Open. Together.

OCP SUMMIT

Server Workgroup

OCP NIC Technology & Ecosystem Update

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OPEN PLATINUM™

Agenda

SERVER

- History
- OCP NIC 3.0 Progress
- Solution Overview
- OCP NIC Technology Update
- OCP NIC Community and Ecosystem Update
- Looking Into Future & Open Together

Specifications

History

2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019

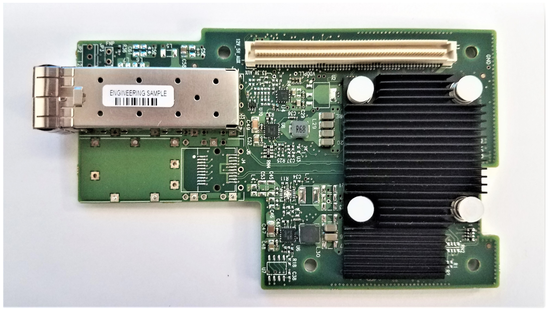
Dev | Release

Proto | Prod

OCP NIC 0.5

Base specification

Facebook developed



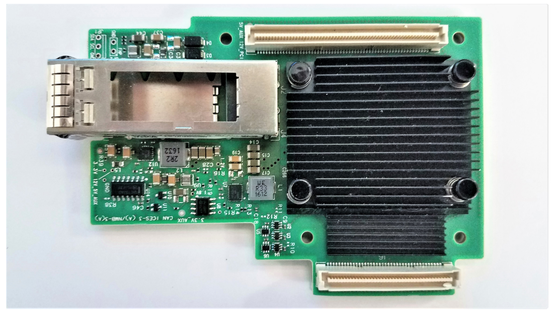
Dev | Release

Proto | Prod

OCP NIC 2.0

Incremental change

Facebook developed
Community inputs



0v70

0v90

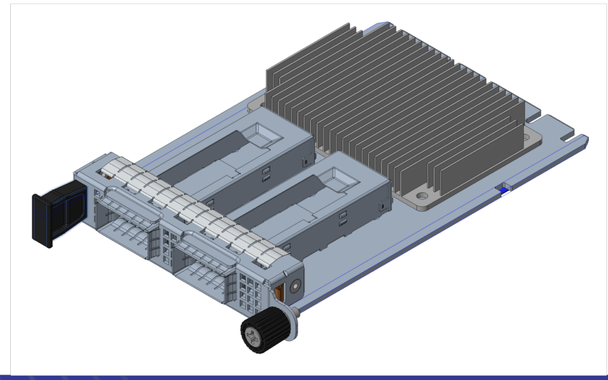
Dev | Release

Proto | Prod

OCP NIC 3.0

Form factor rearchitected

Community developed



OCP NIC 3.0 Progress

Oct'17 to Feb'19

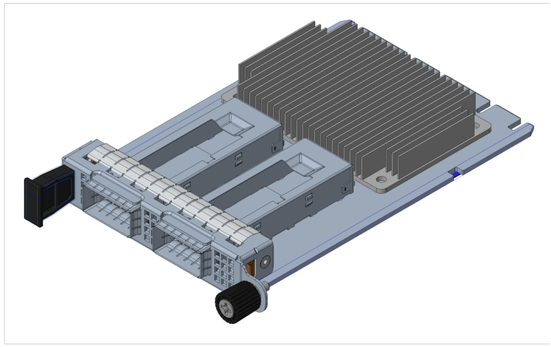
22x General specification working sessions
24x Mechanical specific working sessions
10x Thermal specific working sessions
2x Surveys
9x revision pushes

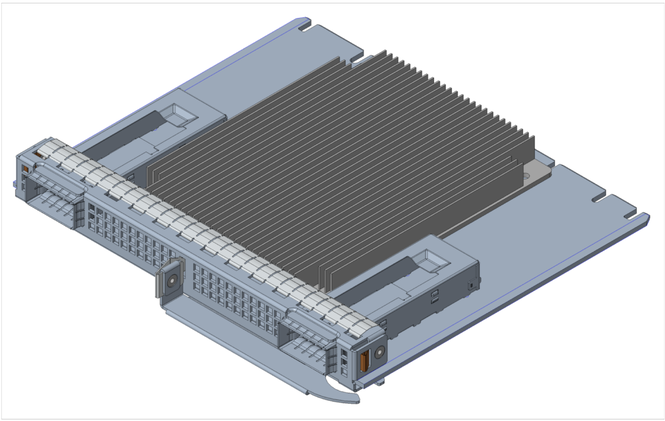
1x Specification
Mechanical 3D models
Mechanical 2D models
Thermal simulation models
Thermal test fixture collateral

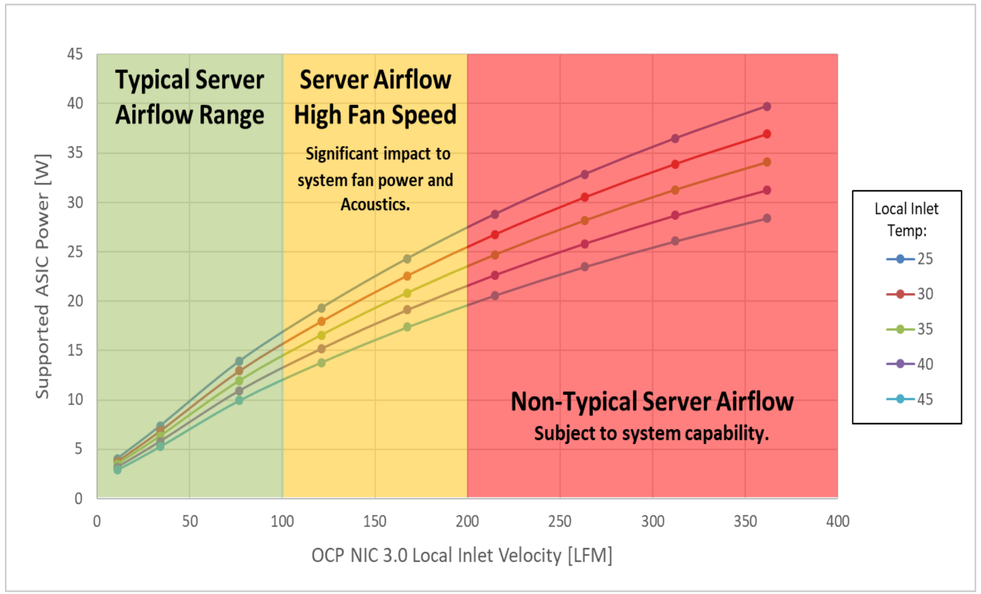
https://www.opencompute.org/wiki/Server/Mezz

Solution overview

- 2x Form factors (SFF and LFF)
- SFF-TA-1002 connector
- 32 lanes of PCIe Gen4
- 4x of OCP NIC 2.0
- EMI containment
- Front service
- 80W/150W power delivery
- Larger thermal potential in similar profile
- NIC management features





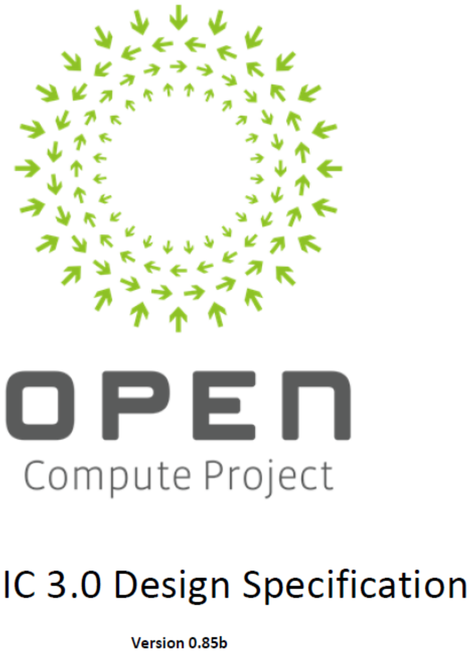


Latest specification : http://www.opencompute.org/wiki/Server/Mezz

1 Year Technology Update

Specification development

- Main specification hotfix (0v86 latest version)
- Mechanical hotfix and improvements (0v86 latest version)
- Extremely close to 0v90 release!



Fixtures

- Thermal fixture design collateral (Dell-EMC)
- SI compliance test fixture creation

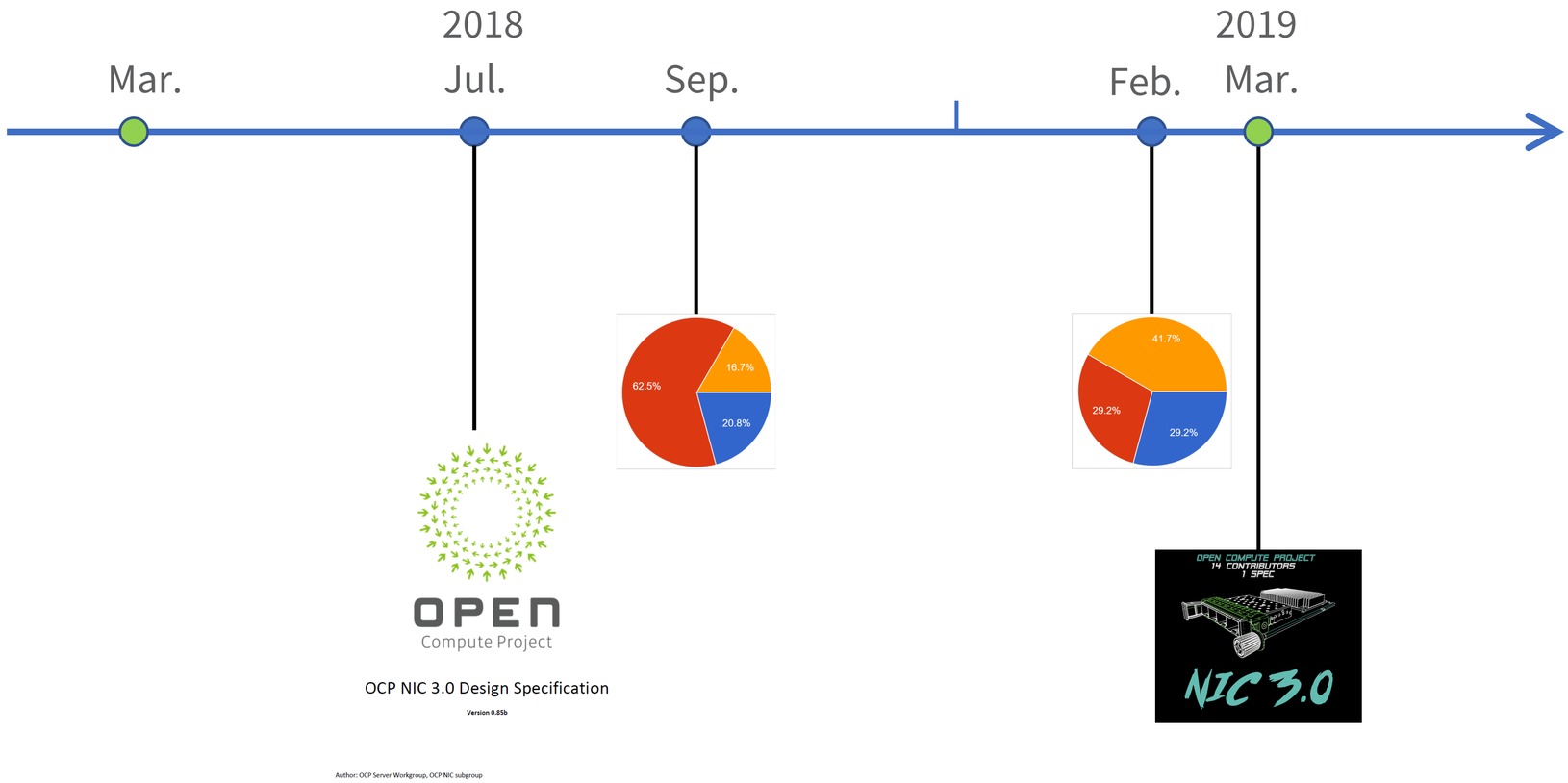
1 Year Technology Update

Bring up examples @ Facebook

- Yosemite V2 based “Hack” with MH OCP NIC 3.0
- Multiple platforms in plan with OCP NIC 3.0

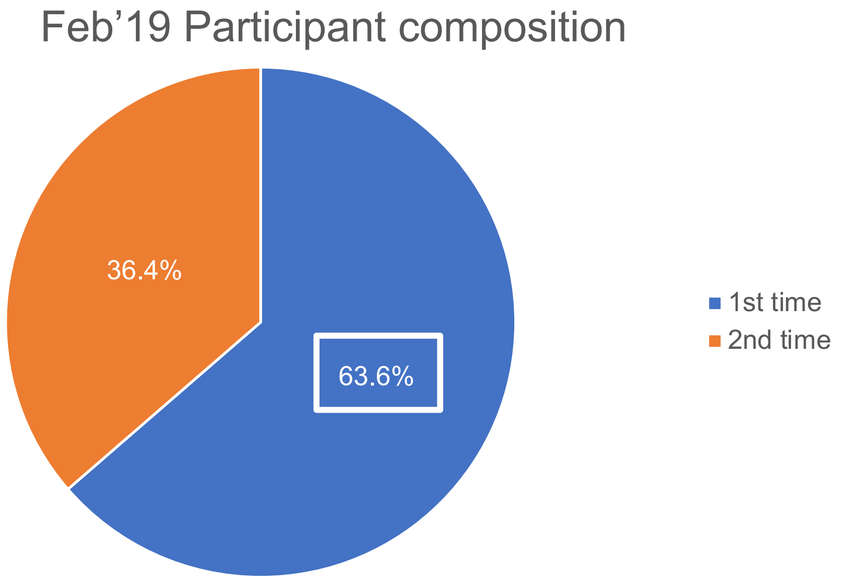
See more OCP NIC 3.0 related demos and fixtures @
OCP NIC Community Space under OCP Experience Lab

1 Year Ecosystem Update



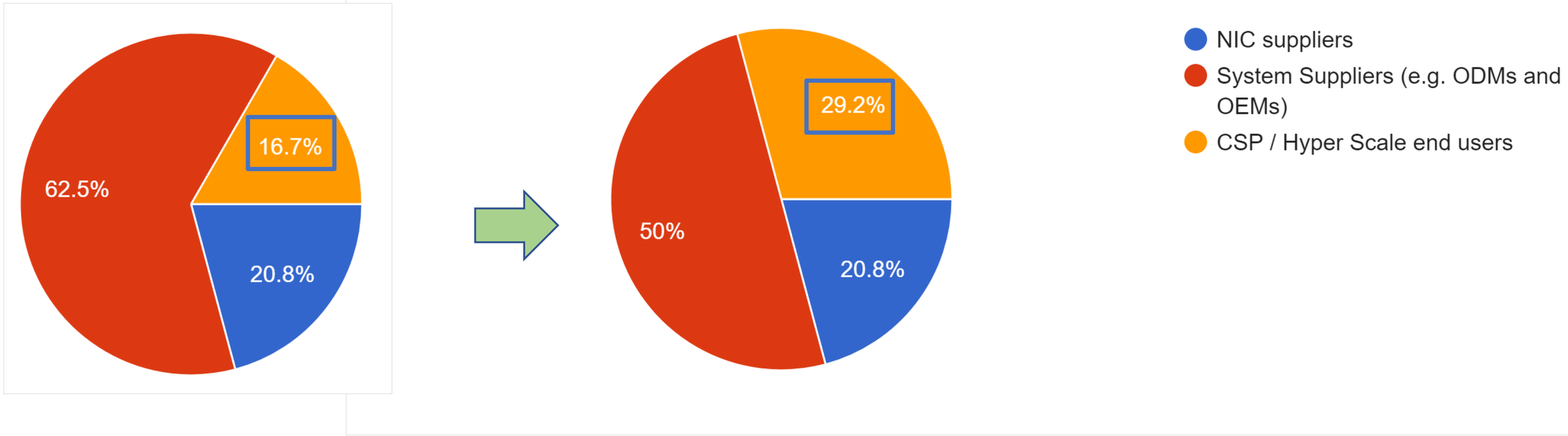
1 Year Ecosystem Update (Survey)

- Sep’18
  - 1st Survey
  - 23x responses
- Feb’19
  - 2nd Survey
  - 24 responses



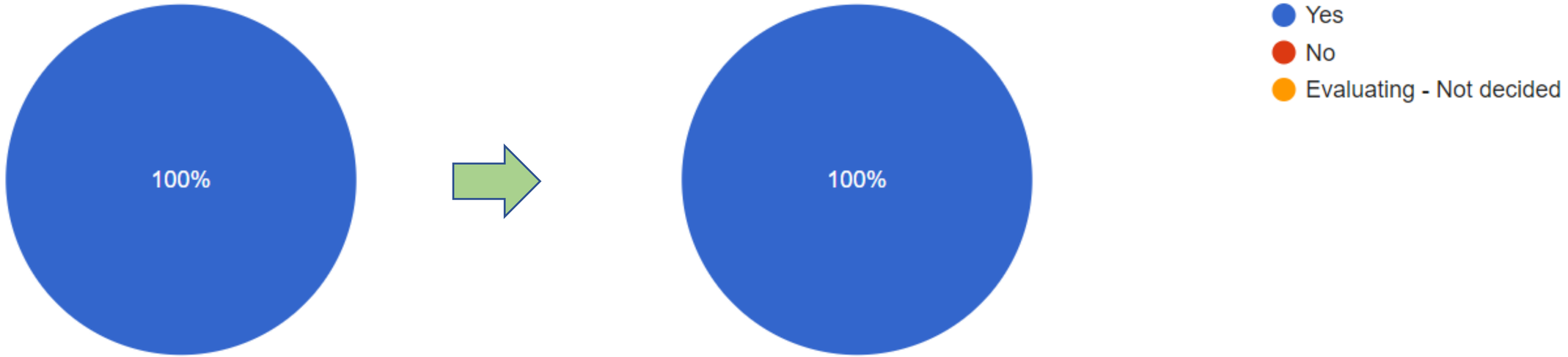
1 Year Ecosystem Update (Survey)

Do you represent the NIC community or System/ CSP community ?



1 Year Ecosystem Update (Survey - NIC)

Do you plan to design in OCP NIC 3.0 in your adapter roadmap?

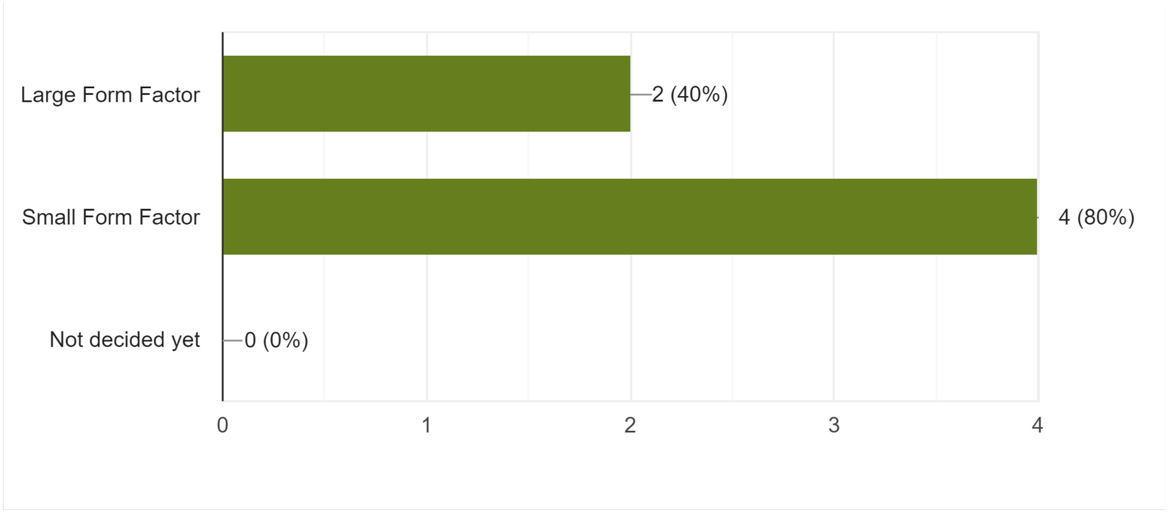


Sep’18

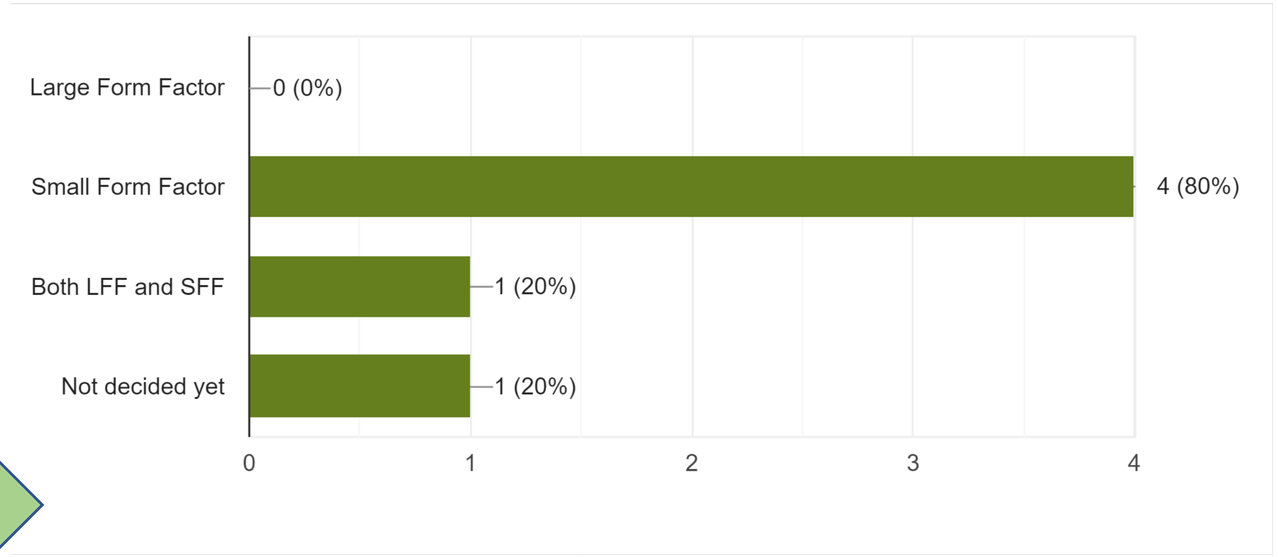
Mar’19

1 Year Ecosystem Update (Survey - NIC)

Do you plan to design in Large-Form-Factor, Small-Form-Factor, or both?



Sep’18



Mar’19

1 Year Ecosystem Update (Survey - NIC)

What motivates your organization to adopt OCP NIC 3.0 in your NIC roadmap?

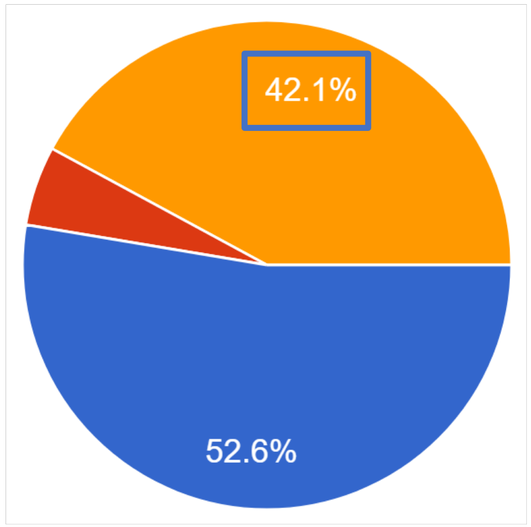
- “We expect OCP NIC 3.0 to become mainstream form factor for network adapters as many key system vendors start to adopt it as a replacement for their custom form factor network daughter cards.”
- “OCP NIC3.0 is following industry development trend.”

Additional feedback comments regarding the OCP NIC 3.0 ecosystem

- “OCP NIC 3.0 has addressed some specific challenges that we have learned in OCP NIC 2.0 such as thermal and power consumption. We expect OCP NIC 3.0 to be widely and successfully adopted by customers beyond CSPs.”
- “We expect to see this to be the dominant daughter card form factor.”

1 Year Ecosystem Update (Survey - Sys/CSP)

Do you plan to design a platform supporting OCP NIC 3.0?



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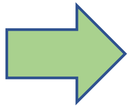
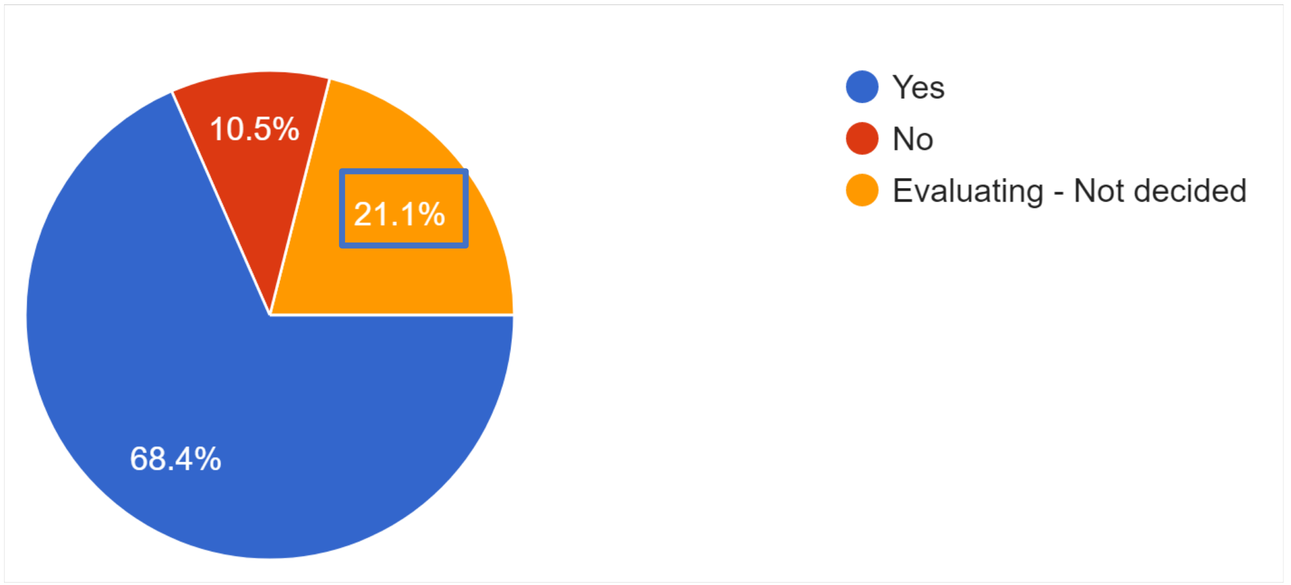
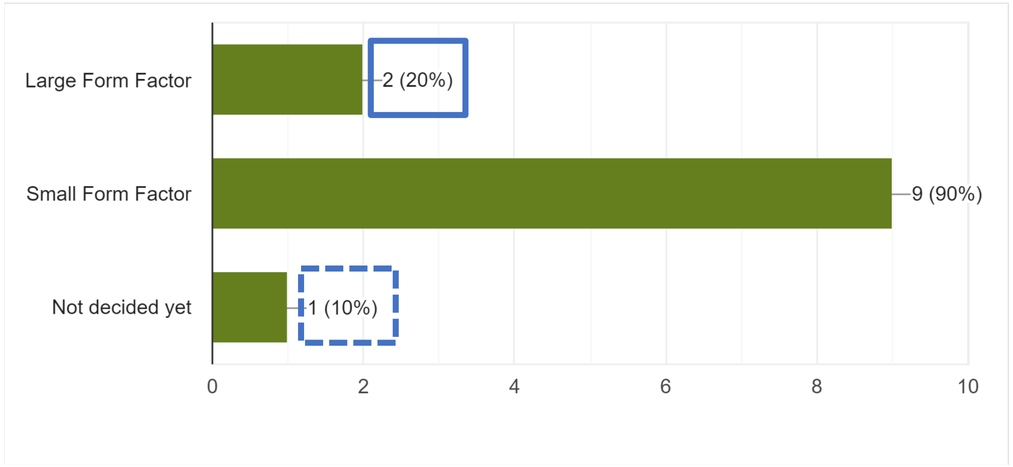




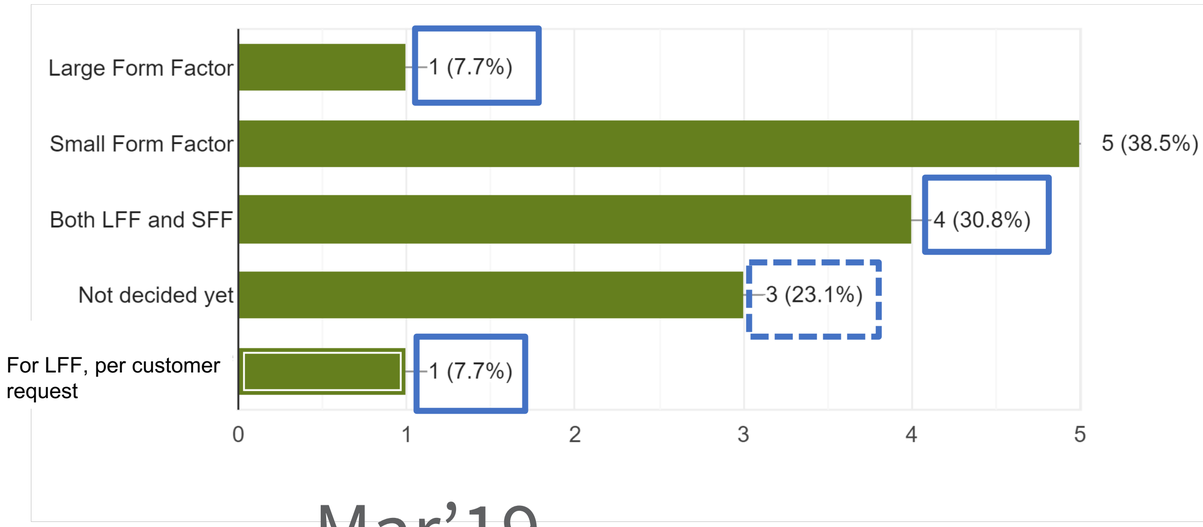
Mar’19

1 Year Ecosystem Update (Survey - Sys/CSP)

Do you plan to design in Large-Form-Factor, Small-Form-Factor, or both in your platforms?



Sep’18



Mar’19

1 Year Ecosystem Update (Survey – Sys/CSP)

What motivates your organization to adopt OCP NIC 3.0 in your platform ?

- “open standard, good ecosystem”
- “To allow for using common AOCs across platforms to reduce complexity of product qualification, reduce cost and improve availability/lead times.”
- “Ability to use off the shelf components and firmware/drivers for quicker time to market and better economies of scale”
- “Better thermal and hot plug feature”

Additional feedback comments regarding the OCP NIC 3.0 ecosystem

- “need more final design documents”
- “Would like to see AOC vendors offer OCP 3.0 AOCs for all their product lines.”

1 Year Ecosystem Update (Survey – Sys/CSP)

What can the OCP NIC 3.0 workgroup do differently to encourage your adoption?

- "Adoption would follow with adoption of OCP servers. Make those more attractive, and NIC 3.0 adoption could follow."
- "Add more suppliers, ensure firmware support, add adapters for AI/ML workloads"

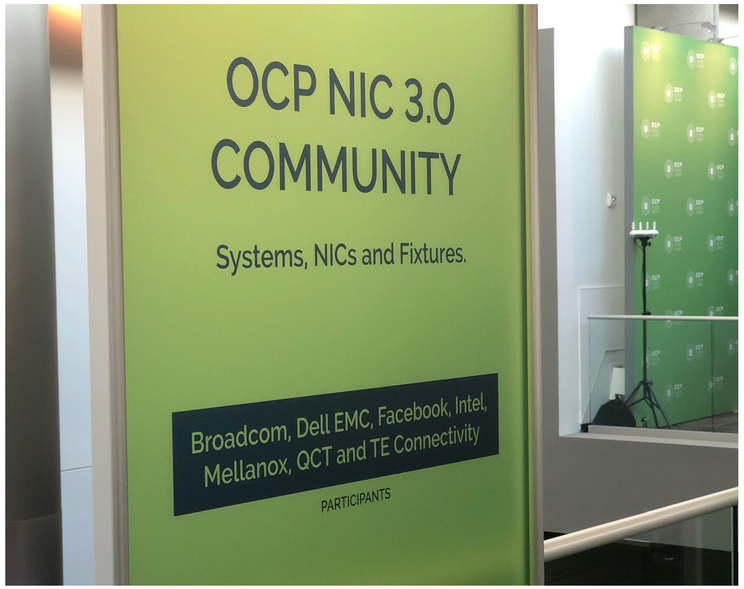
Please provide any additional feedback or comments regarding the OCP NIC 3.0 ecosystem (open comment).

- "OCP Marketplace does not list any OCP NIC 3.0 servers or cards. It may be too early to survey end users."
- "Make efforts to ensure compliance to spec, add more suppliers with functions beyond just Ethernet NIC"

1 Year Ecosystem Update

OCP Experience lab

OCP NIC 3.0 Community Space

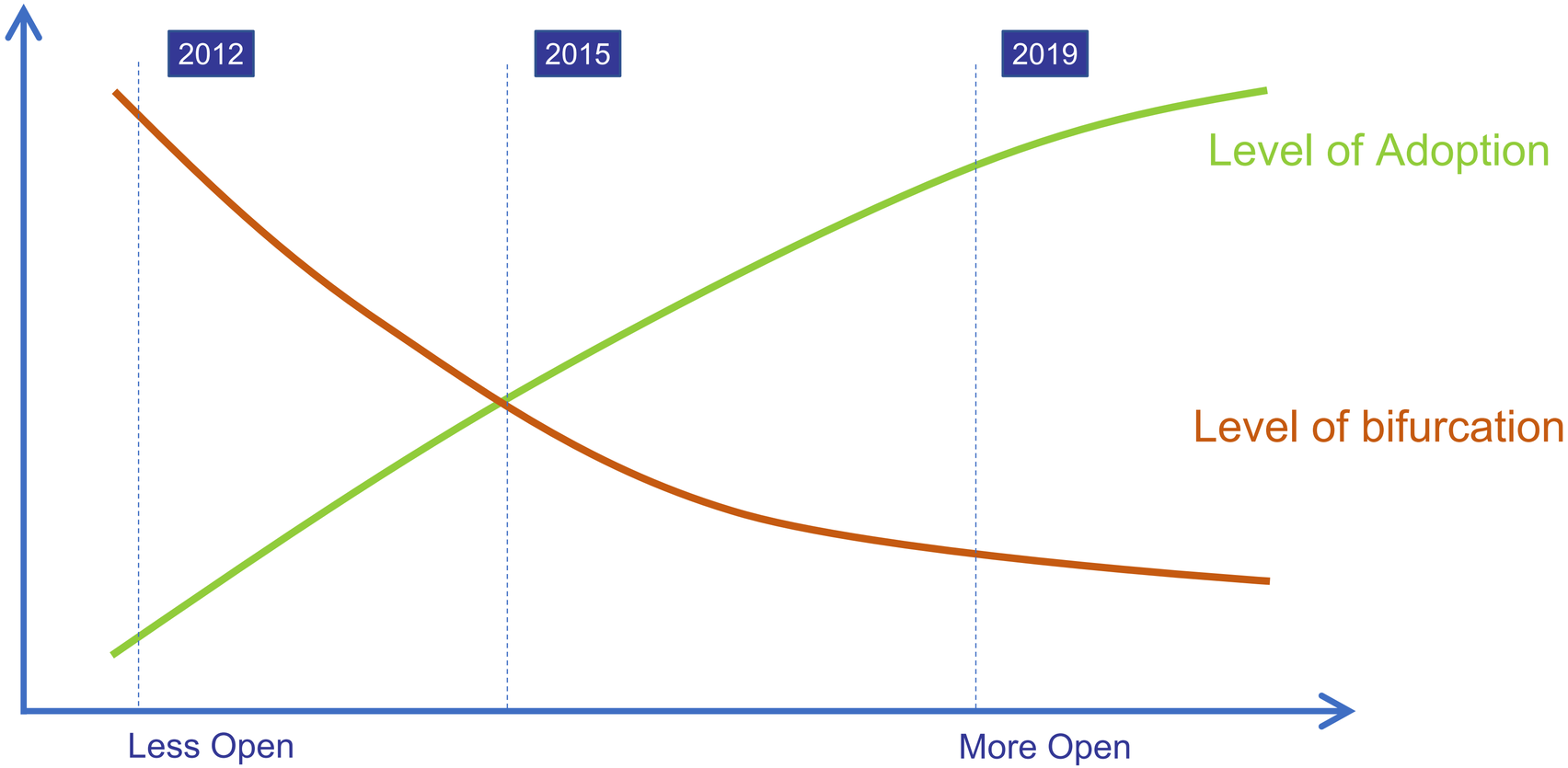


Look Into Future

Potential design and enabling support workstreams

- 0v90 and 1v00 Specification
- Reference platform designs
- Release SI compliance fixture with PCI-SIG®
- Compliance work and plug fest

Open Together



* Chart is for illustration purpose

Open Together

- Engineering workshop (Room 210A, 3/15 8a-10a/1p-2p)

Contributors / Community Partners

Amphenol Corporation
Broadcom Limited
Cavium
Dell, Inc.
Facebook, Inc.
Hewlett Packard Enterprise Company
Intel Corporation
Keysight
Lenovo Group Ltd
Mellanox Technologies, Ltd
Netronome Systems, Inc.
Quanta Computer Inc.
TE Connectivity Corporation
University of New Hampshire

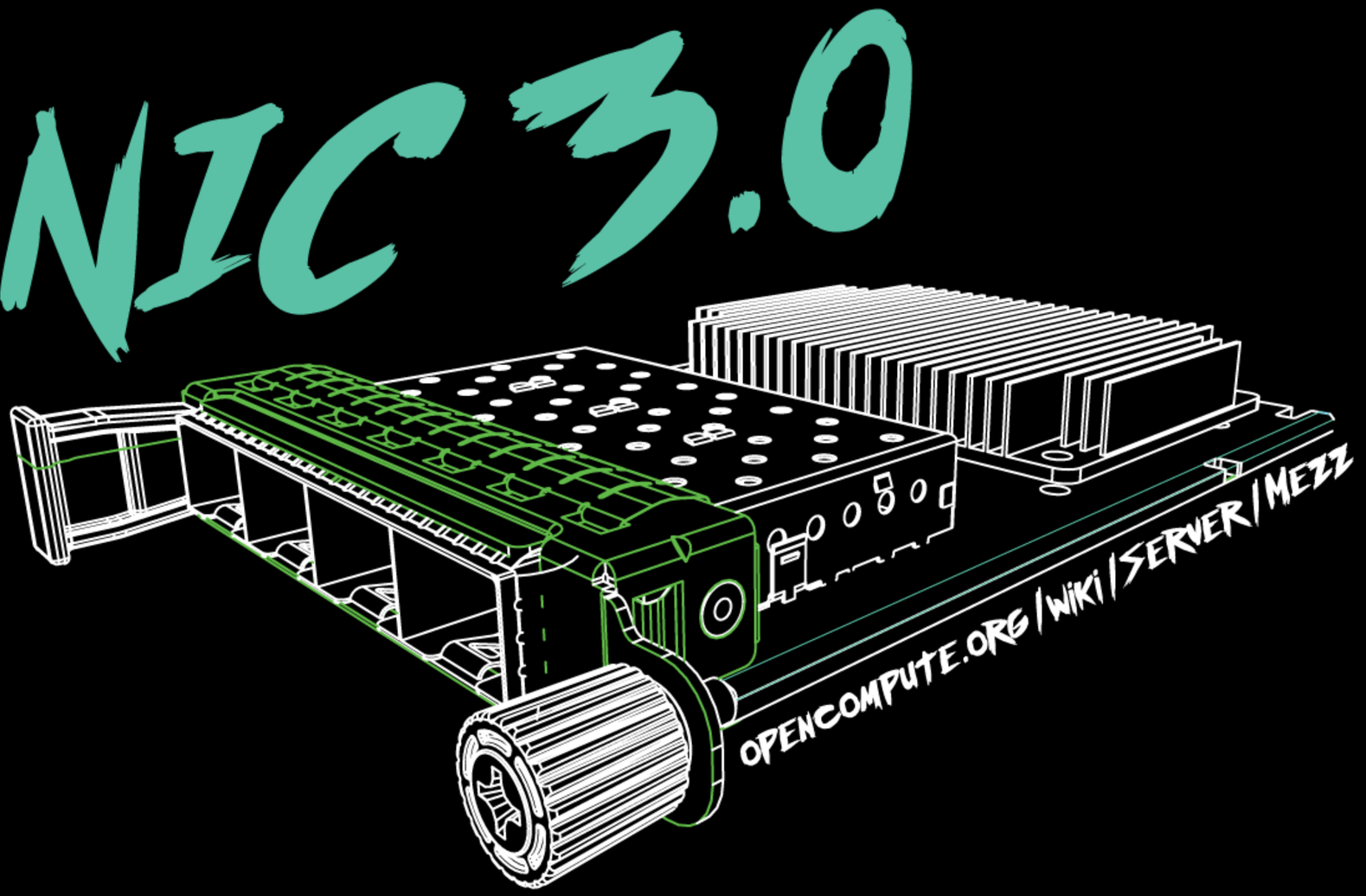
And many more!

Open Together

- OCP NIC community Space @ OCP Experience lab
- OCP NIC mailing list
- OCP NIC monthly call (1st Wed of the month; detail see wiki)

Sub-group Project wiki: https://www.opencompute.org/wiki/Server/Mezz
Mailing List: https://ocp-all.groups.io/g/OCP-NIC

Q&A



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