All-in on Cloud Production
When it rains, it pours
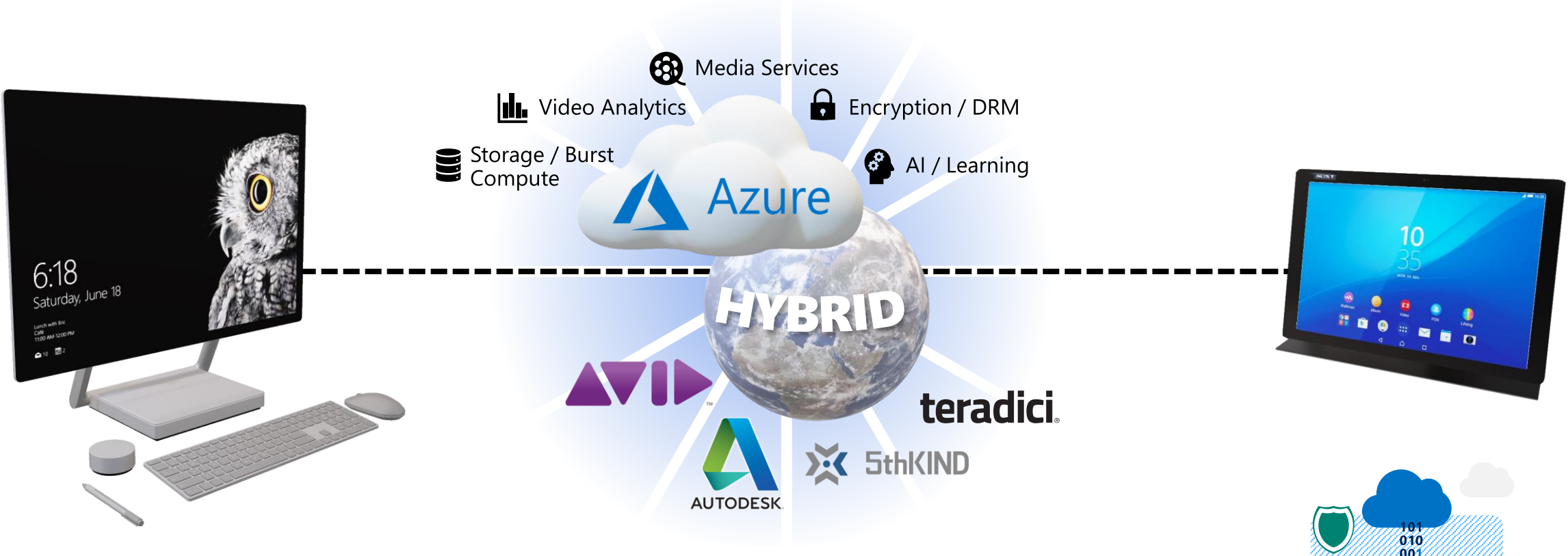
Joel Sloss, Sr. Program Manager, Microsoft

HITS-Spring 2018
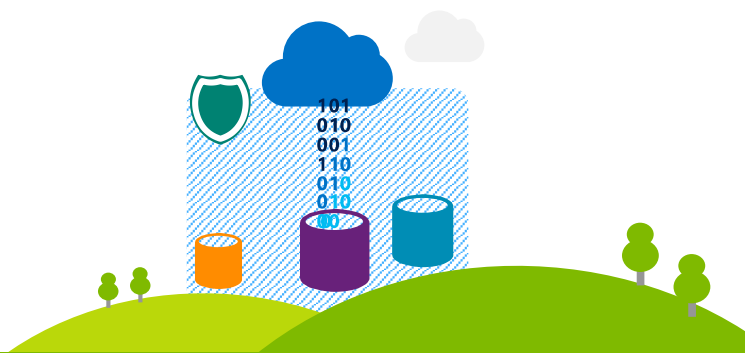
Microsoft

End-to-End Pipeline with Microsoft Cloud

Pre- and post-production workflows

Whichever tools artists want to use

Media Services

Video Analytics

Encryption / DRM

Storage / Burst Compute

AI / Learning

Azure

HYBRID

AVID

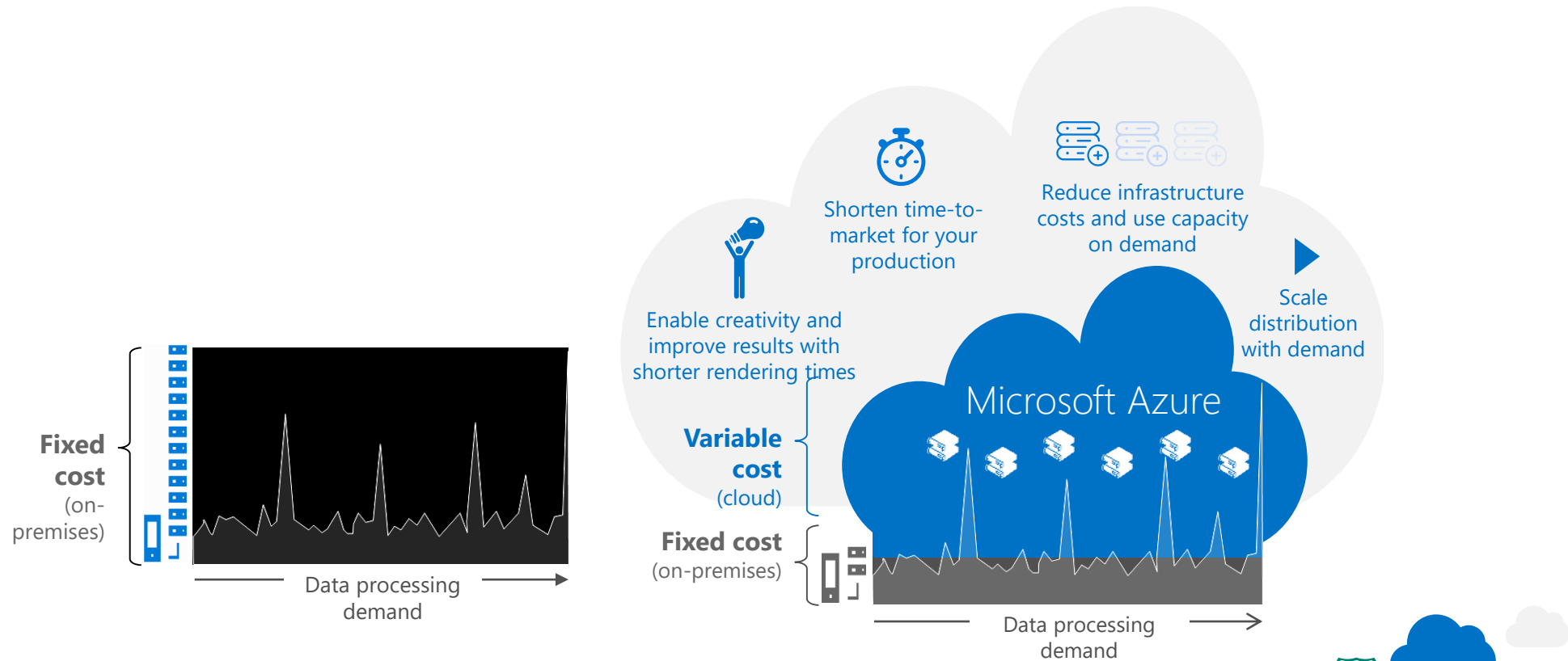teradici

AUTODESK

5thKIND

Distribute anywhere & to any device

Scalable Post-Production Infrastructure

Leverage cloud elasticity and scalability to address changing production needs

Enable creativity and improve results with shorter rendering times

Shorten time-to-market for your production

Reduce infrastructure costs and use capacity on demand

Scale distribution with demand

Fixed cost
(on-premises)

Data processing demand

Microsoft Azure

Variable cost
(cloud)

Fixed cost
(on-premises)

Data processing demand

A cloud-based solution enables media companies to deploy and manage infrastructure for rendering, and content processing in a flexible, secure manner with optimal TCO.
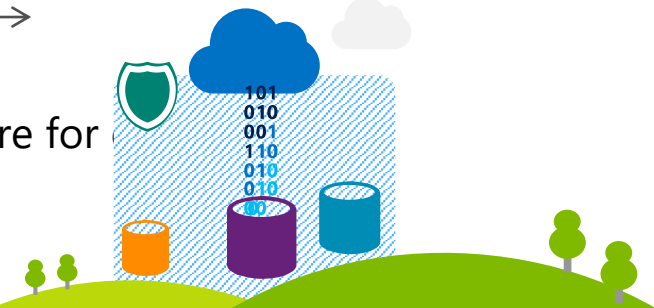
Workflows: Device-to-Cloud-to-Screen

Ingest and asset management

- Getting camera files, generating proxies, uploading VFX assets, ...

Visualization

- Workstation, desktop virtualization, modeling, scheduling / orchestration, rendering (/hybrid)

Editorial and metadata / analytics

- Building your content (/hybrid)

Storage, protection, and archive

- Keep what matters, track everything, keep it safe

Distribution and playout

- Move large assets to distributors, stream directly to consumers

Ingest and Asset Management

- Offline data migration

Azure Data Box

- Self-service data migration
- Simple: order, fill, and return to upload data to Azure
- Fast: Move ~80 TB per Data Box
- Secure: AES 256-bit encryption

- Status: Preview

Azure Data Box

Disk import

- Self-service data migration
- Customer supplied disk(s)
- Send disks for upload into Azure
- Secure: AES 128-bit encryption

- Status: Generally Available

Import/ Export

Offline Media Import Service

- Partner specialists provide HW, facilities, & expertise
- Migrate tapes, optical drives, hard disks, even film to Azure
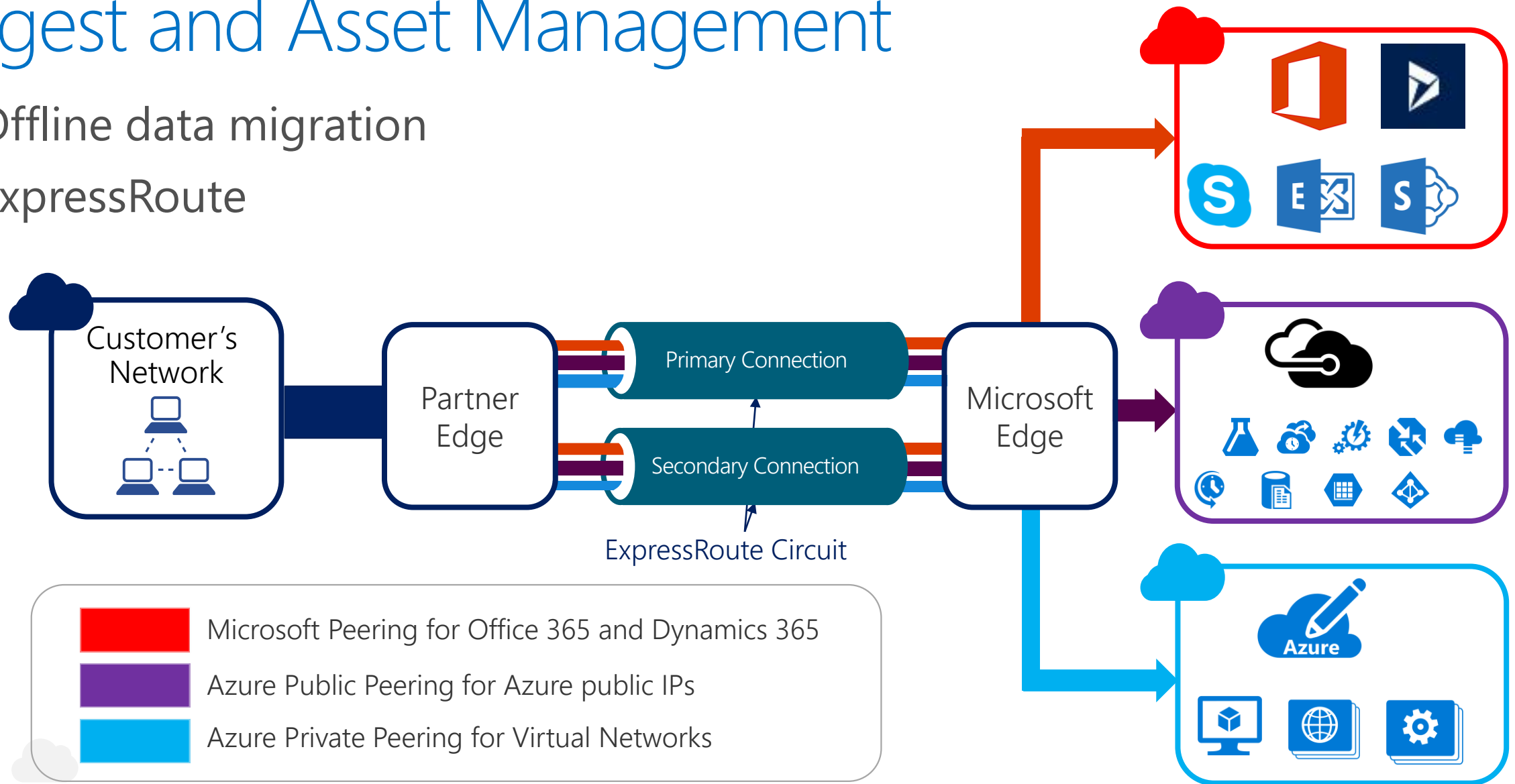
- Contact partners
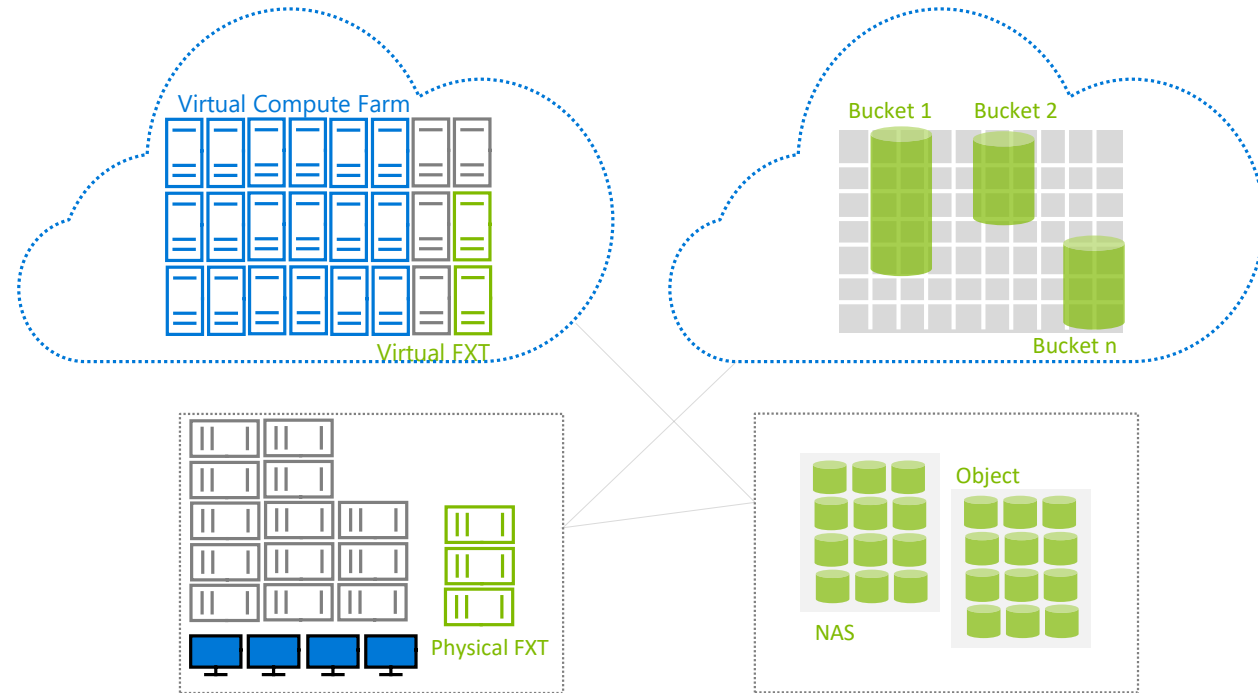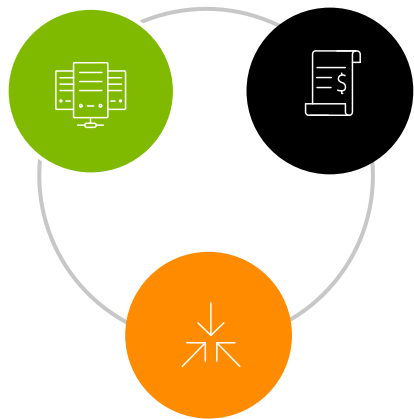 Offline Media Import Website

Offline Media Import

Ingest and Asset Management

- Offline data migration
- ExpressRoute

Customer's Network → Partner Edge → Primary Connection / Secondary Connection (ExpressRoute Circuit) → Microsoft Edge

Legend:
- Microsoft Peering for Office 365 and Dynamics 365
- Azure Public Peering for Azure public IPs
- Azure Private Peering for Virtual Networks

Ingest and Asset Management

- Offline data migration
- ExpressRoute
- Performant hybrid storage

Virtual Compute Farm — Virtual FXT

Bucket 1 · Bucket 2 · Bucket n

Physical FXT

Object · NAS

Customer needs	Avere delivers
Low-latency file access	Edge-Core architecture
Scalable performance and HA	Scale-out clustering (3 to 24 nodes per cluster)
Familiar NFS and SMB interfaces	FlashCloud file system for object storage
Manage as a single pool of storage	Global namespace (GNS), FlashMove
Data protection	Cloud snapshots, FlashMirror
High security	AES-256 encryption (FIPS 140-2 compliant), KMIP
Efficiency	LZ4 compression

AVERE
A Microsoft® Company

Ingest and Asset Management

- Offline data migration
- ExpressRoute
- Performant hybrid storage
- MAM/DAM
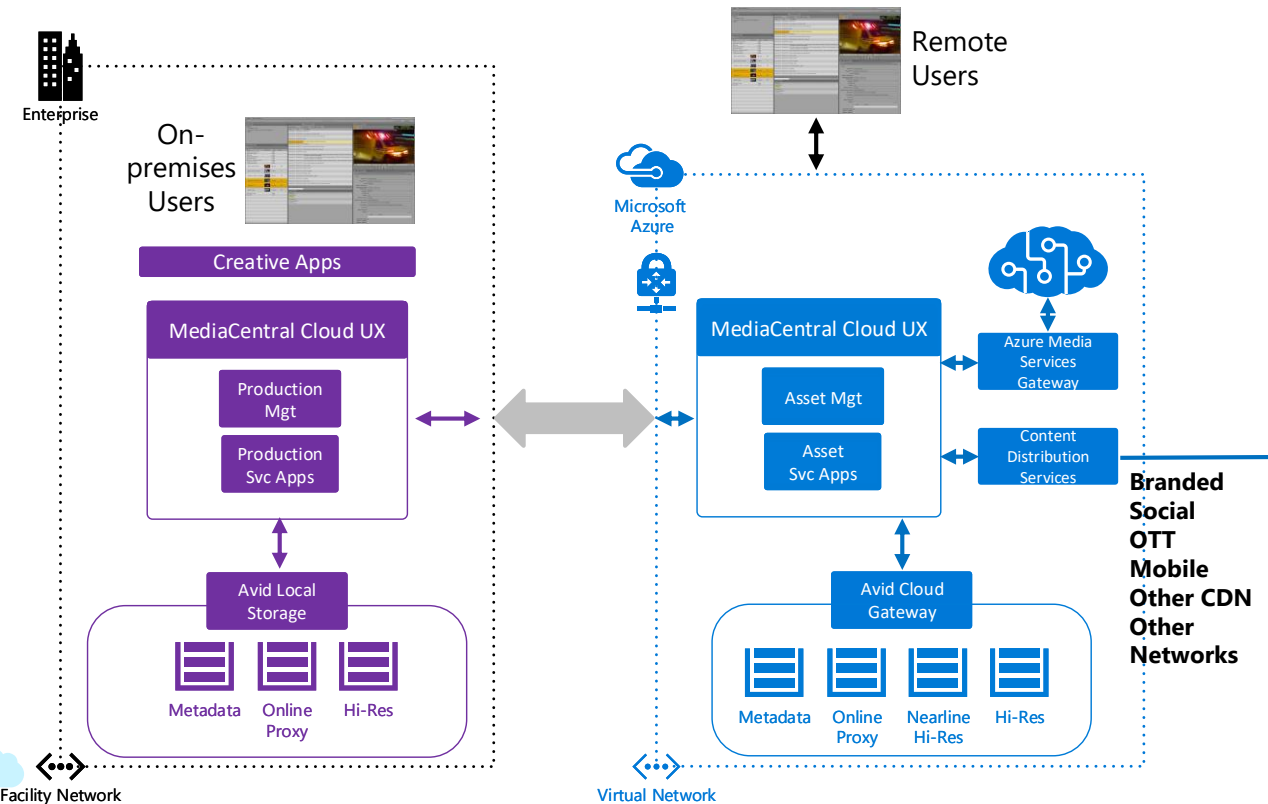
Post Value Proposition

- Extend collaboration beyond editorial users – rights, review, transcription, localization etc.

- Utilize secure tiered storage for media staging and archive matched to content usage – proxy vs hi-res vs shooting ratio vs cost

- Streamline packaging workflows for distribution and campaigns

- Augment ancillary processes using Cognitive services

Enterprise

On-premises Users

Creative Apps

MediaCentral Cloud UX

Production Mgt

Production Svc Apps

Avid Local Storage

Metadata   Online Proxy   Hi-Res

Facility Network

Remote Users

Microsoft Azure

MediaCentral Cloud UX

Asset Mgt

Asset Svc Apps

Azure Media Services Gateway

Content Distribution Services

Avid Cloud Gateway

Metadata   Online Proxy   Nearline Hi-Res   Hi-Res

Virtual Network

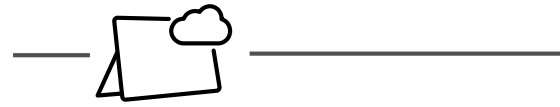**Branded Social OTT Mobile Other CDN Other Networks**

Visualization

- Surface creativity
- Desktop virtualization – workstations in the cloud using PCoIP
- Modeling
- Scheduling and orchestration
- Rendering (/hybrid)
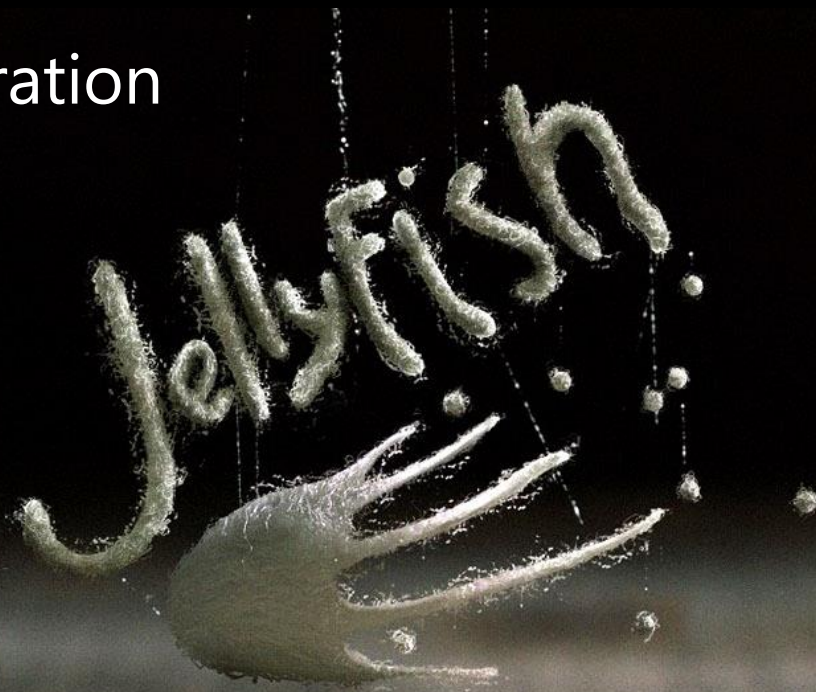
Microsoft Surface

Creativity Unleashed

- Best inking experience

- Works naturally with touch

- Perfect balance of power and mobility
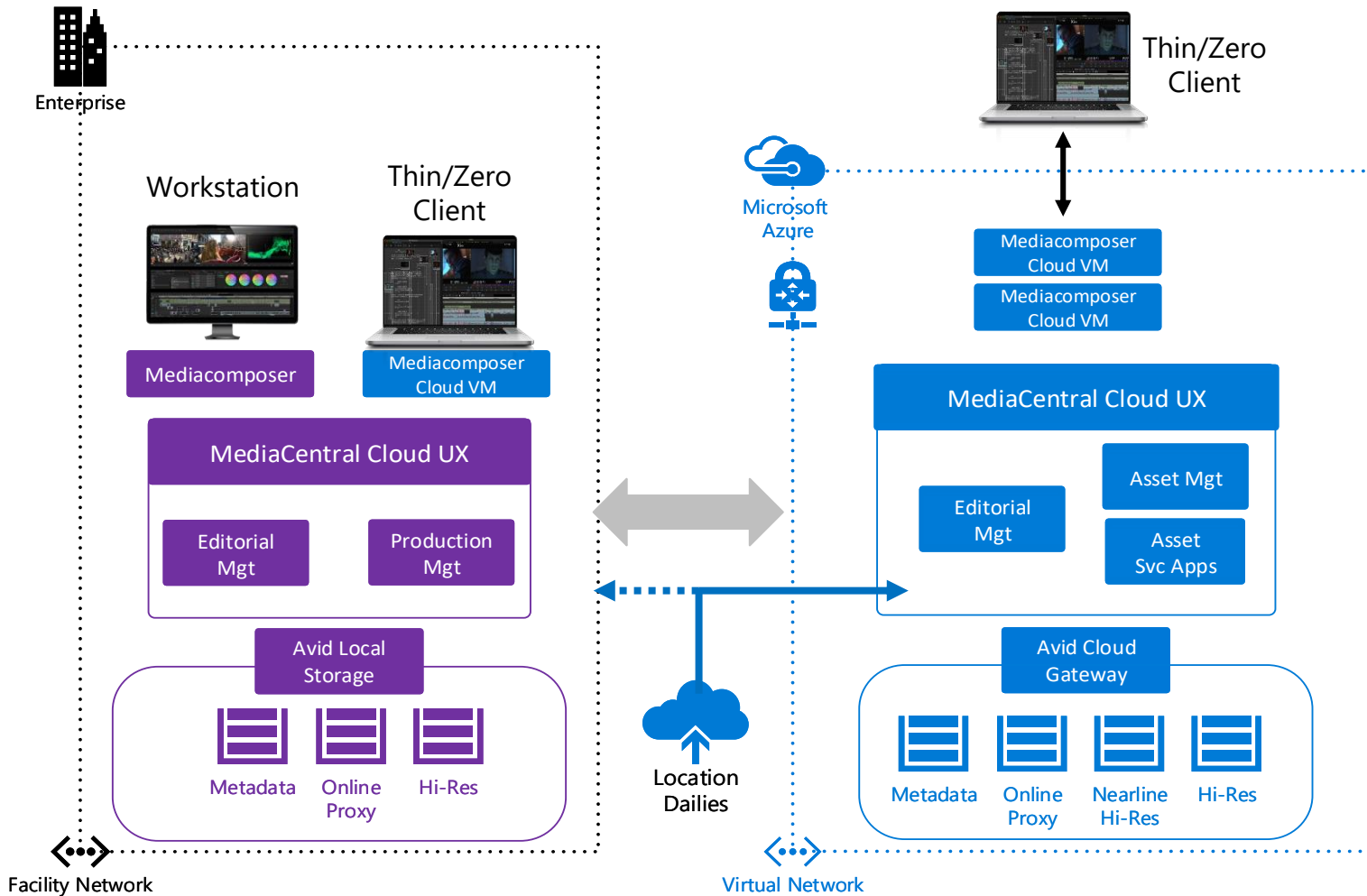
- True to life displays

- Most versatile form factors

Editorial and Metadata / Analytics

- Azure Video Indexer
- Avid

Post Editorial – Cloud Production

Enterprise

Workstation
Mediacomposer

Thin/Zero Client
Mediacomposer Cloud VM

MediaCentral Cloud UX
- Editorial Mgt
- Production Mgt

Avid Local Storage
- Metadata
- Online Proxy
- Hi-Res

Facility Network

Microsoft Azure

Location Dailies

Thin/Zero Client

Mediacomposer Cloud VM
Mediacomposer Cloud VM

MediaCentral Cloud UX
- Editorial Mgt
- Asset Mgt
- Asset Svc Apps

Avid Cloud Gateway
- Metadata
- Online Proxy
- Nearline Hi-Res
- Hi-Res

Virtual Network

Post Value proposition

- Scale resources to match workload on-premise or to accommodate remote workers

- Potential for efficient direct delivery of location dailies proxies reducing delay and costs

- Flexibility for balancing on-premise vs cloud storage costs and footprint

- Offload ancillary post workflows using thin/zero client technology, greater options for user flexibility
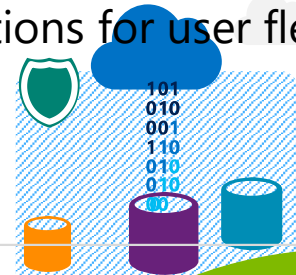
Azure Video AI
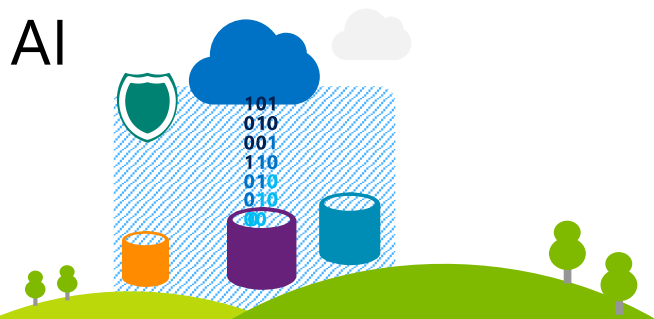
Cloud-based speech and vision services

Advanced search across printed text, spoken words, faces

Build actionable intelligence from media archives

Enhance content discovery and engagement through AI
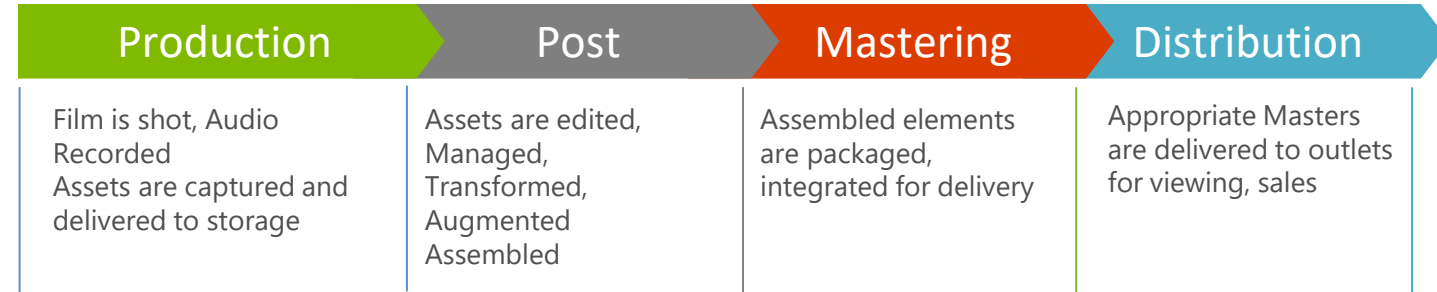
Storage, Protection, and Archive

Storage Workflow

- ## Scenarios
  - ### Media Asset Management
  - ### Post Production in the Cloud
  - ### Distribution (Online Video Platform)
    - Live & On Demand Streaming
    - Media Analytics
  - ### Media Storage & Archiving
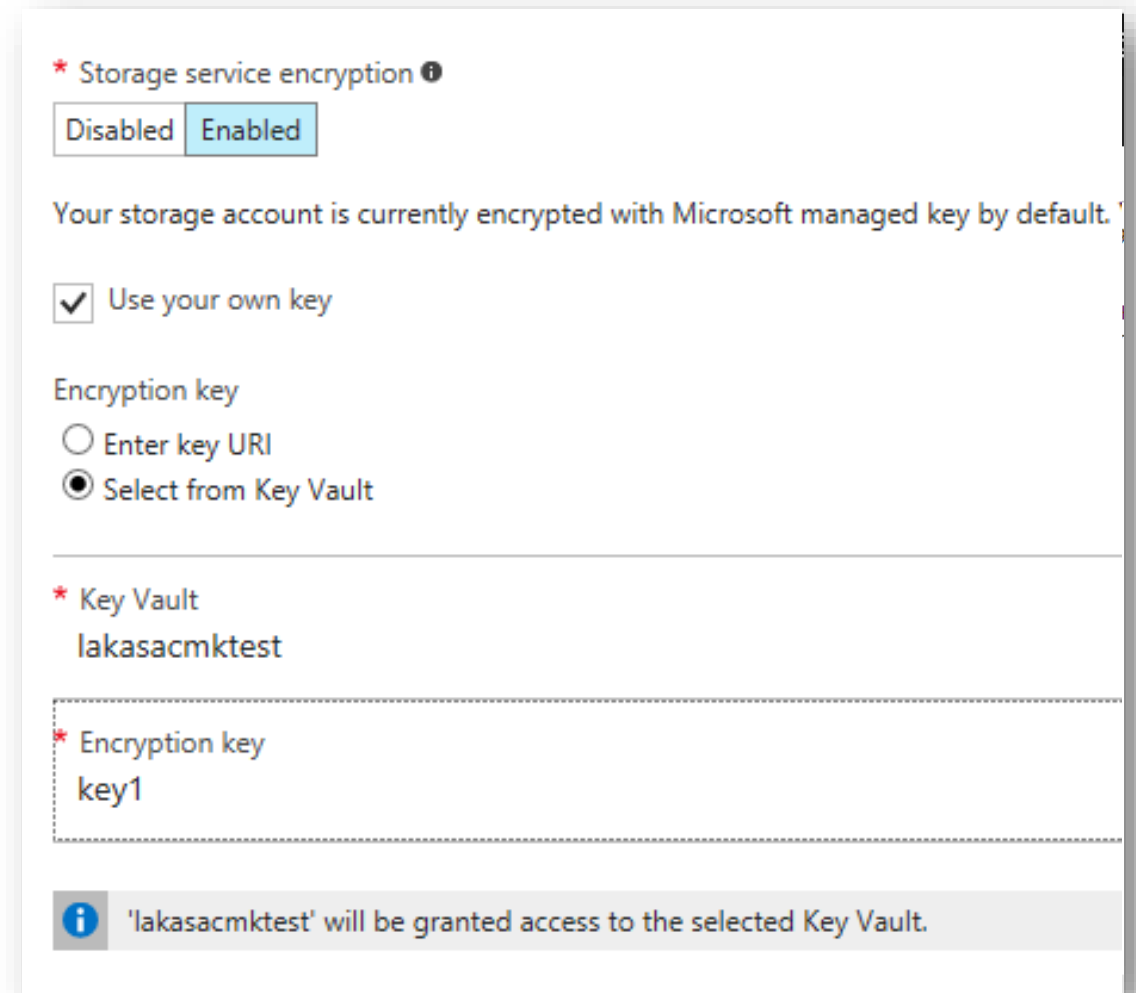   - On Prem Tiering
    - Full versions in the cloud
- ## Cloud Benefits
  - Ease of use and scale
  - Low Cost Storage tiering
  - Metadata Enrichment through Media Analytics
  - Streaming to the right audience at scale

Production	Post	Mastering	Distribution
Film is shot, Audio Recorded Assets are captured and delivered to storage	Assets are edited, Managed, Transformed, Augmented Assembled	Assembled elements are packaged, integrated for delivery	Appropriate Masters are delivered to outlets for viewing, sales

LIVE arena BROADCAST

imagen°

vidispine

AVID

axinom!

deltatre

OPENTEXT

Adobe

Storage & Archiving

Quantum

XenData

AVID

SPECTRA

NetApp

DELL EMC

NASUNI

SoftNAS

Encryption At Rest

- Prevents data disclosure from physical disk compromise

- Available for Blobs with Microsoft-managed keys

- Encryption enabled for all accounts

- Customer-managed encryption keys
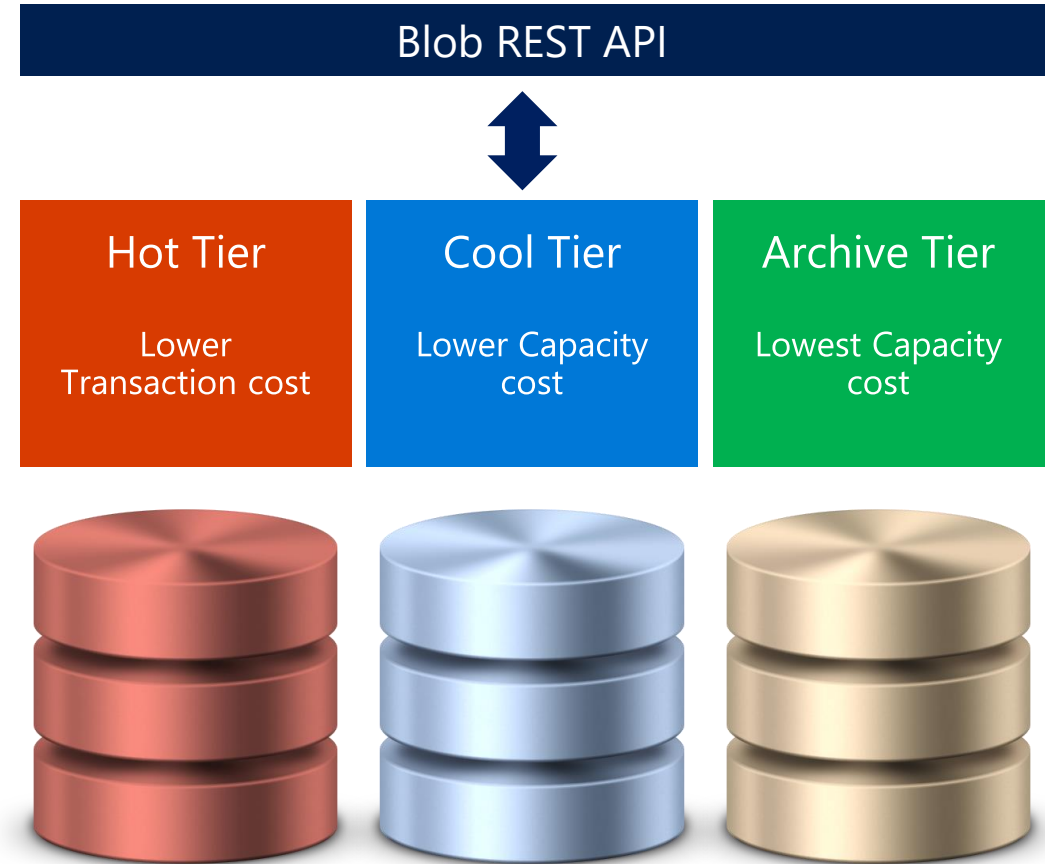
Archive Storage

Tiered Storage
- Cold storage for long term data
- Offline data - Retrieval latency is hours

Consistent API Among Tiers
- Access through Blob REST API
- Metadata for archive tier is always online

Immutable (WORM)
- Write-modify-delete protection
- Retention-interval based policy
- Audit logging
- Available for all tiers (hot, cool, archive)

Blob REST API

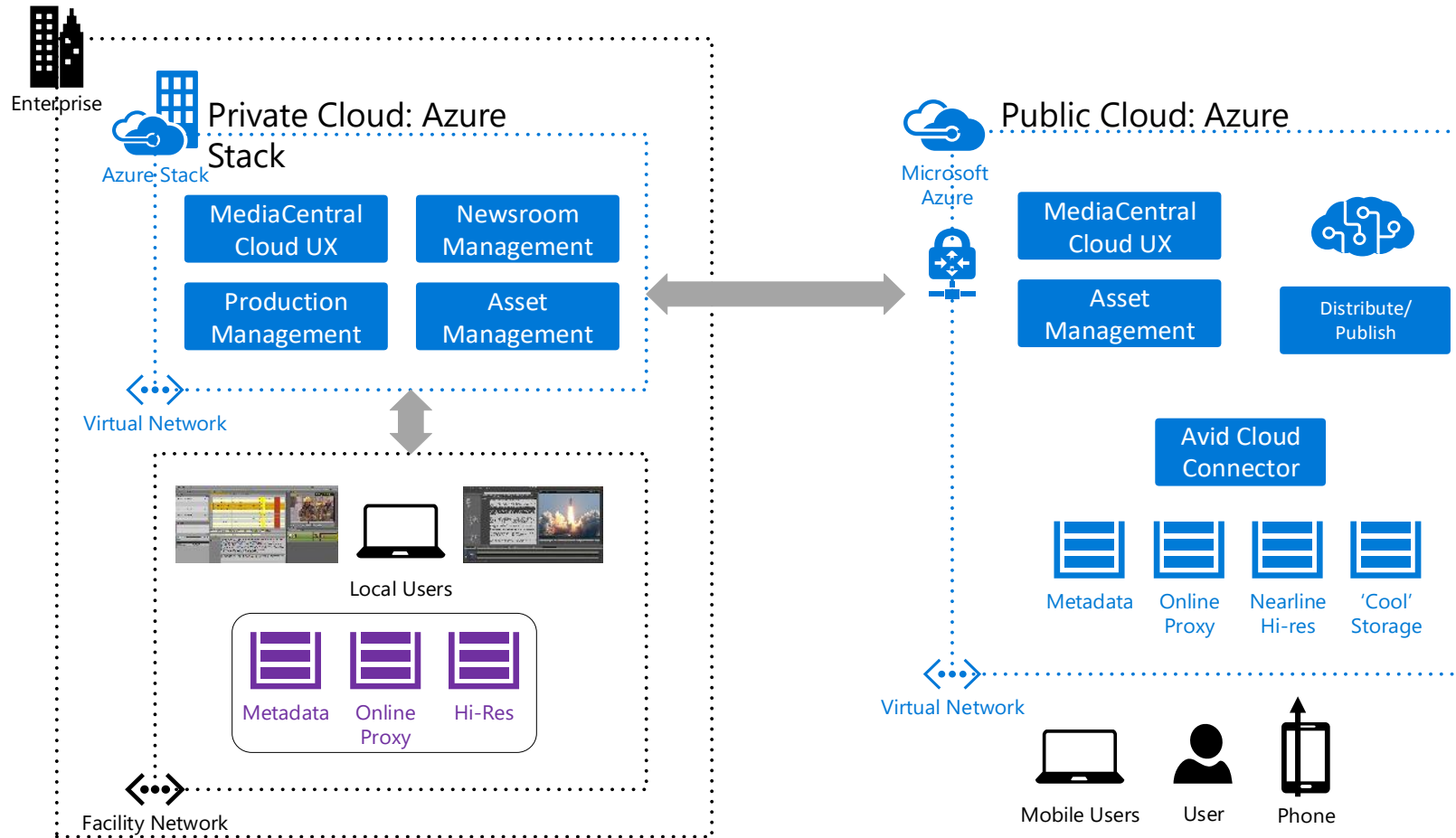| Hot Tier	Cool Tier	Archive Tier
Lower Transaction cost	Lower Capacity cost	Lowest Capacity cost

Questions?

Thank you!

The journey to the cloud

Virtualizing local deployments with Azure Stack and connecting to the Azure Public Cloud

On-premises workloads & local users

Cloud workloads & remote users

Understanding Threats in New Media

File Not Found

- Motivated by economic gain, voyeurism, political gamesmanship
  - Data tampering, theft, loss
  - Service disruption / destruction
  - Competitive advantage
- Multiple attack vectors
  - In-transit: on the wire, portable media / devices
  - At-rest: in storage / archive, on workstations
  - In-use: at the source, on the capture device, in a service / application
- Multiple attack types
  - Admin breach / insider threat
  - Malware
  - And the list goes on …
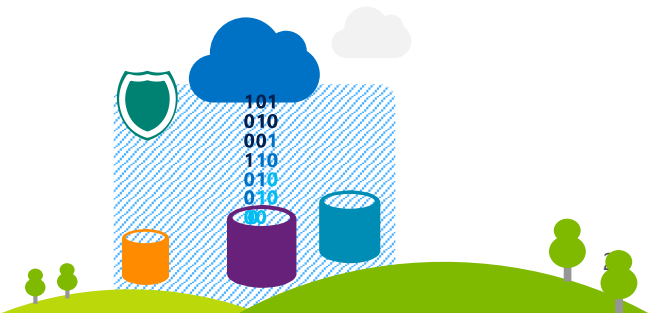
Unlocks creativity

- Best inking experience

- Work naturally with touch

- Perfect balance of power and mobility

- True to life displays

- Most versatile form factors

91% say Surface helps them express their creative ideas more effectively[5]   +9% over Apple
+26% over Windows

93% say Surface makes them feel like their company is investing in them[5]   +14% over Apple
+17% over Windows

Intelligent security

- Session wipe with Hub

- Always updated

- Firmware-level security with SEMM

- Work anywhere securely with eSim

- Biometric identification

Windows 10 and Surface, when used in a layered solution, can **meet the strictest security requirements** for use in classified environments such as the classified programs at the NSA