OCP Solutions
Accelerating the Digital Transformation

Jason Waxman
Corporate Vice President, Data Center Group
Intel Corporation
Digital Transformation Driving Datacenter Scale

50B Connected Devices by 2020

5G Wireless and Optical Networking

Rack Scale Design
Deploy at scale:
- Storage
- Network
- Compute

Hyper-connected World

Cloud Processing and Analytics

Deluge of Data

Open Solutions accelerating the pace of innovation

Ecosystem

Open Hardware. Open Software. Open Future.

1Source: Intel 2017 Investor Meeting
Intel® Rack Scale Design (RSD): Foundation for the Modern Scalable Data Center

Intel® RSD Vision:

Flexible  Manageable  Economic  Open

Becoming a reality...

1st Generation
2016: Established the standard, racks available
OPEN HARDWARE.  OPEN SOFTWARE.  OPEN FUTURE.

2nd Generation
2017: Pooling with storage v2.1 released in February ‘17

Future
2018+: Extend pooled resources
• Logical Architecture & Hardware Management Software at the Data Center level
• Open industry standard Redfish™ APIs
• Intel® RSD 2.1 released to partners, available on GitHub by end of month
Enabling Efficient Workload Management

• **Snap: Open source for telemetry**
  - 80+ plugins w/ libraries for C++, Python, Go

• **Intel® HPC Orchestrator**
  - Intel supported Open HPC
  - Integrates 60+ open source components
  - Easing HPC system installation, management and maintenance

• **Open source SDI**
  - Kubernetes* enterprise readiness
  - OpenStack* easy to deploy at scale
  - Cloud native architecture to the mainstream

[Link to Snap telemetry framework: http://snap-telemetry.io]
[Link to OpenHPC community: http://openhpc.community]

* Other brands and names may be claimed as the property of others.
Efficiency at Scale: Software Defined Power Monitoring

- Power available where needed on-demand through a system of software and hardware
- Intelligently managed power capacitance to ride through heavy use and short duration failures
- Powered by Virtual Power Systems*

VPS committed to integration with RSD management APIs

* Other brands and names may be claimed as the property of others.
Storage: Project Lightning*

- NVMe* JBOF open and scalable
- Enables hot and warm storage
- Flexible form factors: 2.5inx7mm, 2.5inx15mm
- PCIe 3.0 x4 speeds under 10W
- 60x PCIe 3.0 NVMe* drive expander

Source: https://code.facebook.com/posts/989638804458007/introducing-lightning-a-flexible-nvme-jbof/

* Other brands and names may be claimed as the property of others.
Connectivity: Intel® Silicon Photonics

- Open standard optical hardware leveraging wafer scale manufacturing
- 100G PSM4 in volume production Aug ’16
- 100G CWDM4 ramping now
- Showcasing Silicon Photonic Optics with Barefoot Networks 6.5T Wedge 100B Switch
Compute: Intel® Server Board S7200AP (Adams Pass)

- Designed for highly parallelized workflows
- Support for Intel® Xeon Phi™ processors with 6 DIMMs and optional support for Intel® Omni-Path Architecture (Fabric)
- Customizable as a 2U, four node system
- Submitted Adams Pass to the OCP foundation
- Enabled Penguin chassis submitted to OCP foundation
Compute: Microsoft* Project Olympus
Next generation Universal Motherboard for Hyperscale Cloud

- Based on next generation Intel® Xeon® processor (codenamed Skylake)
- Intel® AVX512: Up to 2X FLOP/sec peak performance versus prior gen\(^1\)
- Intel® Arria 10® FPGAs provide a configurable framework

[Link](https://azure.microsoft.com/en-us/blog/microsoft-reimagines-open-source-cloud-hardware/)

High-performance platform with hardware-optimized workloads

---


* Other names and brands are property of others.
Intel + OCP: Accelerating the Data Transformation

- Intel® RSD for scale compute, storage, and network in the Data Center for the future
- Open source orchestration and telemetry
- Visit the Intel demo showcase (booth A5) to learn more
- Mark Seager session 3/8 2pm - Intel and OCP: Collaboration and Innovation
- Mohan Kumar session 3/8 4:55 – Intel RSD: A Deeper Perspective on Software Manageability for OCP Community