Dealing With The “Other” Latency: What The Cloud Portends For IT Infrastructure

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ClearSky Data
What Is Tolerable Latency?

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

~8ms  
200 uSec  
20 uSec
The New Bottleneck is Distance

10-20 uSec

Rack to rack

200-1000uSec

Metro

10-25mSec

Region
Most Growth is in the Public Cloud

Annual Growth in U.S. Dollars

Source: "Gartner Market Databook, 1Q16 Update," March 2016 (G00296771) and "Gartner Cloud Forecast," 1Q16 Update, April 2016
BPaaS = business process as a service; IaaS = infrastructure as a service; PaaS = platform as a service; SaaS = software as a service
Yet Public Clouds Are Most Distant

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

Optical fiber is everywhere.

39 MILLION
MILES OF FIBER
ACROSS THE UNITED STATES
Data centers are becoming cloud hubs.
The Data is the Problem.

Companies deliver an average of only 18% of their workloads from the cloud today.
The New Architecture is Hybridized.

- **On Premises**: Enterprise Data Center
- **Hybrid Model**: Private Cloud, Managed Cloud, Public Cloud
- **Off Premises**
Emerging Connectivity-Focused Model

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
- SLA-guaranteed for enterprise workloads
- Complete lifecycle management
Solving the Data Challenge
The ClearSky Global Storage Network
A Dedicated Storage Network is Essential.

ACCESS all your data, ANYWHERE it resides, ANYTIME you need it.
The ClearSky Data Architecture

- **Edge Cache**
  - iSCSI/NFS/Fiber Channel
  - 2x 1GbE

- **Data Services**
  - ClearSky Metro Cache

- **Metro POP**
  - Remote DR Mirrored Copy
  - Mgmt/S3/Data

- **Customer SAN**
  - 1-2 ms latency

- **Edge**
  - Highly variable latency

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Many Other Possible Services

- Private CDN’s
- On-Demand high speed network services
- Disaster recovery services
- Privately connected cloud compute
- Many more…
Thank You!