



**inspur**



# OCP CHINA DAY

June 25th  
**2019**  
Beijing

## Intel Cloud Innovations and OCP

**Mohan Kumar | Intel Fellow**

25<sup>th</sup> June, 2019

# Agenda

- 01 **Cloud and OCP**
- 02 **Intel Platforms and Solution Innovations**
- 03 **Edge Computing**
- 04 **Summary and Call to Action**

# Public Cloud Growth Drives Greater Infrastructure Needs



BY 2021



Digital Retail  
**\$4.9T<sup>1</sup>**



Digital Advertising  
**\$400B<sup>2</sup>**



Digital Video & Media  
**\$120B<sup>3</sup>**



Cloud Services  
**\$300B<sup>4</sup>**

1. Digital Retail - eMarketer Jan/March 2018  
2. Digital Ads - eMarketer May 2018  
3. Digital video/media - Juniper Research, Subscription Video on Demand, Dec 2017  
4. XaaS (cloud services) - IDC Public Cloud Services Tracker Forecast 2017H2, May 2018

# Cloud and OCP

Cloud requires not just hardware but solutions!



OCP Project(s) well-positioned to satisfy Cloud Solution Requirements



SERVER



STORAGE



NETWORKING



SECURITY



OPEN SYSTEMS  
FIRMWARE



MANAGEMENT



RACK & POWER



DATA CENTER  
FACILITIES

# Intel High-density, cloud-optimized platforms



- Intel is investing in architecting *reference designs* for the next generation of cloud-optimized platforms for greater cloud infrastructure capacity
- High core-count in a single 2U platform provides increased cloud service revenue opportunity
- Capital cost saving by consolidation
- Operational cost savings by efficiency
- Platform Innovations;
  - Features designed for cloud IaaS solutions, VM per core/mem.
  - Offset processor placement for efficient cooling
  - Front hot-swap accessibility U.2 drives, OCP 2.0/3.0 modules

Tencent 腾讯



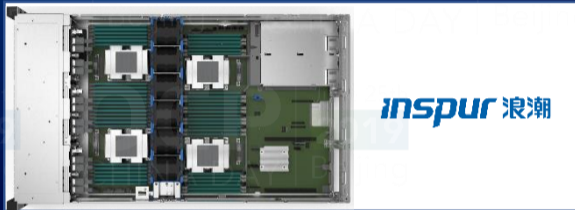
SERVER

# INTEL® HIGH-DENSITY, CLOUD-OPTIMIZED PLATFORM (CONTD.)



## First Cloud-Optimized Platform

- 2U 450mm x 780mm 4S Xeon® 6xxx VM optimized processors
- 48 DDR4 memory slots, SATA/SAS/NVMe 2.5" SSD drive bays
- Supply-line forming 1H 2019



\*Other names and brands may be claimed as property of others.

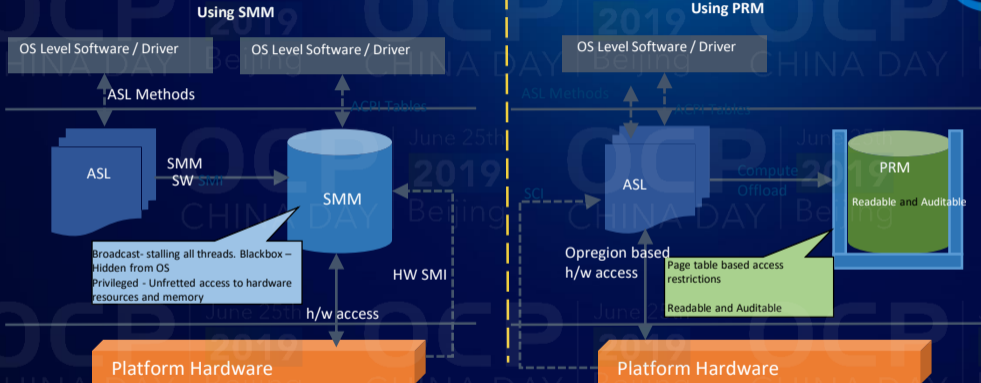


SERVER



Specifications

# Platform Runtime Mechanism (PRM)

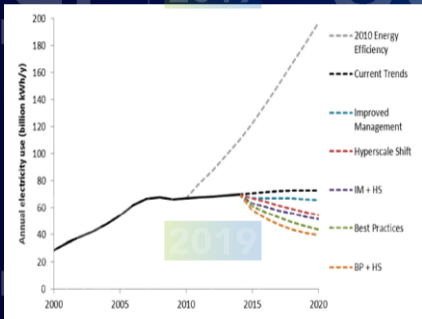


Case Study

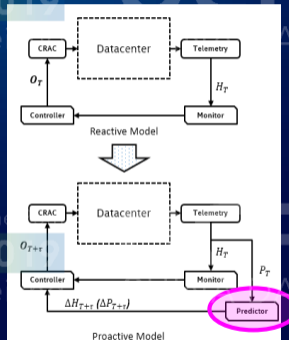


OPEN SYSTEMS FIRMWARE

# DC Cooling Based on Predicting Power



Need to Mitigate DC Power Consumption



Adding power predictor into cooling control loop



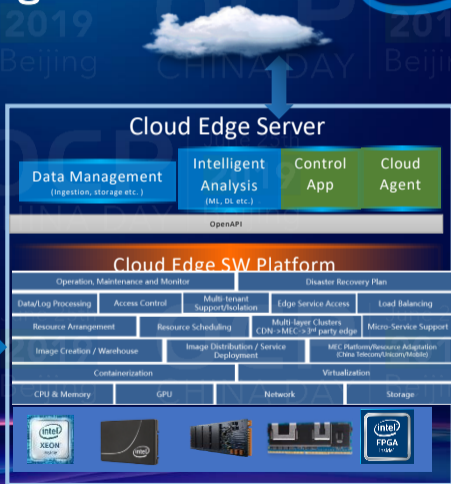
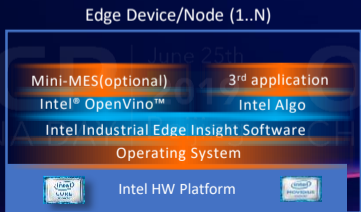
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# Cloud Edge: Offering Cloud Service to the Edge



- The emerging applications and exponential data growth have been driving cloud service extend to the edge.
- CSPs accelerating **Cloud-Edge-Device** deployment



# Edge Computing



## Edge requirements

- Integrated Solution
- Remote management
- Ease of maintenance
- Fail in place and Failure Resilience

## Intel Innovations that benefit Edge

- Hardware ingredients, Open Frameworks
- Lights out Remote Management
- Open Firmware and firmware complexity reduction
- Firmware resilience
- Rack and Power Management

## Advancing Cloud Innovations through OCP Projects



Specifications



White  
Papers



Tested  
Configurations

- Intel® High-Density, Cloud-Optimized Platform – Joint OCP contribution from Intel and Inspur
- Data Center Cooling based on Predicting Power - Plan to contribute Whitepaper and Redfish profile to OCP DCF Project
- OSF
  - Platform Runtime Mechanism
  - Multi-socket FSP & Coreboot
- Storage Disaggregation using NVMe over Fabrics (TCP/IP or RDMA)

# Call to Action



Take advantage of Intel platform and solution contributions to OCP

Collaborate with Intel on Cloud & Edge Innovations

Participate and contribute to OCP Projects to enhance Server & DC solutions

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# Thank you

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