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Powering The Open Data Center Revolution

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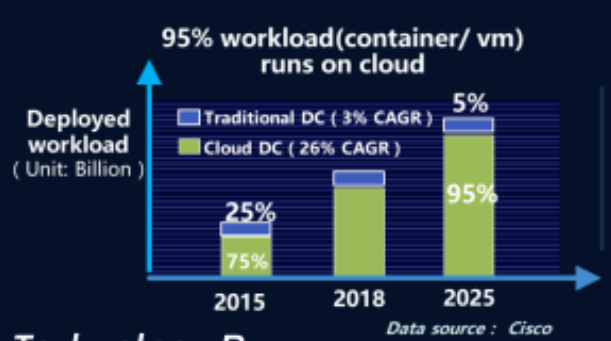
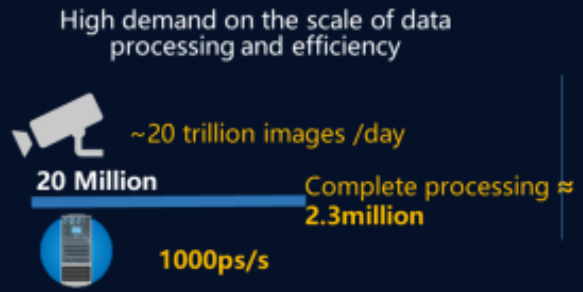
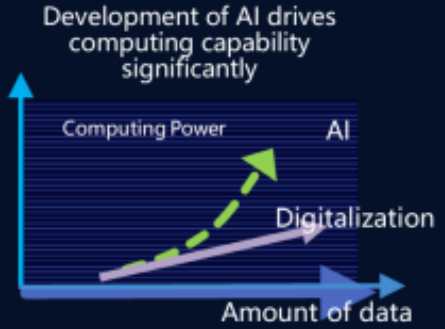
Intelligent World Requires Enormous Computing Power







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Solutions

Open

Converge

Agile

Ecosystem

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Open Platform, Making Ecosystem More Open

Embrace Open

Open Hardware

Member: Facebook, Inspur, Google, Microsoft

Over billion deployment

Members: Baidu、Tencent、Alibaba、Intel、Inspur

ODCC

Millions of nodes deployed

OpenPOWER

inspur 浪潮

Google IBM Mellanox NVIDIA TYAN

OpenPower

Open Software

OpenBMC openbmc

DMTF Redfish

Rack Level Management

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Open Platform, Making Ecosystem More Open

Beneficial

Open Design Platform

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Goal for Open Platform

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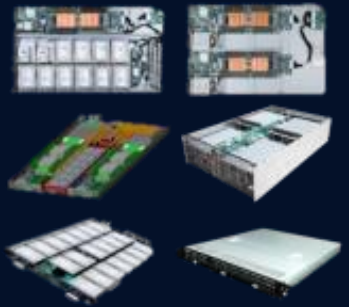
No.1 Server supplier for Alibaba

Alibaba e-Commerce Platform is Running on Inspur ODCC Rack

Peak of system transaction reached 175,000 orders per second



Over 80% of Baidu's hyperscale rack-level servers

Deploying 10,000 nodes per day

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Momentum of OCP & Inspur

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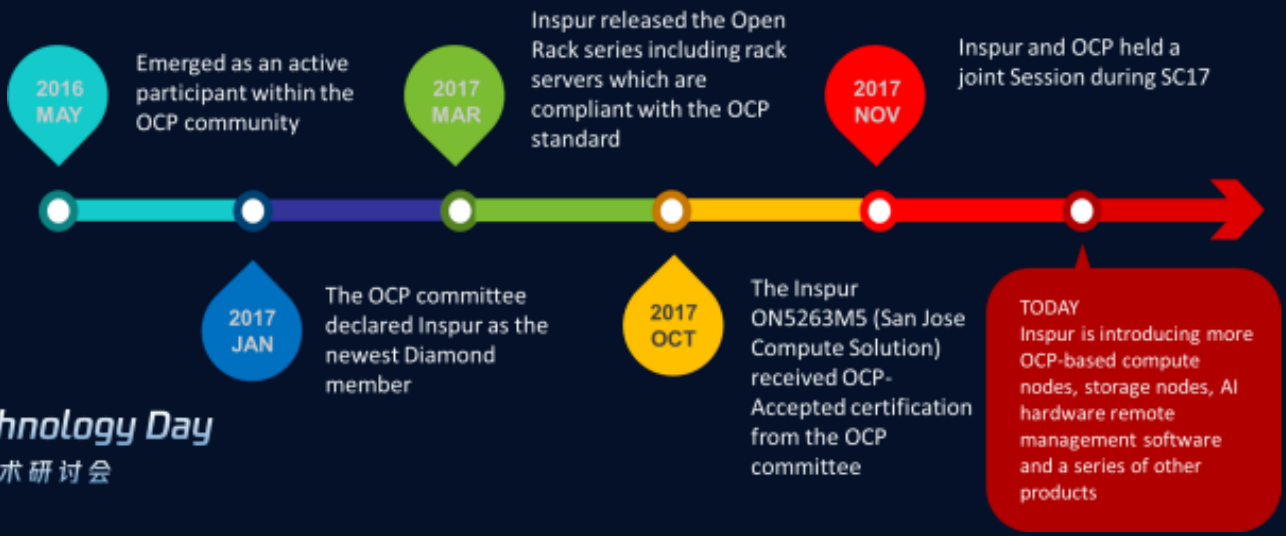

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Open Rack Architecture Comparison

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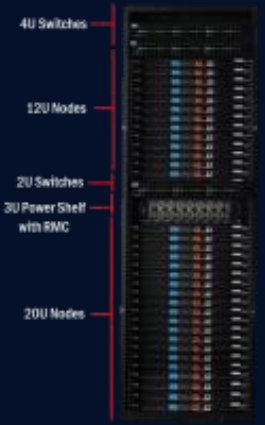
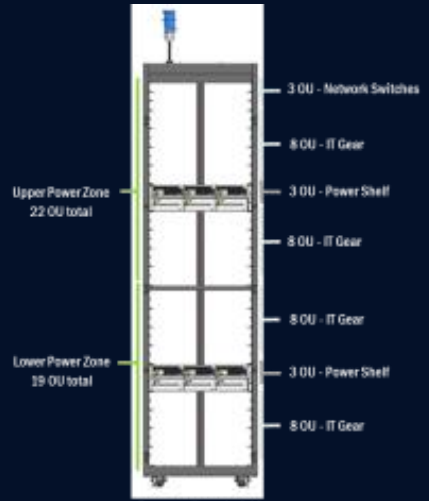
Share the same inner dimension : 21-inch wide
Front maintenance : computing nodes, PSU, Switch,
Cables can be maintained from cold aisle

Item	SR	OCP
1U Height (mm)	46.5 (Scorpio Unit)	48 (Open Unit)
Rack Height	42/46 SU	41 OU
Server Node Width	21"	21"
Device Space	36/40 SU	32 OU
Switch	3 SU	3 OU
Power	3 SU	6 OU
Bus bar	1 pair(left)	3 pair
Unified Cooling	Yes	No
Unified Mgmt	Yes	No



Inspur SR Rack



Open Rack V2

Converge ODCC Rack and OCP Rack

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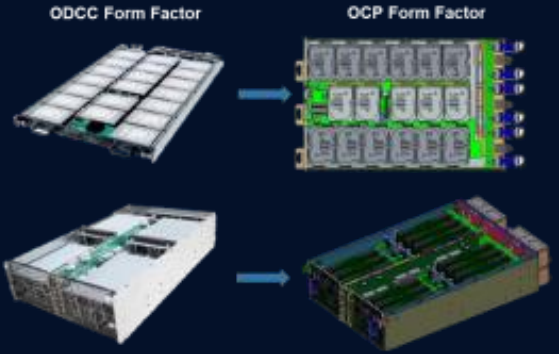

Component	SR Storage Node	OCP Storage Node
Chassis	N	N
HDD Tray	**Share**	**Share**
Controller Board	**Share**	**Share**
HDD Backplane	N	N
Power Distribution Board	N	N

Component	SR GPU Node	OCP GPU Node
Chassis	N	N
GPU Switch Board	**Share**	**Share**
Expansion Board	**Share**	**Share**
Power Distribution Board	N	N

Convert ODCC storage and GPU nodes to OCP , with key components shared
Design cycle shortened 60%, high reliability and cost efficiency

Inspur OCP Rack Level Product Overview

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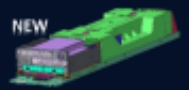
Compute

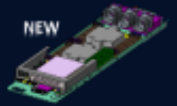


I/O Balance

- 2x2.5"HDD or NVMe
- 2x M.2
- 1x FHFL(x16) : CPU0
- 1x FHHL(x16) : CPU1

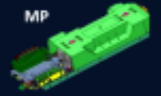
High Expansion

- 4x2.5"HDD or NVMe
- 1x M.2
- 3x HHHL(x8) : CPU0



Density Computing

2x M.2
Expansion Slot:
1x FHHL(x16) : CPU0



Energy Efficiency

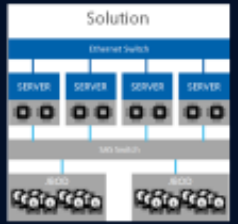
- 1x3.5"HDD
- 1x M.2
- 1x FHHL(x16) : CPU0
- 1x FHHL(x16) : CPU0

Storage

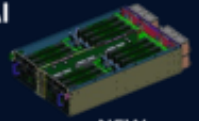
NEW

JBOD

- 2OU Form Factor
- Two drive tray design
- 34*HDDs or SSD
- Each drive support Hot-plug



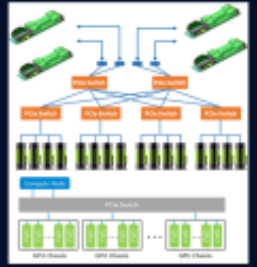
AI



NEW

GPU Box

- 4OU Form Factor
- 16 PCIE GPU Cards



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Inspur OCP Compute Family

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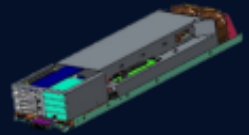
Converged Computing Architecture

Converage Architecture

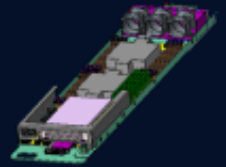
- Unified MB Design to cover 4 Types Application
- Cover High Expansion, Resource Balance, Energy Efficiency and Desity Computiong

I/O Balance



High Expansion

Energy Efficiency



Density Computing

High Density & High Performance

- High density architecture to support 2OU three Node and 1OU three Node
- High performance computing capability

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Inspur OCP JBOD Storage

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Storage Density and Cost Efficiency

High Storage Density

- 2OU 34*HDDs, improve 13% storage capacity

Flexiable Architecture

- Dual Separate Storage tray, 17 drives per tray
- Each tray support SATA and SSD, maintain individuly

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Inspur OCP AI Product

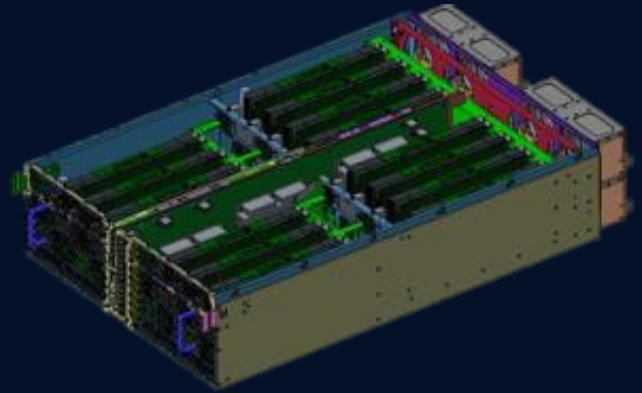
Scalable and Leading Compute Architecture

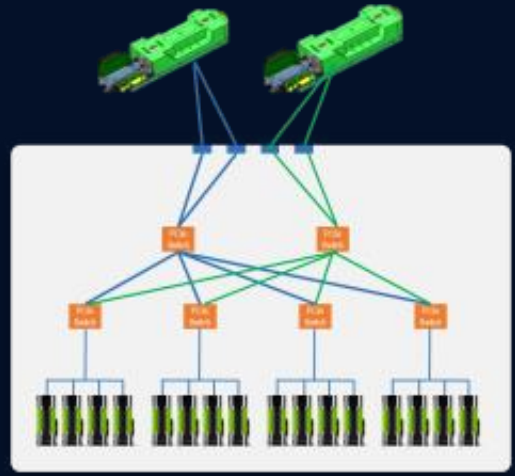
Leading Compute Capability

4OU 16*GPU for training

or 16*FPGA for Inference

Optimization Architecture for AI





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Hardware Management For OCP Rack

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OpenBMC openbmc

WebUI to monitor system status

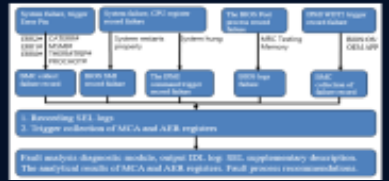
Redfish/Restful Function , Support Redfish OCP Baseline Profile

Component **Firmware Life cycle Management**

1. **Version auto discovery**
2. **Intelligent update for BMC、BIOS、CPLD、FPGA etc.**
3. **Firmware rollback when error occurs.**

Fault Diagnosis

1. System Fault rapid diagnosis.
2. Output the detailed fault records and recommendations.
3. BMC Subsystem fault diagnosis



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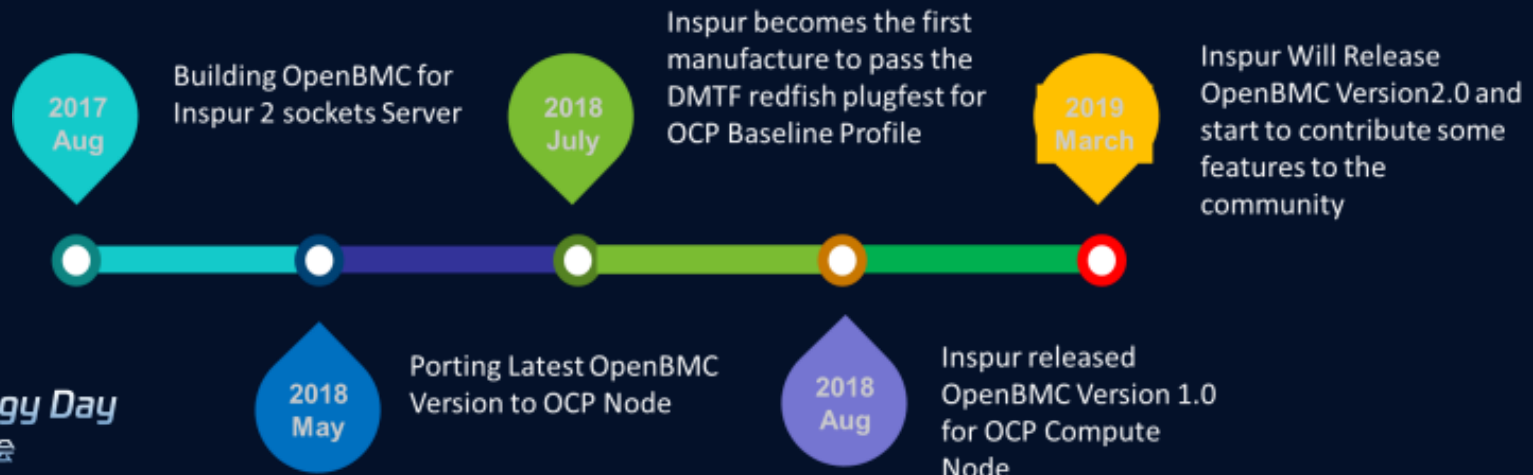
Inspur's OpenBMC Roadmap



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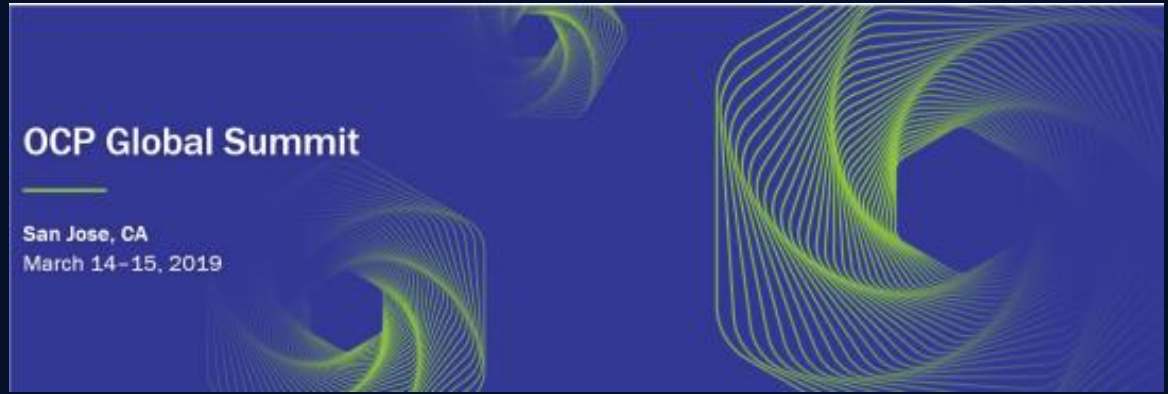

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