

Why 1 is sometimes more than 4

The merit of 100G LR1 vs LR4

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Topics

1. What do 100G LR4 and LR1 actually stand for?
2. Why is now the right moment to introduce 100G LR1?
3. Introducing 100G LR1

What do 4 and 1 actually stand for?

Transceiver naming convention (simplified)

100G LR 4

L - Long ~1300 nm wavelength
S - Short 850 nm wavelength
E - Extra long ~1550 nm wavelength
R - large block code 64b/66b.

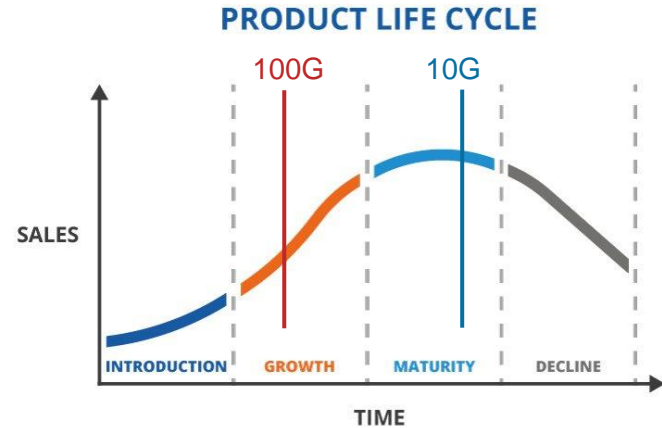
indicates the number of lanes used per link

4 lanes -> 4 optical components
1 lane -> 1 optical component

Why is now the right moment to introduce 100G LR1?

100G is the new 10G

- 100G grows much faster than 10G (tier 1 markets)
- Driven primarily by new 100G customers



Customer Statement

“100G is the de facto standard interconnect method for us going forward for the foreseeable future....”

Is it just us? No! The industry is switching to 100G LR1

10G/100G

- 10G on peering will be off less interest going forward and will not be offered anymore other than on an exception-basis. In our 400G edge-platform a 10G port means sacrificing 390G to 360G of potential capacity on the port (40G Breakout-optics on 400G). We must leave 10G land
- 100G continues to be the de-facto standard interconnect-method for us going forward for the foreseeable future. Happy to hear and take note if anyone would be interested in **100G-LR1** instead of **100G-LR4** to optimize for cost and simplification in 400G native networks.

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Sebastian Neuner @neunerseb · Jun 30

The first few links with **100G-LR** (instead of LR4) are running in the new @belwue DC :)



1



19



837





High-capacity, high-density, power-, and cost-efficiency are critical for the data center infrastructure of peers, carriers, transit providers, and IXPs.

Capacity of up to 36 x **400Gb**



1 x 100G LR4 or
2 x 100G LR4

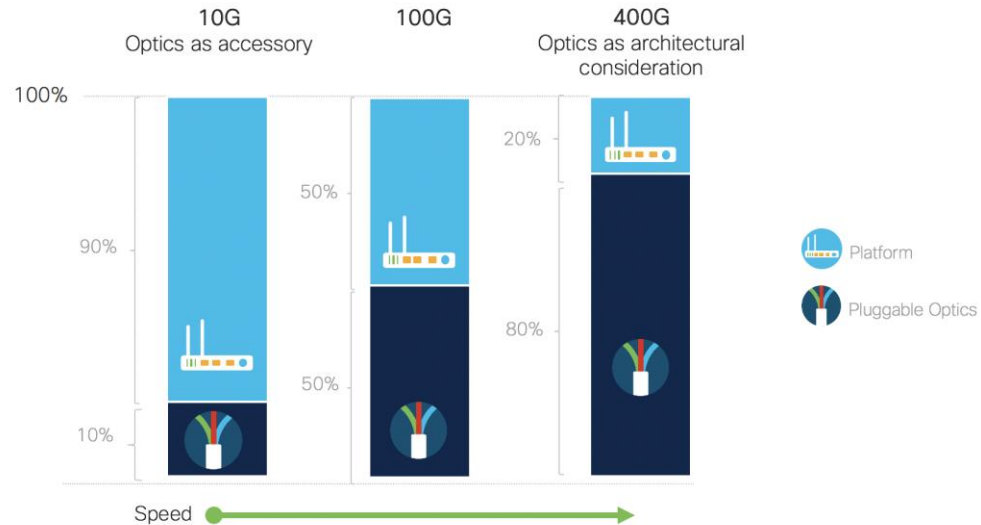


4 x 100G LR1

100G LR1 allows to consume the total capacity of modern routers.

100G LR1: Lower initial investment and TCO

- Reduce (optical) complexity (1 instead of 4 optical components)
- Lower MTBF & MTBR
- Backwards compatible and interoperable (switch/router, cabling, etc.)
- LR1 is about 20% cheaper, already
- Market adoption will increase (additional price degradation)



Introducing 100G LR1

Customer communication is the key to success

- Customer survey: How ready are customers?
 - ✓ 91% of customers are ready to use 100G LR1
 - ✓ 82% of customers would consider switching existing interconnections links from 100G LR4 to LR1
- Various marketing campaigns to reach our customer base to introduce 100G LR1

Joined IXP Initiative

Press Release together with AMS-IX, BCIX, and LINX to promote the adoption of 100G LR1

09.10.2023



AMS-IX @AMS_IX · Jun 20

#Proudmoment! @DECIX, @LINX_Network, #AMSIX & @bcix will be introducing a new generation of optical transceivers, the **100G LR-1** to their platforms, starting in #Frankfurt, #London, #Amsterdam, and #Berlin ams-ix.net/ams/news/next-...



**Next-Generation IX:
The world's leading
Internet Exchange
operators to
introduce new
cutting-edge 100G
LR-1 technology**



3

13

1,689



the same benefits to our peers is just the next logical step," says Andre Gruneberg, CTO at BCIX.

Roll-out of 100G LR1 at DE-CIX

100G LR1 as a product

- Dual operation 100G LR4 & LR1 (existing contracts)
- Single product option: 100G LR1 (new contracts)

Roll-out location by locations

Start in Frankfurt, followed shortly by other markets

- Available in all 37 DE-CIX-enabled data centers
- Launch is September 2023

Other locations (e.g., New York, Madrid, Dallas, ...) will follow shortly after!

QnA