NetApp Cloud Sync: File and Object synchronization in the Hybrid Multi-Cloud world.

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What is NetApp Cloud Sync?

CS3 – Cloud Services for Sync & Share

Cloud Sync ~~ CS2 – Cloud Service for Sync

- Managed Cloud Service
  - For migrating & synchronising data

- Between endpoints
  - From where you receive or have your data
  - To where you need your data
  - Both on-prem and cloud

- Between disparate formats
  - NFS, SMB, Object

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Cloud Sync Use Cases
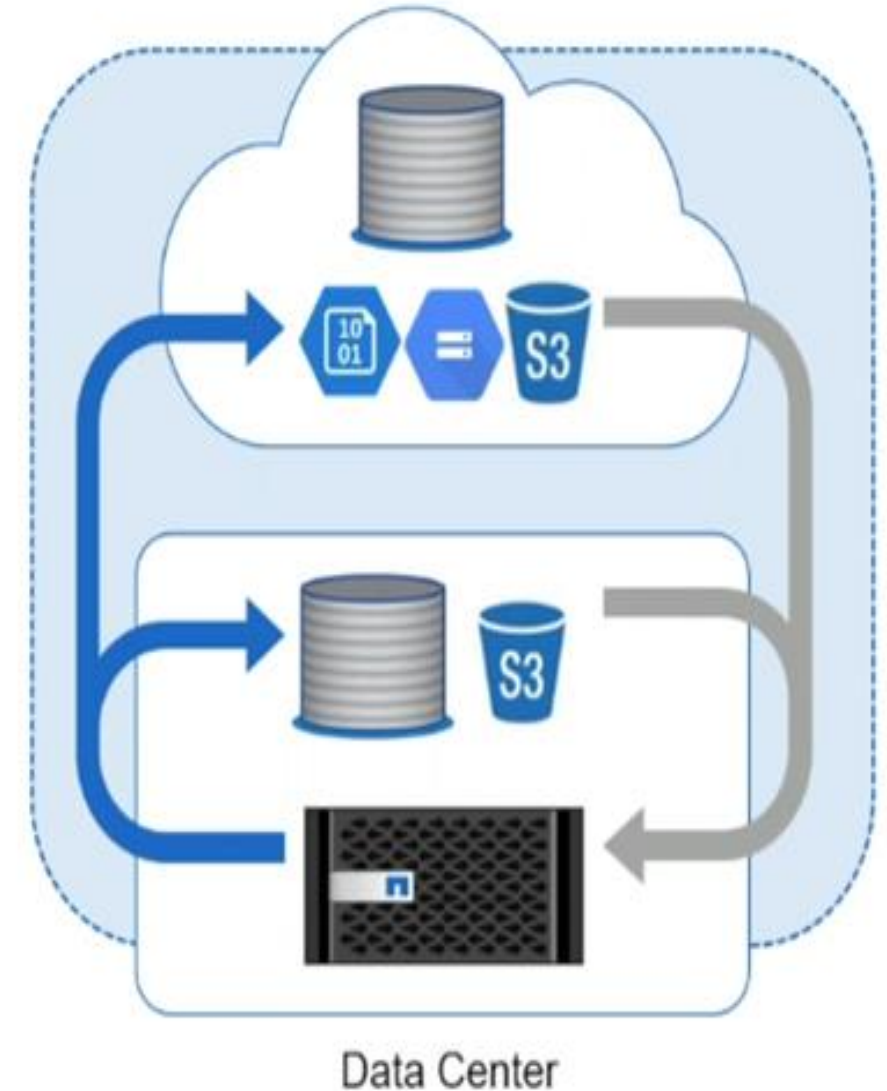
Blog
Moving Data Between the AWS and Azure Clouds
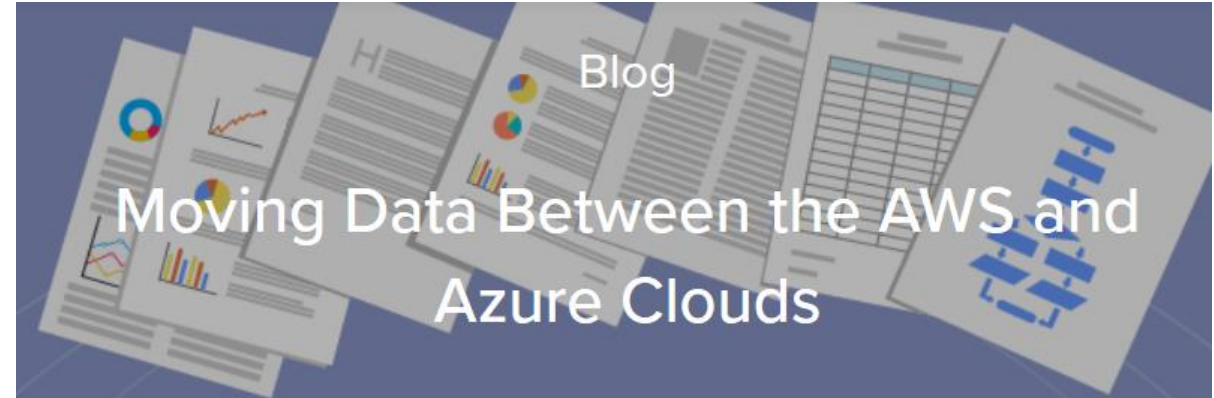
Data Migration

Move and synchronize your NAS data between any platform and Object storage.

Big Data Analytics

Solve your data-driven business decisions with cloud analytics.

Onboard Cloud Environments

Convert and copy your file-based datasets to the Cloud.

& Offboard / Exit Strategy

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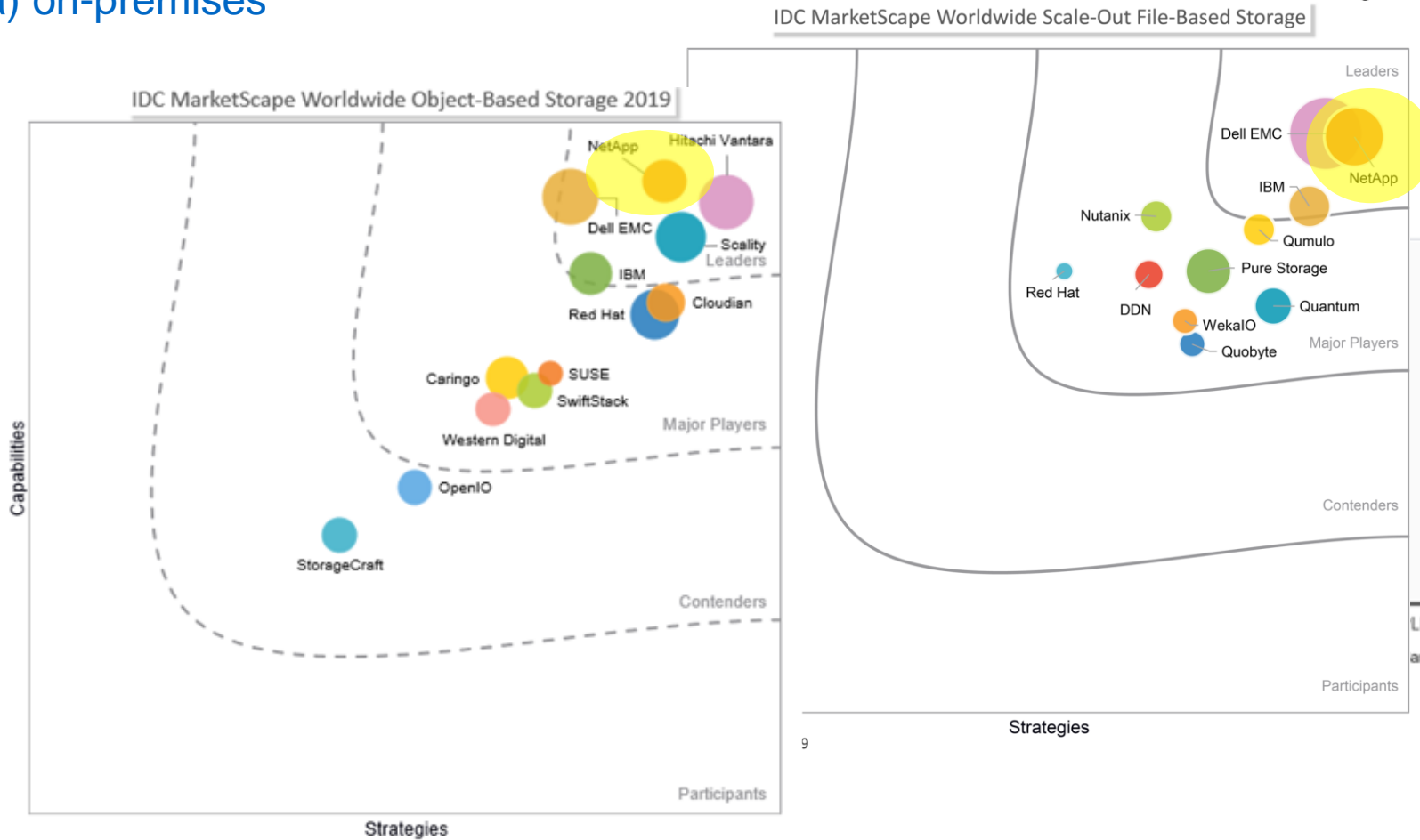*'Who are you and why should I care?' ⃰*

a) on-premises

Figure 1. Magic Quadrant for Primary Storage

IDC MarketScape Worldwide Scale-Out File-Based Storage

IDC MarketScape Worldwide Object-Based Storage 2019

Source: IDC, 2019

⃰ https://www.watts-innovating.com/who-are-you-and-why-should-i-care/ - Matts Watts, NetApp EMEA CTO
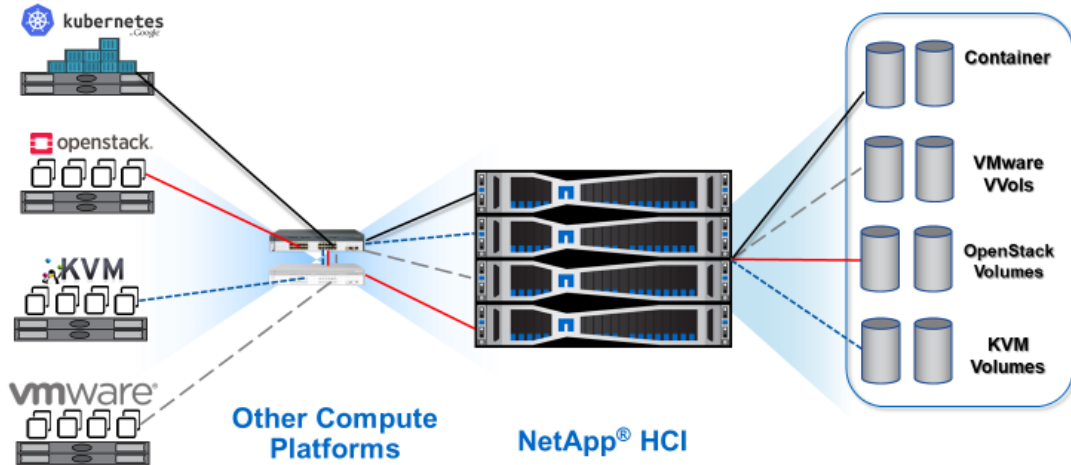
NetApp - a Hybrid Cloud Data Services Company

b) NetApp HCI – ~~Hyperconverged~~ Hybrid Cloud Infrastructure - Private Cloud

c) Hybrid Multicloud & Cloud Data Services
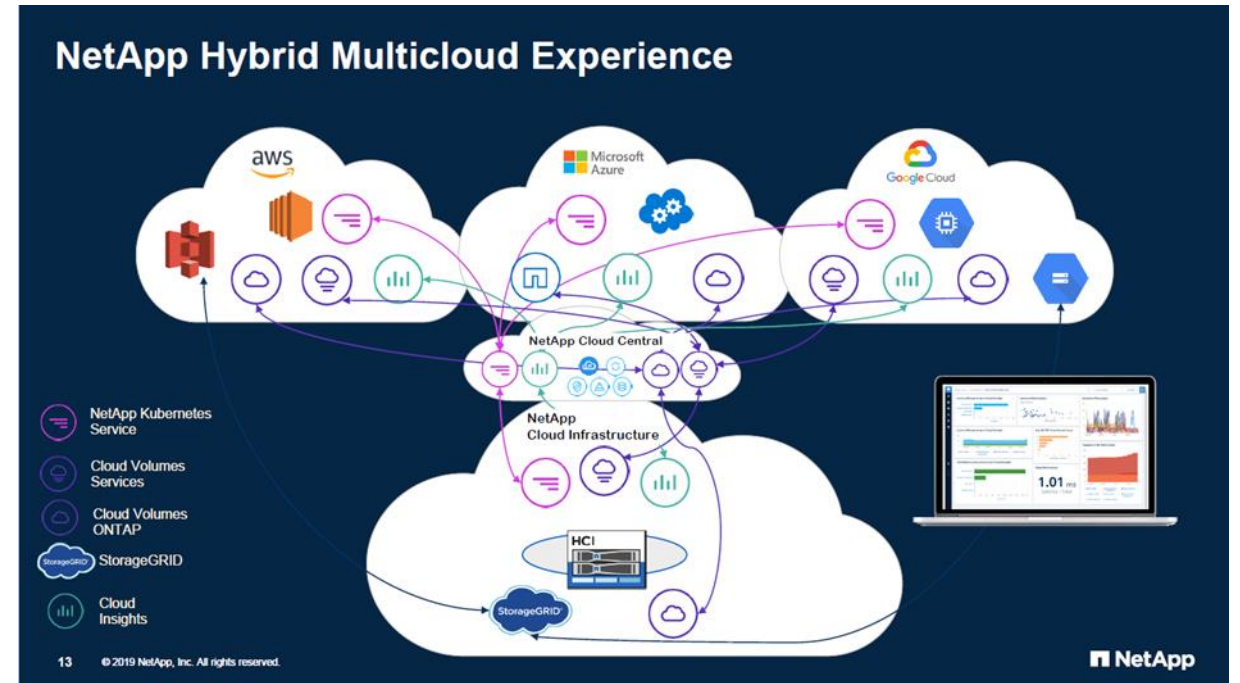
Cloud Sync – a NetApp SaaS service

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Challenges when transferring data

Securely move
datasets to
a new target.

Transform the format
and structure of data.

Overcome slow,
inefficient, and
expensive processes.
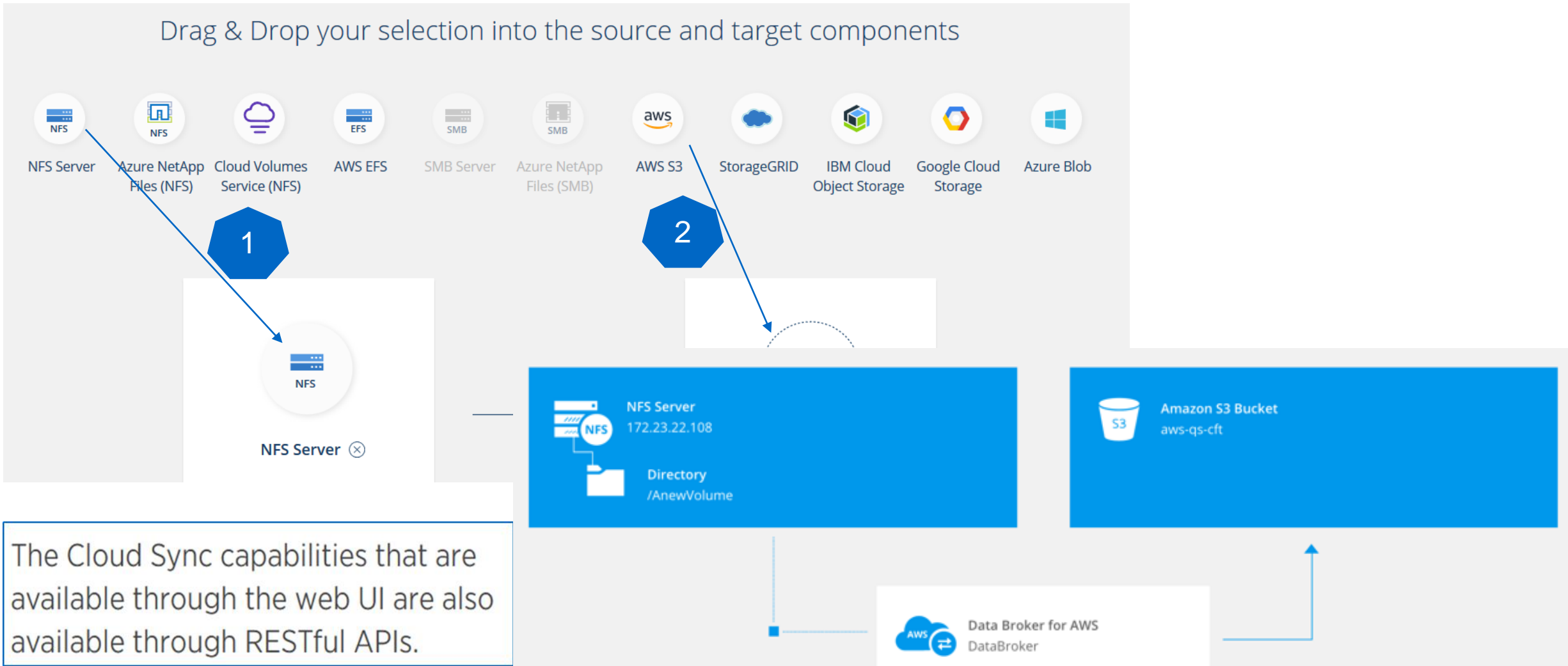
Keep the source
and target
synchronized.

Maintain data
consistency
and integrity.

Avoid the effort to
develop and maintain
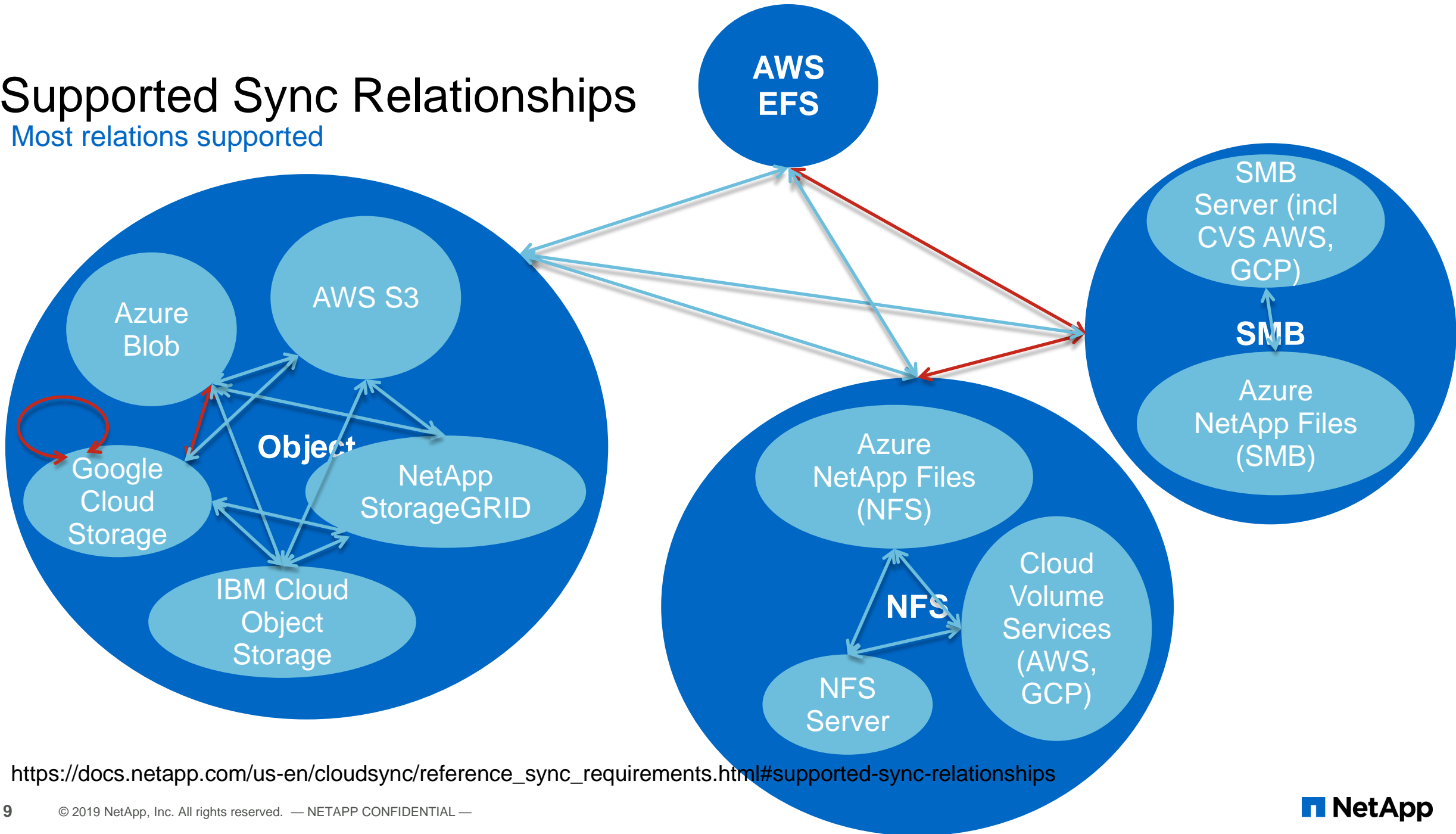tools in-house.

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Intuitive User interface - https://cloudsync.netapp.com

Create Sync Relationship by drag-and-drop

Drag & Drop your selection into the source and target components

NFS Server

Azure NetApp Files (NFS)

Cloud Volumes Service (NFS)

AWS EFS

SMB Server

Azure NetApp Files (SMB)

AWS S3

StorageGRID

IBM Cloud Object Storage

Google Cloud Storage

Azure Blob

1

2

NFS

NFS Server ⊗

NFS Server
172.23.22.108

Directory
/AnewVolume

Amazon S3 Bucket
aws-qs-cft

Data Broker for AWS
DataBroker

The Cloud Sync capabilities that are available through the web UI are also available through RESTful APIs.

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Supported Sync Relationships

Most relations supported

AWS EFS

Object
- Azure Blob
- AWS S3
- Google Cloud Storage
- NetApp StorageGRID
- IBM Cloud Object Storage

NFS
- Azure NetApp Files (NFS)
- Cloud Volume Services (AWS, GCP)
- NFS Server

SMB
- SMB Server (incl CVS AWS, GCP)
- Azure NetApp Files (SMB)

https://docs.netapp.com/us-en/cloudsync/reference_sync_requirements.html#supported-sync-relationships

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Architecture
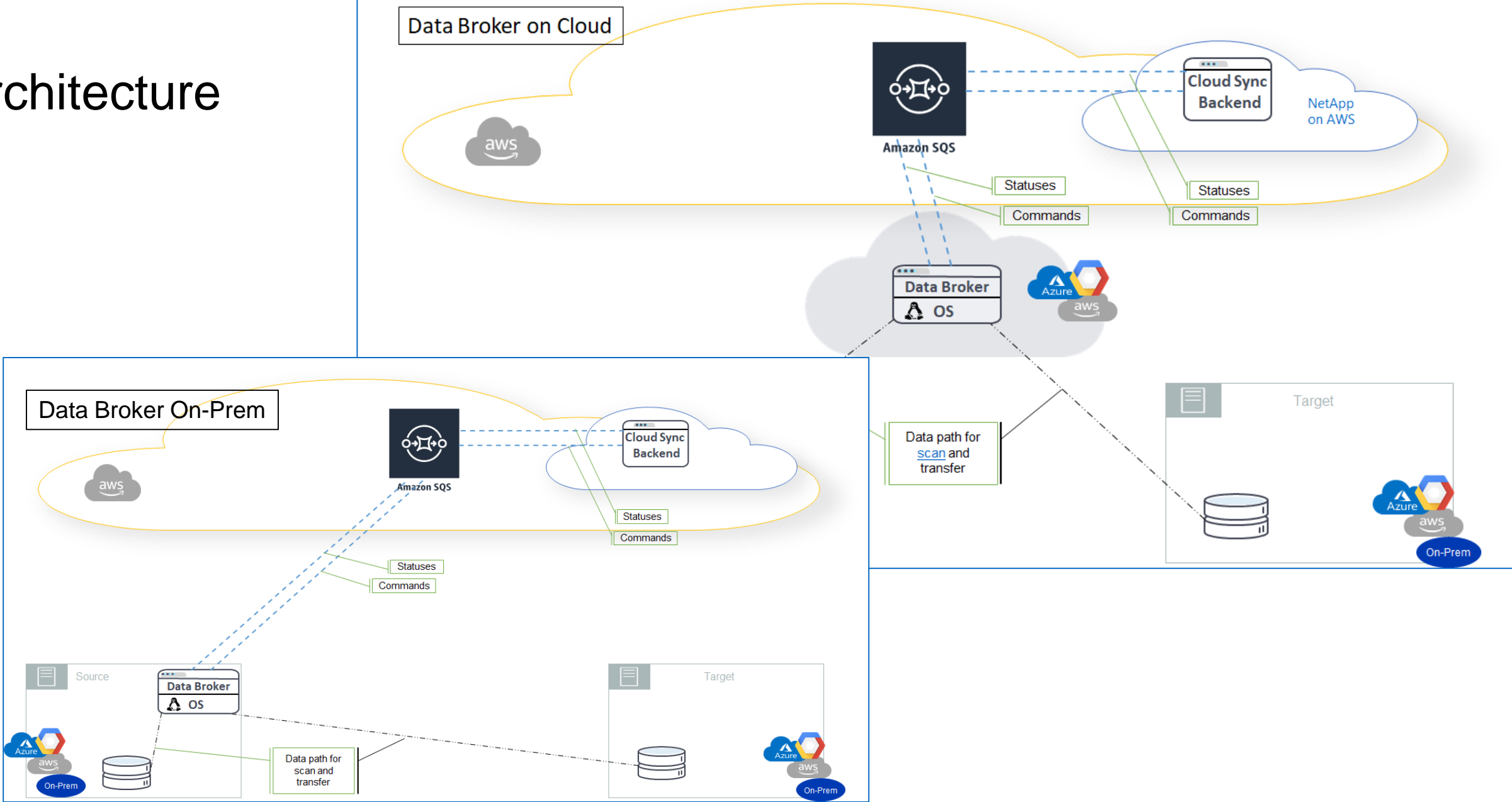
Performance through parallelization

Up to 200 files simultanously per databroker
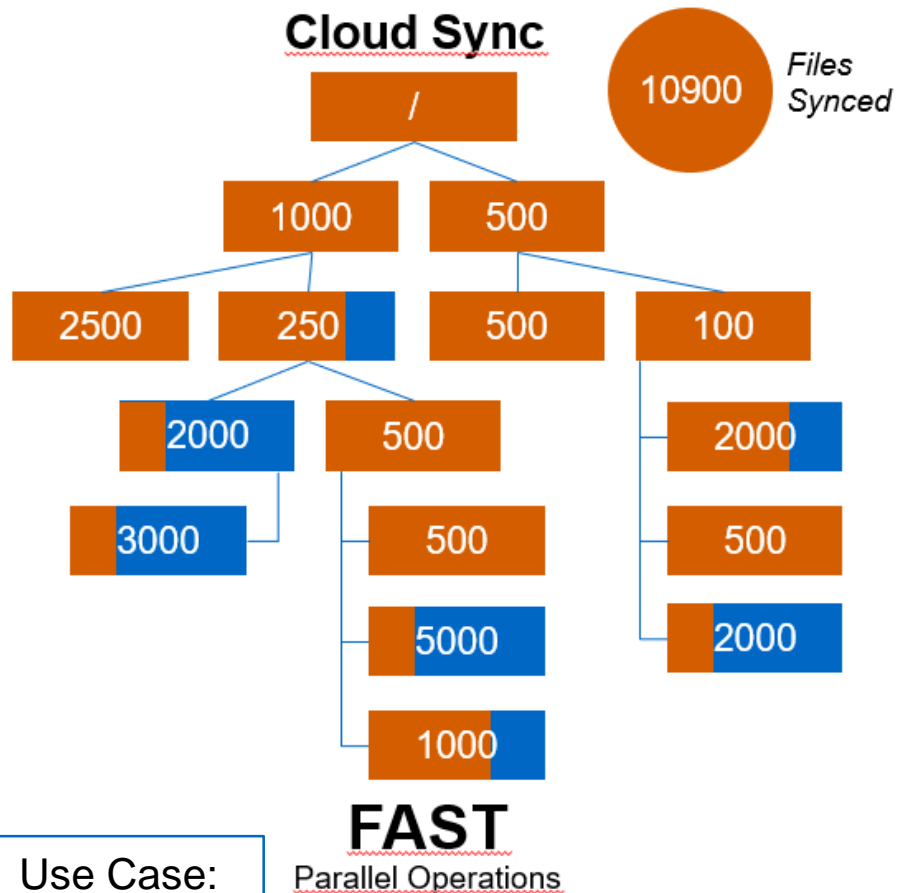
Use Case:

NetApp® Cloud Sync Service synchronized nearly 2 billion files and over 85TB of on-premises data to Amazon S3 in just one month

- **NFS versions 3, 4.0, 4.1, and 4.2 are supported.**
  - Permissions, user&groups info & ACL's are copied

- **SMB versions 1.0, 2.0, 2.1, and 3.0 are supported**
  - SMB ACL's can be copied as well

- **Azure Blob: hot and cold tier**

- **AWS S3: choose your storage class**

- **Cloud Sync less suitable for:**
  - Live data (such as running VMDKS and live databases)
  - High change rate file systems
  - Lots of very small files in only a few folders/directories

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Synchronization: which files and settings?

Synchronization when files are changed/modified:
a. *Files size*
b. *Permissions*
c. *File GID*
d. *File UID*
e. *Modified time*

Recently Modified Files	Exclude files that are modified up to 30 Seconds before a scheduled sync
Delete Files On Target	Never delete files from the target location
Retries	Retry 3 times before skipping file
File Types	Include All: Files, Directories, Symbolic Links
Exclude File Extensions	None
File Size	All
Date Modified	All

✓ Sync Completed   Initial Copy | Duration: a minute | 21 days ago

Scan

Succeeded
2 Directories | 699 Files   Failed ⓘ

To see the list of failed items, connect to your data broker and view the following file:
/opt/netapp/databroker/logs/failed/5c1f3fb3599c8f353c19f5ca-failed.log.*

Marked For Copy
4 Directories | 1.4K Files

Copy

Succeeded   Deleted   Failed ⓘ
692 Files | 5.08 TB   6 Files | 890 B   4 Files | 241.28 MB

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Secure

- HTTPS communications

- Files do not leave the customer security boundaries (on-premises & Cloud VPC's)
  - *<<ToS;DR>>*
  - Only metadata to Cloud Sync backend

- Use on-premises and cloud security facilities (VPN, direct connect, data-at-rest encryption)

- Optionally: NFS in-flight encryption (databrokers in both source and target location)
  - For on-premises to on-premises
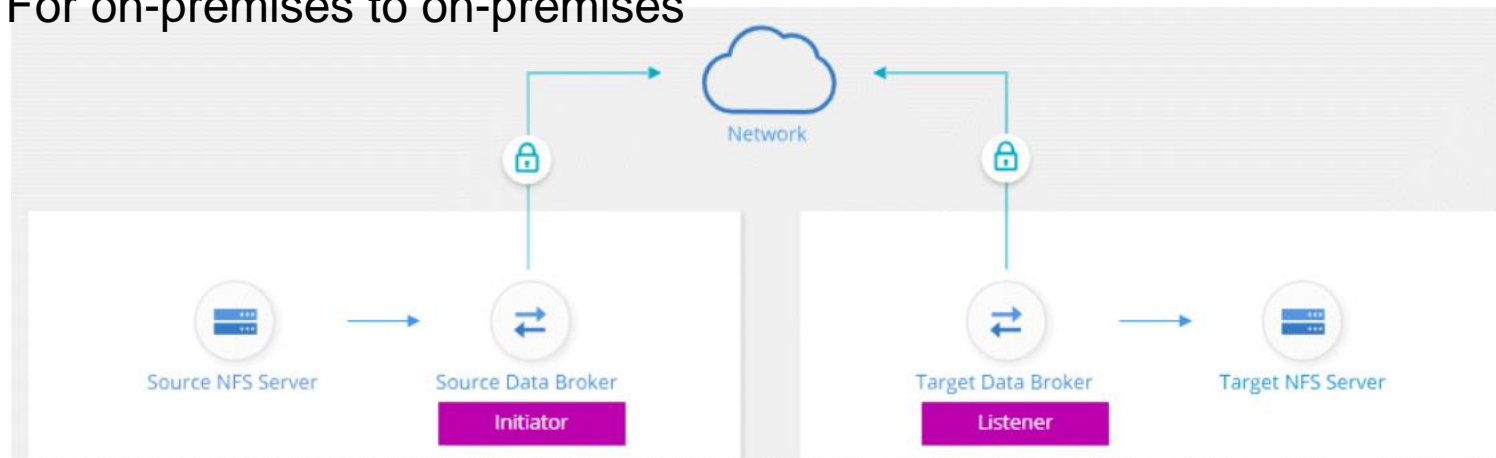
Cost structure of Cloud Sync Services

Note: Add-on costs to regular Cloud, networking and on-premises infrastructure costs.

- ## Pay-as-you-go / By the hour
  - Migration, moving, etc

- ## Annual pricing
  - Replication, synchronization

This software is priced along a consumption dimension.
Your bill will be determined by the number of hosts you use per hour.
Additional taxes or fees may apply.

Cloud Sync service	
Hosts	**Cost**
First 1-5 host sync relationships per hour	$0.15 / host / hour
Next 6-20 host sync relationships per hour	$0.1 / host / hour
More than 20 host sync relationships per hour	$0.085 / host / hour

Below are the total costs for these different subscription durations.
Additional taxes or fees may apply.

Cloud Sync service - Annual license		
Hosts	**Description**	**12 MONTHS**
20 sync relationships	20 sync relationships	$14,475

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Example: Cloud Sync integrated in Cloud Volumes Service for AWS

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- Volumes
- Snapshots
- Active directory
- **Sync**
- API access

● AWSDataBroker (Complete)

Region: US West (Oregon)
VPC: 10.60.3.0/25 | vpc-5b46c03e
Private IP: 10.60.3.81

Availability zone: us-west-2a
Subnet: 10.60.3.0/25 | subnet-f1f526a8
Instance Id: i-123456789

Create relationship

Volume *Required*

newNFSvol4app (4f45ca65-9f2e-f8a0-3295- ▼

Use volume as target | Use volume as source

Source

Protocol	Version	Host *Required*	Export *Required*
NFS ▼	3 ▼	success.com	/data1 ▼

Target

☁ Sync

Actions ▼	+ Create new relationship	● AWSDataBroker ⌄		🔍 Search

1–1 of 1 entries ‹ ›

	Source	Target	Auto sync	Schedule	Last sync	Duration	File progress			Action
☐	nfs://success.com/data1	nfs://192.168.0.190/ebullient-adoring-ptolemy	ON 🟢	Every 2 hours ▼	7 minutes ago	a minute	696	0	6	Done ⌄

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Key Takeaways

Seamless

Sync cycles based on the schedule you set, moving only deltas

Simple

Intuitive web-based GUI, and API

Reliable

Enterprise-class monitoring, audit and reports

Secure

Data remains within your security boundaries

Fast

Continuous sync of large workloads and immediate data access

Cost Effective

Simple, on demand resources

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For Free Trial go to
https://cloud.netapp.com