SNIA DSI '16
DATA STORAGE INNOVATION
CONFERENCE

Innovation in Storage Products,
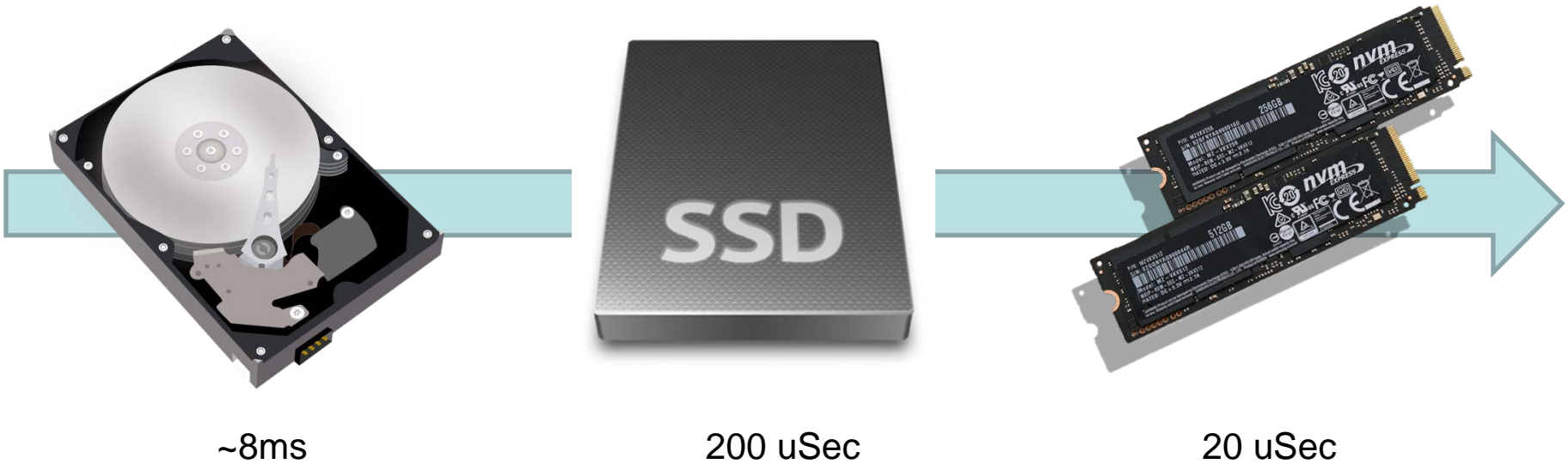Services, and Solutions

June 13-15, 2016 | Marriott San Mateo | San Mateo, CA

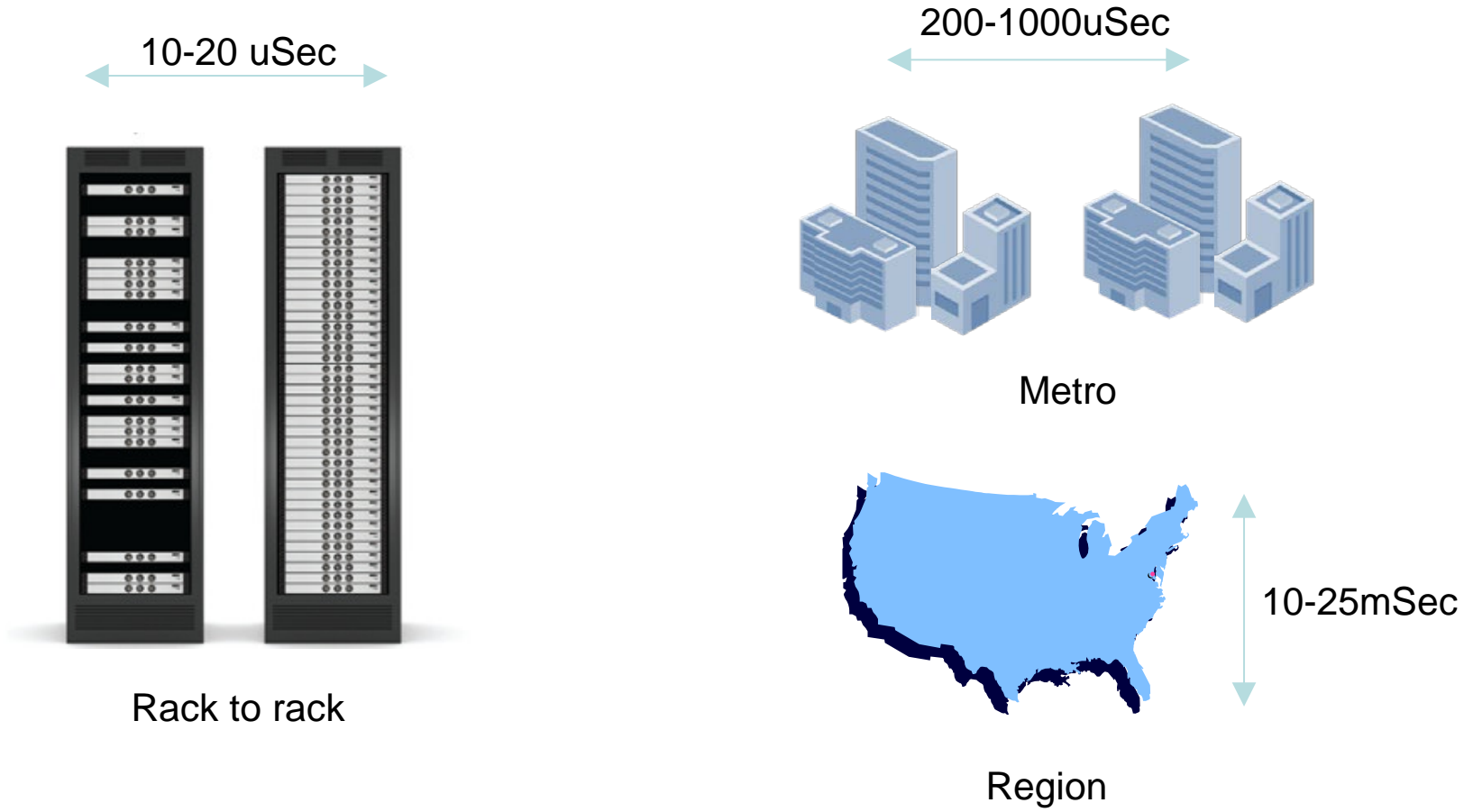# Dealing With The "Other" Latency: What The Cloud Portends For IT Infrastructure

Laz Vekiarides
ClearSky Data
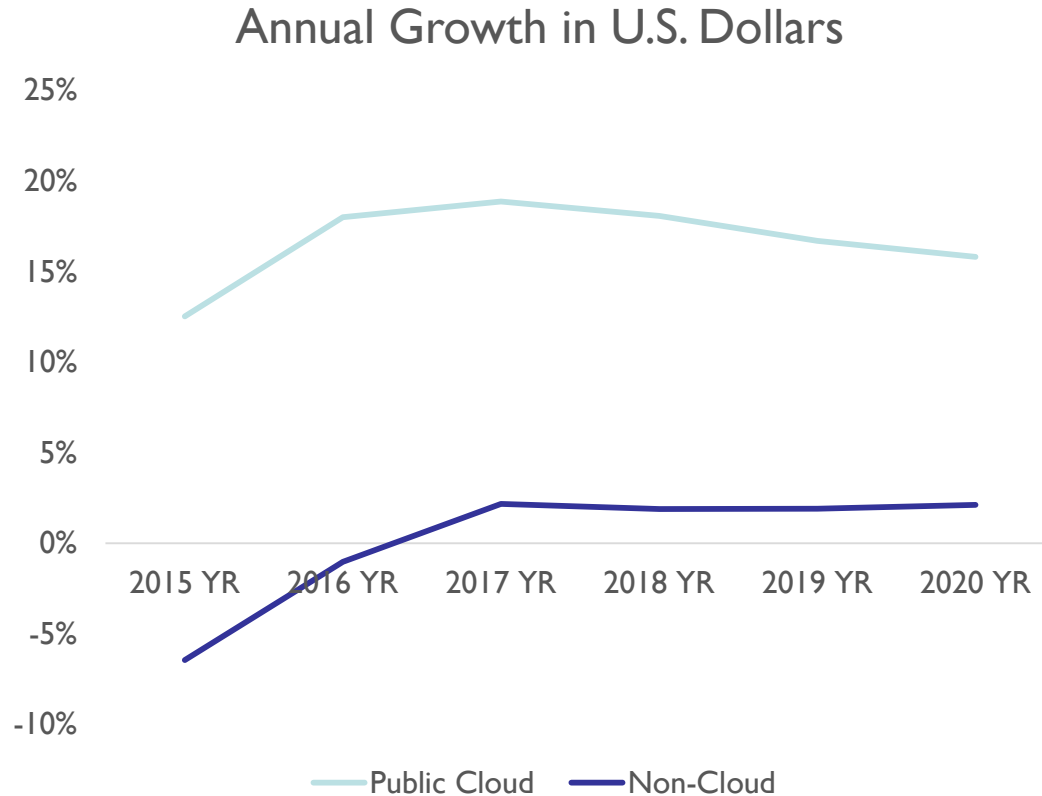
What Is Tolerable Latency?

| ~8ms | 200 uSec | 20 uSec |

- ☐ Expected latencies are trending down
- ☐ Applications still recommend 10ms or less as an average

SNIA | DSI '16
DATA STORAGE INNOVATION
CONFERENCE

The New Bottleneck is Distance

10-20 uSec

200-1000uSec

Metro

10-25mSec

Rack to rack

Region

SNIA DSI '16
DATA STORAGE INNOVATION
CONFERENCE

Most Growth is in the Public Cloud

Annual Growth in U.S. Dollars

Public Cloud — Non-Cloud

4

Yet Public Clouds Are Most Distant

- ❑ Cloud locations driven by real estate factors
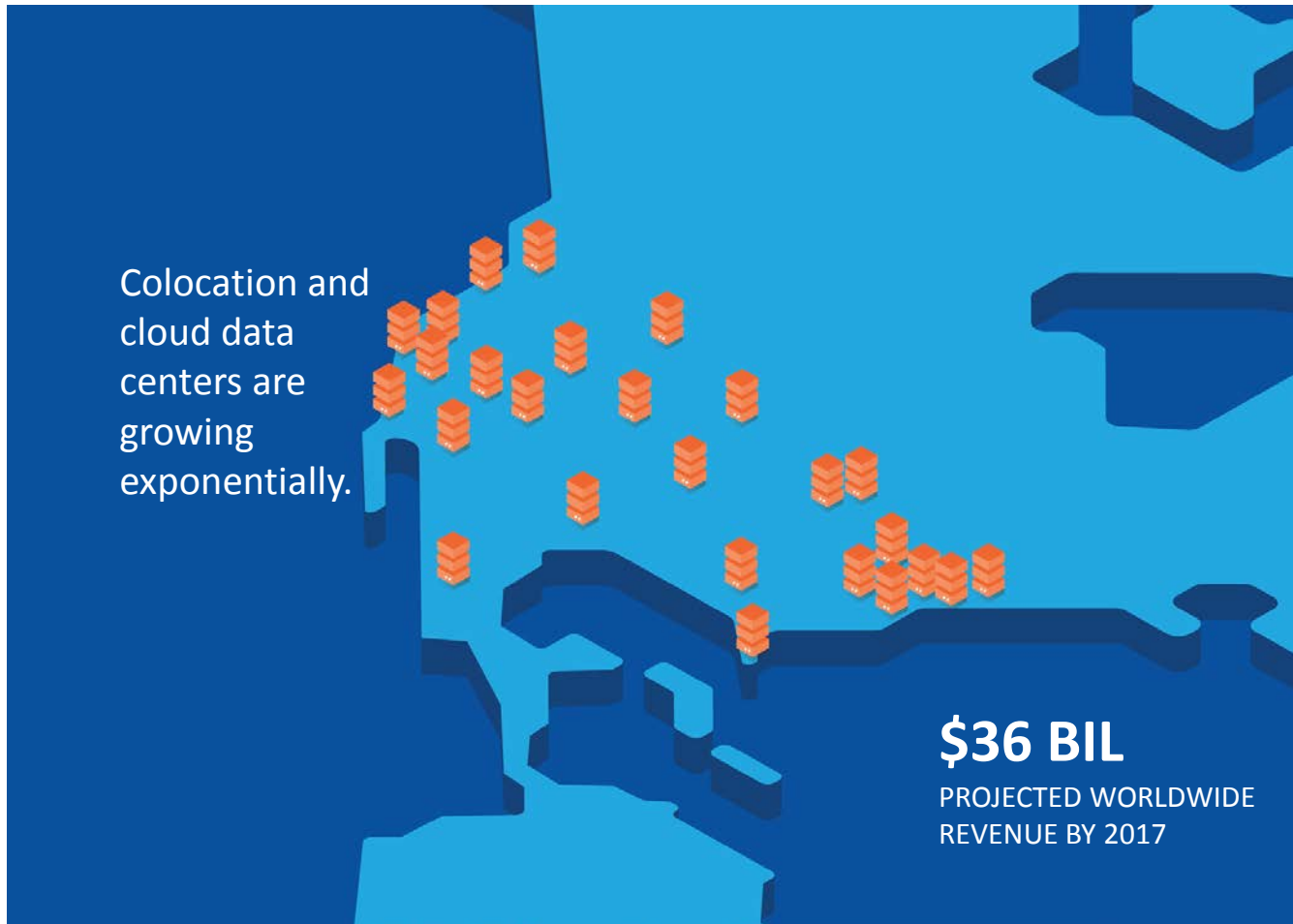 - ❑ Power costs
  - ❑ Cooling
  - ❑ Land value

5

A New Enterprise Architecture Is Emerging
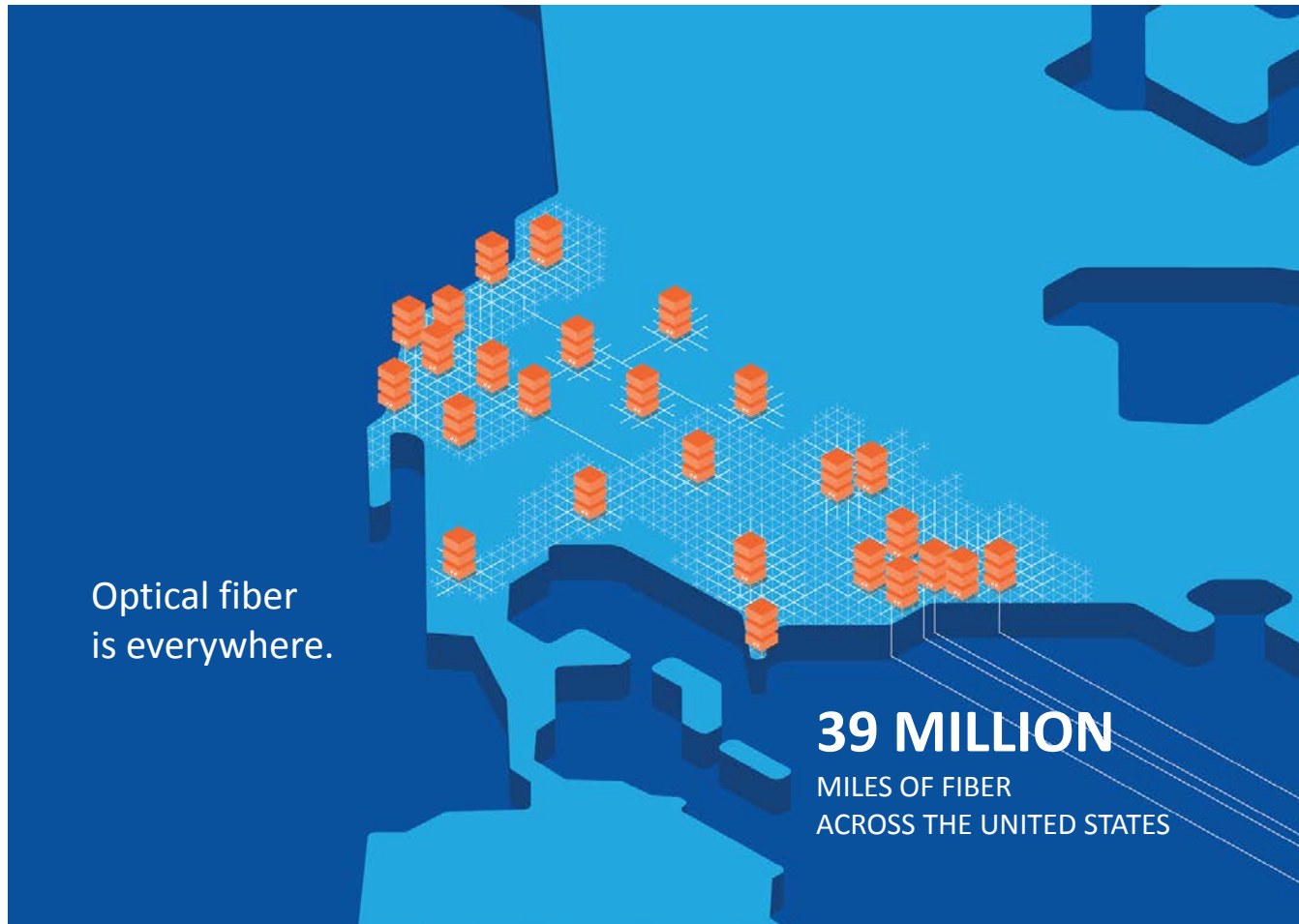
- Low latency storage is nice but…
    - Most data will be living across a network
    - At least some compute and storage will be in a public cloud
    - Everyone is NOT moving to northern Virginia to be close to their data
- New systems will need to be networked to optimize for lowest latency
- A new set of components must be used

Colocation

Colocation and cloud data centers are growing exponentially.

$36 BIL
PROJECTED WORLDWIDE REVENUE BY 2017

SNIA DSI '16 DATA STORAGE INNOVATION CONFERENCE

Connectivity

Optical fiber is everywhere.

39 MILLION
MILES OF FIBER
ACROSS THE UNITED STATES

Metro-Clouds

Data centers are
becoming cloud
hubs.

SNIA | DSI '16
DATA STORAGE INNOVATION
CONFERENCE

The Data is the Problem.

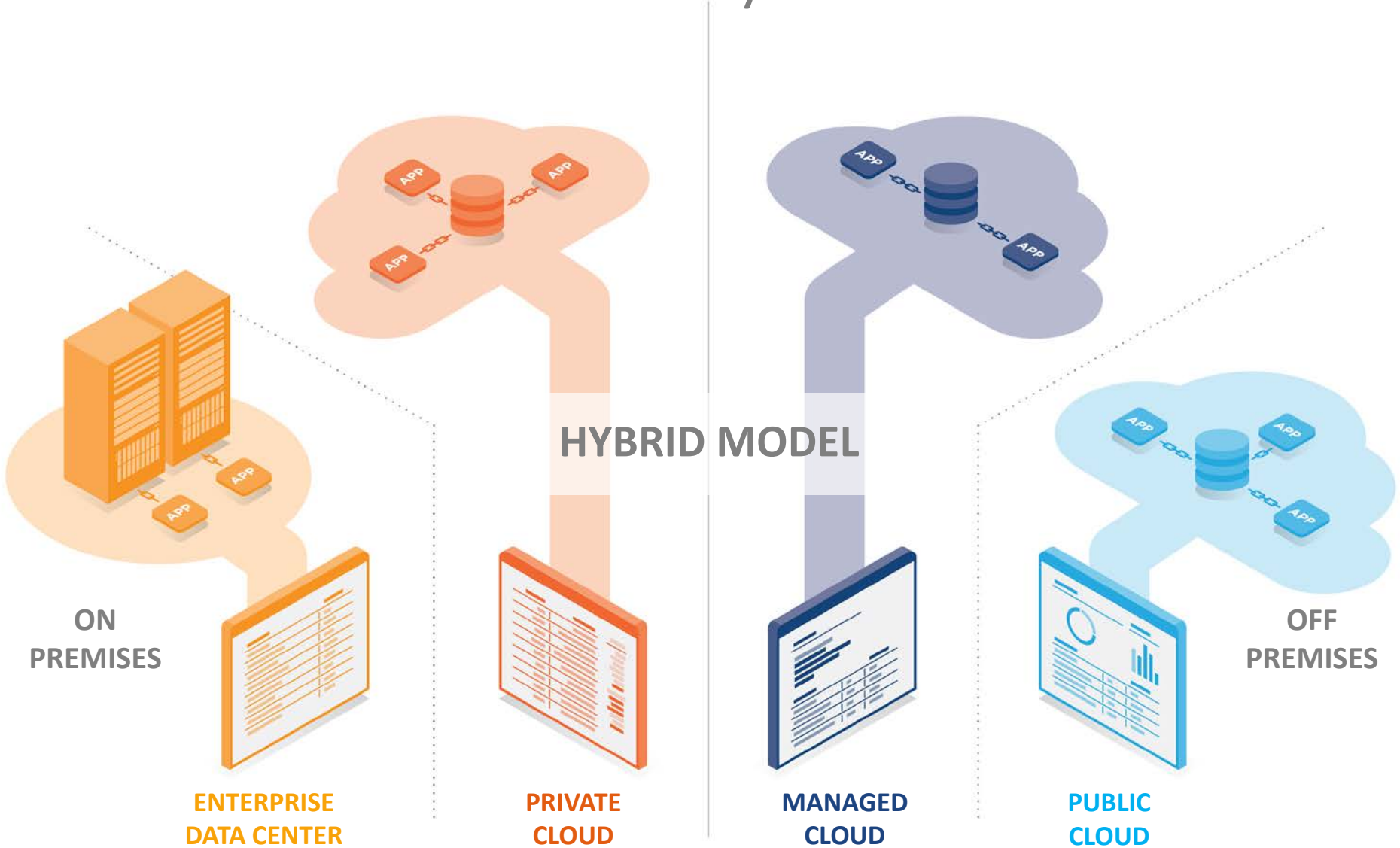**COMPANES DELIVER AN AVERAGE OF**

ONLY 18%

OF THEIR WORKLOADS FROM THE CLOUD TODAY.

The New Architecture is Hybridized.

HYBRID MODEL

ON PREMISES

OFF PREMISES

ENTERPRISE DATA CENTER

PRIVATE CLOUD

MANAGED CLOUD

PUBLIC CLOUD

SNIA DSI '16 DATA STORAGE INNOVATION CONFERENCE

Emerging Connectivity-Focused Model

Metro Ethernet Access Network

Dedicated Cloud Networks

Leverage colo connectivity marketplace for:
- Low cost, low latency user bandwidth
- Dedicated single-hop connections to clouds
- Optimized cost
- Optimized latency

The ClearSky Network at a Glance

METRO-BASED FULLY MANAGED SERVICE

Primary

Recovery

Backup

COMPLETE LIFECYCLE MANAGEMENT

SLA-GUARANTEED FOR ENTERPRISE WORKLOADS

13

Solving the Data Challenge
The ClearSky Global Storage Network

PRIVATE CLOUD

MANAGED CLOUD

ENTERPRISE DATA CENTER

PUBLIC CLOUD

ClearSky

HIGH PERFORMANCE   **LOW LATENCY**   **ELASTIC**   **SECURE**   **FULLY MANAGED**
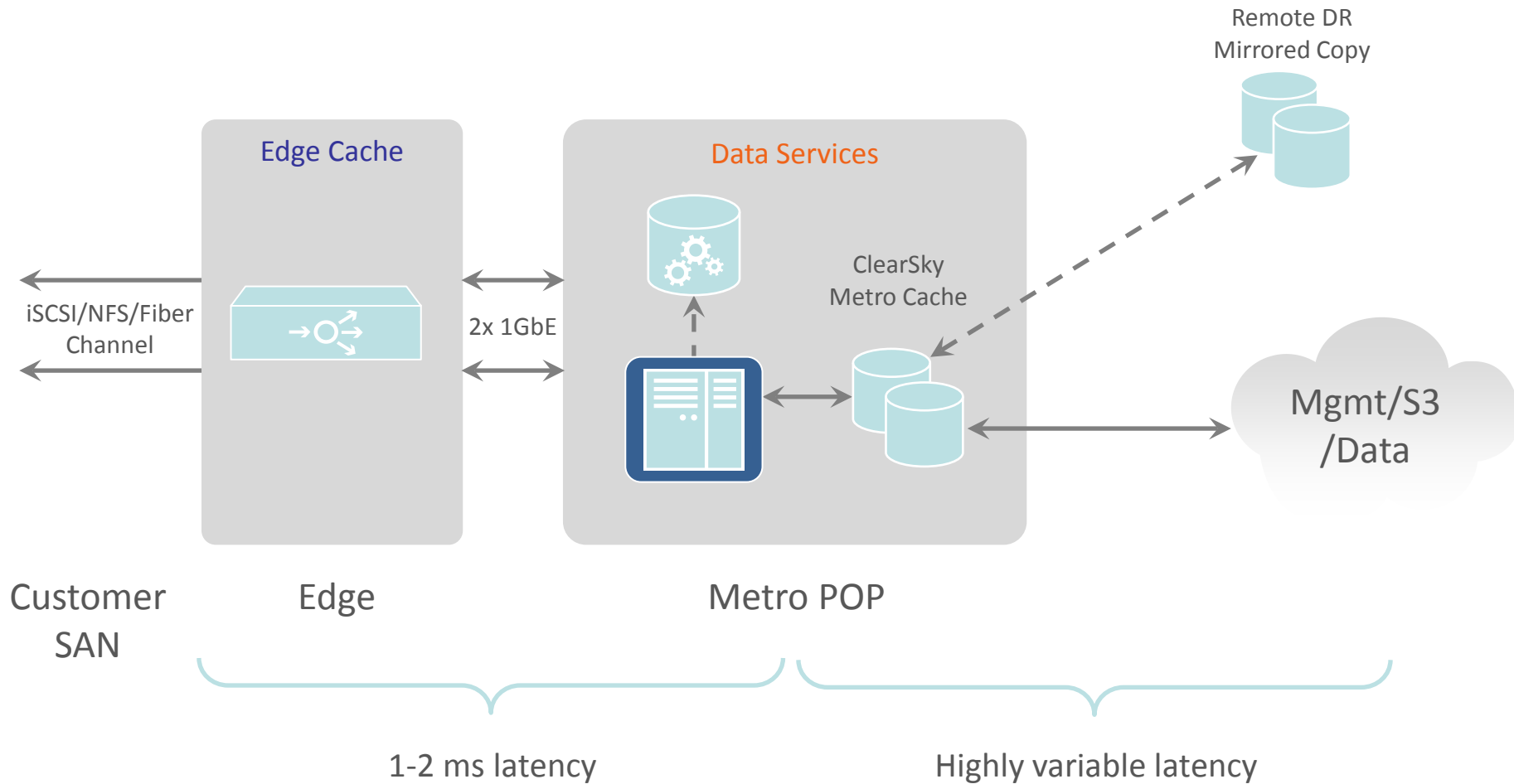
A Dedicated Storage Network is Essential.

ACCESS all your data,
ANYWHERE it resides,
ANYTIME you need it.

The ClearSky Data Architecture

Customer SAN — Edge — Edge Cache — 2x 1GbE — Data Services — Metro POP — ClearSky Metro Cache — Remote DR Mirrored Copy — Mgmt/S3/Data — iSCSI/NFS/Fiber Channel — 1-2 ms latency — Highly variable latency

Many Other Possible Services

- Private CDN's
- On-Demand high speed network services
- Disaster recovery services
- Privately connected cloud compute
- Many more…

Thank You!