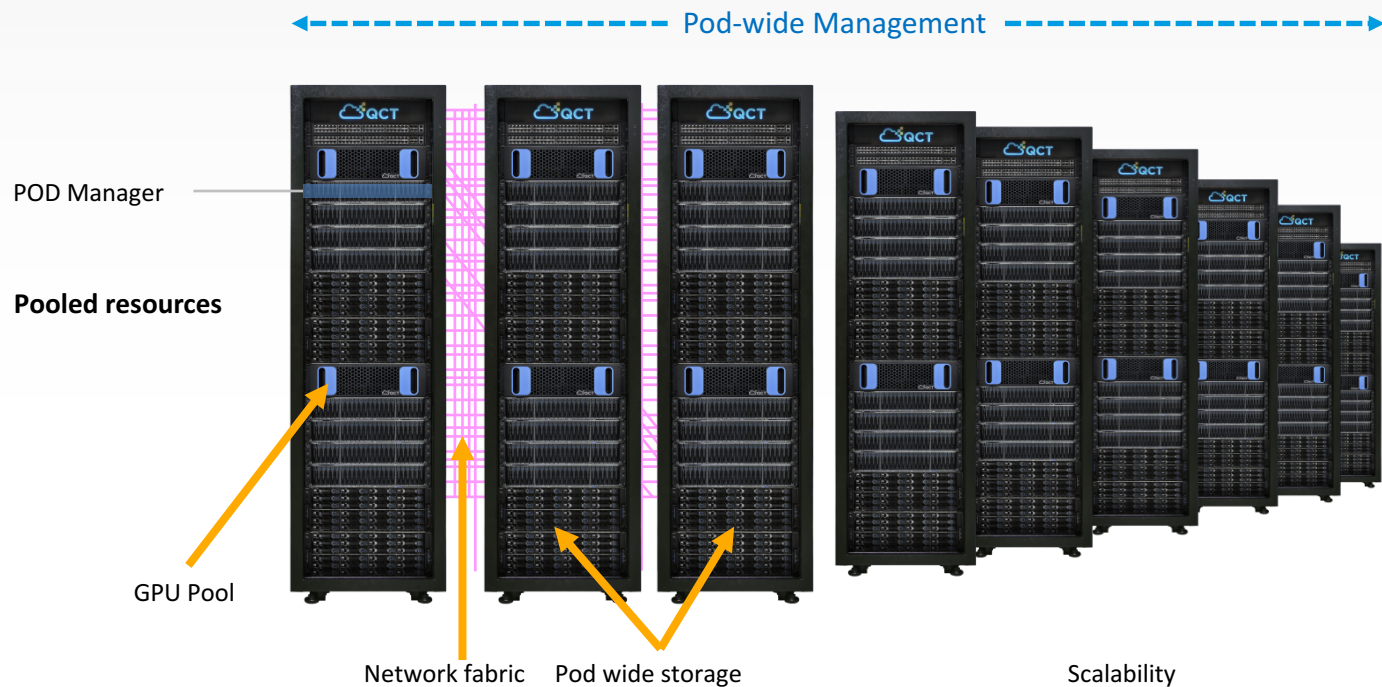
Disaggregation was less talked about now, because memory cannot be disaggregated on current Intel platform and high speed optical network e.g. SiPh is not ready yet.

Pool & Compose



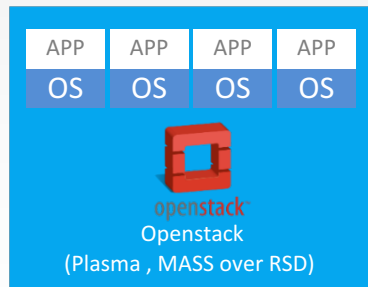
RSD Framework

Simplest Path to Software Defined Datacenter

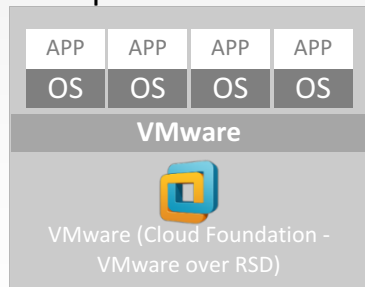


How can RSD help in a heterogeneous environment?

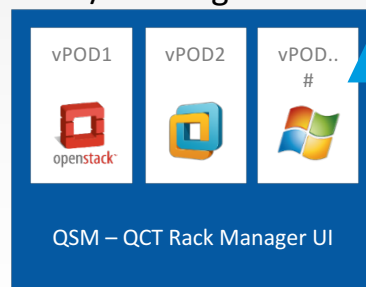
Homogeneous CSP



Homogeneous Enterprise



Heterogeneous Telco/ Hosting



Heterogeneous Pain Points

- *Way too many different Ops*
- *Way too many different customers*
- *No knowing final hardware configuration until order placed*
- *Need quick turnaround time to provide service*

POD Manager Foundation API - Chinook



POD Manager
Discovery/Configuration/Compose/Boot/Telemetry

**QCT PODM
Feature**

Manageability Firmware API - Redfish



PSME -
Compute
S5B/S5S

PSME -
Storage/NVMe
JBZ/ JB7T

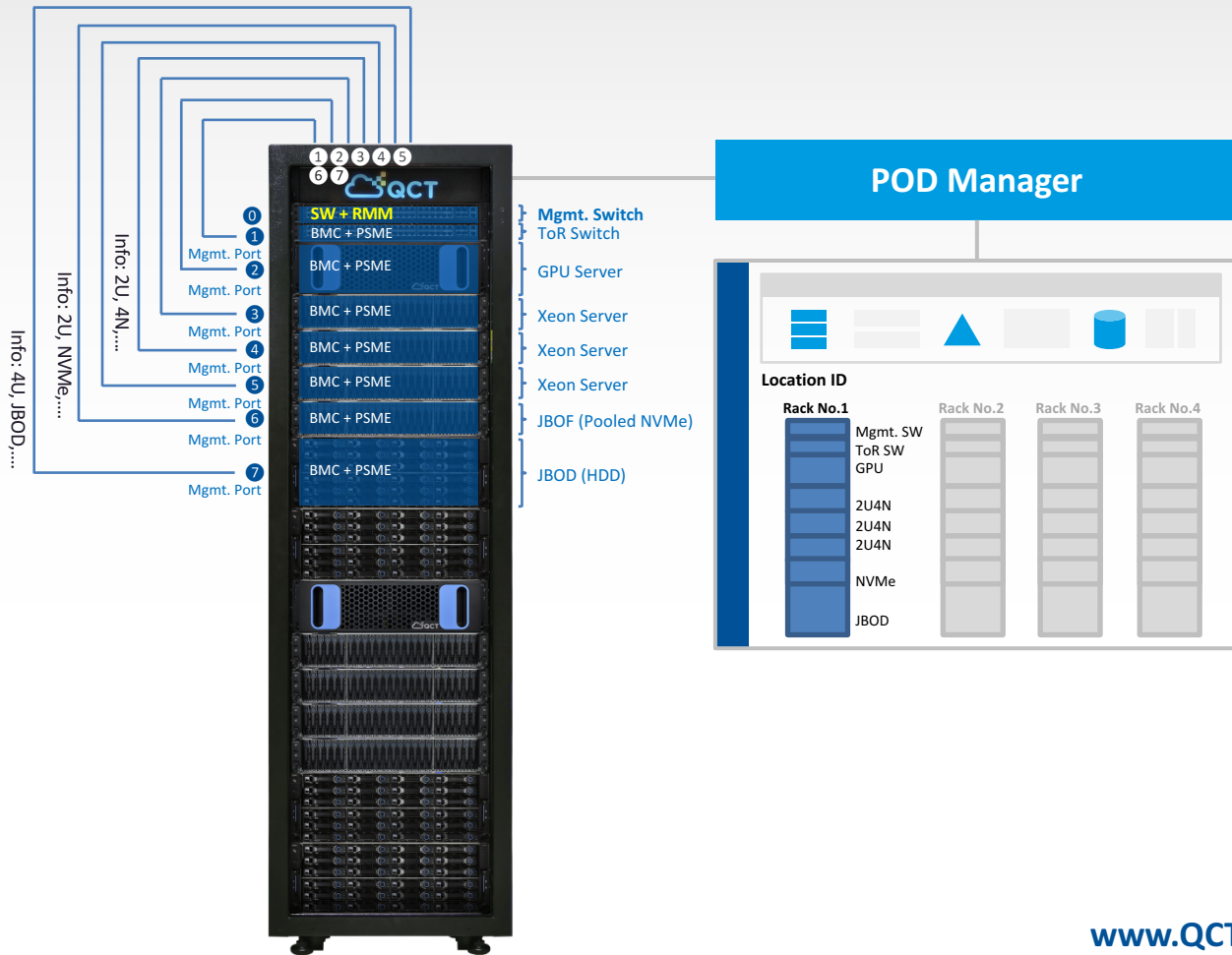
PSME - Network
LY8/LY9/LB9/IX2

PSME - PCIe
Pool PCIe

PSME - PCIe
Pool GPU



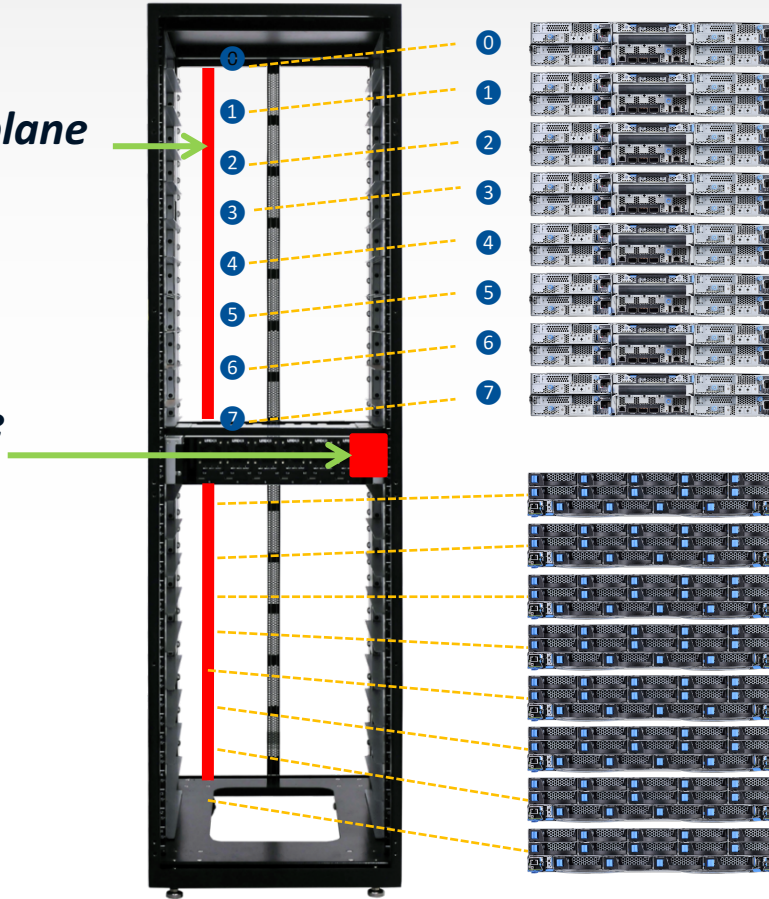
RSD "Location ID" Implementation on 19" Rack



QCT's 1st RSD PoC on Open Rack

1. Management Backplane
to provide **Location ID**
function

2. Rack Mgmt. Module
to provide **Rack ID** &
power / thermal info.



QCT Evolution of Rack Scale Design

“Efficiency”

“Openness”

“Manageability”

New Era of Agility

Q3 : New Memory / Storage / Technology

- QCT : EIA 19”, Redfish
- RSD-ready Management Switch,
- Manageable Compute and **Storage/Switch**

Q1 : NVMe Pooling RSD 2.0

- QCT : NVMe pool MF3 ready

Q3 : Resource Pooling

QCT : Pooled resource integrated with OpenStack

Q2 : Simplified Platform Management RSD 1.2

- QCT : Rack management backplane
- QCT : Server/Storage/Switch same management tool, QSM

2016

2017

2018

Are you ready to take the next step ??



Customer PoC half racks are **AVAILABLE TODAY**
www.QCT.io

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2. Drop it off at the QCT booth
3. Announce the winner at 5pm

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