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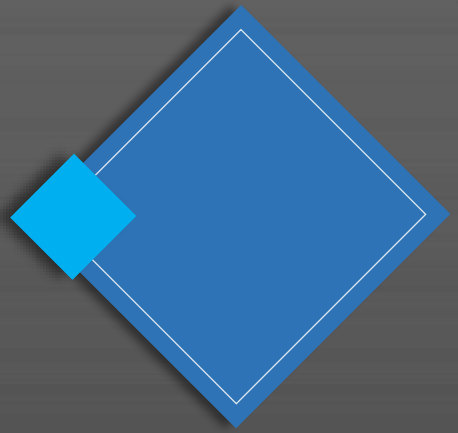
CLOUD COMPUTING AND AI TOTAL SOLUTIONS PROVIDER

# Open Hardware Trends and Use Cases in the Hyperscale Datacetner

Dolly Wu, VP and GM

March 20, 2018

# Challenges and Trends for Modern Hyperscale Data Centers



- Scaling Seamlessly Across the Globe
- Resource Utilization
- Intensive Computing for AI in the Cloud
- Processing Huge Data Sets
- Massive Data Storage

# Open Hardware Projects for the Hyperscale Datacenter

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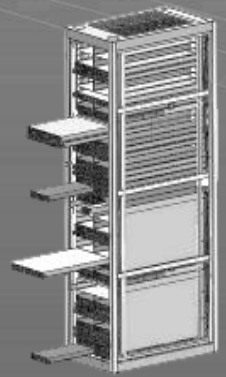
6 International Open Datacenter Platforms

**Inspur is the only server vendor in the world to support all open source hardware projects.**

ODCC Rack

OCP Rack

Project Olympus Rack



Open19 Rack

InCloud Rack with Intel® RSD

ODCC Solution Provider

OCP Platinum Member Solution Provider

OPEN19 Foundation Lead Vendor

Intel® Rack Scale Design

OpenPOWER™

Microsoft Project Olympus

**Inspur is a Key Member in Open Platform Communities.**

openstack FOUNDATION GOLD MEMBER

# Inspur Contribution to OCP Community

*Inspur's Goal for being OCP Platinum Member and Solution Provider*

OPEN PLATINUM

Contribute building blocks to OCP Community

OPEN Compute Project SOLUTION PROVIDER

OPEN Compute Project

OPEN19 Foundation

Standard Rackmount

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OpenPOWER™

开放数据中心委员会 Open Data Center Committee

OCP adoption for Cloud Datacenters in different industries

**Deploy common server building blocks into all hardware platforms**

# Inspur Contribution to OCP:
## San Jose Motherboard

OCP™ ACCEPTED

**The World's First OCP-Accepted™ Motherboard Based on Intel® Xeon® Scalable Processor Family (Skylake/Purley)**

# Inspur Contribution to OCP:

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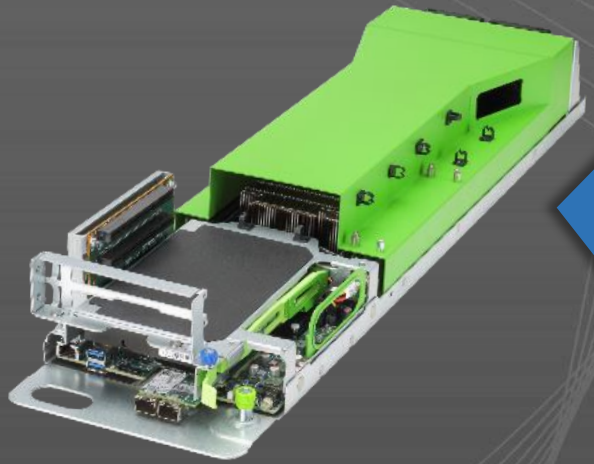
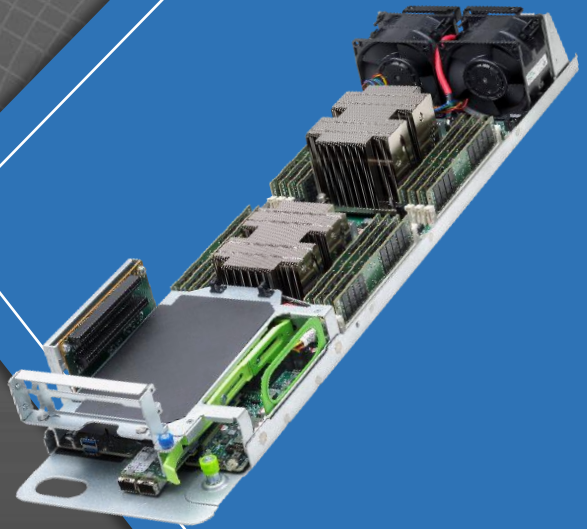
## INSPUR ON5263M5 The World's First OCP-Accepted™ Node Based on Intel® Xeon® Scalable Processor Family (Skylake/Purley).

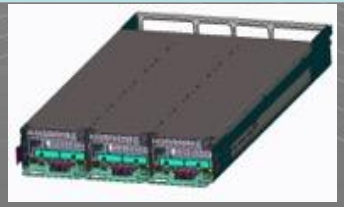


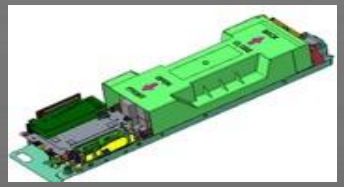


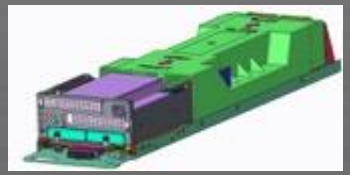
OCP™ ACCEPTED

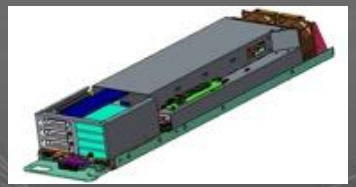
Inspur will also contribute server management software to OCP. For more information, please go to Inspur Executive Track on 3/20 at 4pm, Room #210E/F. Live demo also available at Inspur booth # A16.

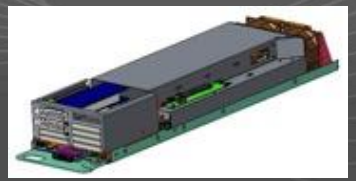
# Inspur OCP Server and JBOD











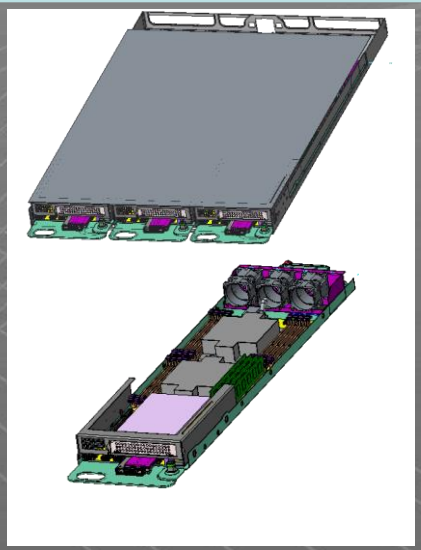
**2 OU 3*Node**
- 2*Skylake CPU
- Support FPGA
- 16*DIMM GPU

**SKU#1 2 OU**
1x3.5”HDD + 1x M.2
Expansion Slot:
- 1x FHHL(x16) : CPU0
- 1x FHHL(x8) : CPU0

**SKU#2 2 OU**
2x2.5”HDD or NVMe
2x M.2
Expansion Slot:
- 1x FHFL(x16) : CPU0
- 1x FHHL(x16) : CPU1

**SKU#3 2 OU**
4x2.5”HDD or NVMe
1x M.2
Expansion Slot:
- 3x HHHL(x8) : CPU0

**SKU#4 2 OU**
6xSSD
1x M.2
Expansion Slot:
- 2x HHHL(x16) : CPU0



**1 OU 3*Node**
- 2*Skylake CPU
- Support FPGA
- 16*DIMM GPU

**SKU#1 1 OU**
2x M.2
Expansion Slot:
- 1x FHHL(x16): CPU0

**3 OU JBOD**
- 64*3.5”HDD
- Support M.2 or U.2
- Support Tri-mode

Microsoft

# Project Olympus

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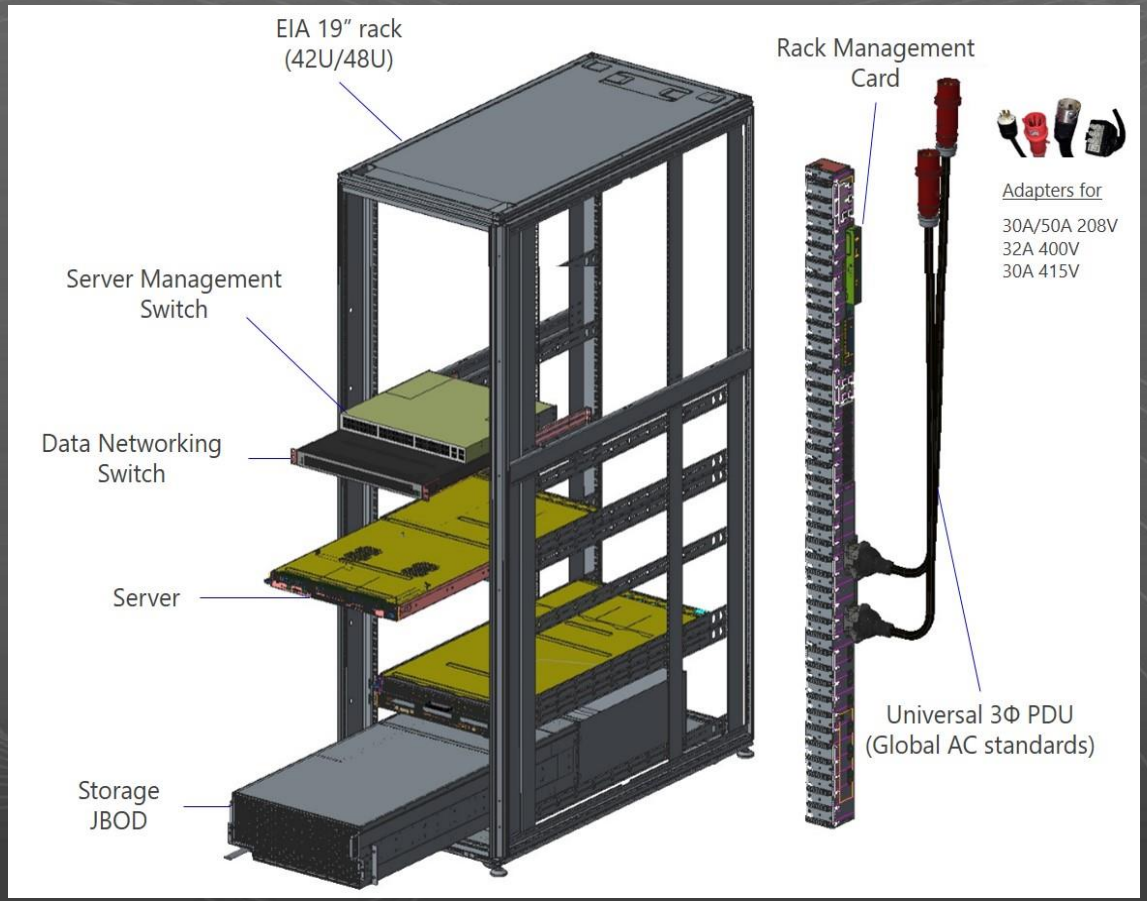



Important Differentiator: Universal PDU with adapters that work for every country – easy for global scaling

OPEN Compute Project

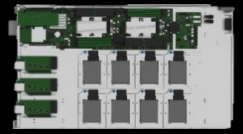
# ODCC: Inspur SR Rack Scale System

**Inspur is the leader in ODCC Deployments with over 60% of the Market Share.**

Storage Pooling

GPU Pooling

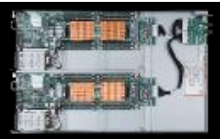
SR Server node



I/O Expansion

Balanced Node

Cold Storage



High Density Compute node

**Centralized Power Centralized Cooling**

Power Consumption

**-15%**

TCO

**-12%**

**Integration Delivery Plug And Play**

Speed Up Delivery

**20x**

Failure Rate

**-50%**

**Cold Aisle Operation Centralized Management**

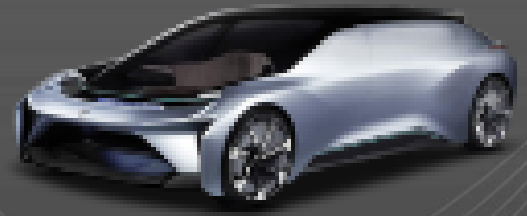
Improve Operational Efficiency

**3x**

- 85% of Baidu rack server products
- 60% of Alibaba rack server products
- 40% of 12306 railway system Phase II
- 60% of Qihoo's rack server products are Inspur Rackscale SR

# Case Study: Baidu

Inspur is the largest server provider for Baidu.



Jointly developed and released the world's first 4U16GPU for Baidu Driverless Car Project.

- Baidu is the world leader in voice, image and autonomous driving technology. Baidu Brain TTS is currently being requested 250 million times per day and delivers a speech recognition rate of 97% and a face recognition rate up to 99.7%.

- Inspur set a new record in 2016 of deploying 10,000 nodes per day using Inspur ODCC SR Rackscale servers for Baidu datacenters. In comparison, conventional rackmount servers deployment is around 300~500 servers per day.

# Case Study: Alibaba

**Singles Day 11/11/2017**
**eCommerce Revenue**
**$25.3B for 1 day.**

Jack Ma, Chairman of Alibaba, celebrated Singles Day 2017 with actress Nicole Kidman.

- Inspur is the No.1 Server supplier for Alibaba
- Inspur ODCC SR Rackscale infrastructure and AI Solutions supported the massive amount of data analytics, images search processing and floating point computation with single precision.

阿里巴巴 Alibaba.com

# Technology Resource Sharing from Hyperscale

## Inspur JDM Model: Full product life-cycle customized to fulfill all types of customer needs

Identify the needs → R&D Design → Just-In-Time Customization → Manufacturing → New Design Generation Updates → Quality Assurance → Delivery and Service

Hyperscale

Share IP

JDM

IP Output

All

Introduce JDM building blocks for Hyperscale to All CSPs, Enterprise, Traditional Industry

- New technology adoption
- Customized development
- Technological support
- Business support

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- Understand business needs of customers
- Joint innovation
- Cooperative development
- Technology research
- Resource sharing
- Management system optimization
- Dedicated quality control system
- Dedicated operation platform

# Inspur Intelligent Factory

Delivery cycle shortened from 15 days to 5-7 days

Production efficiency increased by 30%

Reduced human workforce by 60%

# Thank You

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