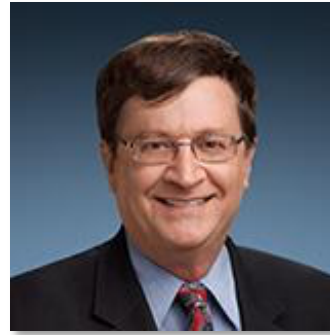


# Your Data Center: Who, What, Where, When, and Why?

Hosted by J Metz, Cisco  
[@drjmetz](#)

# Today's Panelists



- **Craig Carlson**, Technologist, Office of the CTO, QLogic, Gen 6 Fibre Channel, NVMe over Fibre Channel
- **Dave Minturn**, Principal Engineer, Network SSD Storage Architect, Intel, NVMe standards development
- **Rob Peglar**, Senior VP and CTO, Symbolic IO
- **Greg Schulz**, Founder, StorageIO, Third party analyst perspective

# NVMe and Fibre Channel

Craig Carlson  
Technologist  
QLogic, Inc.

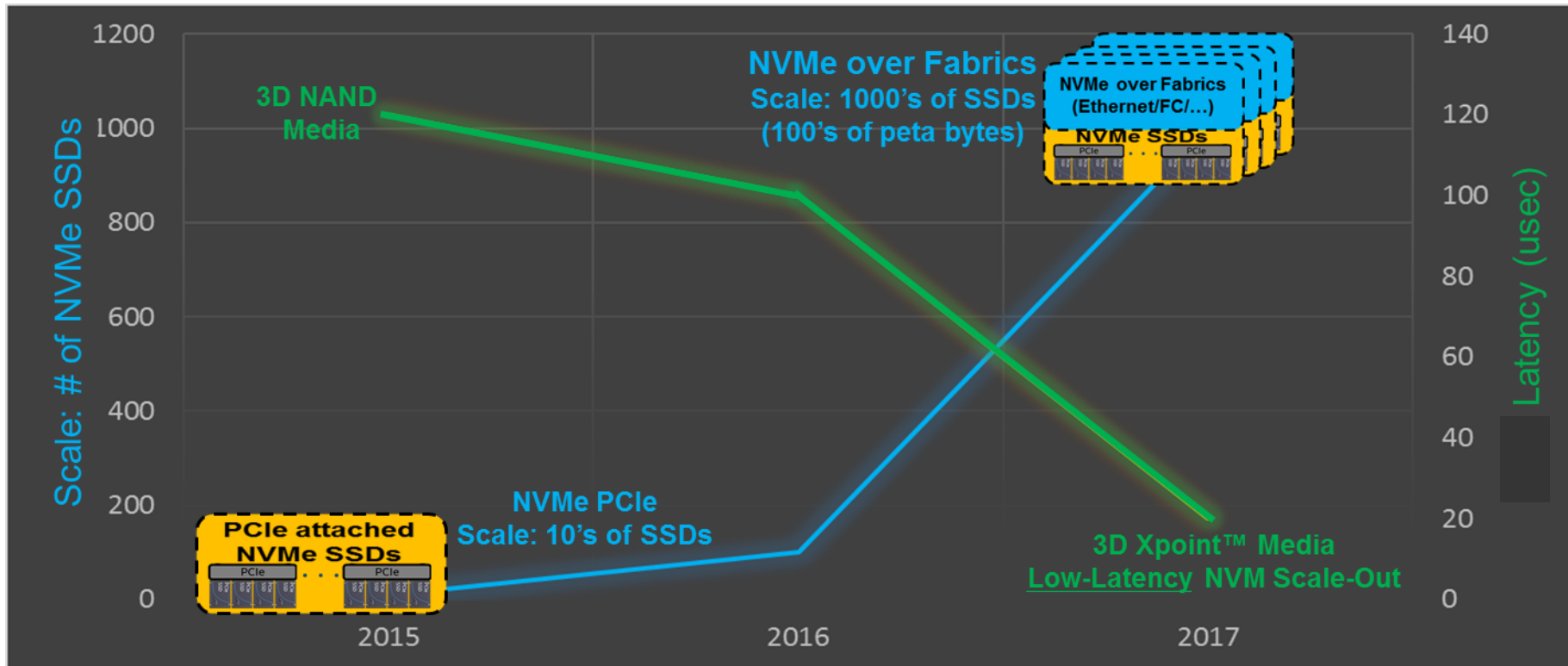
# GEN6 and FC-NVMe

- GEN 6 Fibre Channel
  - 32Gb/s serial, 128Gb/s multi-lane
  - Forward Error Correction (FEC)
  - Enhanced virtualization
- FC-NVMe
  - Mapping of NVMe over Fibre Channel
  - GEN 6 FC provides the perfect platform for NVMe

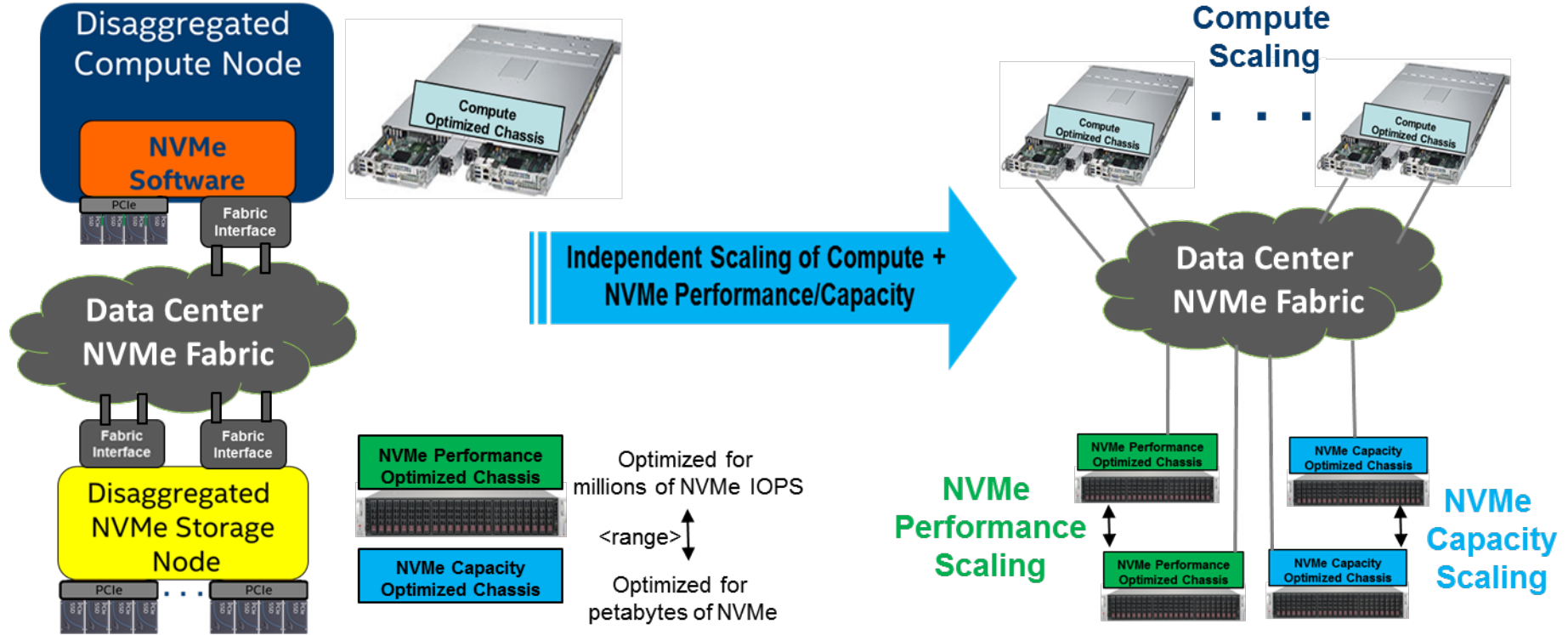
# NVMe in the Datacenter

Dave Minturn  
Principal Engineer  
Intel Corp.

# Evolution of NVMe in Data Center Storage



# NVMe Data Center Storage Taxonomy



# NVMe and Performance

Rob Peglar  
SVP and CTO  
Symbolic IO  
[@peglarr](#)



# The Present: 2D Hybrid Memory Server Architectures



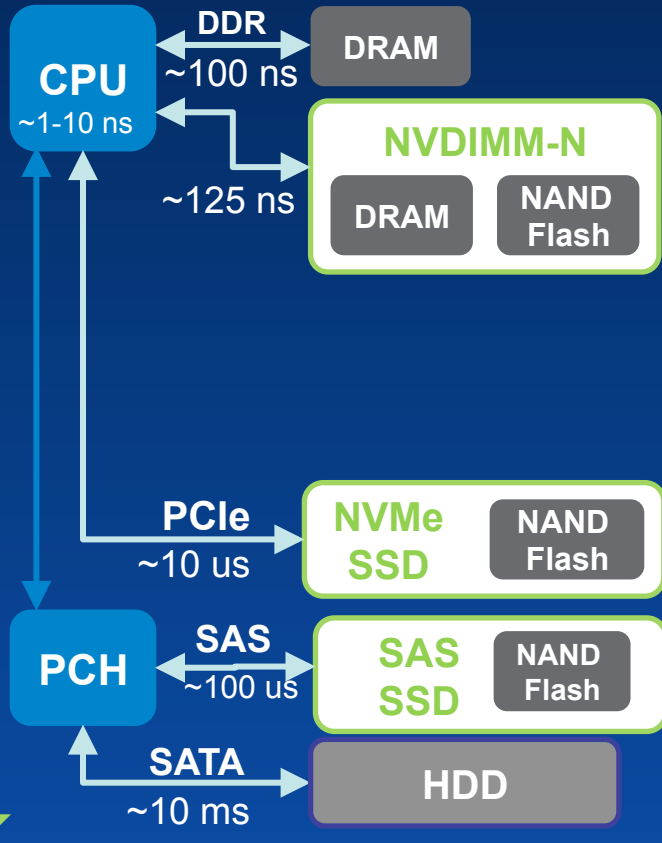
Lower  
R/W Latency

Higher  
Bandwidth

Higher  
Endurance

$\Delta = 80X$

Lower  
cost  
per bit



- System performance increased as the speed of both the interface and the memory accesses improved
- NAND Flash considerably improved the nonvolatile response time
- SAS and PCIe made further optimizations to the storage interface
- NVDIMM provides battery- or ultra-capacitor-backed DRAM, operating at near-DRAM speeds and retains data when power is removed
- NVMe transport provides efficient use of PCI-Express bus (queues, etc.)

It's not a question of if...

Greg Schultz  
Founder  
StorageIO  
**@storageIO**

# With NVMe question is not if, rather...

- When, Where, Why, How and using What
  - In servers & storage, plus accessing storage systems
  - More IOP/TPS/Get/Put/Etc ***and*** improve CPU usage
- Start planning and deploying NVMe today
  - Leverage your skills, knowledge with SAS & SANs
  - Visit [www.thenvmeplace](http://www.thenvmeplace) & [www.thesdplace.com](http://www.thesdplace.com)



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