

Are You Ready For The Digital Transformation?

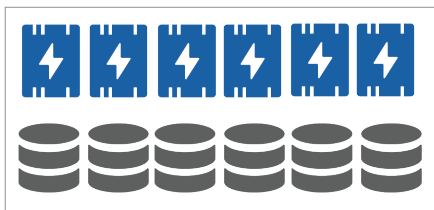
Think And not Or.

Chris Tsilipounidakis
Manager, Product Marketing



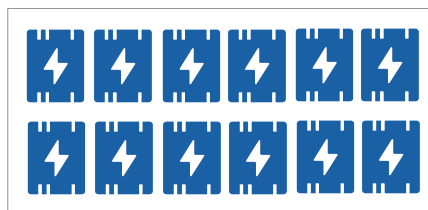
Tegile's Evolution into Flash Architecture

HYBRID



- Multi-Layer Architecture
 - Flash & Disk
 - Flash for Performance
 - Disk for Capacity
- High IOPs
- Lower \$/GB

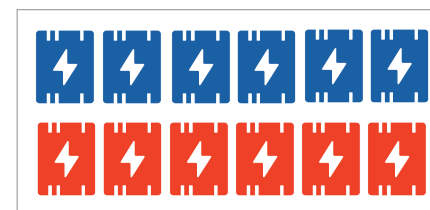
ALL FLASH



- Single Layer of Flash
- High IOPs
- Consistent Low Latency
- Higher \$/GB

Flash Memory Summit 2016
Santa Clara, CA

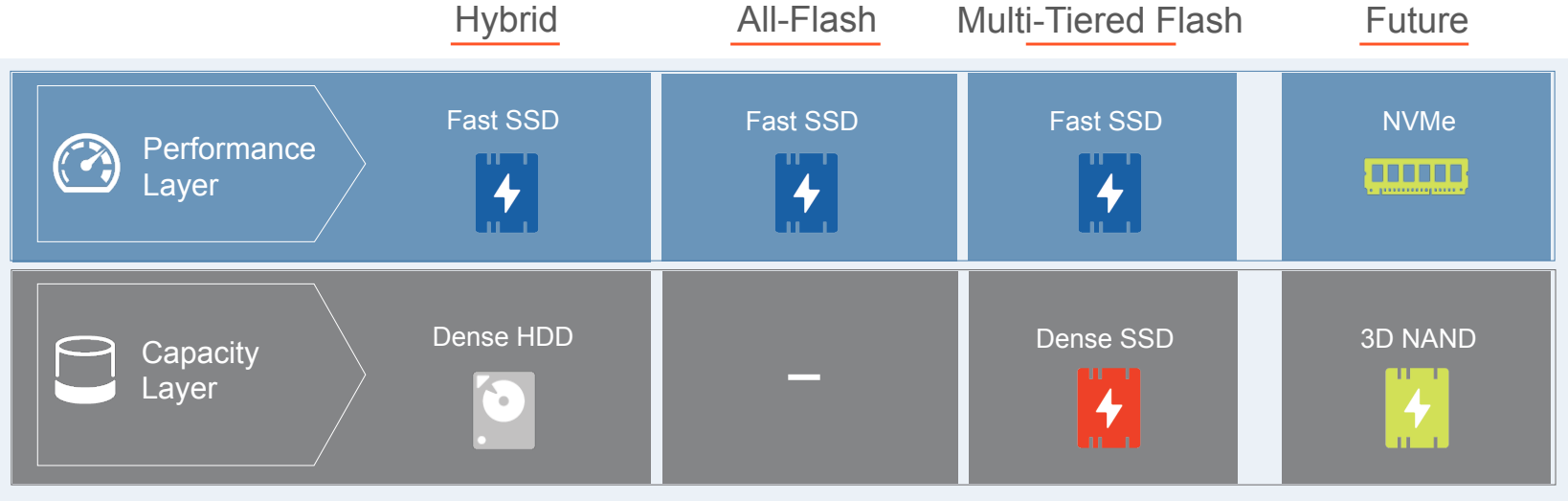
MULTI-TIERED FLASH



- Multi-Tiered Architecture
 - Fast & Dense Flash
 - Fast Flash for Performance
 - Dense Flash for Capacity
- High IOPs
- Better Latency than Hybrid
- Lower \$/GB

Enterprise Architecture - Future Proofed

As technology evolves...



...you must integrate new models to stay relevant

Marrying enterprise data services with best-of-breed flash



All-Flash & Hybrid

Scale up in performance **AND** capacity to accommodate your future needs

Multi-Protocol Support

Native support for block **AND** file protocols (iSCSI, FC, NFS, CIFS/SMB 3.0)

Superior Data Reduction

Inline compression **AND** deduplication



Simple Administration

Intuitive web UI, app integration **AND** cloud analytics

Enterprise Resiliency

Fully redundant hardware **AND** active/active controllers

Affordable Disaster Recovery

Replicate between all-flash **AND** hybrid configurations

This Allows Customers To Achieve...

Workload Consolidation

- Application - Performance and capacity optimization
- Compute & Virtualization - Moore's Law and hypervisor density
- Storage - Platform that grows flexibly as needs arise



Cloud Scale

- Private Cloud - Security and Control
- Data Analytics - Store, Access, Analyze, Value
- Architecture - Scalable, Flexible, Future-Proofed



Cost Reduction

- Acquisition and Operational – Justify long-term strategy premium
- Footprint Reduction – Data reduction, high density media (flash, CPUs, memory)
- Dense flash delivers increased performance, while reducing cost





Real World Considerations



Move to the Cloud or Else...



The Private Cloud Datacenter

- Stall or eliminate moving apps to the public cloud
- Private cloud datacenters achieve similar cost structures
- Eliminate public cloud security, control and performance concerns

Highly dense, multi-tiered storage enables:

- Mixed Workload Consolidation
 - Increases server CPU utilization
 - Reduces servers and application licensing costs
 - Reducing overall datacenter TCO, not just storage!

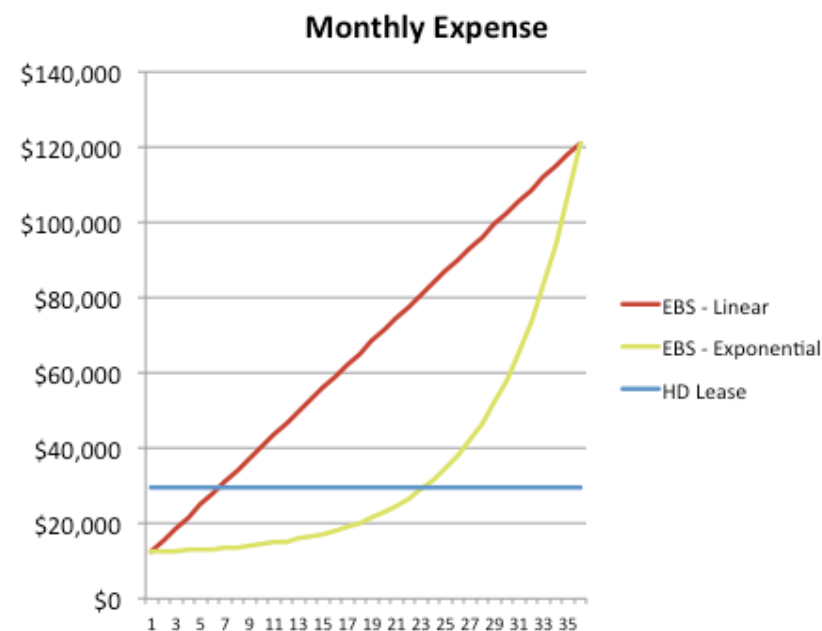
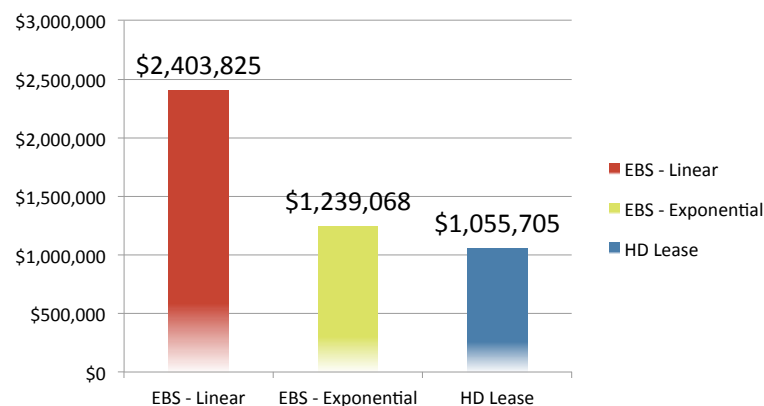
Public Cloud Structures = Hidden Cost

Amazon

- US West EBS Provisioned IOPS (SSD) volumes
- \$0.125 per GB-month of provisioned storage
- \$0.065 per provisioned IOPS-month

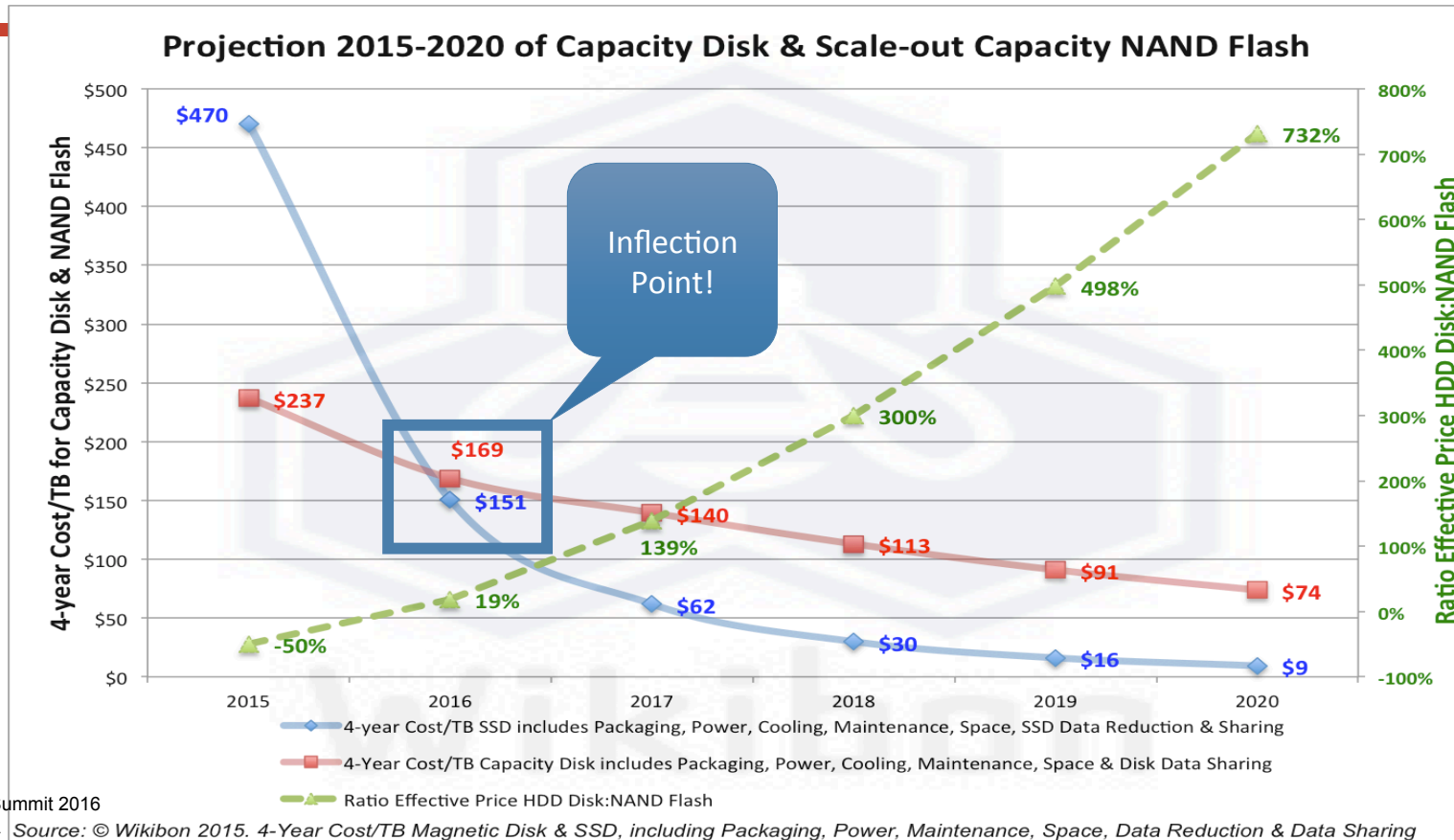
T10KHD-300

- \$877,500 (w/3YR 4HR) Street Price
- Leased at 3% interest with 10% Residual Value
- 180,000 IOPS, 300TB Usable
- 900TB Effective @ 3:1 (grow to 90% utilized at M36)



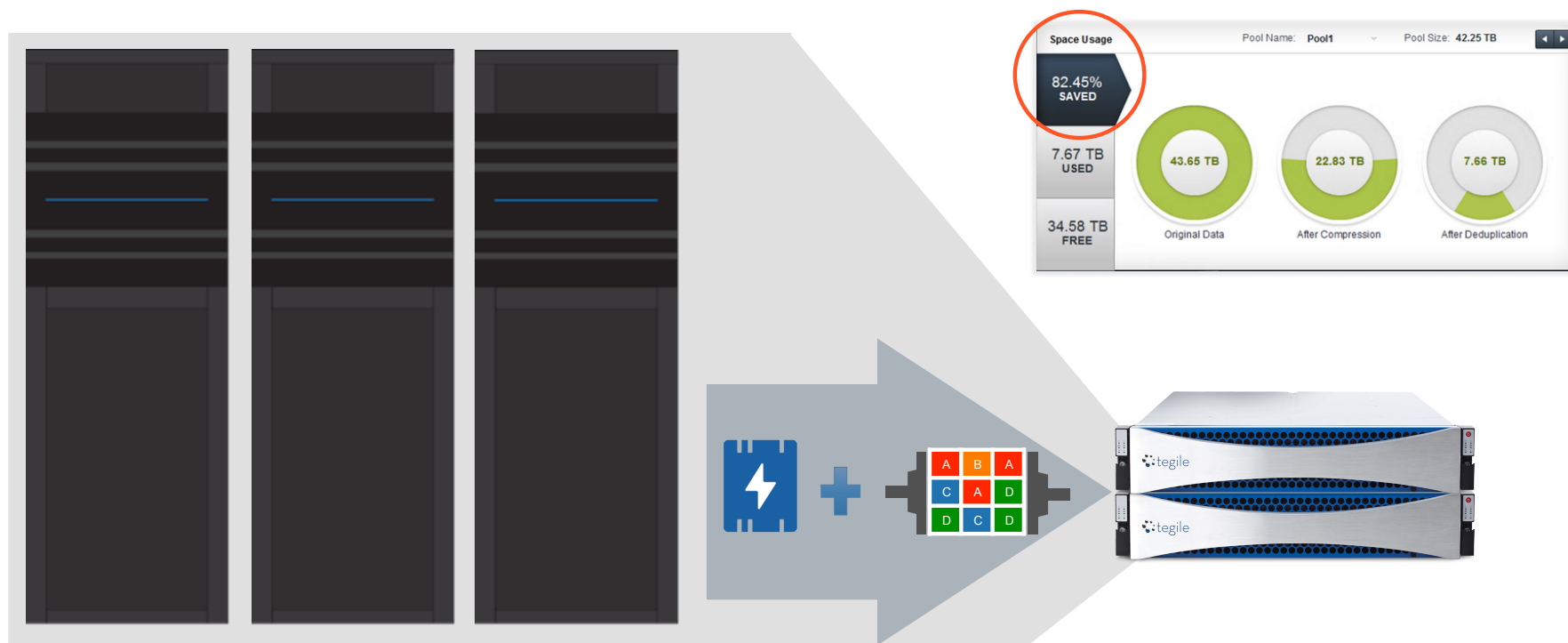
Source: <https://aws.amazon.com/ebs/pricing/>

Setting the Stage: 4 Year Storage TCO Tells the Story



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Tegile's Data Services In Action



Operational Cost Savings of Flash



- Simpler Administration: 48% Savings



- Less Power: 76% Savings



- Less Space: 63% Savings



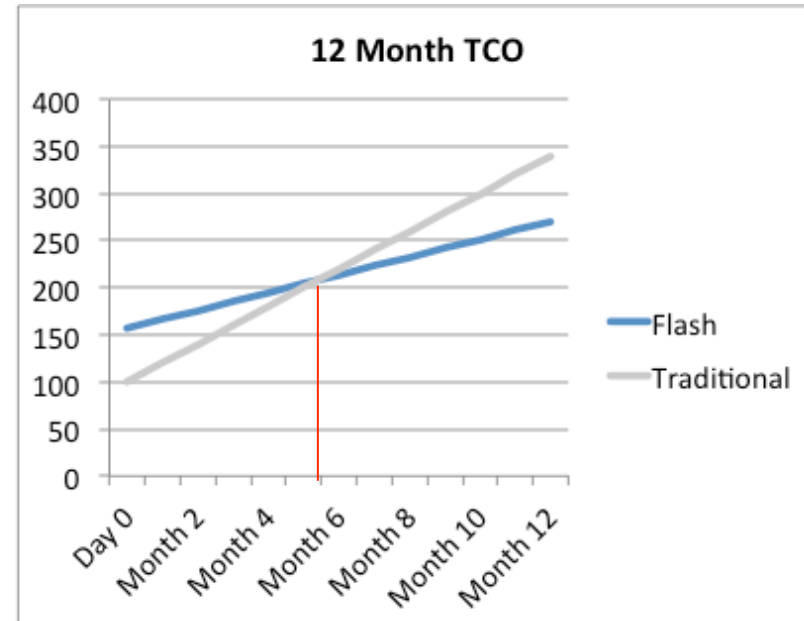
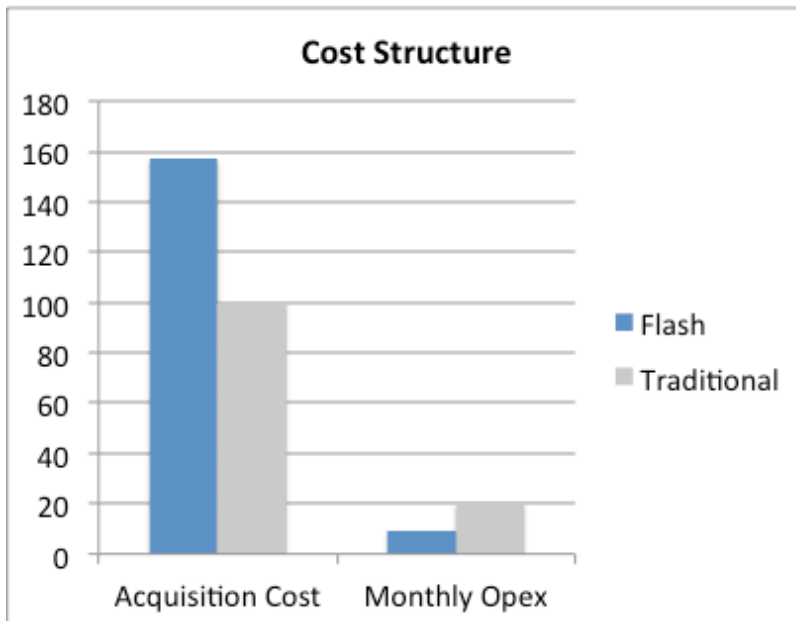
- Less Maintenance: 16% Savings



- ROI: 5.4 Months to Justify Cost Premium vs. Traditional Arrays

Gartner[®]

Flash vs. Traditional Storage TCO Comparison





Customer Use Case



Department of Defense Cyber Range Cyber Warfare Simulation



Customer

- ManTech International Corporation
 - Cyber Range Business Unit
 - Hosts Secure Cyber Warfare Simulation Platforms for DoD

Challenges

- DoD cyber ranges using legacy hardware architecture to service big data
- Limited in scale and recomposing VMs
- ManTech tasked to build a container-based platform using DoD's existing apps and processes



Solution – Tegile and CypherPath Software-Defined Infrastructure Containers



Tegile

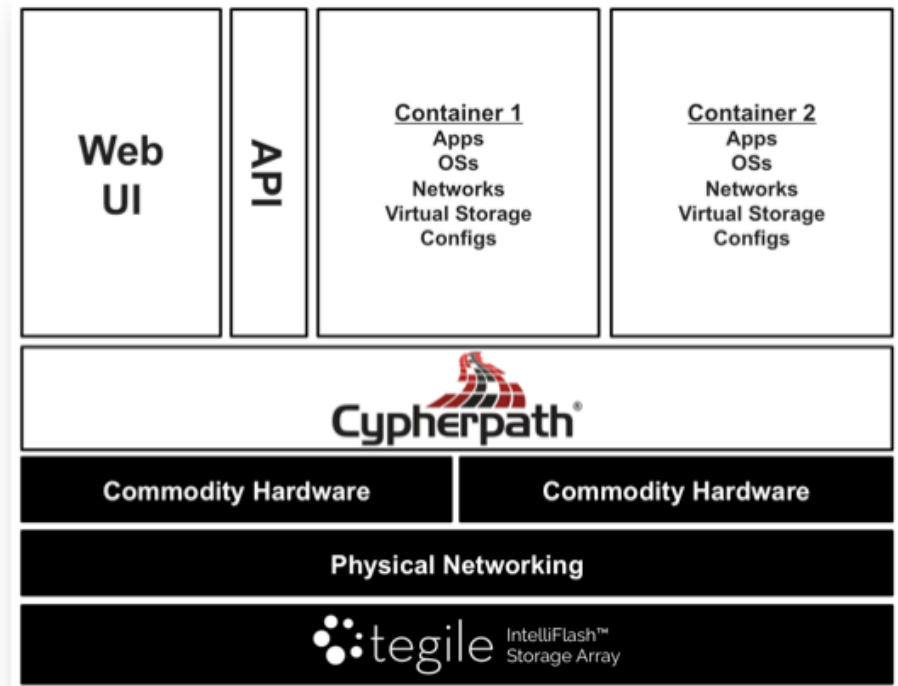
- Flash storage increases performance 5x
- Decreases latency 10x with dense NAND flash
- 80% hardware savings with data reduction

CypherPath Infrastructure

- Secure Virtual Infrastructure Containers
- Secure isolation to deliver IT infrastructure
- Rapidly deploy new services dynamically

Solution

- DoD can rapidly build and deploy ranges in minutes vs. weeks
- DoD now deploys 3000+ systems/minute



Results for the DoD



Virtual Container Platform

- Delivers an IT infrastructure on-demand
- Enables any machines, networks, apps, storage and app containers to be spun up in real-time
- Reduces OPEX while increasing performance to respond to cyber range requests in real-time
- Dense NAND Flash = Enabler

