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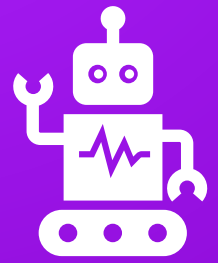
HITS Spring 2022

NAB 22 Review

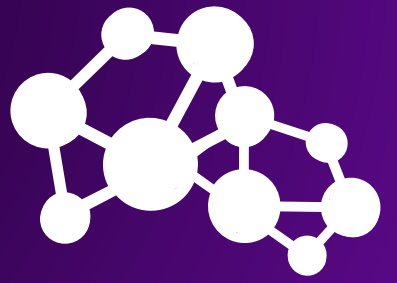
May 19th, 2022

Artificial Intelligence

Machine Learning



Deep Learning



1950 1960 1970 1980 1990 2000 2010 2020 2030 2040

2011 Watson wins Jeopardy

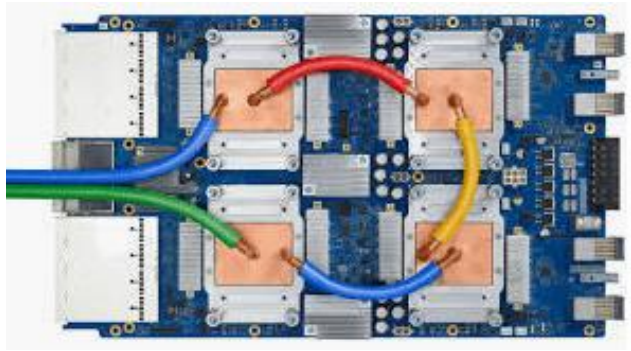
2017 Google Deepmind beats 9th Dan Go champ

2030 Fully Automated Transport?

2040 Artificial General Intelligence?

AI, Machine Learning and Deep Learning Timeline

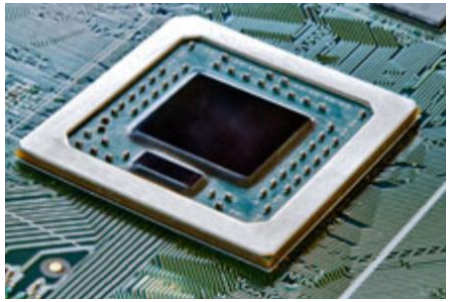
Google TPU

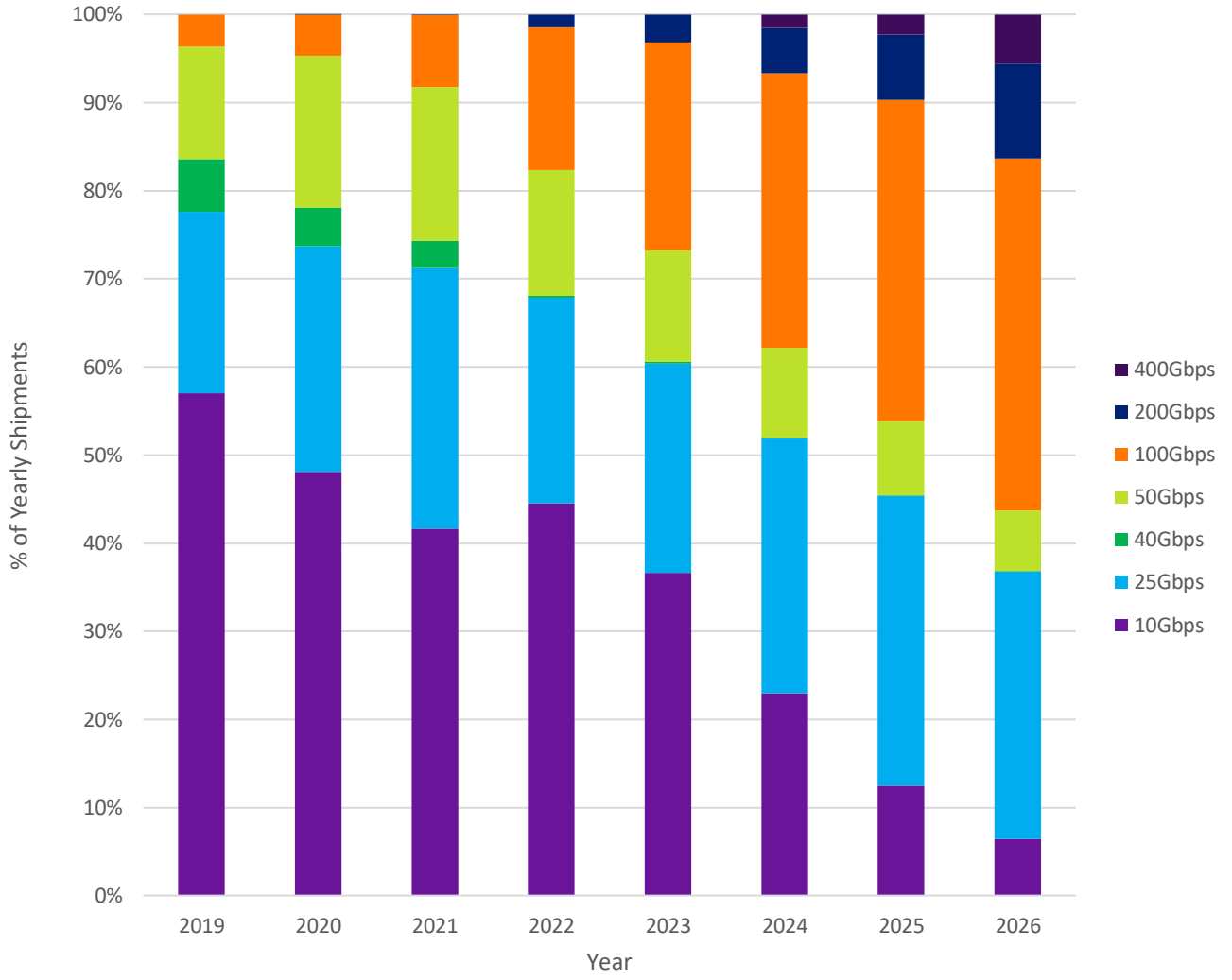


FPGA

CPU

GPU





Servers With Accelerators Deliver Deep Learning

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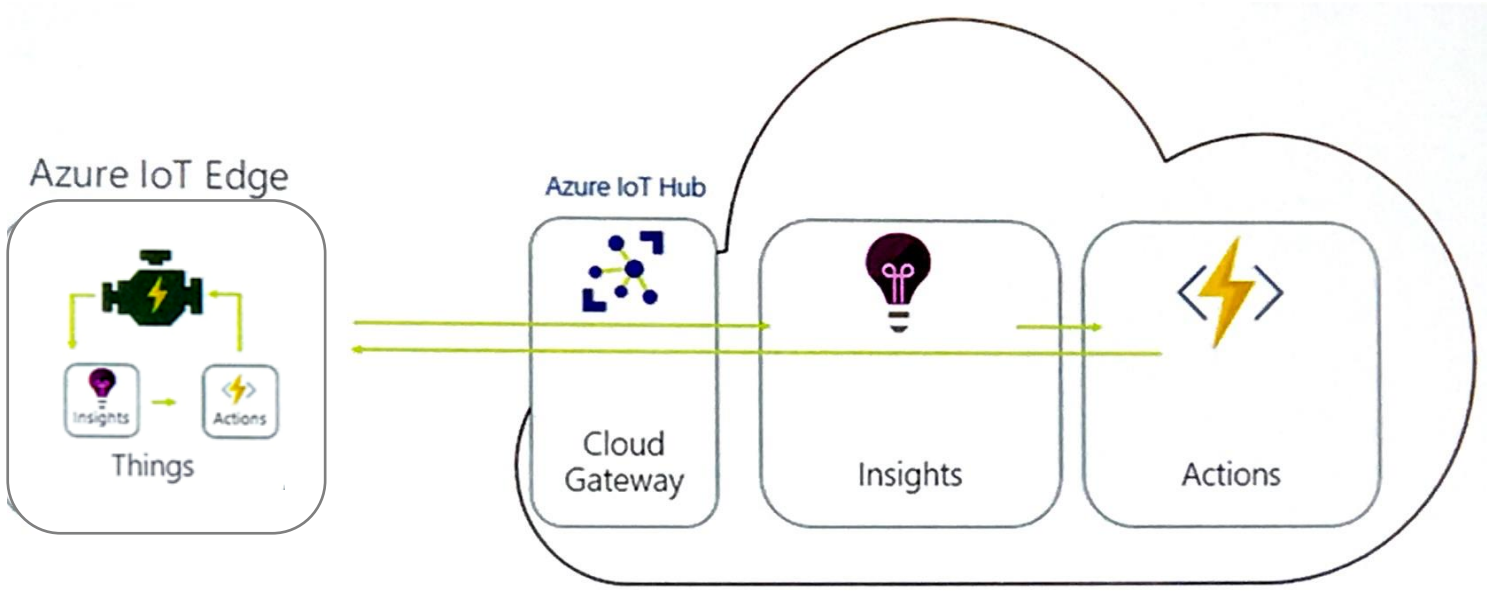
AI – Models From The Core Implemented At The Edge

- Machine Learning at the Edge
- Edge IoT data sets used to train models
- Models deployed to the Edge
- Feedback from Edge AI to Core Deep Learning
- Models evolve and are deployed at the edge
- The Cycle continues



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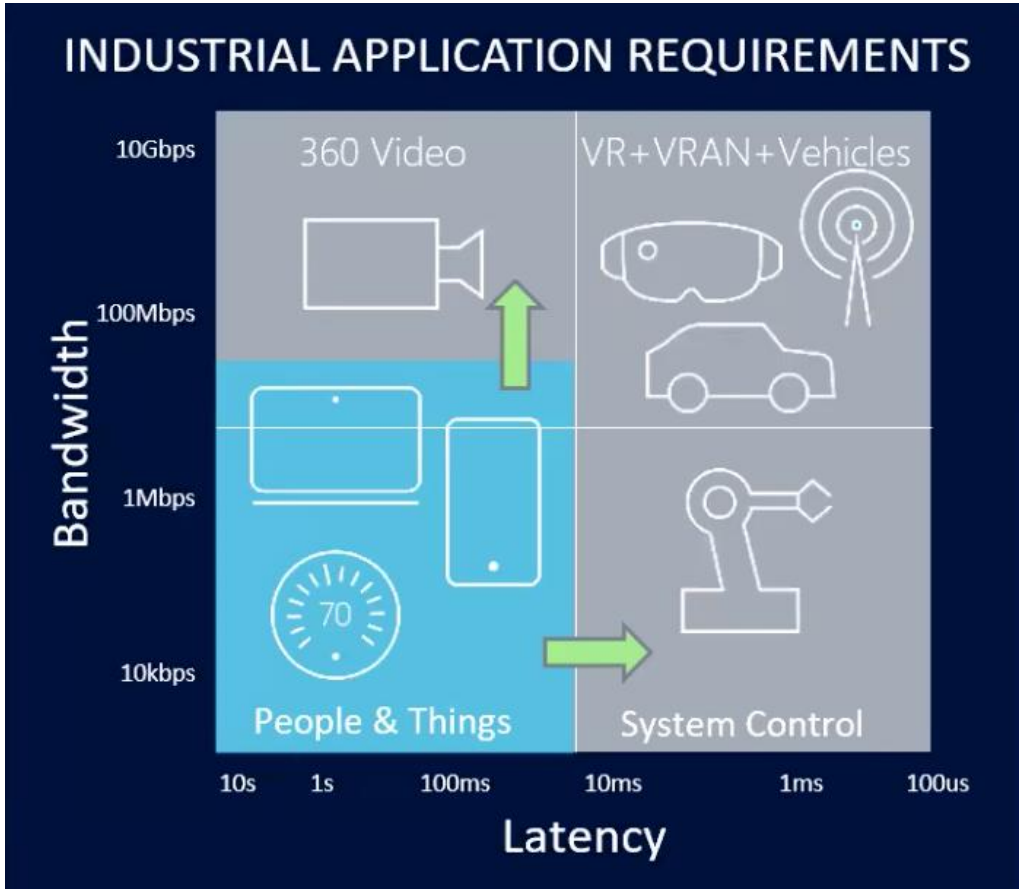
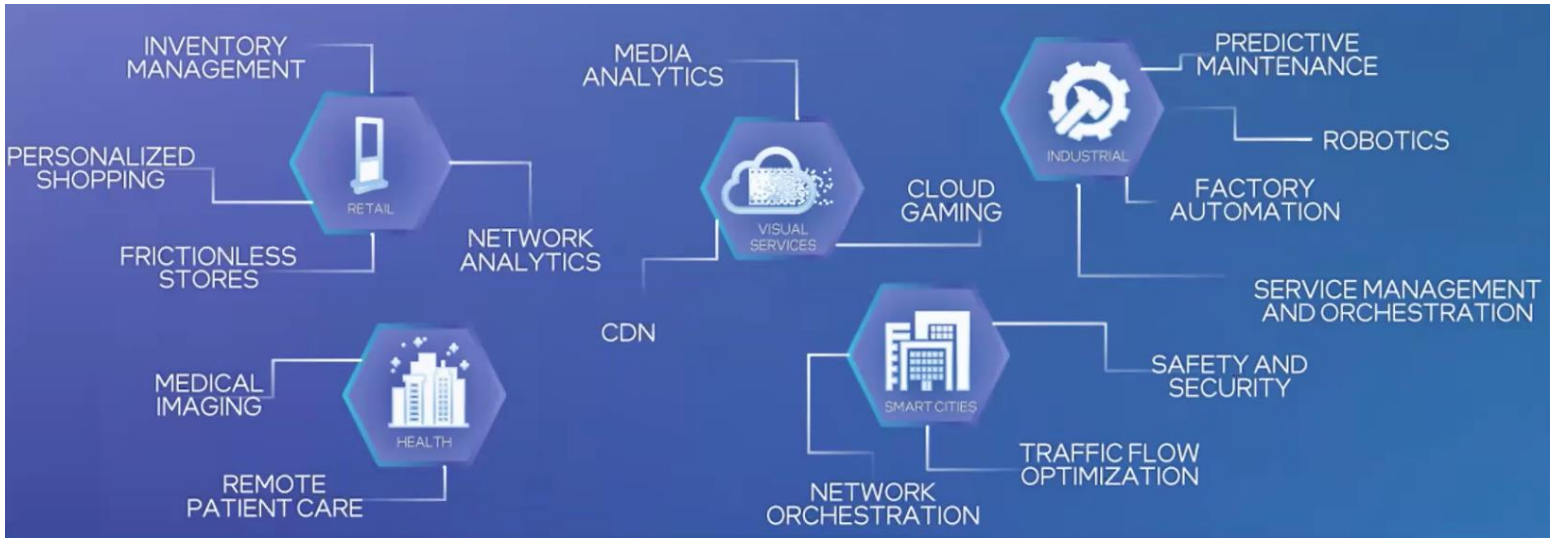
Why move to the edge?

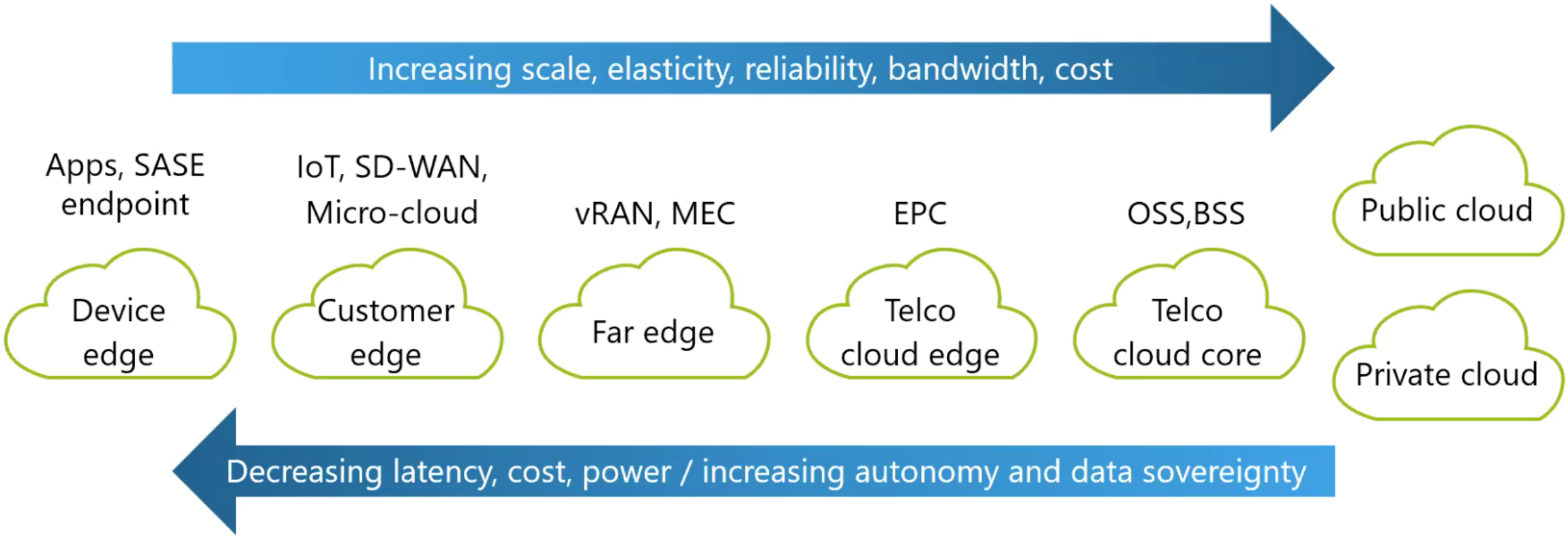
A network to enable application evolution

“Because no one can beat the speed of light”[1]





1 – Albert Rafel, BT



A Telco would view the edge from their current network perspective

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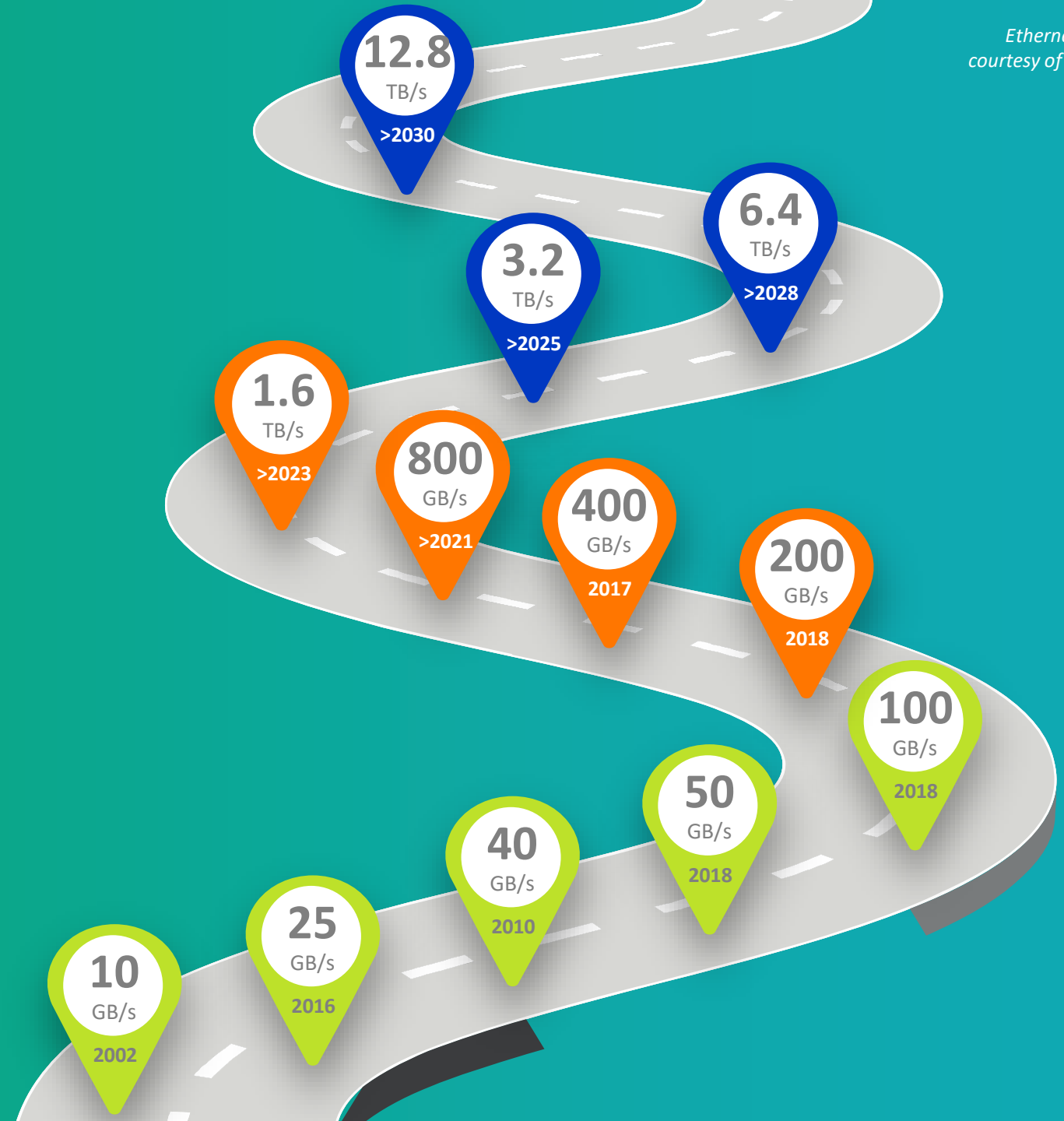
Capacity Crunch Drives Network Speed Investment



Ethernet Roadmap 2021
courtesy of Ethernet Alliance

Ethernet Speed

Speed in Development

Possible Future Speed

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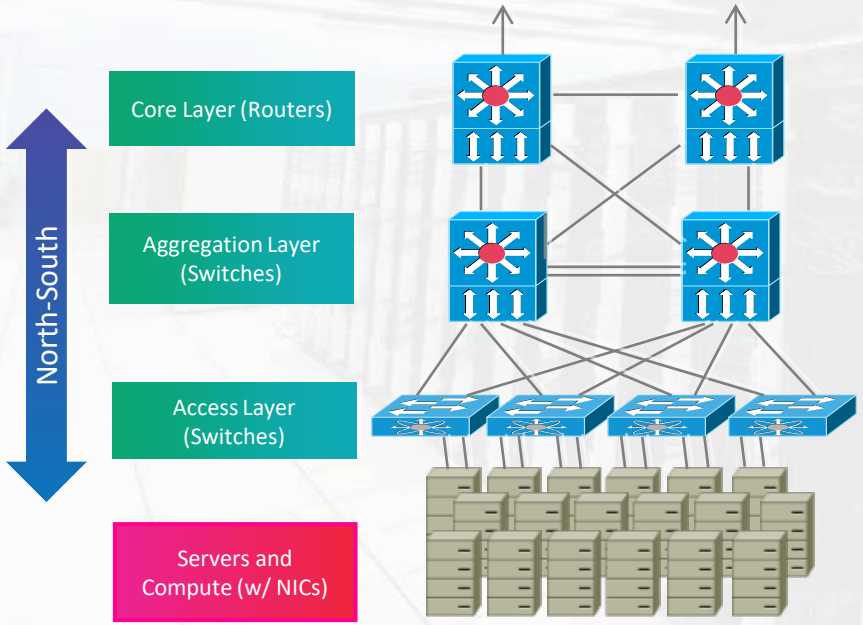
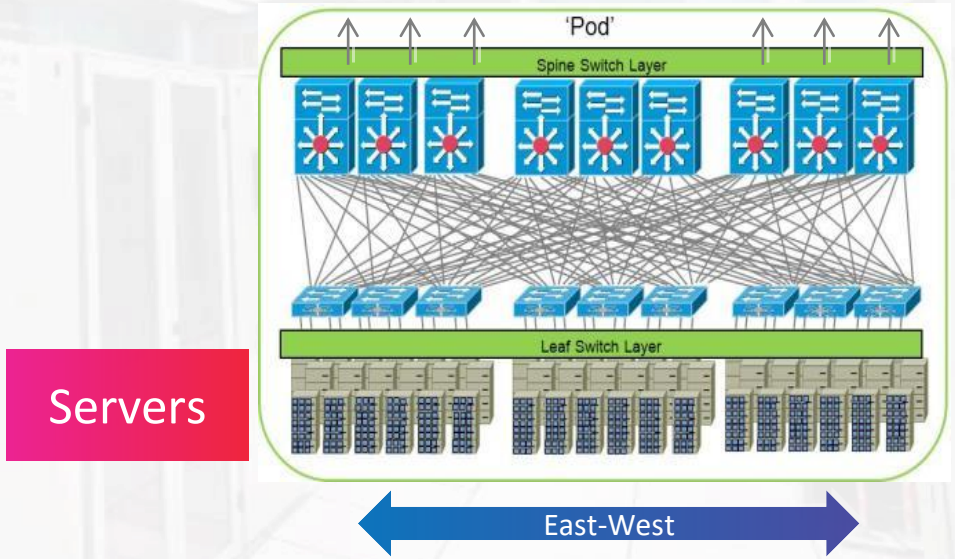
Cloud compute is different

- Change/Risk to upgrade strategies
- Higher speed support when?
- Can I support new network topologies?

Legacy Network



Leaf-Spine Network



DC network topologies continue to evolve

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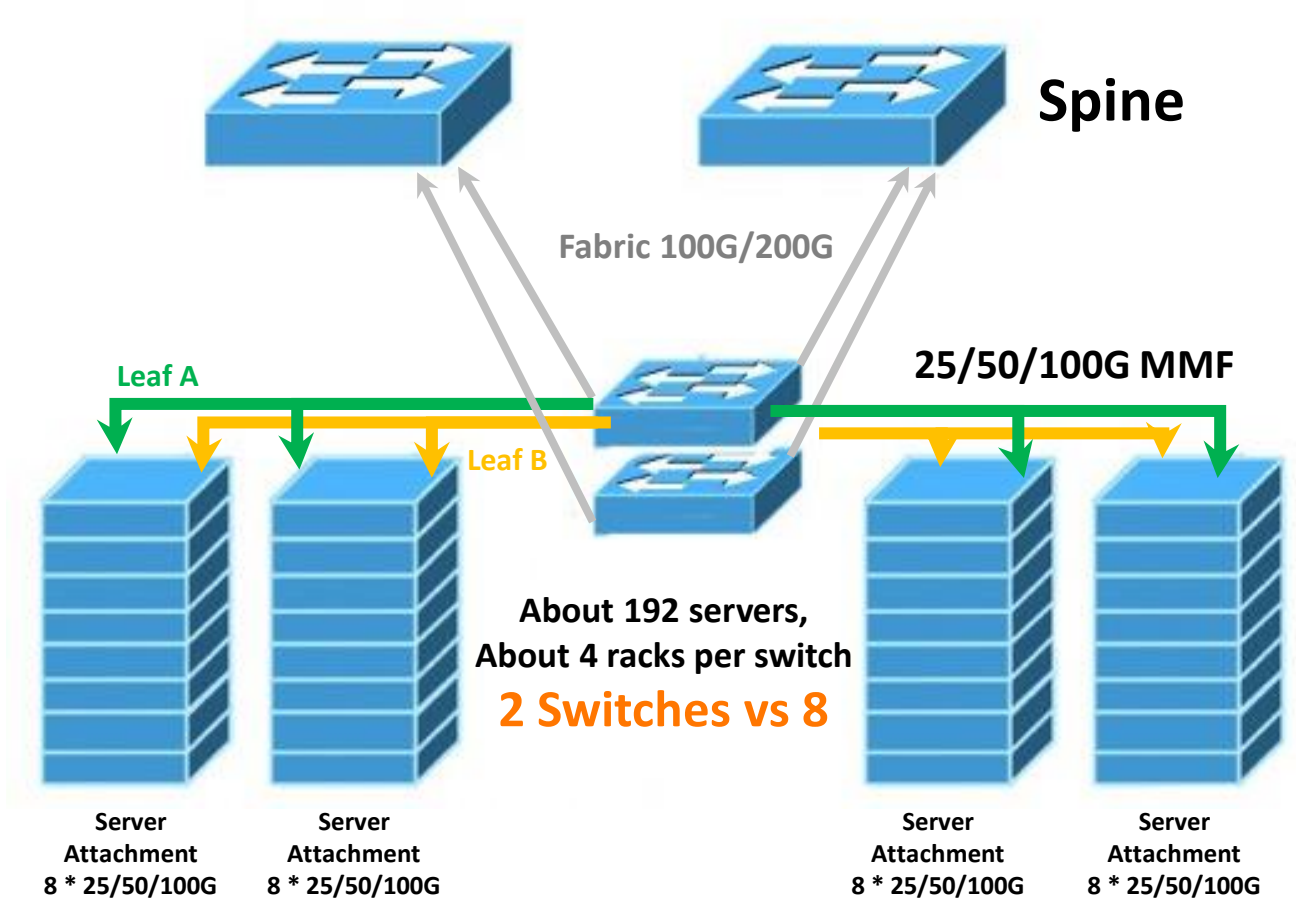
Efficient network architectures



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