



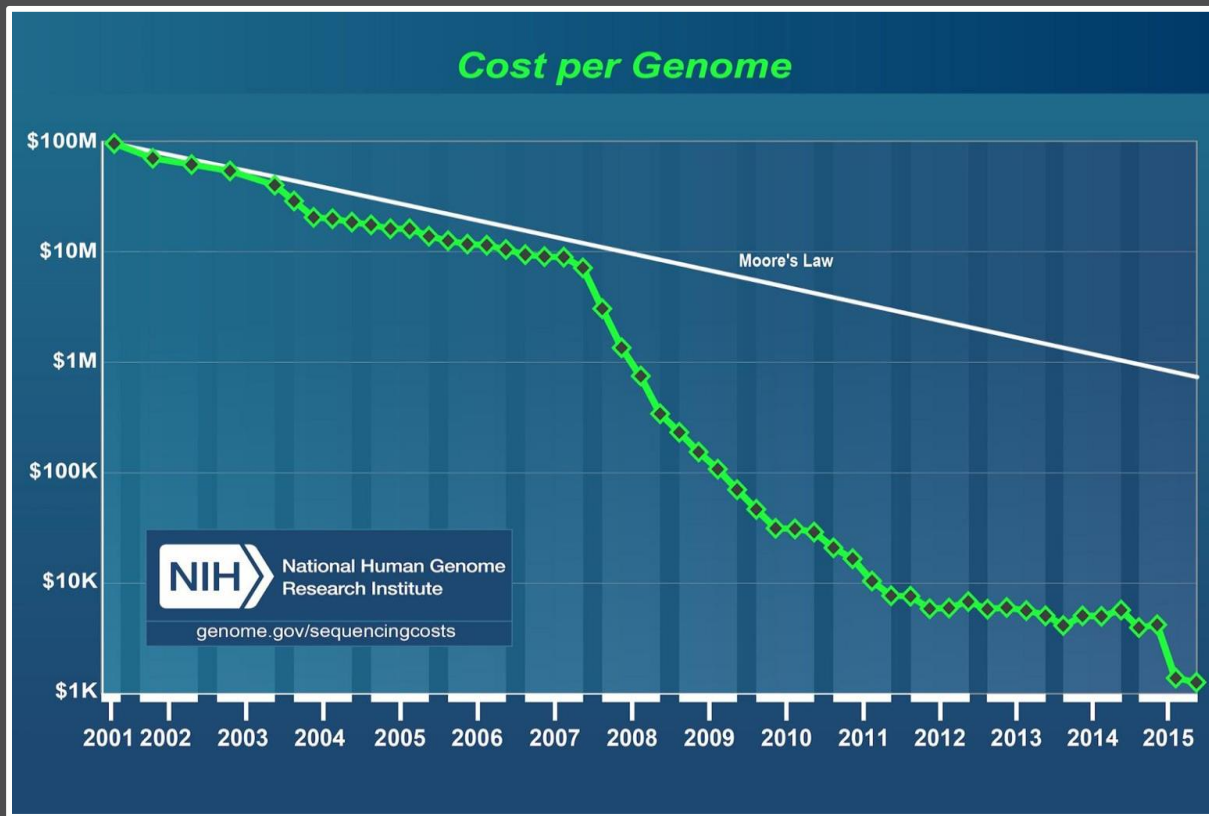
Open Compute Project (OCP) Market Update

Steve Helvie – VP of Channel

steve@opencompute.org

@stevehelvie

Moore's Law on Open Source Steroids

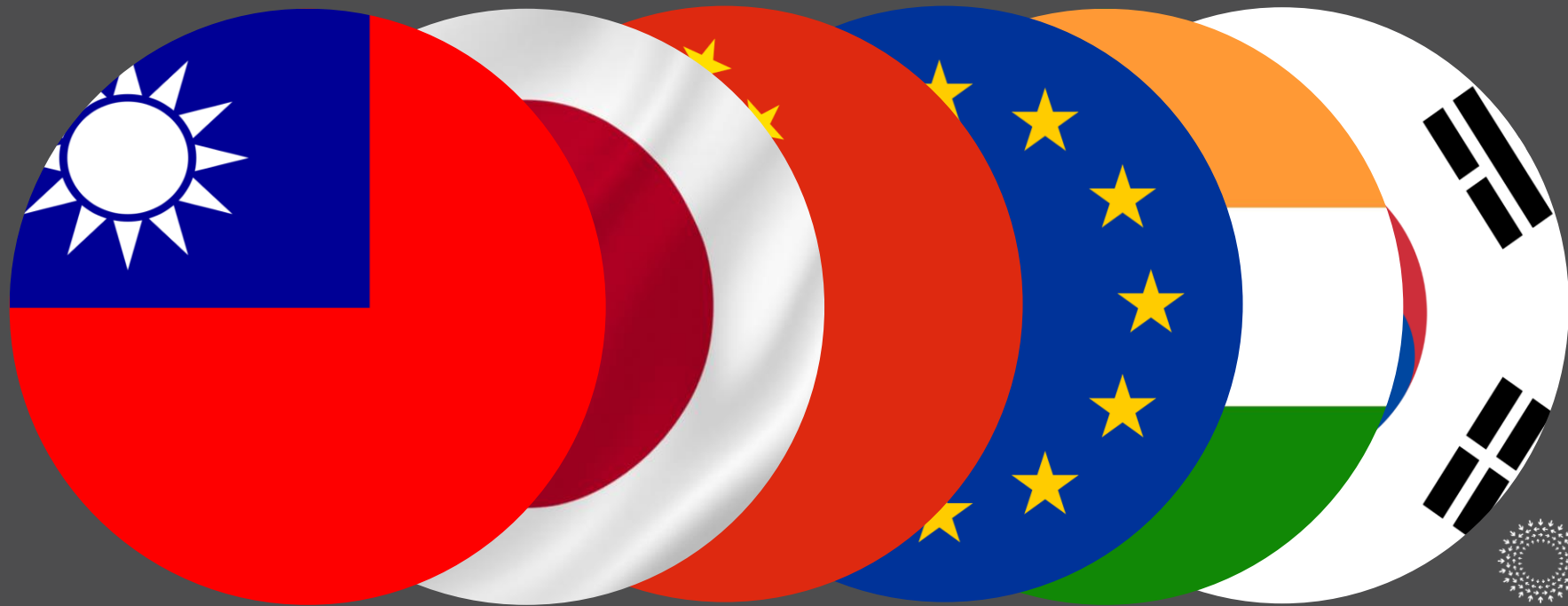


Open Compute Project

A collaborative community focused on redesigning hardware technology to efficiently support the growing demands on compute infrastructure.

Enabling the industry to *Consume, Collaborate, and Contribute*

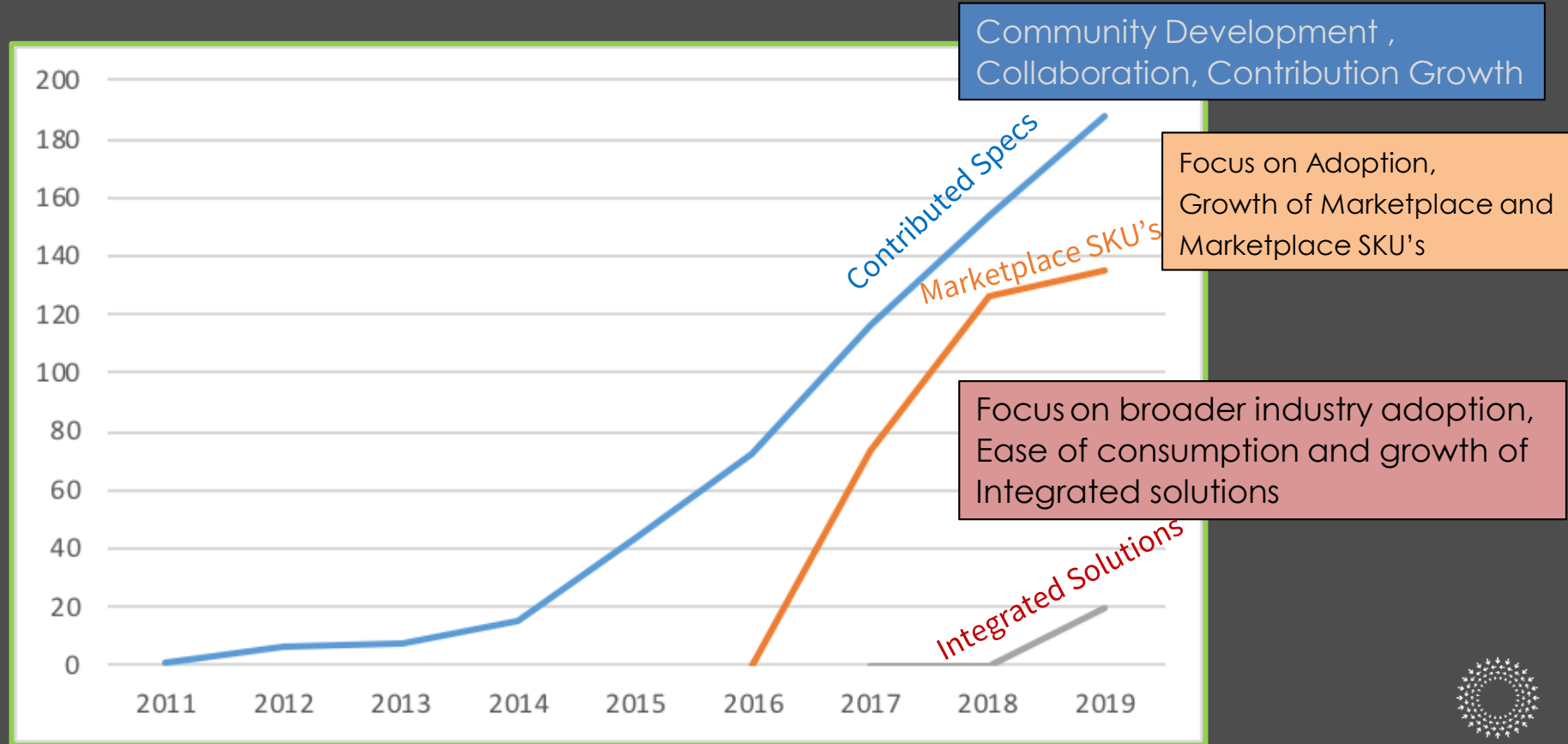
True Global Community





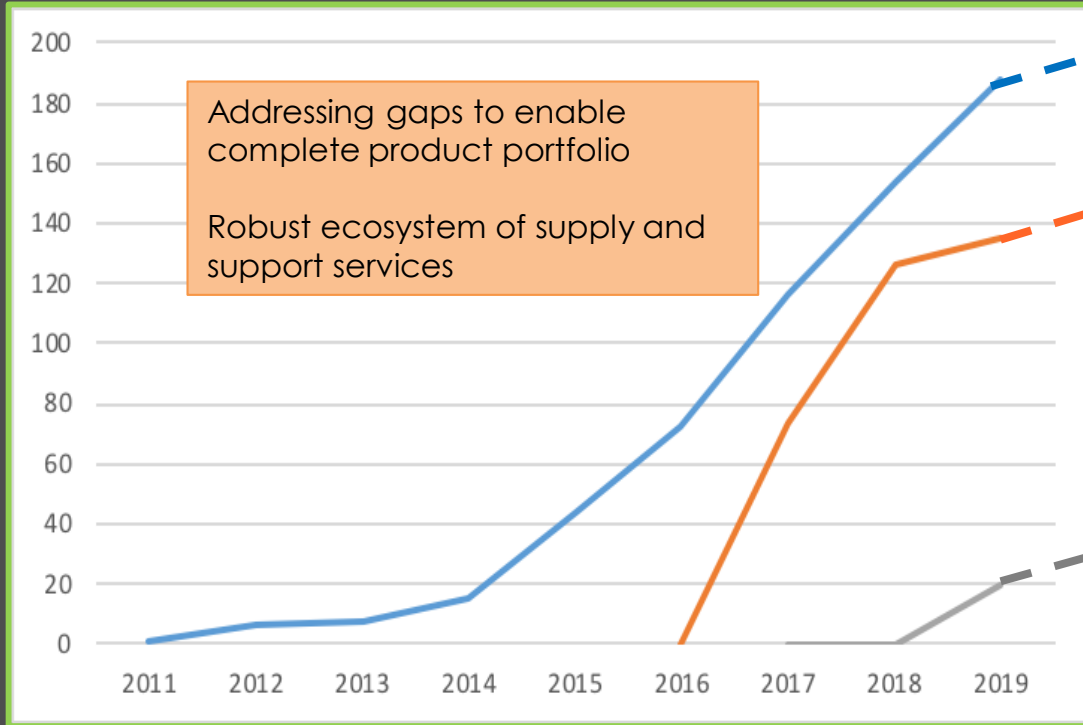
189 contributions
54 companies

The Maturing of OCP



Accelerate technology
introduction

Technology acceleration through
joint development



Contributed Specs

Marketplace SKU's

Integrated Solutions

Development of SW ecosystem

Solutions roadmap

Robust global support/service ecosystem

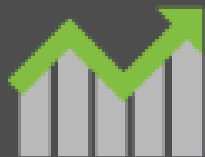


Efficiency



Scale

Impact



Openness



Our Projects



Networking



Server



Storage



Rack &
Power



Advanced
Cooling



Data
Center

Modular DC



Telco

Edge Sub Project



HW Mgmt



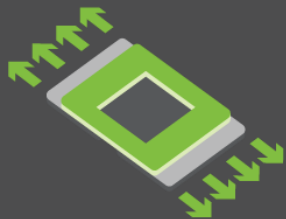
Open
System
Firmware



HPC



Security



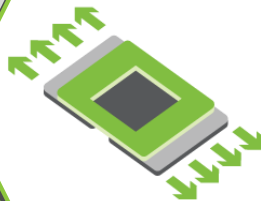
Our Accelerator Module
(OAM) Project is now....

Open Accelerator
Infrastructure (OAI)

Pace of the
Community

Open
ACCELERATOR
Infrastructure

facebook

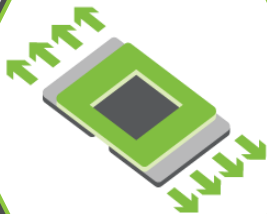


Pace of the
Community

Open
ACCELERATOR
Infrastructure

facebook

 Microsoft Azure



Baidu 百度

Open
Accelerator
Infrastructure

facebook



XILINX



Microsoft Azure

Qualcomm

habana



NVIDIA

BittWare
a molex company

Cambricon
寒武纪



Baidu 百度

Google

inspur

Lenovo

Enflame

AMD

IBM

wiwynn

hyve
design solutions

CoolIT
systems

Alibaba Group

Tencent

molex

PENGUIN
COMPUTING
A subsidiary of SMART Global Holdings, Inc.

Amphenol

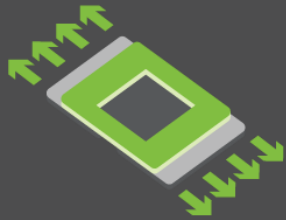
GRAPHCORE

BROADCOM



Inventec

MICROCHIP



OAI overall spec

Universal Base Board (UBB)

Host Interface Board (HIB)

Power Distribution Board (PDB)

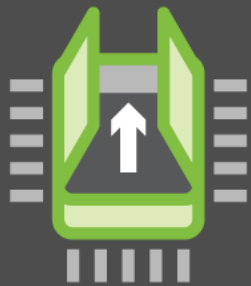
OAM tray

Security, Control, Management

Chassis mechanical and cooling

Expansion beyond Chassis

<https://www.opencompute.org/projects/oai-sub-project>



Open Systems Firmware (OSF)

Open Source Firmware required in 2021

Support from arm, Intel, AMD and IBM Power

OSF Develop Kit available this year from Wiyynn

SONiC & SAI Projects

92 platforms supported today

Since Global Summit: 23 new platforms

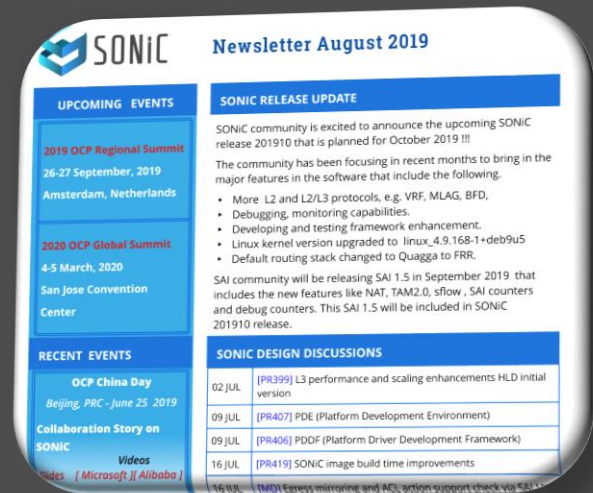
First project newsletter was published in August

Leadership Switch OS with new features like warm reboot

Rich telemetry and troubleshooting capabilities added in August 2019

Switch Abstraction Interface v1.5 released

Next SONiC release planned for October 2019





Rack & Power

Open Rack V3 Initiative

Announced at the OCP China Workshop in Beijing

Microsoft and Facebook subject matter experts working to converge on the best features

Power shelf interoperability initiative

<https://www.opencompute.org/projects/rack-and-power>





Advanced Cooling Sub-Project (ACS)

Cold plate requirements drafted and in review

Immersion requirements spec & immersion checklist released
(Asperitas, Intel, Iceotope, Schneider Electric, Flex)

IT gear for immersion whitepaper announced for Global Summit



Immersion Requirements for OCP



<https://www.opencompute.org/projects/rack-and-power>





openEdge Project

arm based
sled under
development

Announced
at NVF World
Congress

Initial
planning for
OCP spec

Working
demo at
regional OCP
Summit

Draft spec

Commercially
available

1st Commercial
Contract

Workshop
held in USA

v1.2 OCP
Accepted™

Wiwynn
announces
intent to
produce
openEdge
Chassis and
Server Blades

Battery back
up (BBU)
development

Other HW
vendors
announcing
plan to adopt
openEdge

Q2 – Q3 2018

Q4 2018

Q1 2019

Q2 2019

Q3 2019



Ready COLO Facility Assessment			
Self Assessment Status			
Data Center Location Name			
Data Center Location Address			
Site Description: White Space Area			
Site Description: Critical IT Power			
Site Description: Network Provider Availability			
Site Description: Facility Features			
Site Description: Other Services			
Date Original Assessment is Completed			
Re-Assessment Date			
REQUIREMENTS - Attribute		COMPLETE-MEETS REQUIREMENTS	
		LONS	
		Unit 1 Power Avenue, Crawley, West Sussex, RH10 9BE	
		6606 sqm (72,206 sqft)	
		12 MW	
		Multiple Tier-1 Service Providers, 7 Carriers On-Site, RackConnect* Global, Blended Bandwidth	
		24x7x36 Security, Indirect Adiabatic Cooling, Hot Aisle Containment, Overhead Busway Distribution	
		Smart Hands, Colocation, Managed Hosting, Private Cloud, Application Management	
		SSAE 18 SOC1, SOC2, SOC3, PCI DSS, ISO27001, ISO14001, ISO9001	
		2018-12-04	
		2019-12-04	
		Parameter	Notes
ACCESS			
Building Access		1. Loading dock with lift or leveler	Optimum
Delivery pathway, Loading dock to Goods in		2. $\geq 2.7m$ (108in) H x $\geq 3.2m$ (148in) W unobstructed access and threshold free	Acceptable
Delivery pathway, Goods in to White space		3. $\geq 2.4m$ (96in) H x $\geq 1.8m$ (72in) W unobstructed access and threshold free	Optimum
Corridor floor rolling load		1. $\geq 680kg$ (1500lb) (6.67kN)	Optimum
Unboxing/pre-staging/storage area floor uniform load		2. $\geq 732kg/m^2$ (150lb/ft ²) (7.17kN/m ²)	Acceptable
Unboxing/pre-staging/storage area floor concentrated load		1. $\geq 680kg$ (1500lb) (6.67kN)	Optimum
RAMPS			
Gradient		1. Not Applicable - No Ramps Required	Optimum
Width		1. Not Applicable - No Ramps Required	Optimum
Landing area		1. Not Applicable - No Ramps Required	Optimum
Railings		1. Not Applicable - No Railings Required	Optimum
LIFTS / ELEVATORS			
Weight loading		1. Not Applicable - No Lift/Elevator Required	Optimum
Door height		1. Not Applicable - No Lift/Elevator Required	Optimum

Cooling, Electrical, Access, White Space,
Cabling, Service, Efficiency and Transparency

OCP Ready™ Facilities

KAO Data



Giga DC



<https://www.opencompute.org/projects/data-center-facility>



HYDRO66



First OCP Ready™ Certified Nordic Colocation Data Center
uses 90% less energy than other EU datacenters.

HYDRO66

2-4MW each hall

Different specification
per hall possible





Drivers of OCP Adoption



Cost Reduction

Standardisation

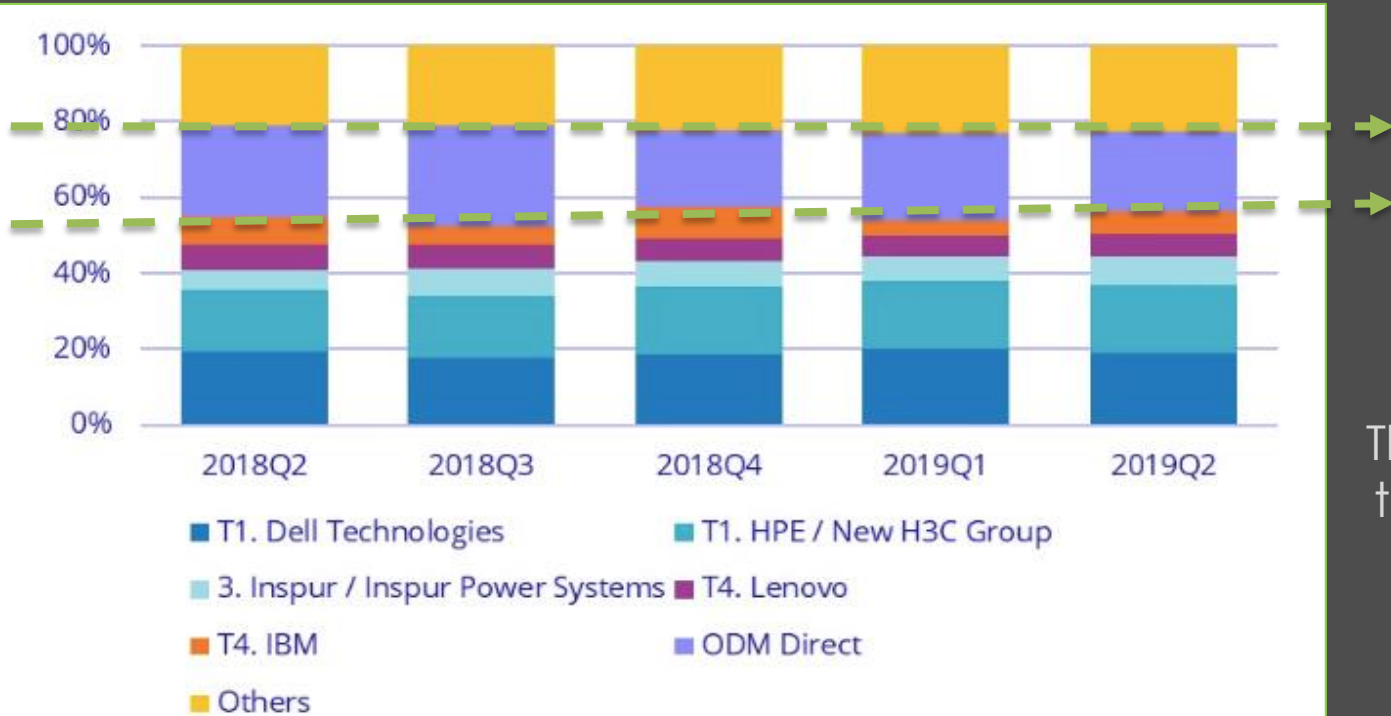


Energy Efficiency

Reliability



Server Market Share



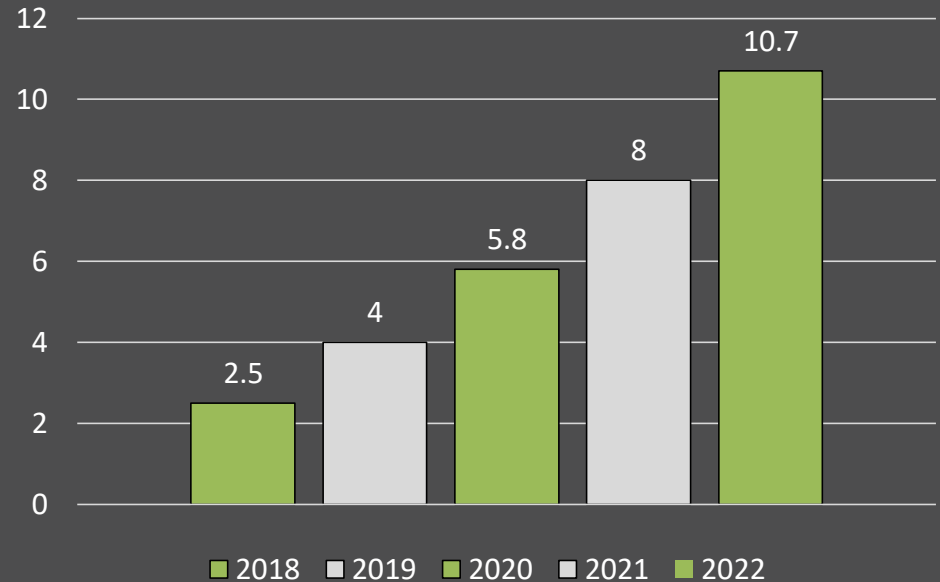
Source: IDC 2019

The rise of
the ODM

EMEA growth driven by telco,
CAGR 59%

2020 - APAC will surpass EMEA
on strength of hyperscaler and
Tier-2 CSP adoption, CAGR
108%

\$ Billion USD – WW Market Revenue



* Non board member revenue (excluding Facebook, Msft, Rackspace, Goldman Sachs deployments)

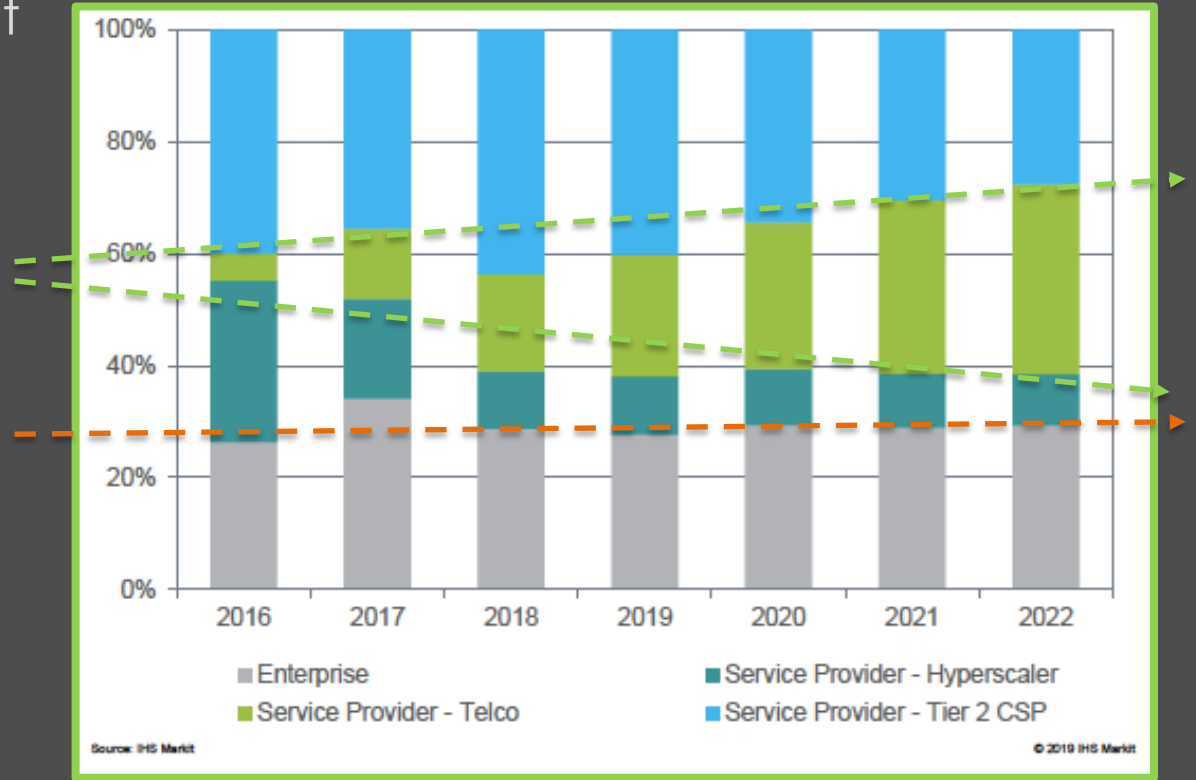


OCP by Industry Forecast

Market just forming for
disaggregated cell
tower equipment

Automotive and
Manufacturing have
highest 5YR GAGR

Healthcare in very early
stages of adoption





OPEN
Compute Project

Compute

Storage

Networking

Rack & Power

DC Facilities

Embedded Software

Hardware Management

Channels/Supply Ecosystem

**Open NW
Solutions**

**Disaggregated
Cell/Gateway
Solutions**

Edge Solutions



TELECOM INFRA
PROJECT

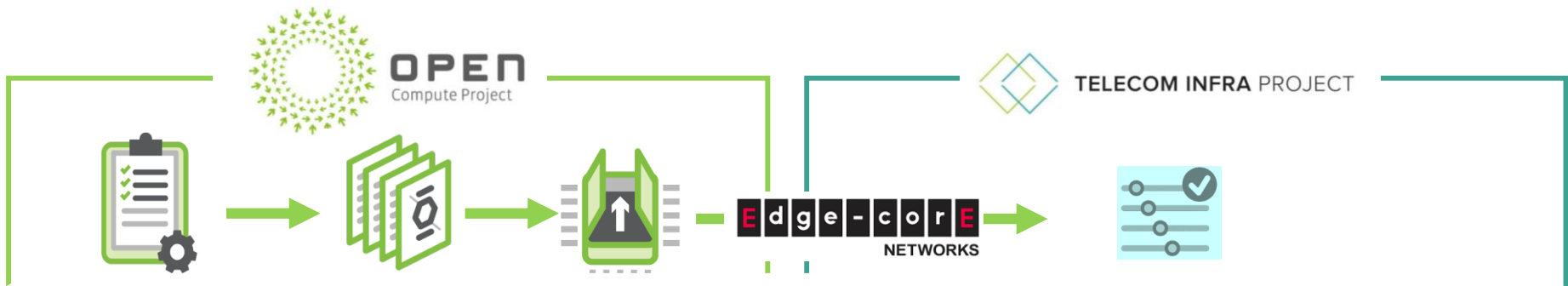
Radio

Backhaul

Core

Engineering Labs

**Startup
Accelerators**



AS7316-26XB Open Cell Site Router





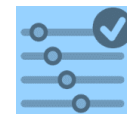
**Design
Files**



Product



**Testing with
Open Source
Software
Platform**



**BOM
for Exemplar
Open Source
Platform**



**Reference Designs
(Operator Led Specifications)**



**OCP
Specifications**



Products

Integrated Solutions

Circular Economy

Open. For Business.

The Open Compute Project (OCP) is reimagining hardware, making it more efficient, flexible, and scalable. Join our global community of technology leaders working together to break open the black box of proprietary IT infrastructure to achieve greater choice, customization, and cost savings.

<https://www.opencompute.org/solutions>
<https://www.opencompute.org/circular-economy>

Search Marketplace...



Search for Specifications & Design collateral under Contributions >

Status

- ☐ OCP Accepted™ Products (5)
- ☐ OCP Inspired™ Products (1)

Category

- ☐ Network (6)

Software

- ☒ SONiC (6)
- ☐ ONIE (40)
- ☐ ONL (28)
- ☐ PICOS (24)
- ☐ OcNOS (15)

Results: All ☆ Favorites

Sort by: Relevance ▾

Edgecore Networks AS5712-54X 10GbE Data Center Switch - POWER TO PORT

Meets the high-performance, availability, and network-scaling requirements of enterprise and cloud data centers. The switch can be de...

Solution Providers: Cumulus Networks, Edgecore Networks, Hyve Solutions, ITOCHU Techno-Solutions Corporation

Part #: 5712-54X-U-AU-B



Pluribus
NETWORKS

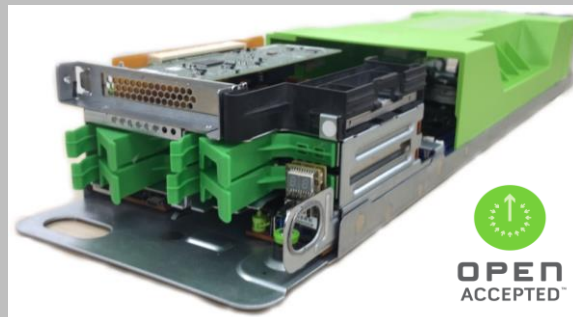
Specifications



OCP
ACCEPTED

inspur

MITAC



SAP® Certified
Hardware for SAP HANA®



<https://www.opencompute.org/products>



Integrated Solutions

OCP Integrated Solutions enable companies to adopt proven solution stacks running on OCP Accepted™ and OCP Inspired™ hardware, thereby providing a converged infrastructure solutions for the Enterprise.

These managed offerings showcase a combination of software products, supporting different rack form factors. All OCP integrated solutions have proven support offerings including 3rd party product support to ensure efficient, reliable and scalable workload deployments.

Search Integrated Solutions...



Search for Specifications & Design collateral under Contributions >

Results: All ☆ Favorites

Sort by: Relevance ▾

Category

- ☐ Network (2)
- ☐ Server (1)
- ☐ Storage (1)

Solution Provider

- ☐ Edgecore Networks (1)
- ☐ ITOCHU Techno-Solutions Corporation (1)

Software

- ☐ Ceph (1)
- ☐ Docker (1)
- ☐ ONIE (1)
- ☐ ONL (1)
- ☐ OpenStack (1)
- ☐ VMWare (1)

Central Office Infrastructure designed for Telco's and ISP's

Edgecore Disaggregated XGS-PON Infrastructure is a complete plug and play demo unit built to aid testing and demonstration of SEBA - ONF's SDN Enabled Broadba...

Solution Provider: Edgecore Networks

Model #: Disaggregated XGS PON Infrastructure



CTC Open Cloud Package

Open Cloud Package is a fully integrated rack of OCP recognized hardware combined with validated software providing Enterprises an efficient and scalable ...

Solution Provider: ITOCHU Techno-Solutions Corporation

Model #: CTC Open Cloud Solution



Home > Marketplace > Integrated Solutions >

Central Office Infrastructure designed for Telco's and ISP's

Product Marketplace

Integrated Solutions

Circular Economy

☆ Add to Favorites

Central Office Infrastructure designed for Telco's and ISP's



Where to Buy



Edgecore Networks

✉ Email

☎ (508) 485-5193

🌐 Website

A complete plug and play demo unit.

SEBA - ONF's SDN Enabled Broadband Access architecture.

☆ Add to Favorites

CTC Open Cloud Package



Open Cloud Package is a fully integrated rack of OCP recognized hardware combined with validated software providing Enterprises an efficient and scalable way to manage their infrastructure as software.

This integrated solution comes with an Open Source system management toolset to manage physical and virtual infrastructure and is ideal for Cloud native, Object storage and container enterprise workloads.

Where to Buy



ITOCHU Techno-Solutions
Corporation

✉ Email

🌐 Website



onie





Circular Economy

CEDaCI - Circular Economy for the Data Centre Industry

<https://www.nweurope.eu/projects/project-search/cedaci-circular-economy-for-the-data-centre-industry/>

EU Legislation – Eco Design Directive


[Commission and its priorities](#) [Policies, information and services](#) [Log in](#)

 English  [Search](#)


[Home](#) > [Law](#) > [Have your say](#) > [Published initiatives](#) > [Environmental impact of enterprise servers and data storage products](#)

IMPLEMENTING REGULATION


Environmental impact of enterprise servers and data storage products

 **Roadmap**


Feedback period
20.06.2017 - 18.07.2017
[FEEDBACK: CLOSED](#)

 **Draft act**

Feedback period
03.07.2018 - 31.07.2018
[FEEDBACK: CLOSED](#)

 **Commission adoption**

About this initiative

Topic	Single market
Type of act	Implementing regulation
Committee	C07900 

Roadmap

[FEEDBACK: CLOSED](#)

Type
Roadmap
[More about roadmaps](#)

https://ec.europa.eu/info/law/better-regulation/initiatives/ares-2017-3069227_en



OCP Global Summit

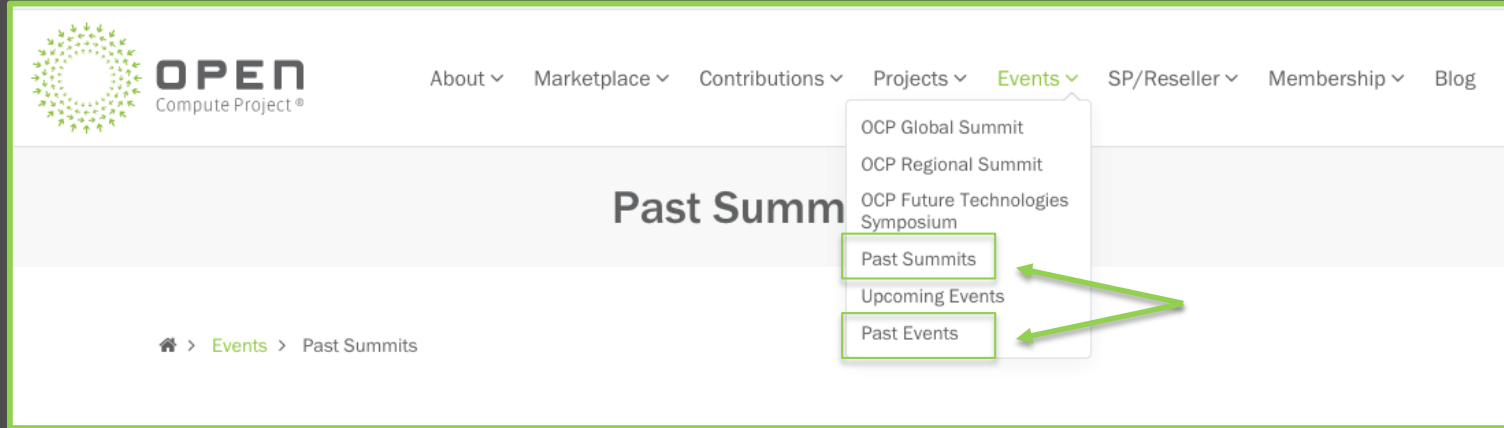
March 4-5, 2020

San Jose, CA

<https://www.opencompute.org/summit/global-summit>



OCP Events - Videos & Session Recordings



<https://www.opencompute.org/events/past-summits>

<https://www.youtube.com/channel/UCXtmeGWbySLShhGV8ooyMzA>

“Whatever market **open source** enters..it eventually dominates”

THANK YOU

`steve@opencompute.org`