

Server NIC Market Update from CFI

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IEEE 802.3 Next Generation BASE-T Study Group
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Geneva, CH

Goal

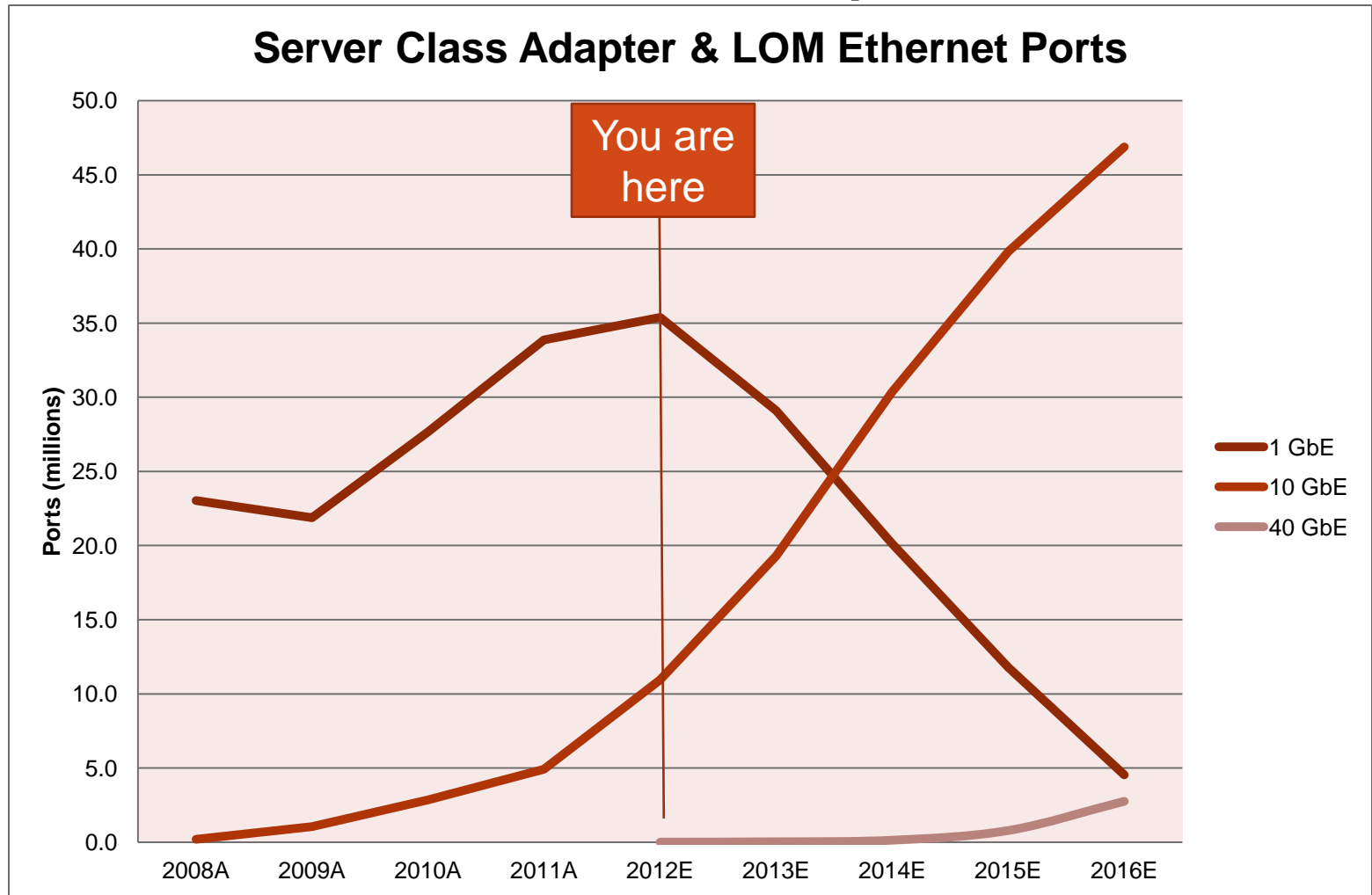
- Review Server Ethernet connectivity history and forecast in support of the broad market potential of next generation BASE-T.

The State of Things

in the Server Ethernet Market

- Overall port count growth ~20%/yr, 2008-2012
 - Expected to slow to ~5% 2013+ as higher speed ports deploy
 - Users saw multiple 1G ports as more cost effective than 10G
- Gigabit Ethernet
 - The incumbent technology, with ~76% of the ports in 2012
 - GbE still growing in 2012 ...may finally be peaking
 - “Rumors of my death have been greatly exaggerated.”
- 10 Gigabit Ethernet
 - On a very strong growth ramp
 - Expected to surpass 1GbE ports in 2014
- 40 Gigabit Ethernet
 - Just getting started, expect to hit 5% of ports in 2016

Server Ethernet Port Speed Mix



Source: Crehan Research, 2012

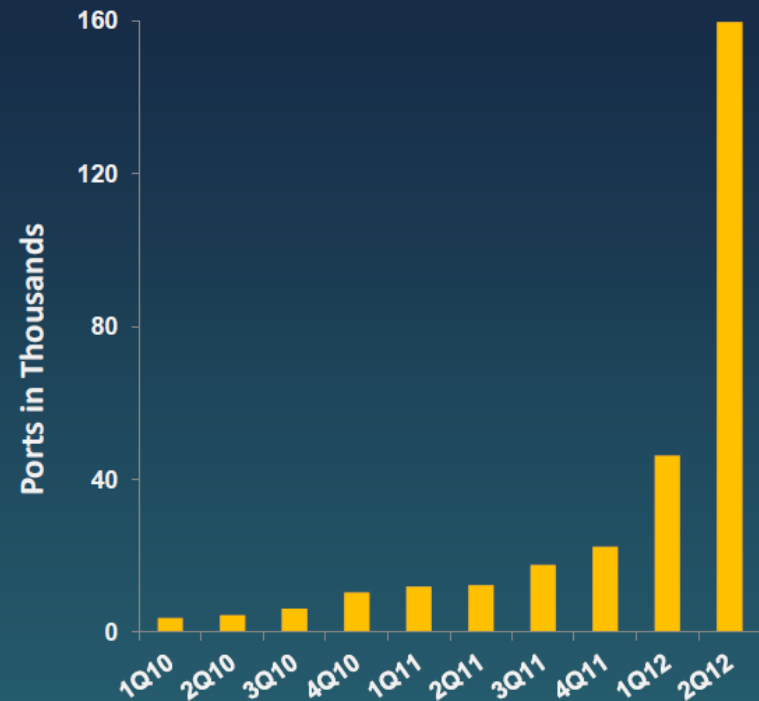
Media Mix

- Our prior views of Server NIC ports focused on port speed.
- What about media type?
- Thanks to Crehan Research for the following two slides

Server-class Adapter & LOM: 10GBASE-T

- 1Q12: ~50K ports (3% of total 10GbE ports)
- 2Q12: ~160K ports (9% of total 10GbE ports)
- 3.5X Q/Q increase
- 13X Y/Y increase
- First full quarter of Romley/
Sandy Bridge brings whole
new level of adoption and
trajectory for 10GBASE-T

Server-class Adapter & LOM
10GBASE-T Shipments



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Server-class Adapter & LOM: 10GBASE-T

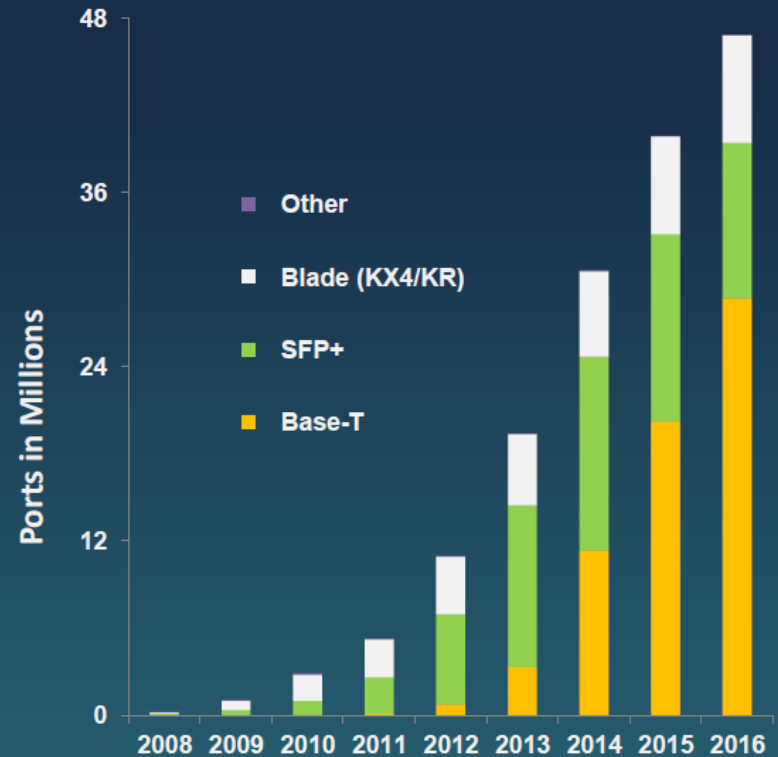
- 1Q12: ~50K ports (3% of total)
- 2012: 750K ports (7% of total)
- 2015: 20M ports (50% of total)

- Complete 10GBASE-T product offerings
 - Stand-up Adapter Cards
 - Modular LOMs/Daughter Cards
 - ~20% price premium over SFP+
 - Chip-down LOMs

- Numerous potential high-volume Switch offerings in 2012

- Sizeable datacenter Cat 6 cabling deployments

Server-class Adapter & LOM 10GbE Port Shipments

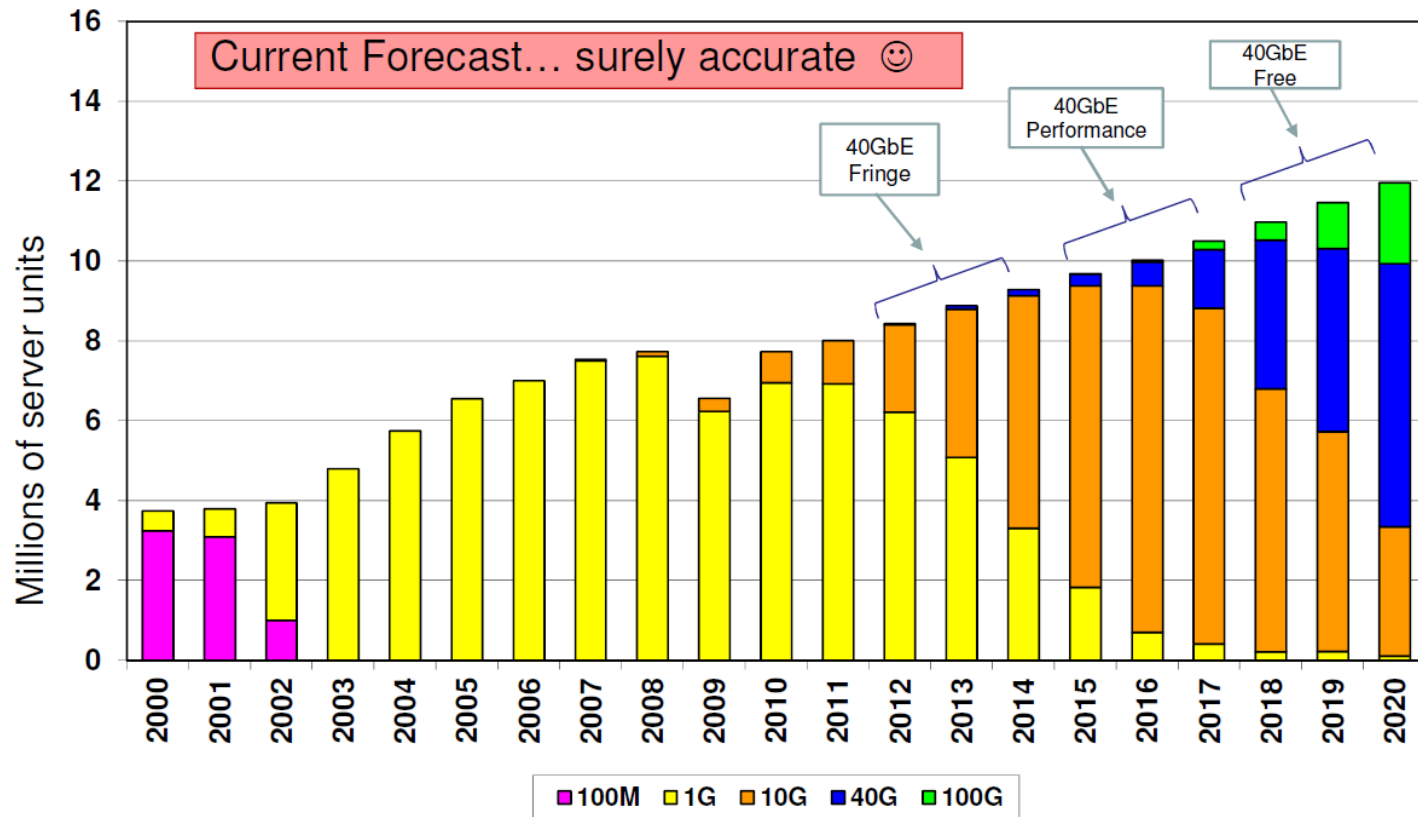


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From the Next Generation BASE-T CFI

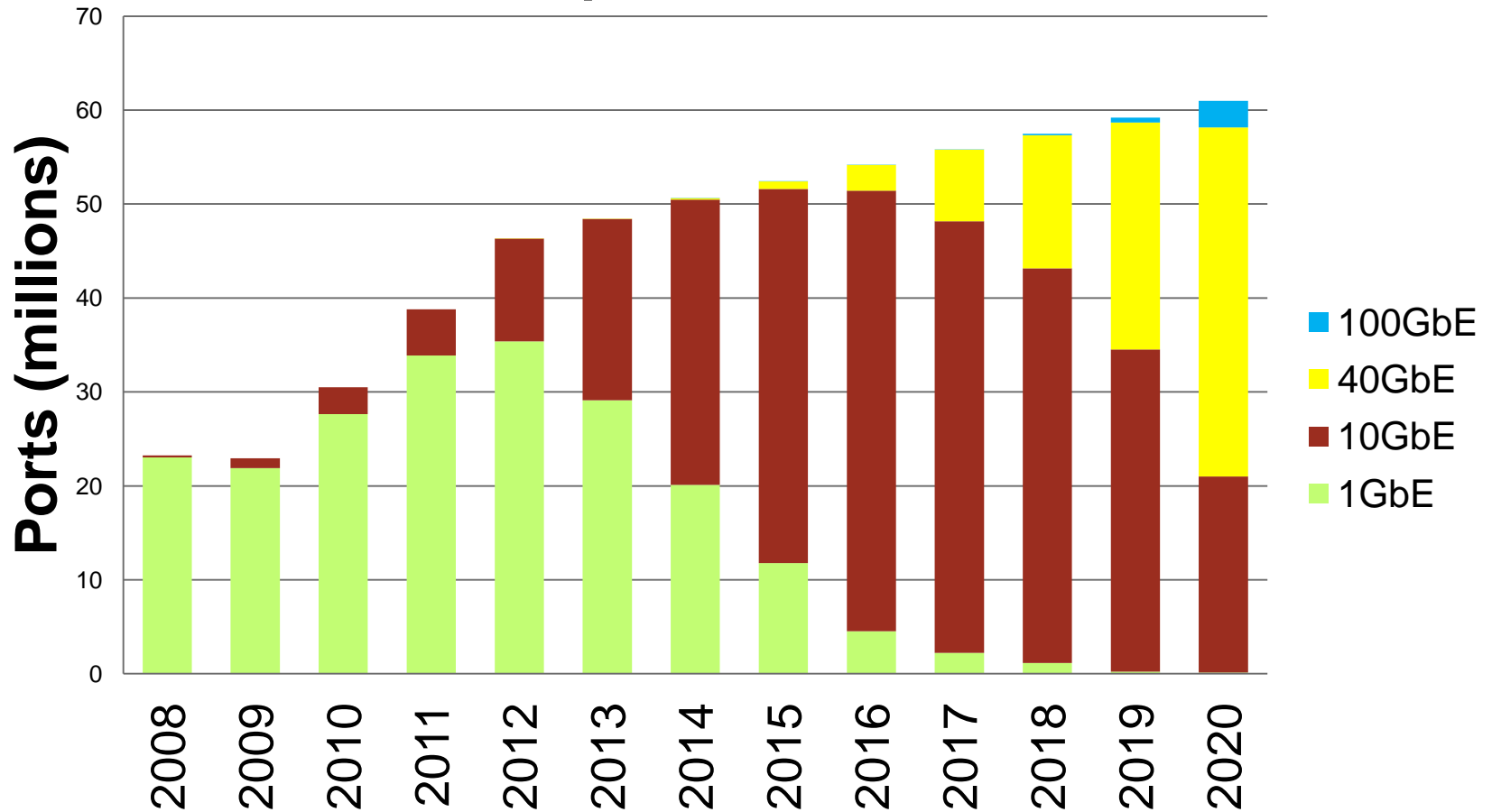
x86 Servers by Ethernet Connection Speed (2012 Forecast)

Based on IDC, Dell Oro, Crehan Research and Intel data from 2H'11 – 1Q'12



Add Some History and Map it to Port Volume

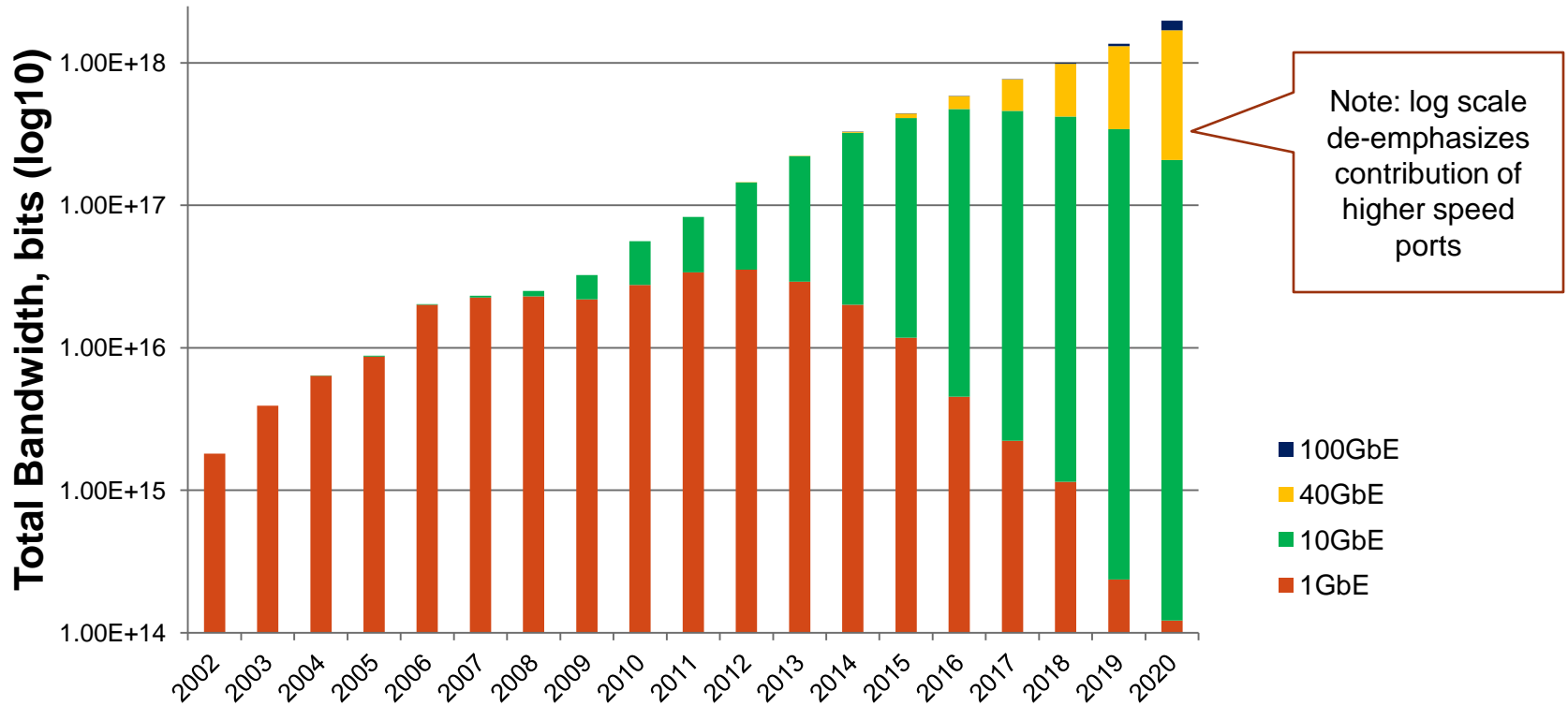
Server Class Adapter & LOM Ethernet Ports



Source data: Crehan Research, 2012

Server Ethernet Bandwidth Capability

Aggregate port count * port speed



Exponential trend continues.
BW doubles every ~2years

Source: IDC, Dell Oro, Crehan Research.
Reporting methods have changes over the years

Summary Observations

- Exponential growth trend of Server port bandwidth capability continues
- 10GBASE-T hit an inflection point in 2012
 - Forecast to meet SFP+ volume ~2015
- 40GbE NICs shipping now
 - Forecast for 5% of Server ports in 2016
 - Mostly QSFP+
 - Forecasters not expecting >10Gb/s BASE-T