RIPE 84 - Berlin - Connect WG

Transceiver 100G/400G and beyond

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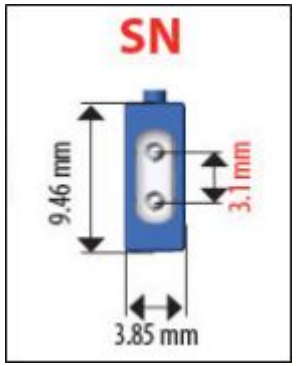
400G to **4x 100G** with **SN** connectors

4x physically separate and
independent 100G-DR/LR duplex links



Eliminate breakout / splitter cables with the 4x SN connector

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Intro to **SFP-DD** and **DSFP**

- SFP-DD and DSFP offer two approaches to achieving the same outcome
- Both use SFP-like form factor with 2x 50G elec interface (100G / port)

SFP Elec interface: 1x 10G / 25G / 50G

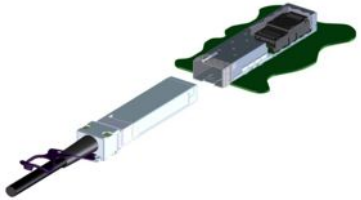
SFP-DD or DSFP Elec interface: 2x 10G / 25G / 50G

- DSFP has some traction in Asia / China
- SFP-DD has some traction within the Europe, US & Rest of World
- **In most regions, only one of these variants is relevant**

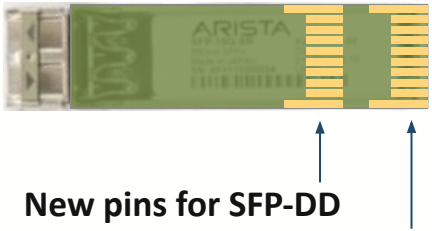
Intro to **SFP-DD** and **DSFP**

SFP-DD

- Stands for “SFP Double-Density”
- MSA site: http://sfp-dd.com/

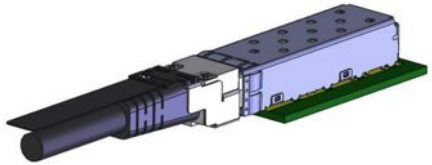


- Adds second row of contacts to the SFP electrical connector for 2x 50G



DSFP

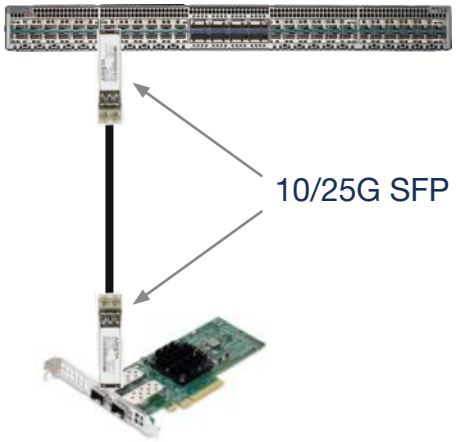
- Stands for “Dual SFP” module
- MSA site: https://dsfpmsa.org/



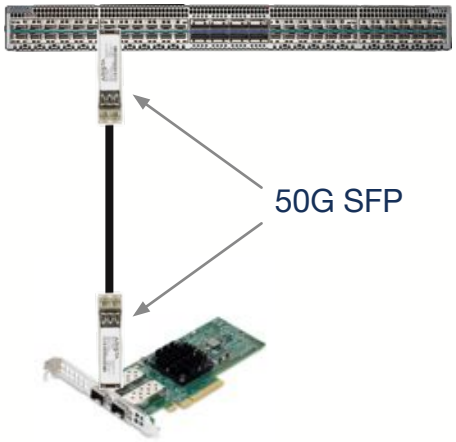
- Some low-speed pins repurposed to enable a 2x 50G interface

SFP-DD / **DSFP** backwards compatibility

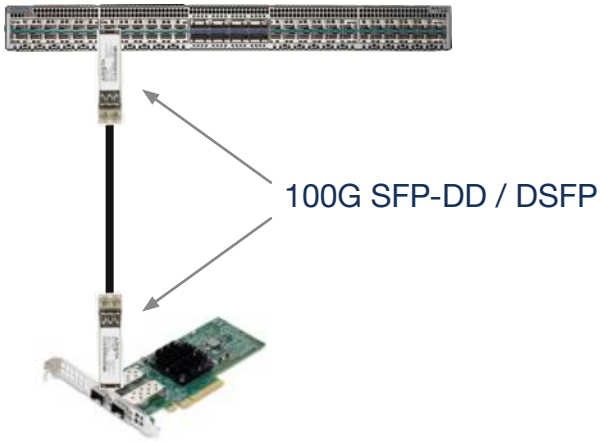
- 10G, 25G or 50G SFP can be used in any SFP-DD / DSFP port
- Future-proofed for 2 additional NIC generations - 50G and 100G



10 / 25G SFP NIC



50G SFP NIC



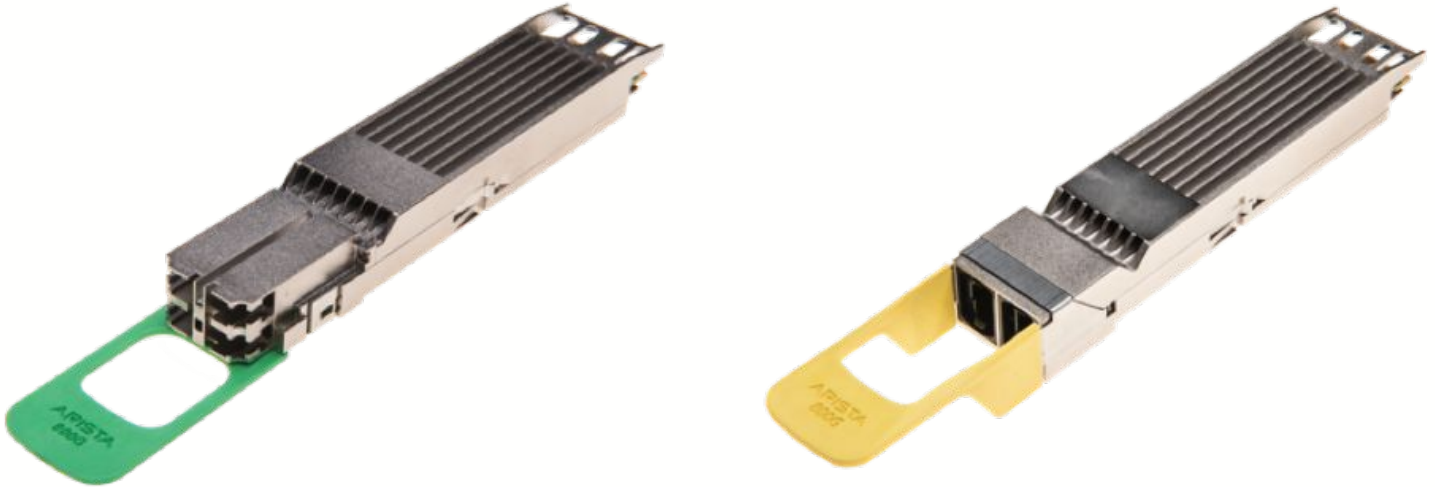
100G SFP-DD/DSFP NIC

Note: a 100G SFP-DD / DSFP cannot be used in a 10G/25G/50G SFP port

What's after **400G**?

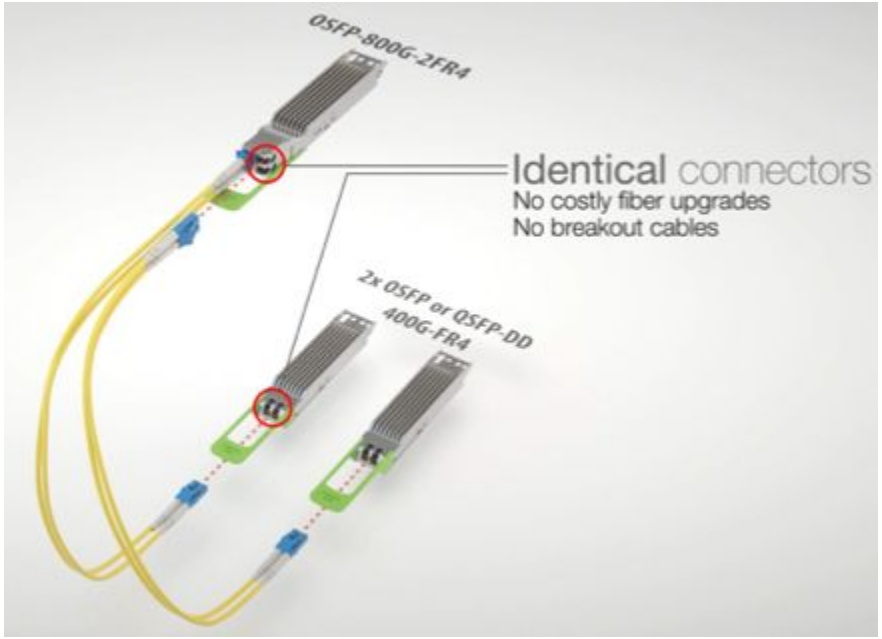
800G / port using 100G serdes

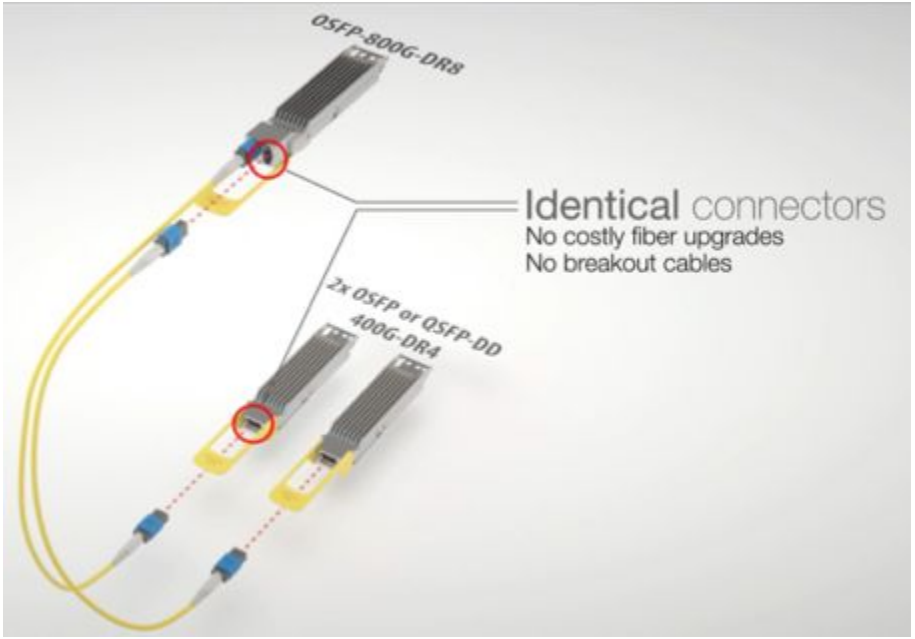
First 800G / port products = 2x 400GbE / port



- 800G OSFPs use 2x "regular" LC and MPO12 connectors without any loss in faceplate density: Only possible with the OSFP
- **Deploy 400G OSFP today** → easy upgrade to 800G in the future

What's after **400G**?





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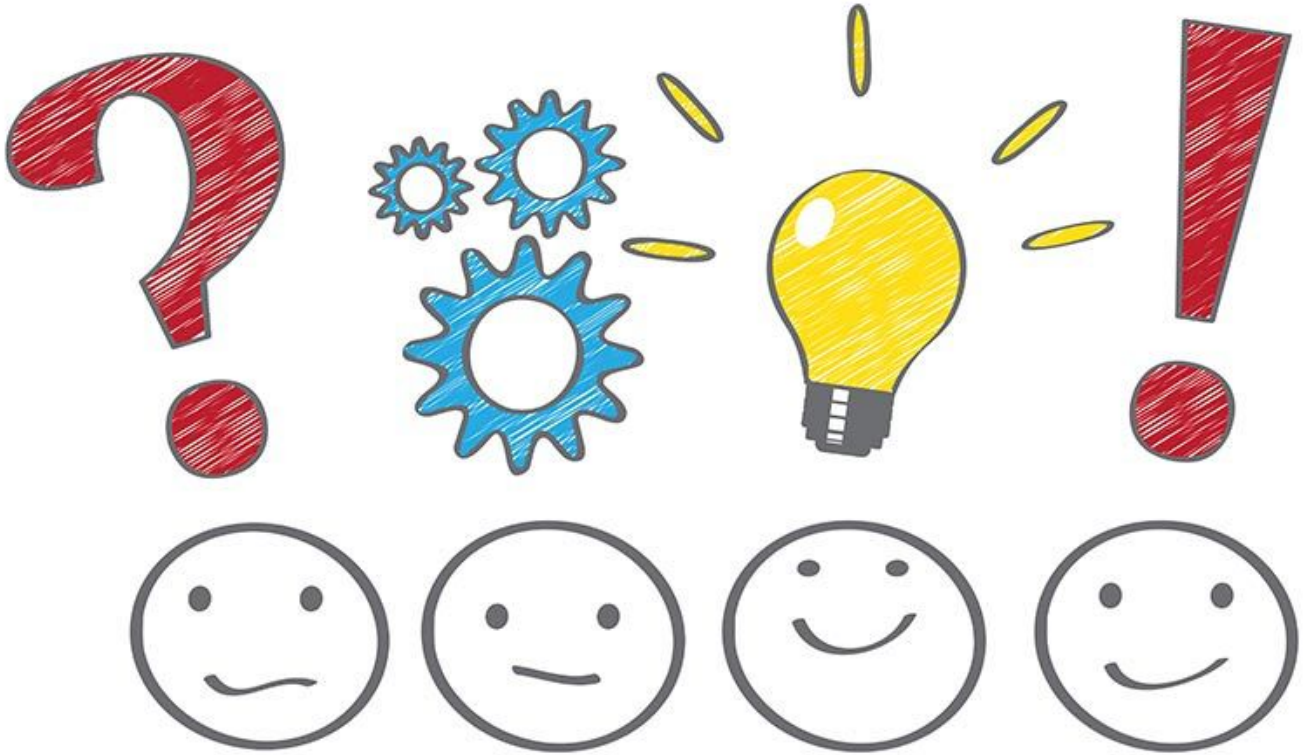
OSFP & **QSFP-DD** Recap and Outlook

- For 400G, approx. 50/50 split between OSFP and QSFP-DD
  - Total market volume driven by large customers (mainly driven by hyperscalers)
- For 800G, expect OSFP volume to exceed QSFP-DD
  - More large customer demand
- Thermal advantages of OSFP become more critical at 800G
- Easier upgrade path from 400G to 800G with the OSFP
  - No change to fiber cabling → large $ savings
- Unprecedented level of industry interest in future 1.6T “OSFP-XD”
  - All major system and optics module vendors have joined the OSFP MSA
  - Industry consensus about the future of pluggable optics for next ~10 years

Check out https://bit.ly/osfpmsa

Questions?



Thank you for your attention!

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