Open. Together.
Francis Lam
Director, Intelligent Computing Product Management
Huawei Technologies
Global Leader in Information and Communications Technology Solutions

180,000 Employees
80,000 R&D employees
170+ Countries
15 R&D centers
No. 68 Interbrand's Top 100 Best Global Brands
No. 72 Fortune Global 500

Open. Together.
Vision and Mission

Bring digital to every person, home and organization for a fully connected, intelligent world.
Focusing on Smart Devices, Connectivity, Computing and Cloud

Smart Devices

Connection

Computing and Cloud

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A Brand Admired and Trusted by Consumers

Top 2 Global Smartphone shipments

206M Units in 2018

88% Brand Awareness
Carrier Business: Industry Leader and Best Strategic Partner for Global Carriers

Global Carriers

180+ carriers
Using LTE-Advanced Pro (4.5G)

25,000+ 5G base stations shipped

480+ NFV commercial contracts

110+ carriers
Using RuralStar to connect tens of millions of users in remote areas

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Innovative Solutions Drives the Digitization of Fortune Global 500 Companies

Huawei works with 211 of the world's top 500 and 48 of the top 100 Enterprises:

- 300+ Financial institutions
- 160+ Smart cities
- 190+ Power companies
- 1,000+ Manufacturers
- 100+ Oil companies

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To Adopt OCP Solutions in Huawei Cloud Datacenters
OCP Makes Sense

Stop re-inventing the wheels

Focus on what counts

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Huawei Engagement with OCP

Build ICT solutions based on OCP building blocks

Contribute back to OCP communities

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Huawei Project Participation

Open RMC
Advanced cooling solutions
OCP Accelerator Module
NIC 3.0 card
Extension to Open Rack 2.0
Huawei Cloud Datacenter Requirements

Huawei Datacenter Conceptual Design

- Deep L1/L2 co-design
- Fast deployment
- High rack density
- Future proof
- Autonomous robot maintenance

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Extending Open Rack

- Cable backplane for cable-less deployment and maintenance
- Optional higher density liquid cooling solution
- Rack Scale management

Open Rack Standard v2.1 as the foundation of our rack scale platform
Starting with Open Rack

Standard Open Rack module form factor

Standard Open Rack 48VDC Power interconnect
Extending Open Rack

Simplify deployment and maintenance – further reduce TCO

Extending rear rack space for blind-mate connectivity

Replacing front-side cabling

All FRUs are still front accessible

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Open Rack Design for Huawei Cloud Datacenter

Conforms to Open Rack 2.0 Specification
Flexible Compute Module Concepts

- Compute Node
- Storage Node
- Accelerator Node

- Blind-mate Liquid Cooling Connectors
- DC Power Connector
- Blind-mate Cable Connector

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To adopt Upcoming OCP Accelerator Module

- Support broad range of Huawei-design or partner accelerators

- Provide suggestion and feedback on specification to expand compatibility with Huawei accelerator devices

- To adopt this specification in future accelerator module designs
High Power Capacity

3x Compute Density per Rack

Why?

- Support high power components such as high performance CPU and hardware accelerators
- Reduce datacenter footprint

How?

- 48VDC in standard depth Open Rack
- 98.1% Efficiency – Highest in industry
- In-Rack Lithium Batteries – Eliminate UPS

One or multiple easily scalable 1U battery backup unit

Single power shelf supporting entire rack up to 33KW+

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Cable-free Deployment and Maintenance

<table>
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<th>Why?</th>
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<td>Simplify factory integration, installation and on-going maintenance</td>
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<th>How?</th>
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<td>High speed blind-mate cable tree backplane</td>
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Alignment with Open Rack standard

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## Integrated Liquid Cooling

### Why?
- Higher compute density
- Maximize factory integration
- Minimize on-site engineering

### How?
- Blind-mate connection to integrated manifold
- In-rack coolant distribution unit
- Factory integration with fully enclosed secondary water loop

Alignment with OCP Advanced Cooling Solution

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Intelligent Rack Level System Management

- Huawei System Management Stack
- NetEco Datacenter Infrastructure Manager
- Fusion Director Compute Infrastructure Manager
- Huawei Rack Level Manager Software (Open RMC)
- Huawei iBMC Software (RedFish)

Alignment with Open RMC
OCP for Huawei Cloud Internet Service Providers