Open Compute Project (OCP) Market Update

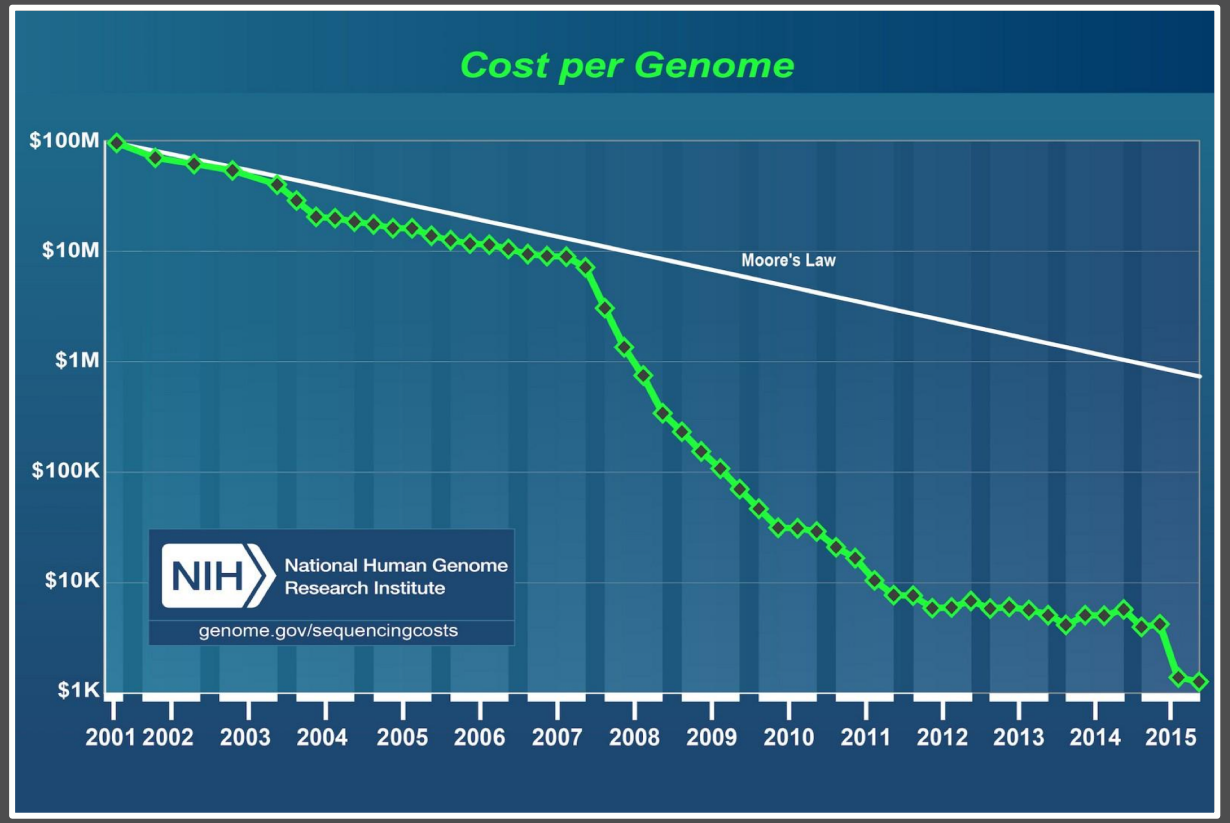
Steve Helvie – VP of Channel

steve@opencompute.org

@stevehelvie

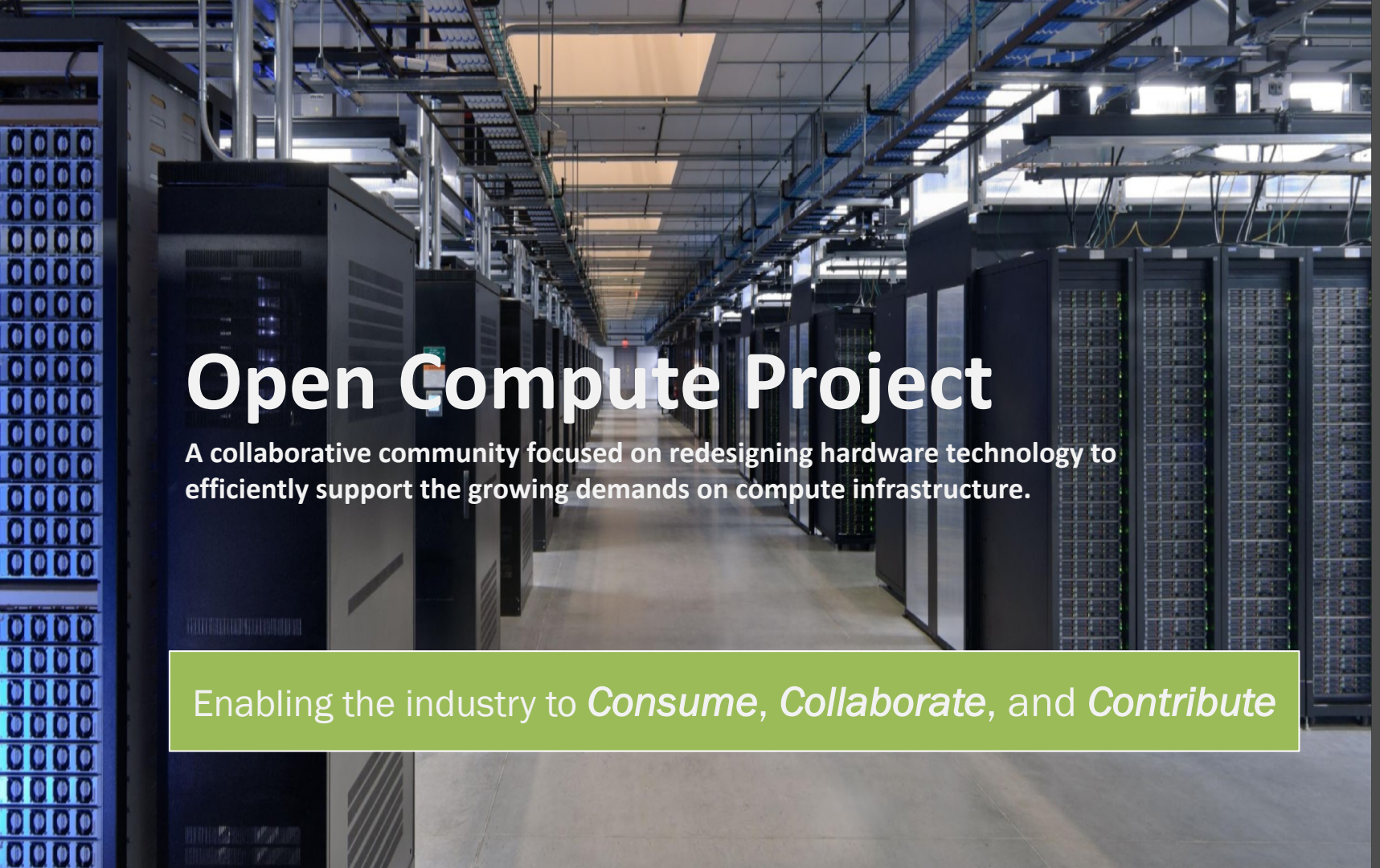
Taipei – October 22nd, 2019

Moore's Law on Open Source Steroids



Consume. Collaborate. Contribute.

OPEN Compute Project



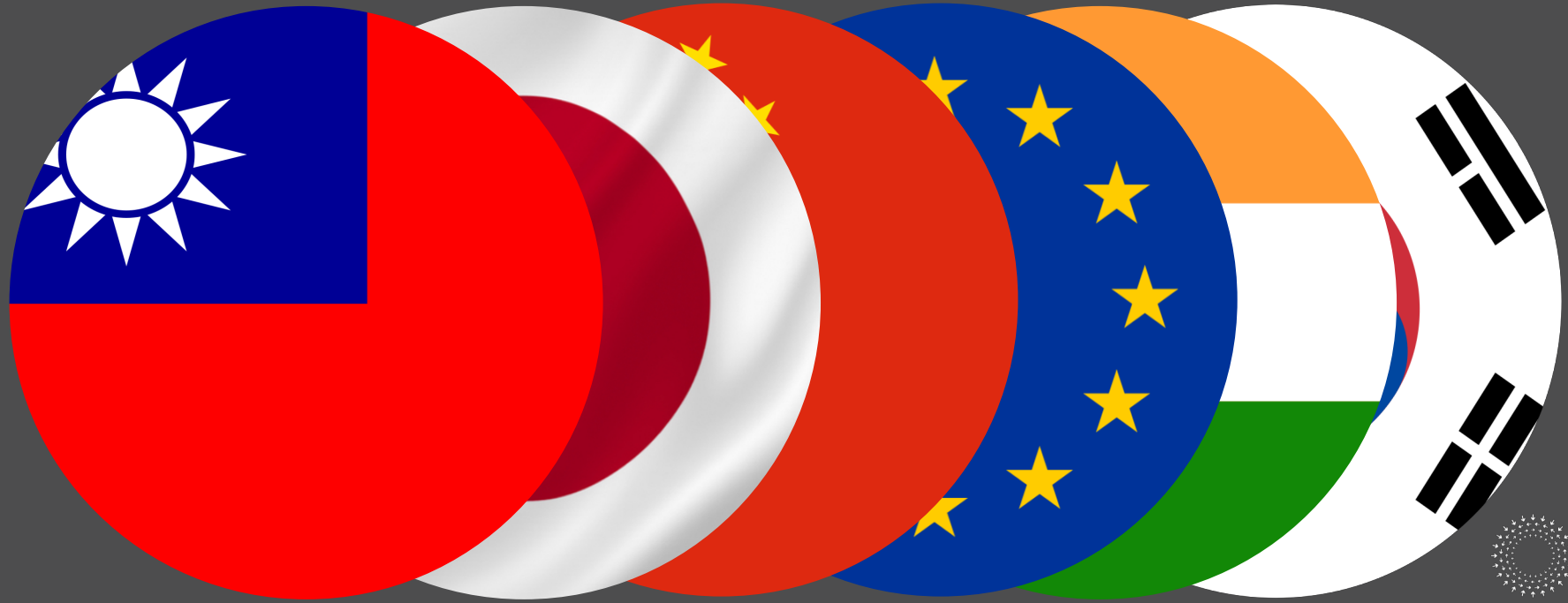
Open Compute Project

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***

OPEN
Compute Project

True Global Community



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189 contributions
54 companies

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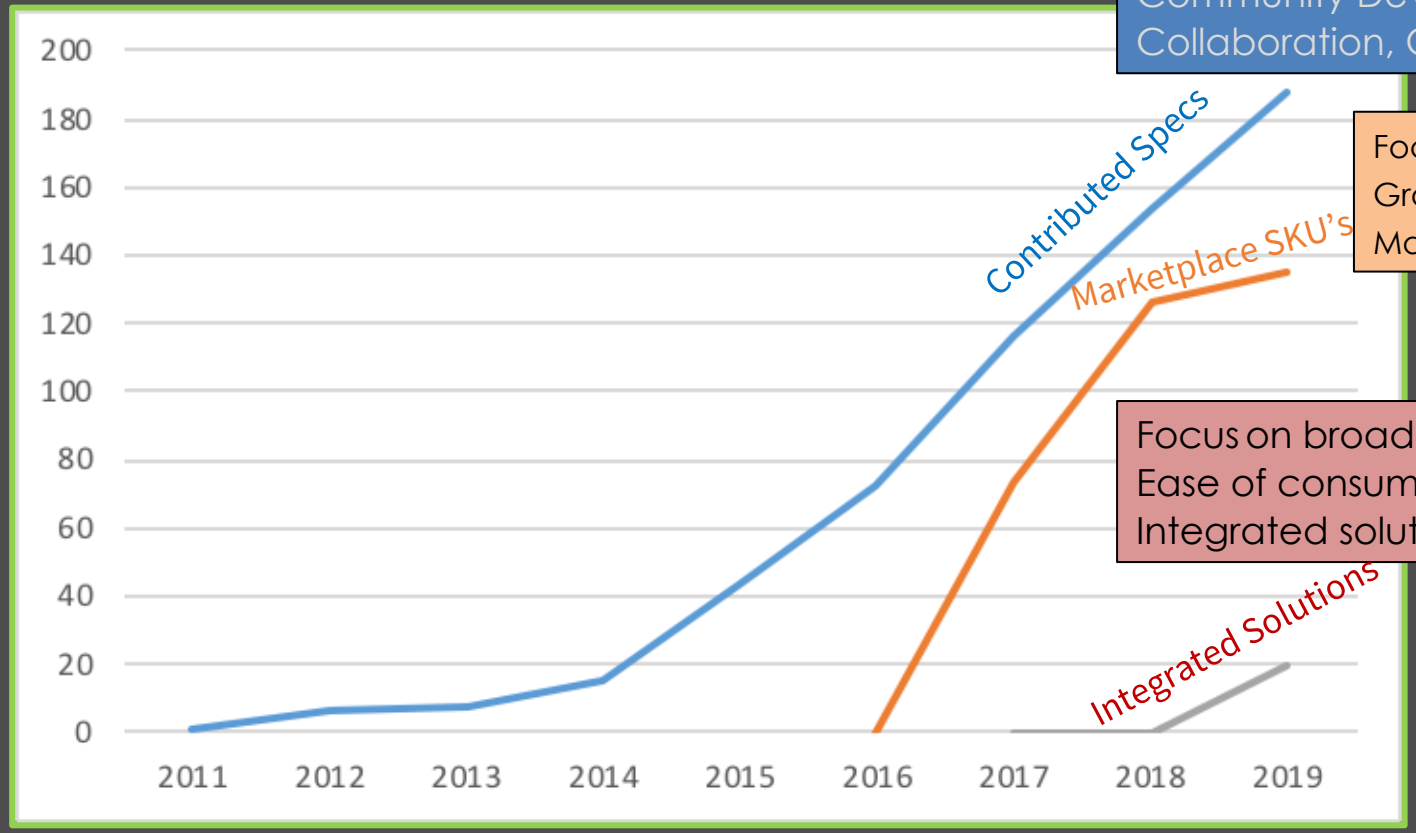
The Maturing of OCP



Community Development , Collaboration, Contribution Growth

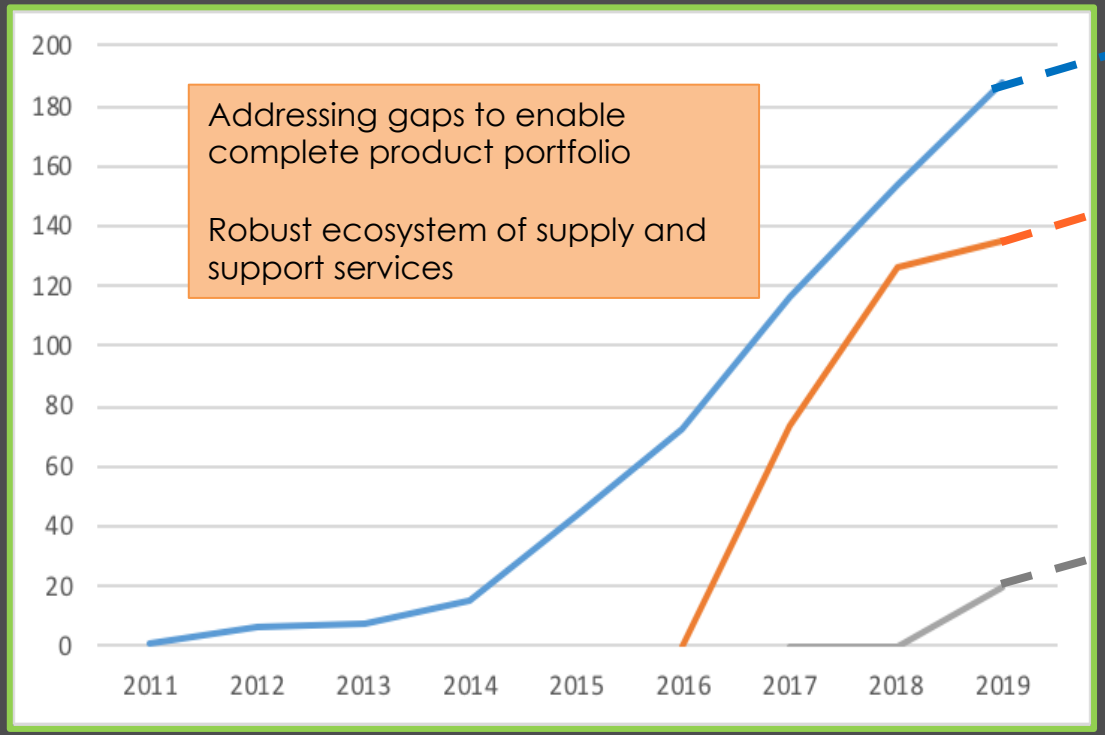
Focus on Adoption, Growth of Marketplace and Marketplace SKU's

Focus on broader industry adoption, Ease of consumption and growth of Integrated solutions

OPEN Compute Project

Accelerate technology introduction

Technology acceleration through joint development



Development of SW ecosystem

Solutions roadmap

Robust global support/service ecosystem

Efficiency

Scale

Impact

Openness

OPEN
Compute Project

Our Projects

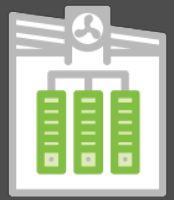
Networking

Server

Storage

Rack & Power

Advanced Cooling



Data Center

Modular DC

Telco

Edge Sub Project

HW Mgmt

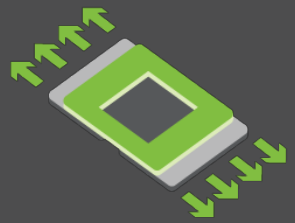
Open System Firmware

HPC

Security

https://www.opencompute.org/projects

OPEN Compute Project



Our Accelerator Module (OAM) Project is now….

Open Accelerator Infrastructure (OAI)

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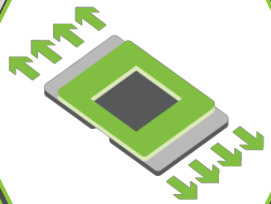
Pace of the Community

Open ACCELERATOR Infrastructure

facebook



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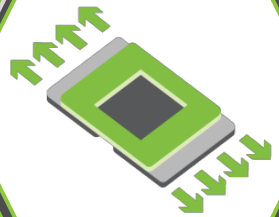
Pace of the Community

Open ACCELERATOR Infrastructure

facebook

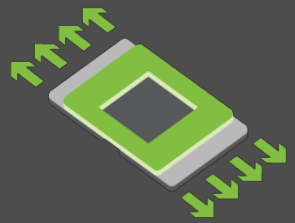
Microsoft Azure



Baidu 百度

OPEN Compute Project

OPEN Compute Project



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

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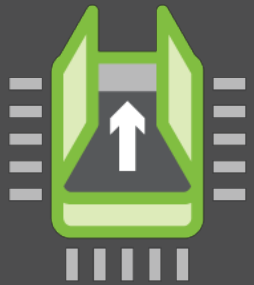

Open Systems Firmware (OSF)

Open Source Firmware required in 2021

Support from arm, Intel, AMD and IBM Power

OSF Develop Kit available this year from Wiwynn

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SONiC & SAI Projects

92 platforms supported today

Since Global Summit: 23 new platforms

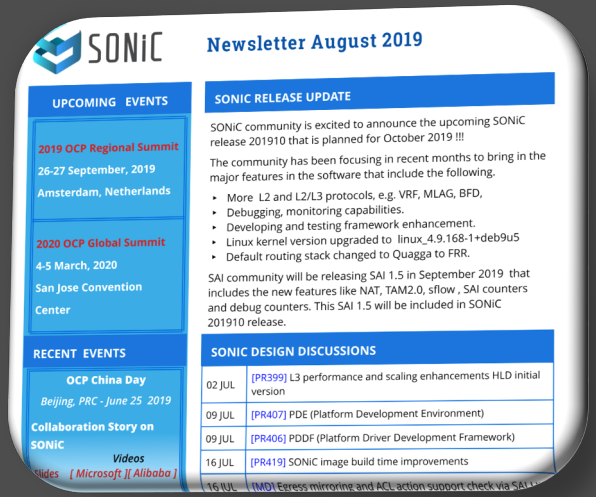
First project newsletter was published in August

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


SONiC

Newsletter August 2019

UPCOMING EVENTS

2019 OCP Regional Summit
26-27 September, 2019
Amsterdam, Netherlands

2020 OCP Global Summit
4-5 March, 2020
San Jose Convention Center

RECENT EVENTS

OCP China Day
Beijing, PRC - June 25 2019
Collaboration Story on SONiC
Videos
Slides [Microsoft][Alibaba]

SONIC RELEASE UPDATE

SONiC community is excited to announce the upcoming SONiC release 201910 that is planned for October 2019 !!!

The community has been focusing in recent months to bring in the major features in the software that include the following.

- More L2 and L2/L3 protocols, e.g. VRF, MLAG, BFD,
- Debugging, monitoring capabilities.
- Developing and testing framework enhancement.
- Linux kernel version upgraded to linux_4.9.168-1+deb9u5
- Default routing stack changed to Quagga to FRR.

SAI community will be releasing SAI 1.5 in September 2019 that includes the new features like NAT, TAM2.0, sflow , SAI counters and debug counters. This SAI 1.5 will be included in SONiC 201910 release.

SONIC DESIGN DISCUSSIONS

02 JUL	[PR399] L3 performance and scaling enhancements HLD initial version
09 JUL	[PR407] PDE (Platform Development Environment)
09 JUL	[PR406] PDDF (Platform Driver Development Framework)
16 JUL	[PR419] SONiC image build time improvements
16 JUL	[MD] Egress mirroring and ACL action support check via SAI

https://www.opencompute.org/projects/sonic-sub-project

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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

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

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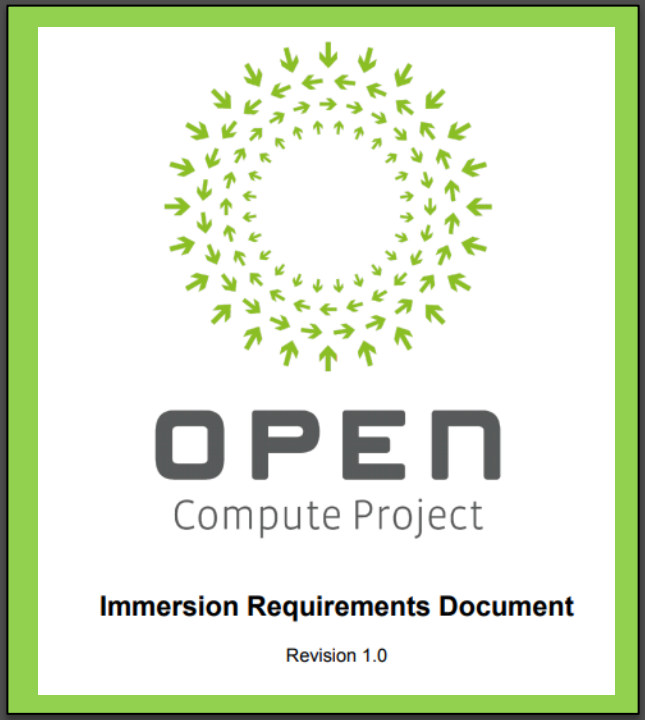
Immersion Requirements for OCP

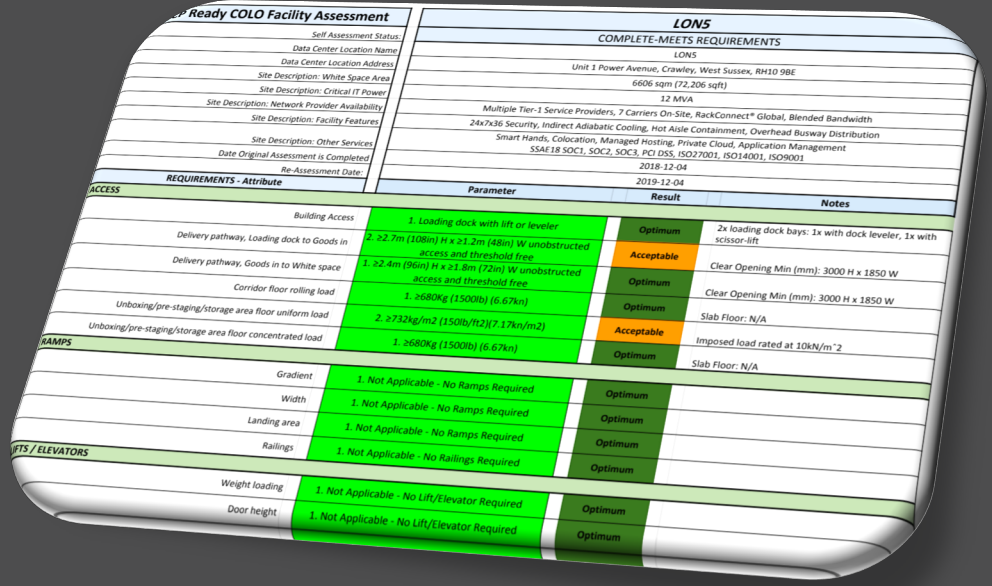


https://www.opencompute.org/projects/rack-and-power

openEdge Project

Q2 – Q3 2018	Q4 2018	Q1 2019	Q2 2019	Q3 2019
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	arm based sled under development Battery back up (BBU) development Other HW vendors announcing plan to adopt openEdge

OPEN Compute Project



Ready COLO Facility Assessment	
Self Assessment Status:	LON5
Data Center Location Name	COMPLETE-MEETS REQUIREMENTS
Data Center Location Address	Unit 1 Power Avenue, Crawley, West Sussex, RH10 9BE
Site Description: White Space Area	6606 sqm (72,206 sqft)
Site Description: Critical IT Power	12 MVA
Site Description: Network Provider Availability	Multiple Tier-1 Service Providers, 7 Carriers On-Site, RackConnect® Global, Blended Bandwidth
Site Description: Facility Features	24x7x36 Security, Indirect Adiabatic Cooling, Hot Aisle Containment, Overhead Busway Distribution
Site Description: Other Services	Smart Hands, Colocation, Managed Hosting, Private Cloud, Application Management
Date Original Assessment is Completed	SSAE18 SOC1, SOC2, SOC3, PCI DSS, ISO27001, ISO14001, ISO9001
Re-Assessment Date:	2018-12-04
	2019-12-04

REQUIREMENTS - Attribute	Parameter	Result	Notes
ACCESS			
Building Access	1. Loading dock with lift or leveler	Optimum	2x loading dock bays: 1x with dock leveler, 1x with scissor-lift
Delivery pathway, Loading dock to Goods in	2. ≥2.7m (108in) H x ≥1.2m (48in) W unobstructed access and threshold free	Acceptable	
Delivery pathway, Goods in to White space	1. ≥2.4m (96in) H x ≥1.8m (72in) W unobstructed access and threshold free	Optimum	Clear Opening Min (mm): 3000 H x 1850 W
Corridor floor rolling load	1. ≥680Kg (1500lb) (6.67kn)	Optimum	Clear Opening Min (mm): 3000 H x 1850 W
Unboxing/pre-staging/storage area floor uniform load	2. ≥732kg/m2 (150lb/ft2)(7.17kn/m2)	Acceptable	Slab Floor: N/A
Unboxing/pre-staging/storage area floor concentrated load	1. ≥680Kg (1500lb) (6.67kn)	Optimum	Imposed load rated at 10kN/m^2
RAMPS			Slab Floor: N/A
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	
FTS / 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

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OCP Ready™ Facilities

KAO Data

Giga DC

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

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HYDRO66

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

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HYDRO66

2-4MW each hall

Different specification per hall possible

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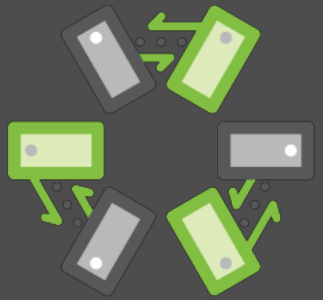
Drivers of OCP Adoption

Cost Reduction

Standardisation



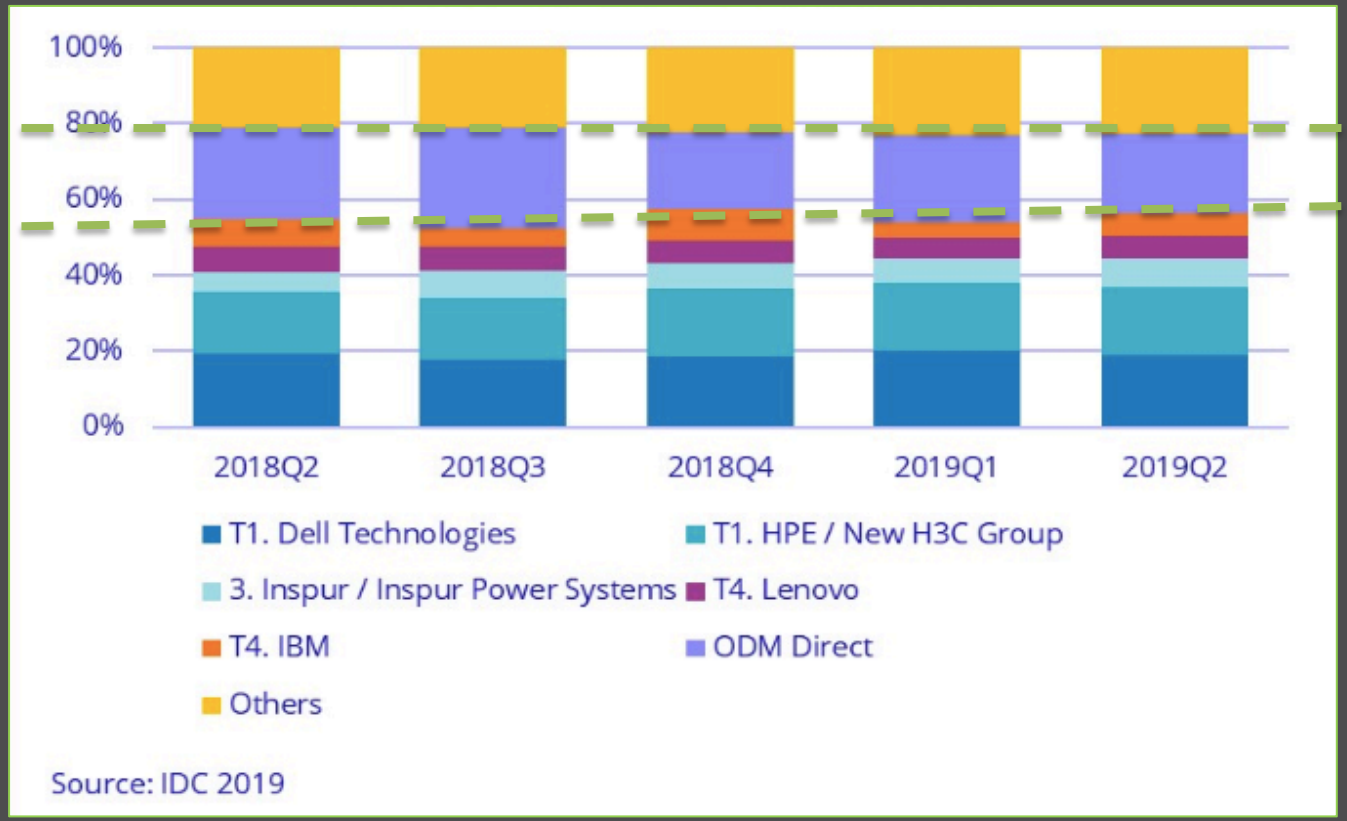
Energy Efficiency

Reliability

Source: IHS Markit

OPEN Compute Project

Server Market Share



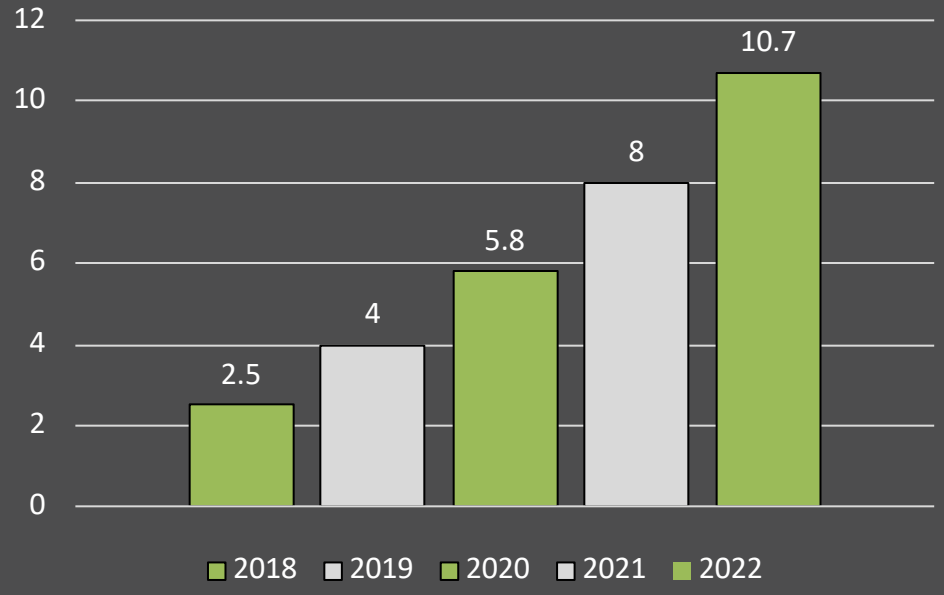
The rise of the ODM

OPEN Compute Project

$ Billion USD – WW Market Revenue

EMEA growth driven by telco, CAGR 59%

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



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

https://www.youtube.com/watch?v=pdpPKAo-HUY

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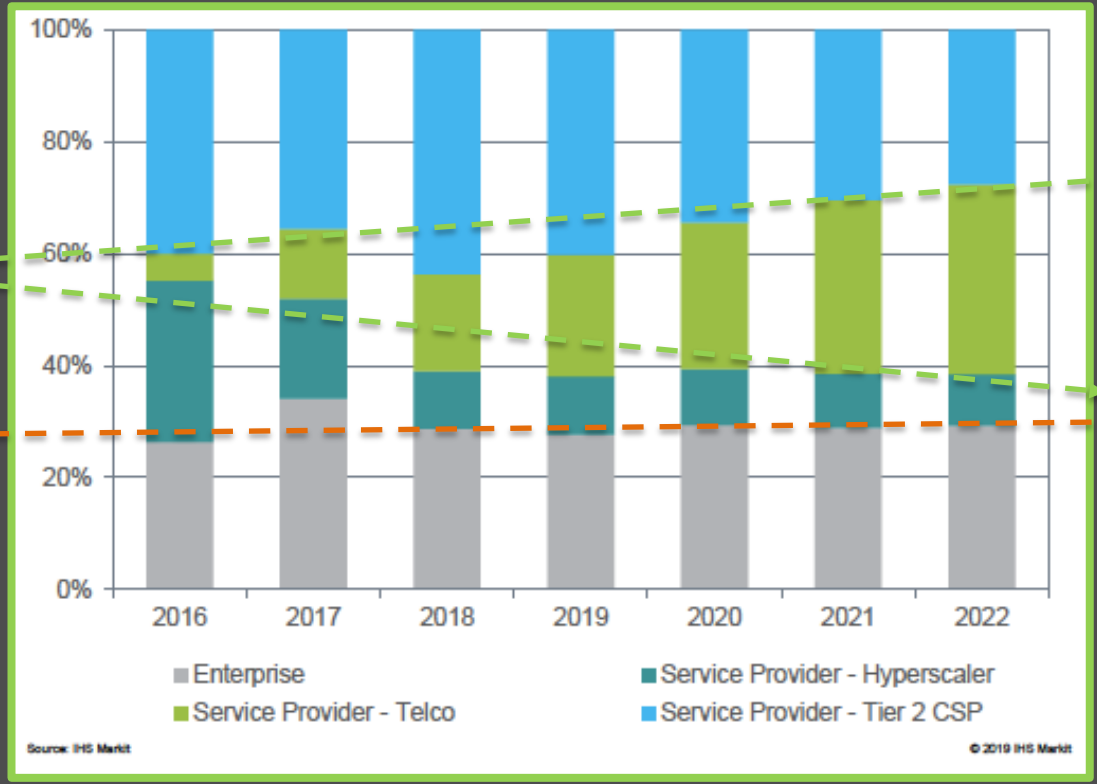
OCP by Industry Forecast

Market just forming for disaggregated cell tower equipment

Automotive and Manufacturing have highest 5YR GAGR

Healthcare in very early stages of adoption



https://www.youtube.com/watch?v=pdpPKAo-HUY

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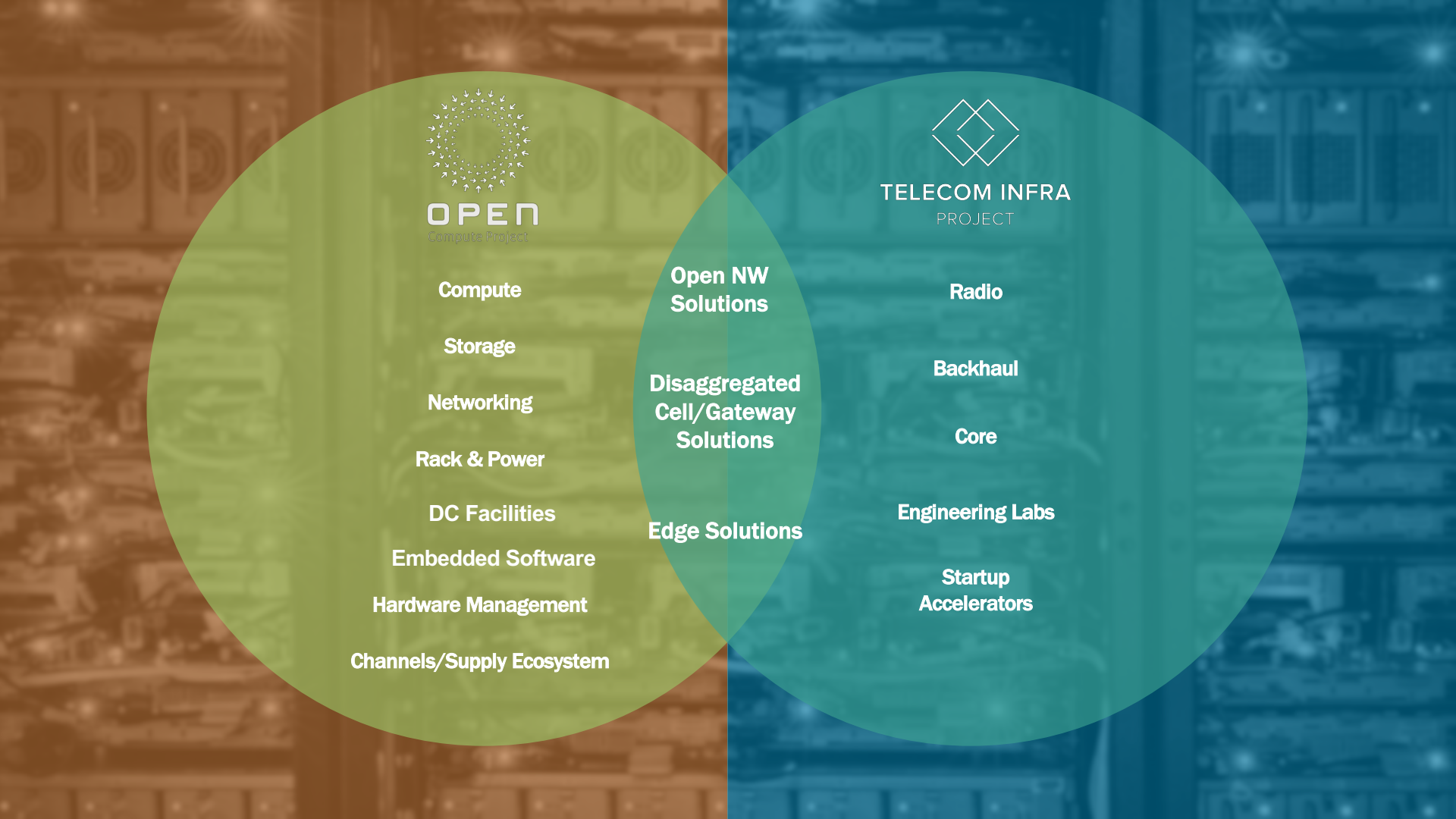
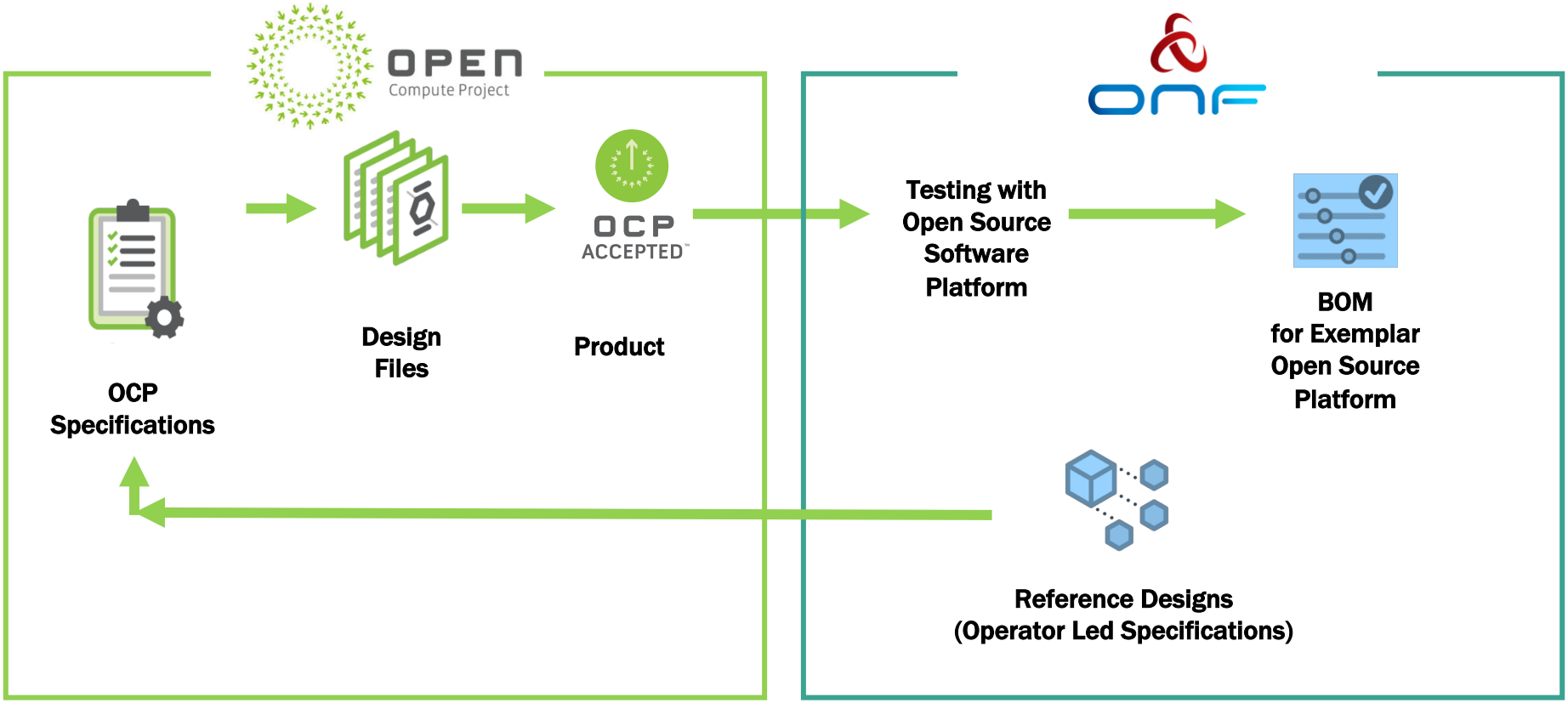

OPEN
Compute Project
Compute
Storage
Networking
Rack & Power
DC Facilities
Embedded Software
Hardware Management
Channels/Supply Ecosystem
Open NW Solutions
Disaggregated Cell/Gateway Solutions
Edge Solutions
TELECOM INFRA PROJECT
Radio
Backhaul
Core
Engineering Labs
Startup Accelerators

OCP ACCEPTED™

AS7316-26XB Open Cell Site Router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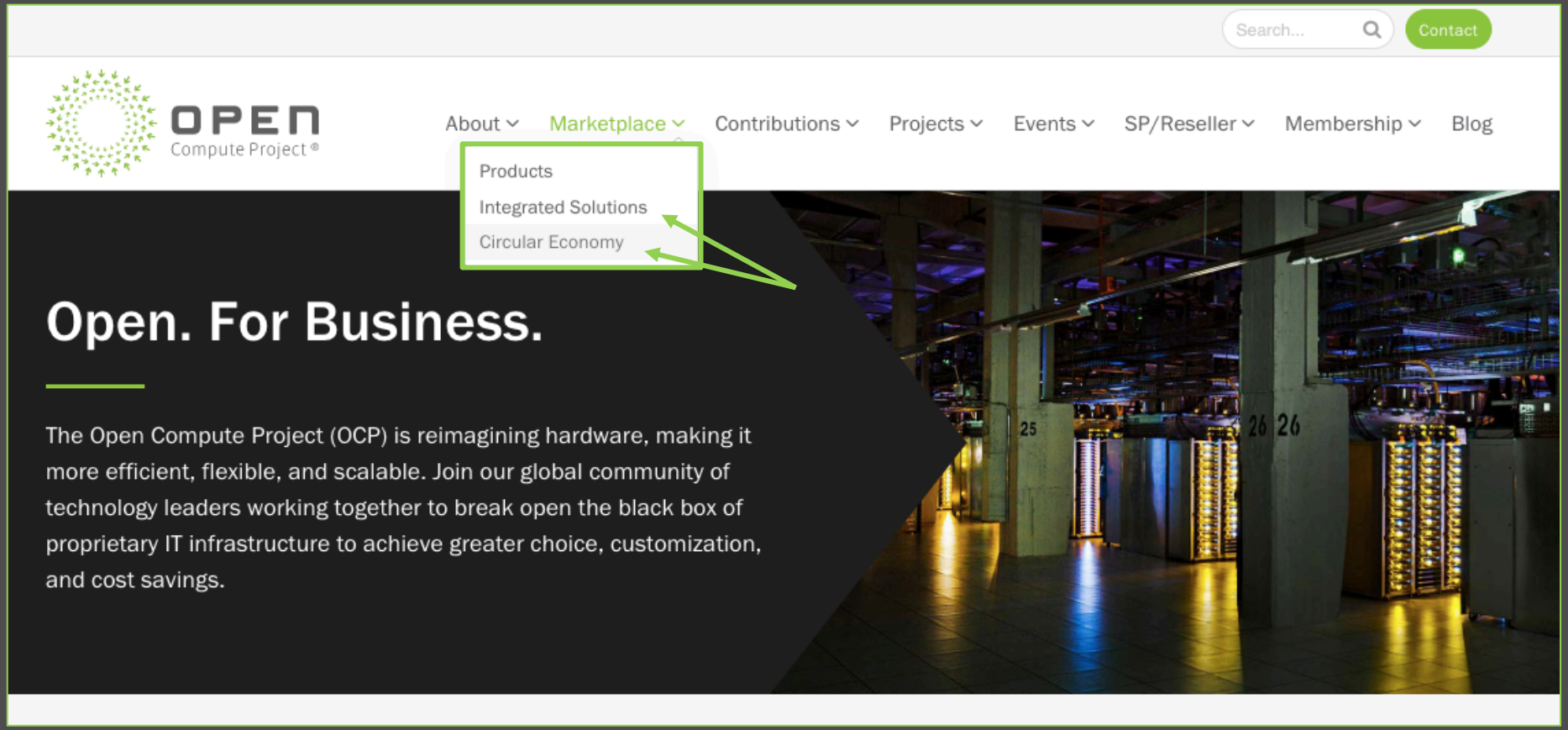
Compute Project
OCP
ACCEPTED
Testing with
Open Source
Software
Platform
BOM
for Exemplar
Open Source
Platform
Design
Files
Product
OCP
Specifications
Reference Designs
(Operator Led Specifications)



https://www.opencompute.org/solutions

https://www.opencompute.org/circular-economy

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Search Marketplace...

Search for Specifications & Design collateral under Contributions >

Status

- [ ] OCP Accepted ™ Products (5)
- [ ] OCP Inspired ™ Products (1)

Category

- [ ] Network (6)

Software

- [x] 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

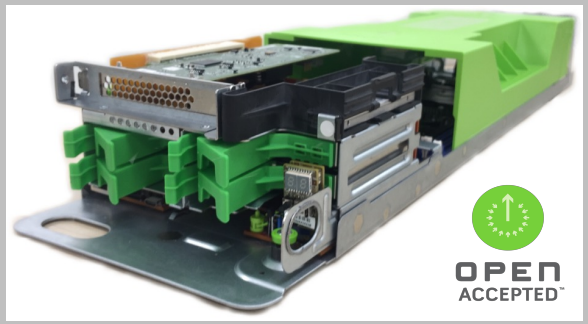
Part #: 5712-54X-O-AC-B

Specifications

OCP ACCEPTED

inspur MiTAC wiwynn

OPEN ACCEPTED™



SAP® Certified
Hardware for SAP HANA®

Red Hat
Certified Technology

https://www.opencompute.org/products

OPEN Compute Project

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

OPEN Compute Project

A complete plug and play demo unit.

SEBA - ONF's SDN Enabled Broadband Access architecture.

OPEN Compute Project

Marketplace > Integrated Solutions > CTC Open Cloud Package

Product Marketplace | Integrated Solutions | Circular Economy

☆ 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

CTC — Challenging Tomorrow's Changes

ITOCHU Techno-Solutions Corporation

Email

Website

docker

ceph

ONL

openstack

onie

OPEN Compute Project

Circular Economy

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

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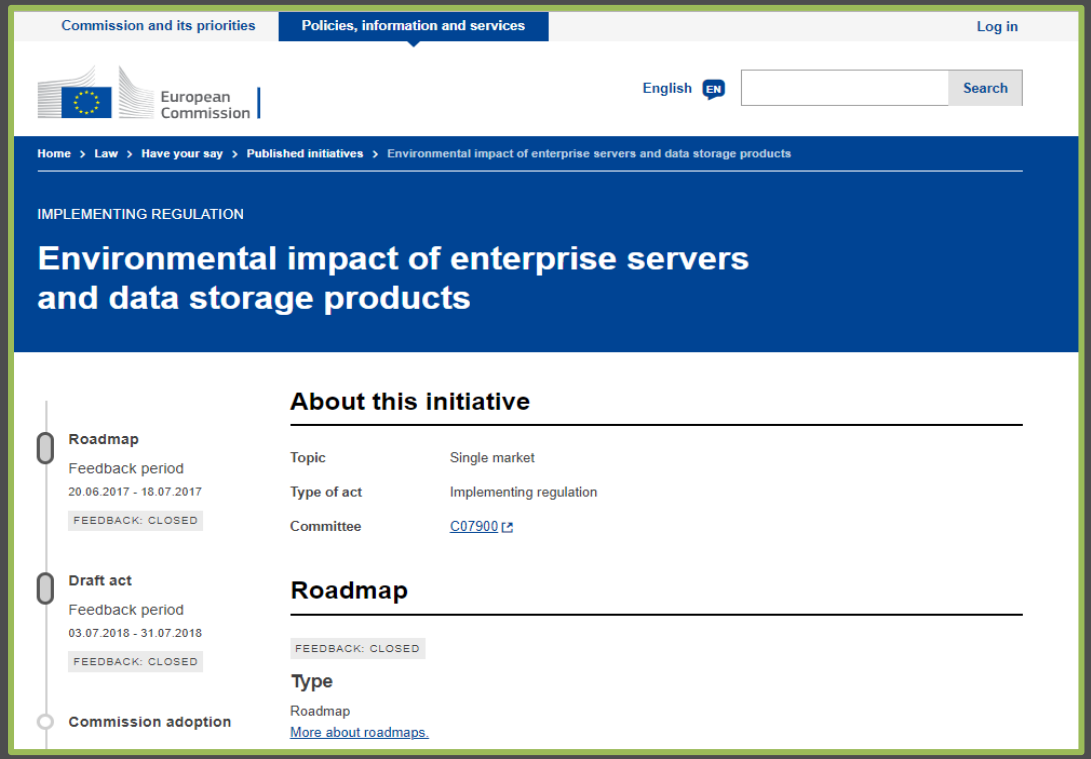
EU Legislation – Eco Design Directive



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

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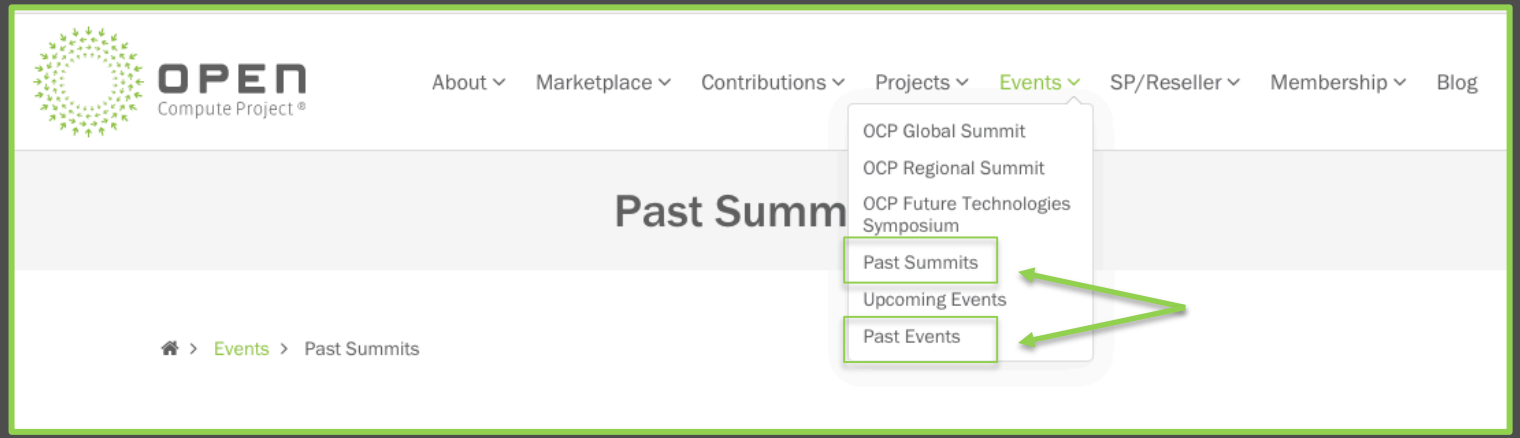
OCP Global Summit
March 4-5, 2020

San Jose, CA

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

OPEN Compute Project

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

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