



Open. Together.



OCP
GLOBAL
SUMMIT

Jason Waxman

Intel Corporation Corporate Vice President
Data Centric Chief Strategy Officer



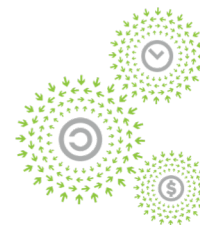


TAKING OCP TO THE NEXT LEVEL – WORKLOAD OPTIMIZATION

Jason Waxman

Intel® Corporate Vice President,
Data Centric Chief Strategy Officer

 @jpwxman



OPEN
PLATINUM™



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OPEN COMPUTE HISTORY OF COMMITMENT AND LEADERSHIP

2011

Founding
Board Member
of OCP

+25

Contributions and
Enablers

+80

Products
with Partners

GETTING TO \$10B IN OCP DEPLOYMENT



Workload
Optimized



Open
Management

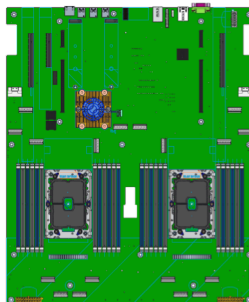


Integrated
Solutions

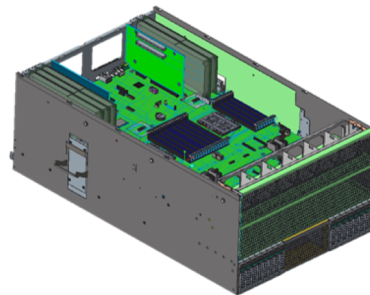
NEW OCP COMPUTE PLATFORMS THIS YEAR

Mount Olympus Next Gen Platform
for Cascade Lake Processor

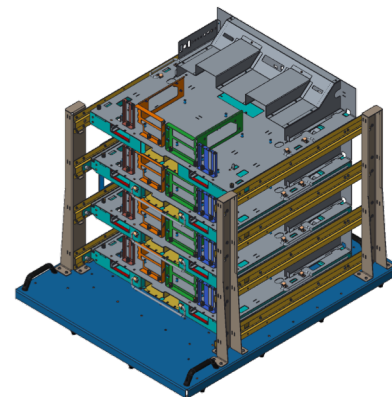
Cooper Lake Processor Platforms



2S



4S (2x 2S)



8S (4x 2S)



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



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INTEL® HIGH-DENSITY, CLOUD-OPTIMIZED PLATFORM

Cloud-Optimized Platform

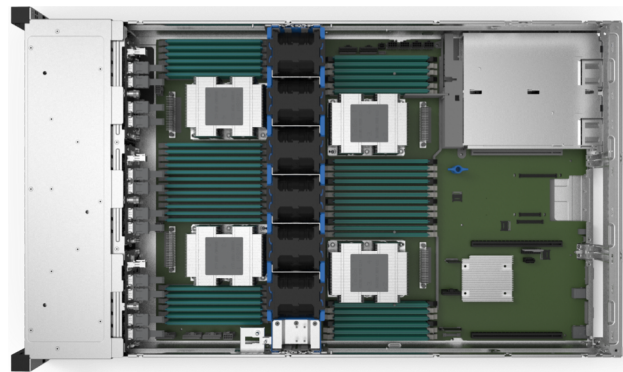
2U 450mm x 780mm

4S Intel® Xeon® Scalable processors

48 DDR4 memory slots,
SATA/SAS/NVMe 2.5"
SSD drive bays



Available in second half 2019



inspur



**Hewlett Packard
Enterprise**



Lenovo

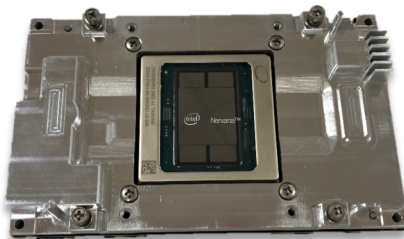


*Other names and brands may be claimed as property of others.

OCP CARDS SUPPORT NEW AI ACCELERATORS

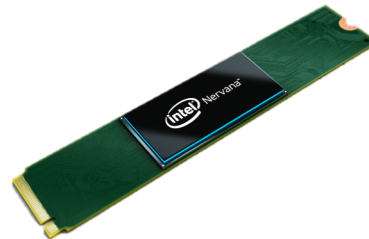
INTEL® NERVANA™ NEURAL NETWORK PROCESSOR (NNP)

FOR TRAINING:



Dedicated deep learning training acceleration
Optimized memory and interconnects
In production in 2019

FOR INFERENCE:



Dedicated deep learning inference acceleration
10nm Intel® process node
In production in 2019

Intel is a proud partner of the **GLOW** community

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facebook

ANNOUNCING A NEW CPU-TO-DEVICE INTERCONNECT STANDARD

COMPUTE EXPRESS LINK (CXL)

New CXL specification and consortium

Memory coherent, high-speed interconnect

Initial spec donated by Intel

Intel® believes there is an opportunity for an OCP working group to define new form factors for CXL

Optimized stack with x16 PCI Express Gen 5 physical and electrical connection (32 GT/s)

Use cases include AI, networking, media, graphics and more

Availability expected 2021

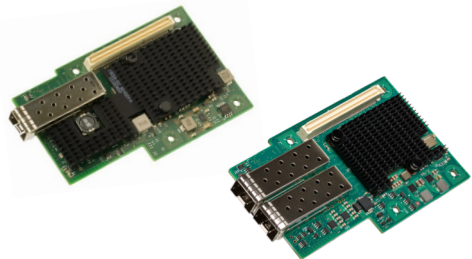


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ADVANCING NETWORK PERFORMANCE WITH OCP NIC 3.0 ADAPTERS



25GbE Intel® Ethernet Network Adapters for OCP 2.0



1GbE and 10GbE Intel® Ethernet Network Adapters for OCP NIC 3.0



Up to 100 GbE next gen Intel® Ethernet Network Adapter for OCP NIC 3.0

[facebook](#)

Now: OCP Mezzanine cards 2.0

Intel® Ethernet Network Adapters for OCP - 10GbE, 25GbE and 40GbE are available

Q3'19: OCP NIC 3.0 Adapters

Complete OCP NIC 3.0 product family from 1GbE to 100GbE (1,10, 25, 50, 100)
Flexible port configurations

Work with us on implementing and validating your solutions

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NETWORKING



ADVANCING COMMON SIPH CONNECTIVITY STANDARDS

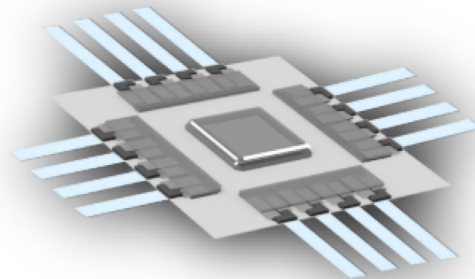
Open standard optical hardware leveraging wafer scale manufacturing

100G CWDM4-OCP shipping in volume since 2017, 400G shipping in 2019

Working to standardize electrical interfaces (die-to-die and die-to-optical) for optical I/O
and integrated networking/switch solutions



100G CWDM4-OCP

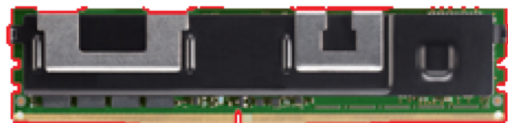


25T+ Integrated, Co-packaged
Optical Switch IC Package

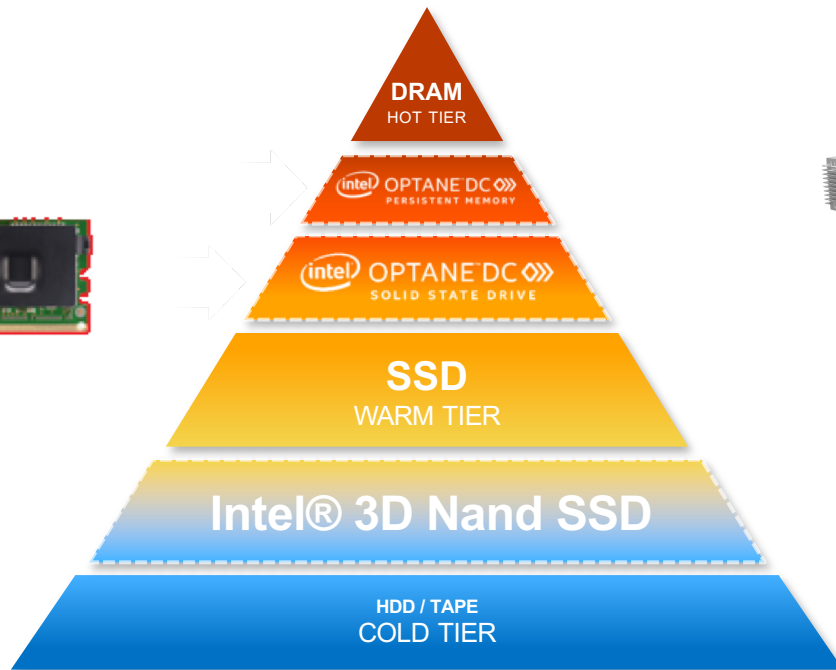


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OPEN PLATFORMS READY FOR NEW MEMORY AND STORAGE



**Persistent
Memory**



**EDSFF* Open
Standard for
Ruler SSD
Form Factor**

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GETTING TO \$10B IN OCP DEPLOYMENT



Workload
Optimized



Open
Management



Integrated
Solutions

INTEL® RACK SCALE DESIGN

OPEN STANDARD FOR DATACENTER RESOURCE POOLING

Higher workload performance

Pooling increases utilization

Disaggregation for late-binding
and independent refresh

Composable with software
defined resource allocation

Resiliency and security

Ease of integration

INTEL® RSD AND COMPOSABLE STORAGE



**Software demo located
at the Intel® showcase**

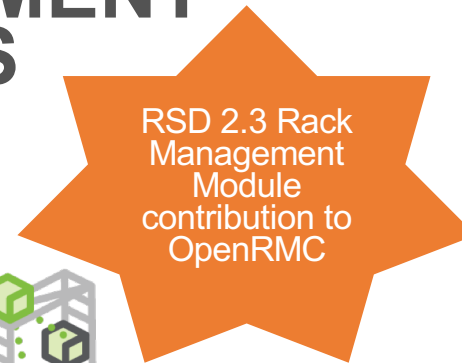


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ANNOUNCING RACK MANAGEMENT MODULE CONTRIBUTIONS

Open Source Industry Efforts



RSD 2.3 Rack
Management
Module
contribution to
OpenRMC



BIOS/System Firmware

(OCP system firmware project
including firmware support package,
platform runtime mechanism,
runtime firmware update...)



BMC Firmware

(Linux Foundation project)
OpenBMC Github



Rack Manager Firmware

(OCP OpenRMC project)
OCP Github

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ANNOUNCING AN INDUSTRY COLLABORATION AROUND PLATFORM ROOT OF TRUST

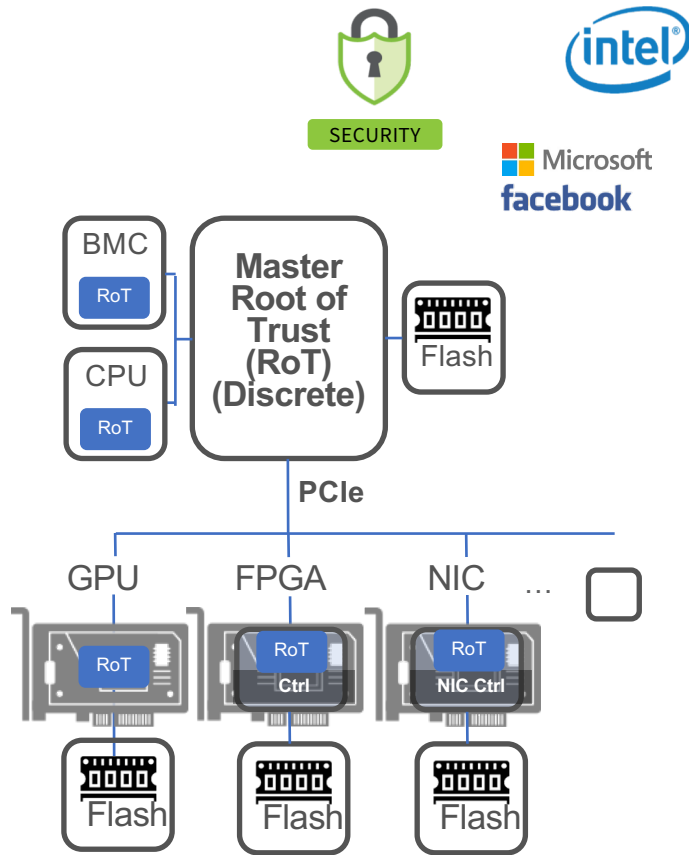
Set an open and aligned specification built upon Cerberus-v1 and Intel® PFR (Platform Firmware Resilience)

Collaborate through OCP on future root of trust capabilities including: in-silicon RoT, secure key measurement/storage, advanced key management

Create open and standardized interfaces, application programming interface (API), firmware and register-transfer level (RTL)

Extend on NIST 800-193 platform resiliency as the foundation

Call for participation, collaboration, and engagement



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OPEN SOFTWARE TO ENABLE INTEGRATED SOLUTIONS

ISOLATION



kata
containers

katacontainers.io/

NEMU

github.com/intel/nemu

ORCHESTRATION



openstack

MKL-DNN



kubernetes

OPTIMIZING FOR AI



Caffe2

OpenVINO™

PYTORCH

LIBRARIES

FRAMEWORKS

TOOLKITS

github.com/intelai

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INTEL® + OCP

Visit the OCP Experience Lab

OCP NIC 3.0: A Collaborative Industry Effort to Create a New Server Connectivity Standard

Brad Burres

Thursday March 14
1:00pm - 1:25pm
210 DH

Intel® Cloud Innovations – An Overview

Mohan Kumar

Thursday March 14
1:30pm – 1:55pm
210 CG

Breaking Barriers in AI: New Hardware, Standard Platforms

Tingwei Huang

Thursday March 14
5:00pm – 5:25pm
210 CG

Case Study: Alternatives for SMM Usage in Intel® Platforms

Sarathy Jayakumar

Friday March 15
8:30am - 8:55am
Marriott Salon III

AI Accelerator Module for Deep Learning Training with Intel® Nervana™ Neural Network Processor(NNP)

Song Hang

Friday March 15
4:05pm - 4:45pm
210 A

Next Generation Intel® Xeon® Scalable Processors for Machine Learning

Niveditha Sundaram,
Andres Rodriguez

Friday March 15
3:00pm - 3:40pm
210 A