Going Tapeless

End-to-end data protection from production to cloud

February 2017

Common problems with traditional data protection

Too Slow

- Backup and recovery fail to meet windows
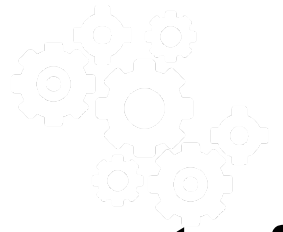- Users expect instant recovery and minimal data loss

- Volume of data continues to increase
- Movement of data becomes impactful to production workloads
- Recovery from archived tape may take days

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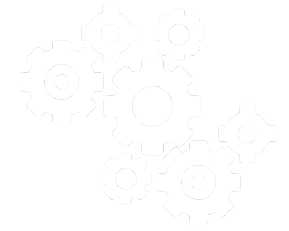# Common problems with traditional data protection

Too Expensive

- Cost of media

- Labor to manage backups and media

- Restores are costly

- As storage grows, so does the cost of backup
- Too much employee time is devoted to data protection

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Common problems with traditional data protection

Too Risky

- Lost tapes
- Stolen tape
- Restore reliability

- Tapes can get lost and are hard to test
- Companies experience increased downtime and data loss

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Common problems with traditional data protection

Too Complex

- Storing and rotating media
- Compliance
- Restore reliability

- Organizations manage hundreds of backup jobs across multiple backup apps
- Managing copies of data across sites is a challenge

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Disk as a replacement for tape

- Cost of disk historically an issue
- Often used as a buffer
- Advancements in storage efficiencies
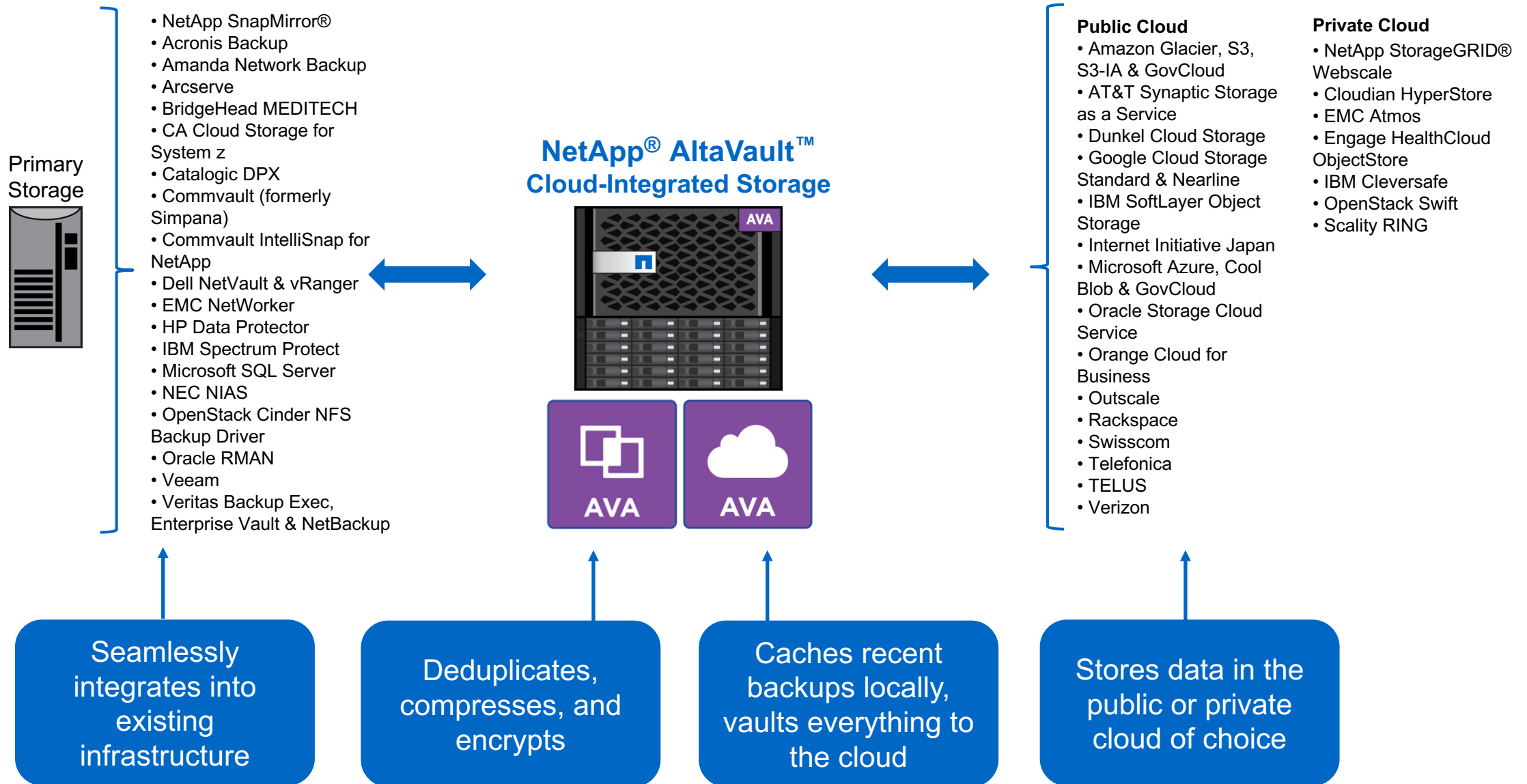- Object protocol eases management
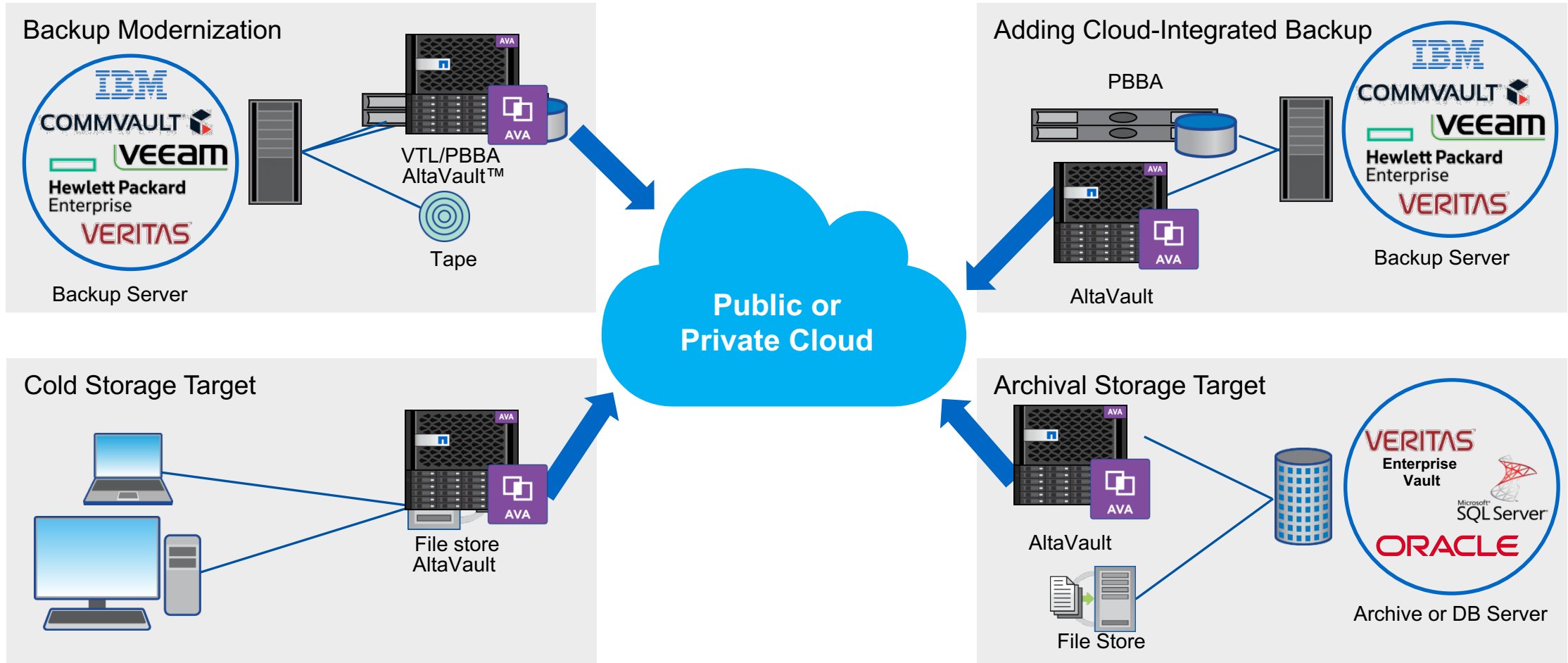
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Stage 1 – Backup to Cloud

- Leverage existing backup products and processes

- Replace tape with an object repository

- Object eliminates storage management and hardware lifecycle issues

- Optional "Cloud Gateway"

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AltaVault Backup Appliance – Gateway to the Cloud

Primary Storage

- NetApp SnapMirror®
- Acronis Backup
- Amanda Network Backup
- Arcserve
- BridgeHead MEDITECH
- CA Cloud Storage for System z
- Catalogic DPX
- Commvault (formerly Simpana)
- Commvault IntelliSnap for NetApp
- Dell NetVault & vRanger
- EMC NetWorker
- HP Data Protector
- IBM Spectrum Protect
- Microsoft SQL Server
- NEC NIAS
- OpenStack Cinder NFS Backup Driver
- Oracle RMAN
- Veeam
- Veritas Backup Exec, Enterprise Vault & NetBackup

NetApp® AltaVault™
Cloud-Integrated Storage

AVA

AVA   AVA

Public Cloud
- Amazon Glacier, S3, S3-IA & GovCloud
- AT&T Synaptic Storage as a Service
- Dunkel Cloud Storage
- Google Cloud Storage Standard & Nearline
- IBM SoftLayer Object Storage
- Internet Initiative Japan
- Microsoft Azure, Cool Blob & GovCloud
- Oracle Storage Cloud Service
- Orange Cloud for Business
- Outscale
- Rackspace
- Swisscom
- Telefonica
- TELUS
- Verizon

Private Cloud
- NetApp StorageGRID® Webscale
- Cloudian HyperStore
- EMC Atmos
- Engage HealthCloud ObjectStore
- IBM Cleversafe
- OpenStack Swift
- Scality RING

| Seamlessly integrates into existing infrastructure | Deduplicates, compresses, and encrypts | Caches recent backups locally, vaults everything to the cloud | Stores data in the public or private cloud of choice |

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How customers use AltaVault physical and virtual appliances

AltaVault integration with Amazon Snowball

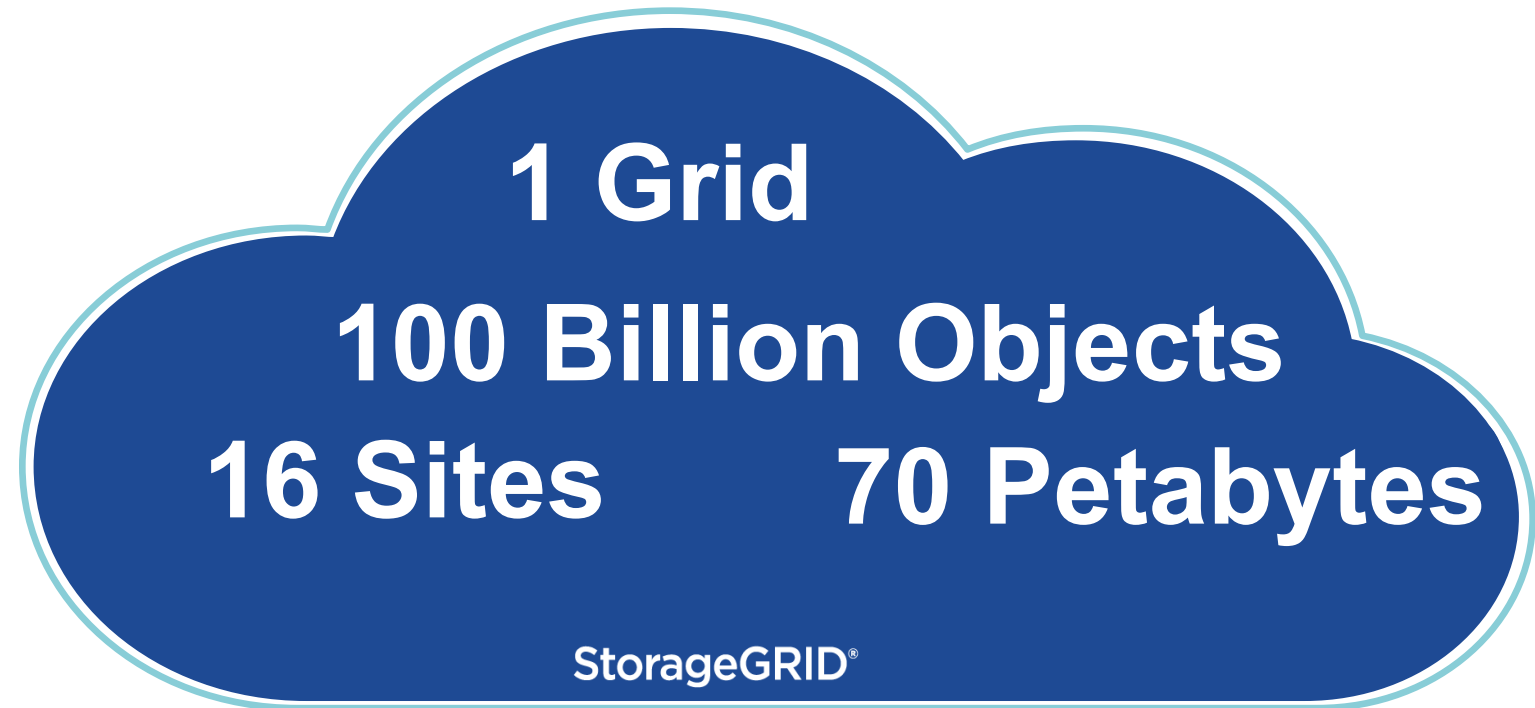## Seed large datasets to Amazon S3 without having to transfer over the wire

Primary
Storage

Leading backup
and archive
software
solutions

Learn more about Amazon Snowball

Webscale storage for on-premises archives

Primary Storage

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NetApp® AltaVault™ Cloud-Integrated Storage

AVA

AVA

NetApp StorageGRID® Webscale

StorageGRID®

Seamlessly integrates into existing infrastructure

Deduplicates, compresses, and encrypts

Caches recent backups locally, vaults everything to the cloud

Stores data in the public or private cloud of choice

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NetApp StorageGrid – On Premise Cloud Storage

1 Grid

100 Billion Objects

16 Sites   70 Petabytes

StorageGRID®

NetApp®

NetApp StorageGrid – On Premise Cloud Storage

Available as Software ONLY or Appliance

Built-in Geo Redundancy

StorageGRID®

vmware®

Western   Central   Eastern

■ NetApp®

NetApp StorageGrid – On Premise Cloud Storage

NetApp StorageGrid – On Premise Cloud Storage

Backup & Archive
NetApp AltaVault

S3
(via HTTPs)

StorageGRID®

vmware®

Western

Central

Eastern
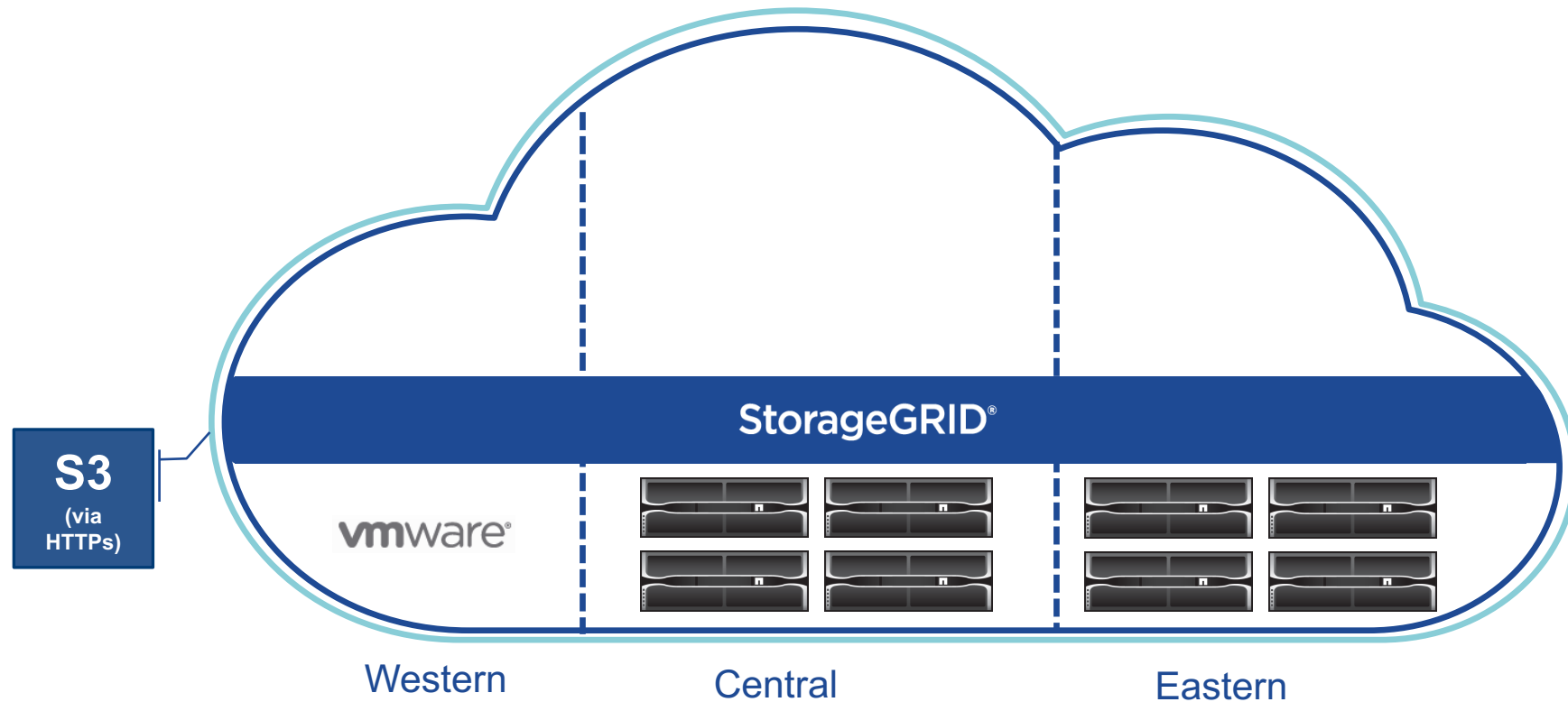
NetApp®
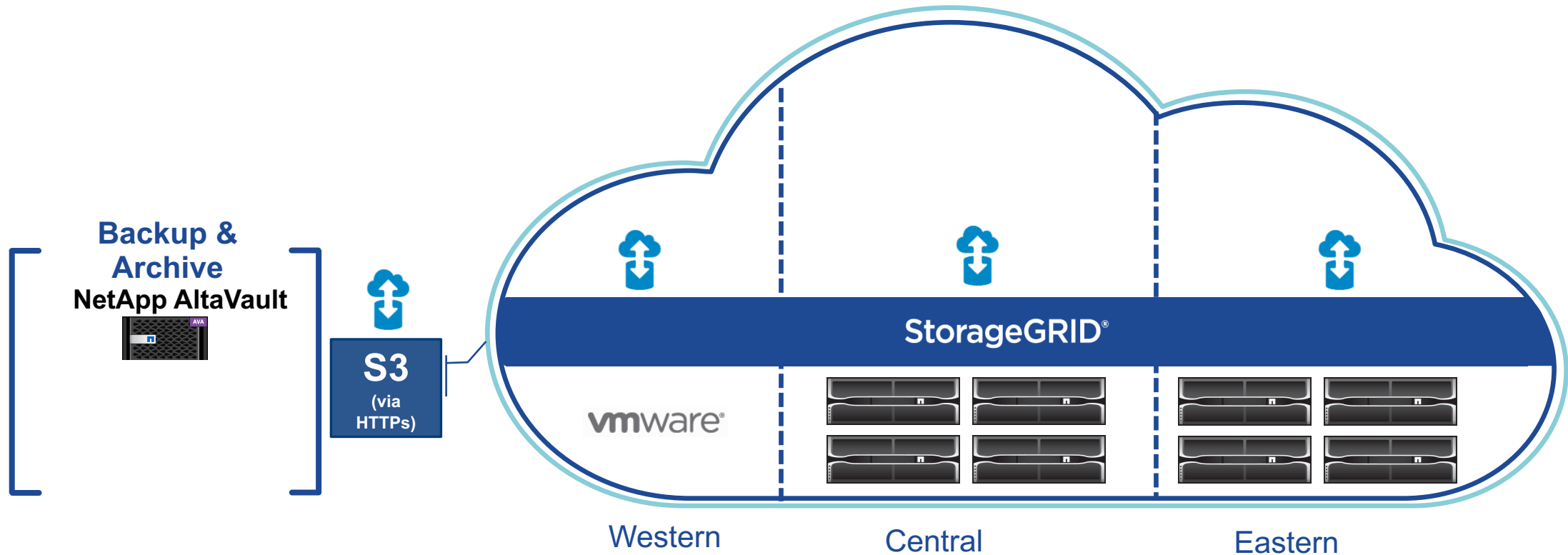
Stage 1 – Pros and Cons

PROS

- ✓ Very little change to existing tools and processes to eliminate tape

- ✓ Same restore process

CONS

- ✗ Still periodically moving large amounts of data from primary storage to backup
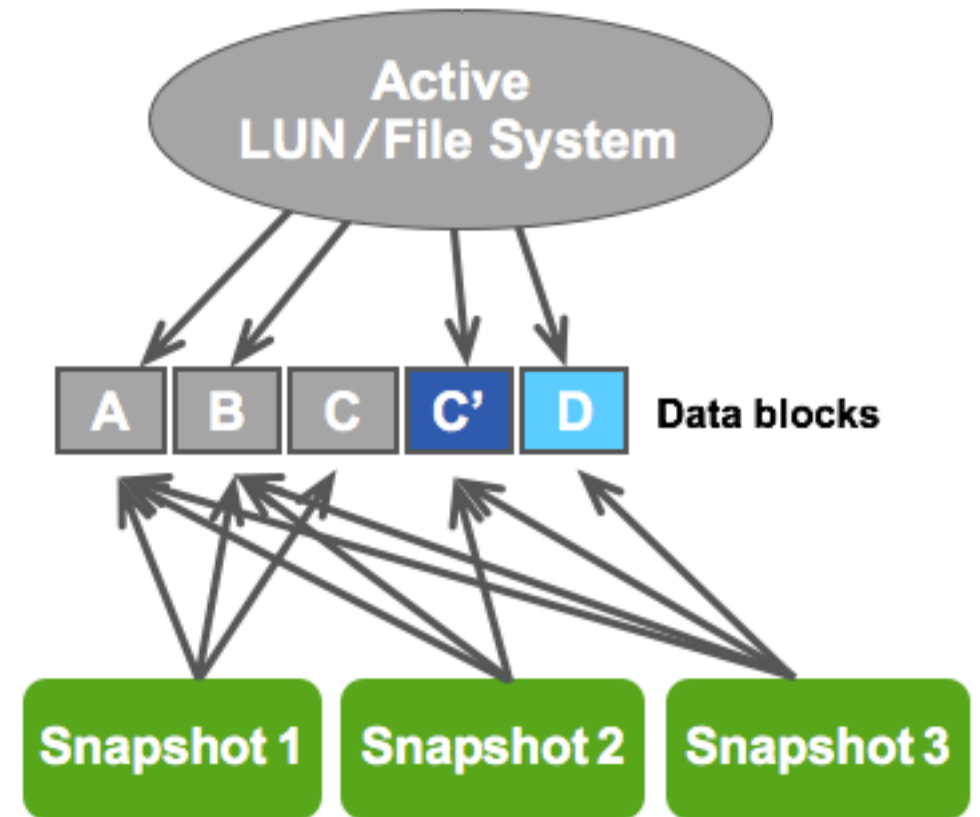
- ✗ Same restore process

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Stage 2 – Backup enabled primary storage

- Enabling primary storage to create backups accelerates backups and streamlines data movement
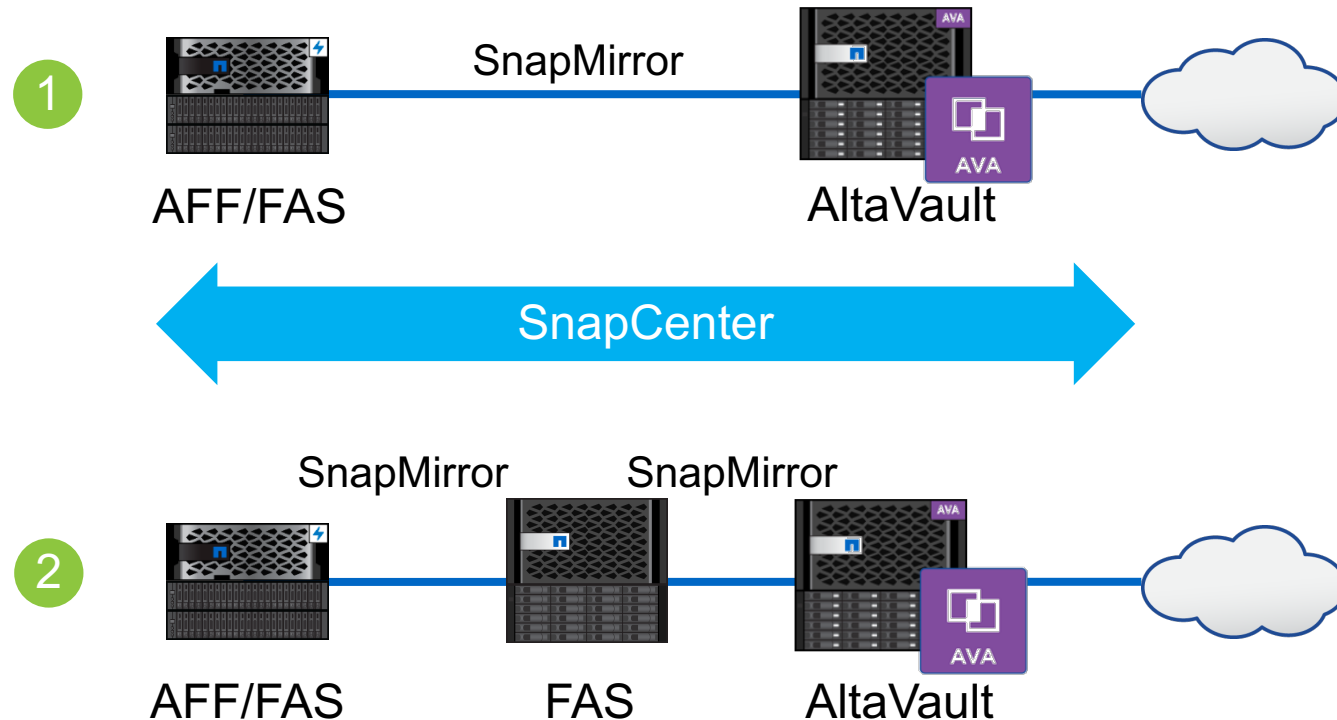
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NetApp ONTAP – Feature #1

- Snapshots on Primary storage was first key feature

- 25 years ago!

- Still the standard for snapshots

- Optimal for data movement and restore options

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Integrating Snapshots with AltaVault

End-to-end file backup and recovery across the Data Fabric

1
AFF/FAS — SnapMirror — AltaVault — (cloud)

← SnapCenter →

2
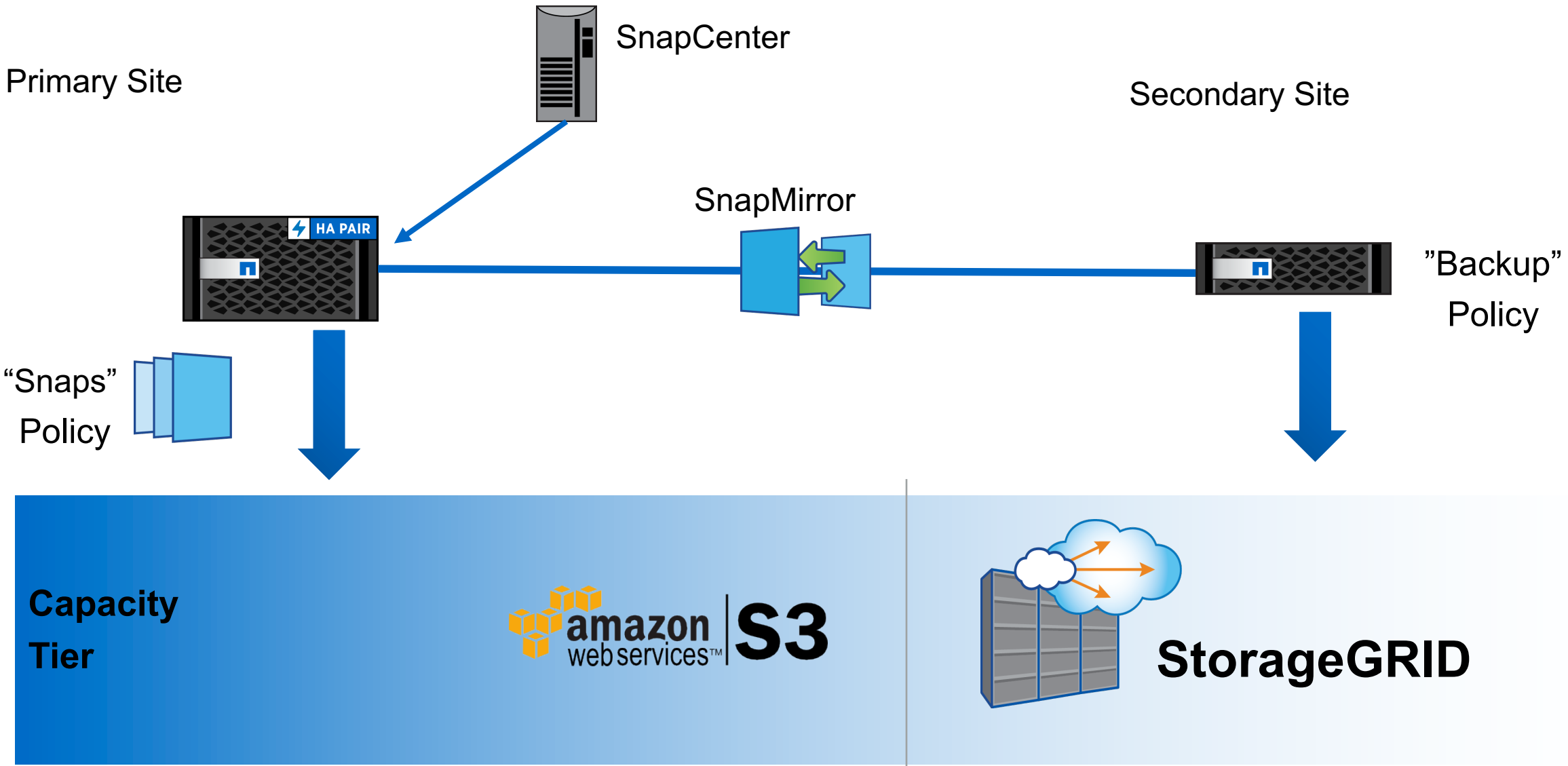AFF/FAS — SnapMirror — FAS — SnapMirror — AltaVault — (cloud)

- Integrating NetApp® SnapMirror® software with AltaVault™ provides efficient and secure data replication

- Easy-to-use NetApp SnapCenter® software manages data protection workflow from flash to disk to the cloud

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FabricPool: Reducing the cost of Snapshot based backup

FabricPool

Before

After

Active data   Inactive data

On-premise footprint
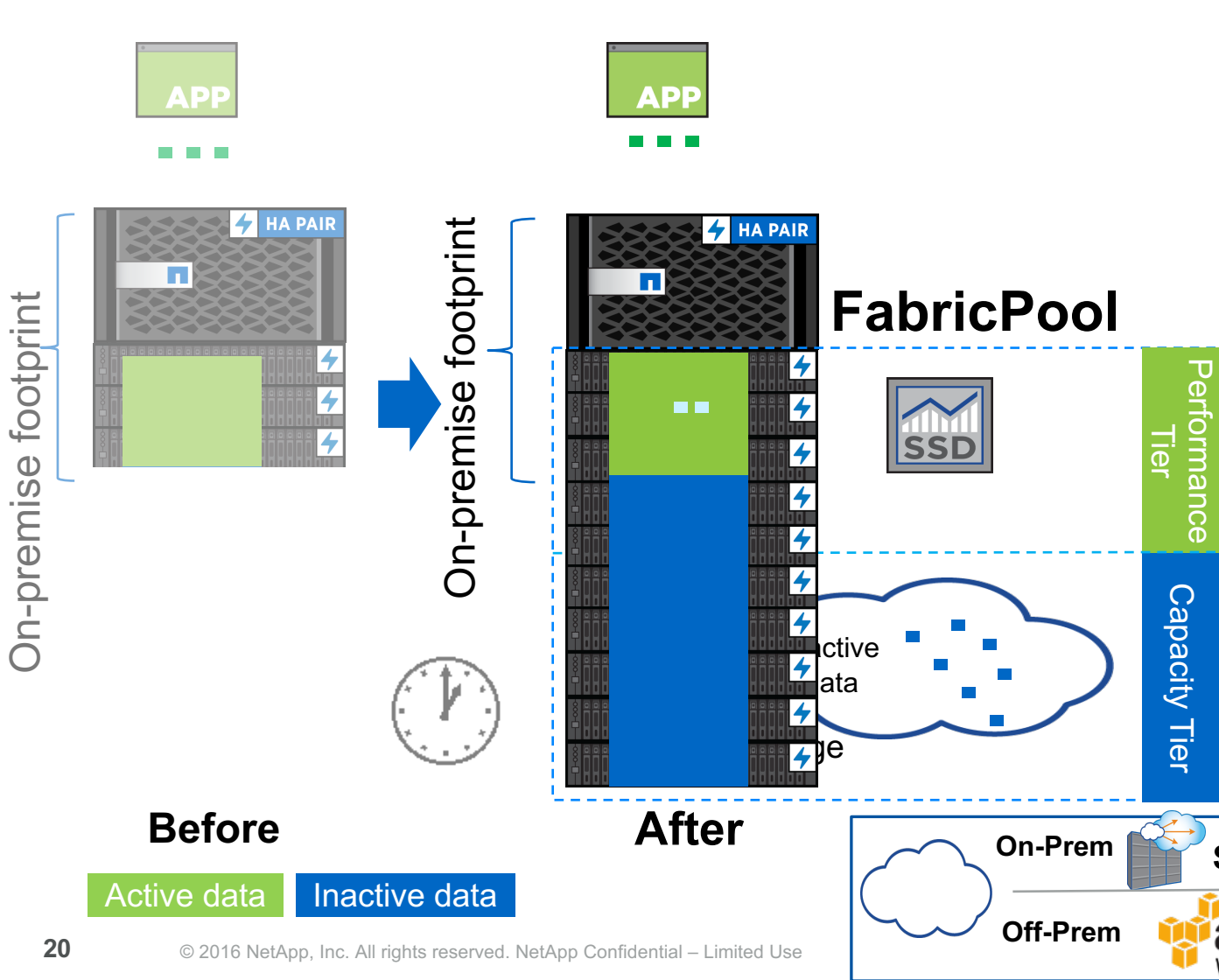
- Auto-Tiering between tiers

- Tiering performed at WAFL block level

- Supports NAS and SAN protocols

- "Zero Touch" Management – no complex policies

- Preserves data protection and storage efficiency

- Security – Data at rest and over the wire (TLS 1.2)

Performance Tier

Capacity Tier

On-Prem   **StorageGRID**

Off-Prem   amazon web services™

More TBD

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Data Protection with Fabric Pools

SnapCenter

Primary Site

Secondary Site

SnapMirror

HA PAIR

"Backup" Policy

"Snaps" Policy

Capacity Tier

amazon web services™ | S3

StorageGRID

NetApp

OVERVIEW
NetApp IT

PROBLEM SOLVED

NetApp IT replaced its physical tape archiving process with a hybrid cloud solution using NetApp® AltaVault™ cloud-integrated storage and NetApp StorageGRID® Webscale for faster, more reliable, and less expensive long-term data retention.

EXECUTIVE SUMMARY:

Like any large global enterprise, NetApp IT faces the challenge of cost-effectively archiving legal, human resources, and financial data to meet various federal and state requirements. NetApp IT moved from tape-based archiving solution to a hybrid cloud solution. It combined NetApp AltaVault, a cloud-integrated storage appliance for backup, and NetApp StorageGRID Webscale, purpose-built software for large data archives, and realized major cost and space savings.

BENEFITS:

- 29.66x dedupe rate reduces cloud-based storage, lowering capex.

- Eliminated the need to wait 24+ hours for off-site tape deliveries.

- Removed need for a vendor to manage the program and the associated warehousing, transportation, and library support costs.

- 100% improvement in operational efficiency, with no tape drive issues.

- Mirroring between two data centers ensures that data is protected.

- Greater flexibility in scaling operations for future needs.

FULL STORY: http://www.netapp.com/us/media/cs-netapp-it.pdf

Thank you

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