



From On-Prem NAS to FSx for NetApp ONTAP

A Migration Case Study

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Large Datacenter-to-AWS Migration: No Simple "Lift and Shift"



100+ VMware VMs migrated to EC2 (using MGN)

Dozens of databases migrated to AWS RDS

Several hundred TB on on-premises NAS

Everything deployed to a brand-new AWS Landing Zone

Active Directory: Greenfield domain cutover required mid-migration

Regulatory constraints prevented pre-staging the new domain

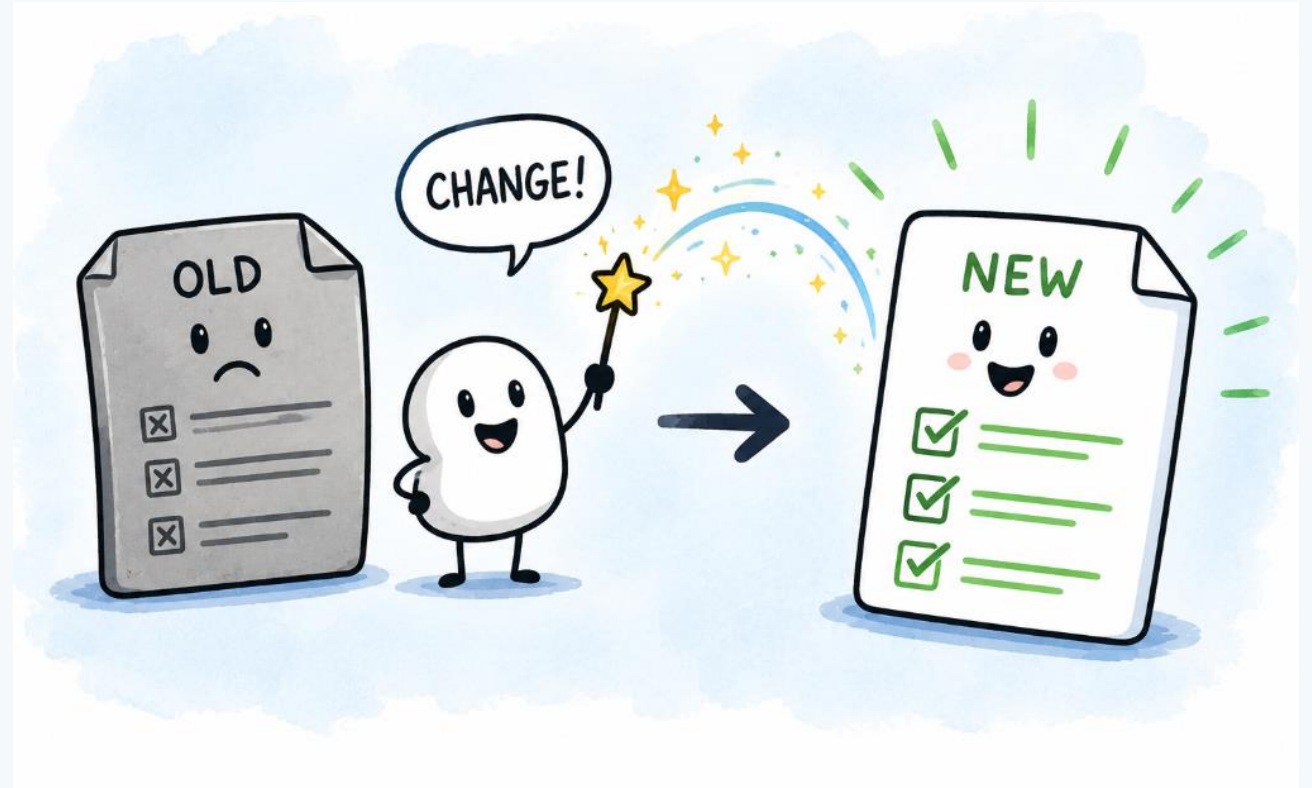
Air-gapped "bubble" environment used for safe testing

Why FSx for Windows was our Go-To for NAS Migrations

- Used on multiple past NAS-to-AWS migrations
- Simplicity with ease of configuration
- Familiarity to Windows admins
- SMB-Native with AD-join capabilities

Why It Didn't Fit This Time

- Cost scales linearly with capacity
- No tiered storage: you pay SSD rates on everything
- Large number of Terabytes included with this project



Why We Evaluated FSx for NetApp ONTAP



Cost Pressure and Flexibility Forced the Conversation



Advantages

- Savings potential too significant to ignore
- Ability to easily adjust the desired throughput
- Multi-AZ and redundancy enhancements
- Flexibility with SSD consumption and cold storage options



Previous Hesitations We Overcame

- No internal ONTAP experience
- More up-front configuration decisions (throughput, Multi-AZ, protocols)
- Several hundred Terabytes included with this project

What is Amazon FSx for NetApp ONTAP?



Complete, fully
managed
NetApp ONTAP
file systems



With the simplicity,
agility, and scalability
of an AWS service

Why Pick Amazon FSx for NetApp ONTAP

SSD Tier (Hot): Frequently Accessed Data

Capacity Pool (Cold): Infrequently Accessed Data

Throughput Provisioning

Built-in Deduplication and Compression

Multi-Protocol: SMB, NFS, iSCSI from the same volume



Fully managed,
PB+ scale



Single-AZ
or Multi-AZ



High performance



ONTAP's data
management features
and API's



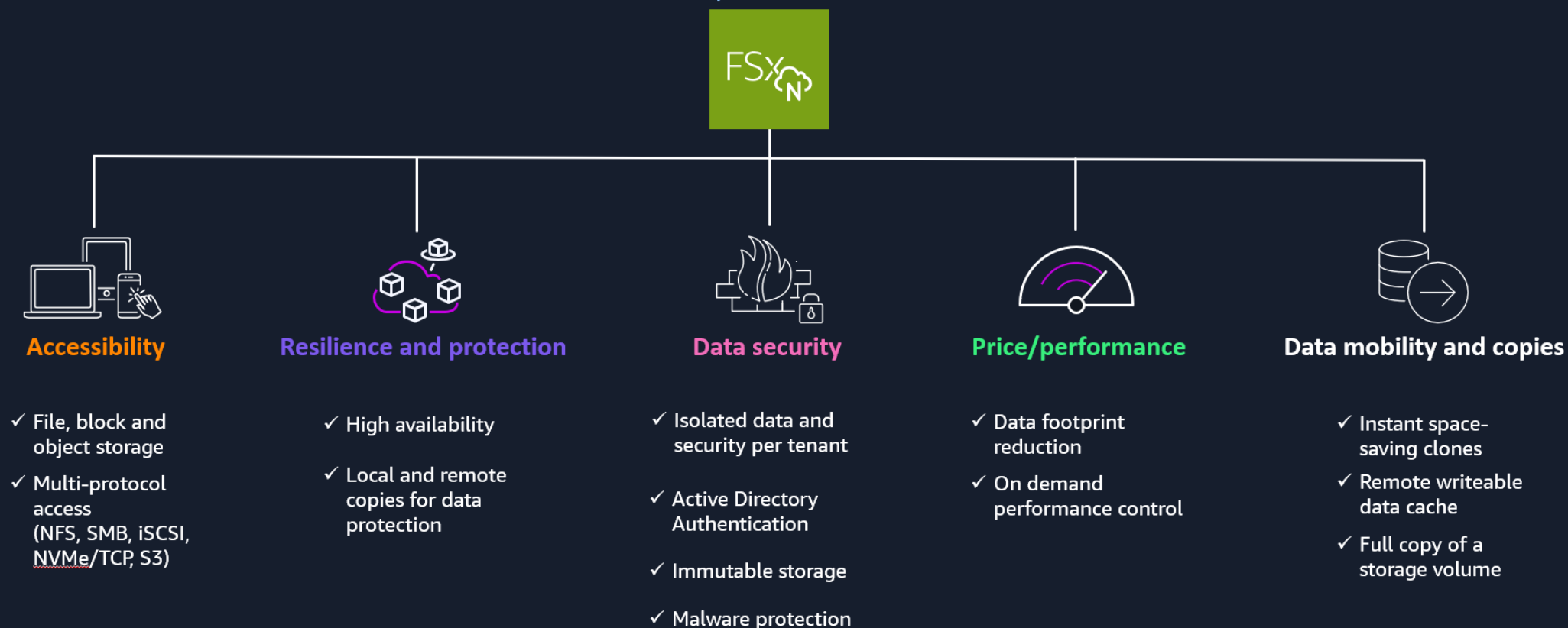
Built-in storage
efficiency and
elastic tiering



Multi-protocol
(NFS, SMB, iSCSI)

Intelligent storage for any workload

COMPREHENSIVE SET OF FEATURES FOR OPTIMAL COST/PERFORMANCE



Optimize your TCO with FSx for ONTAP

USE THE MOST OPTIMIZED SERVICE FOR EACH WORKLOAD AND PAY FOR ONLY WHAT YOU USE



Single-AZ or
multi-AZ
deployments



Multiple storage
type and performance
options



Snapshot, backup,
and replicate
your data



Built-in storage
efficiencies



Migration Approach

AWS DataSync and Implementation Details

Migration Approach

Let's Migrate some data!

We select AWS DataSync as the product of choice for data migration.

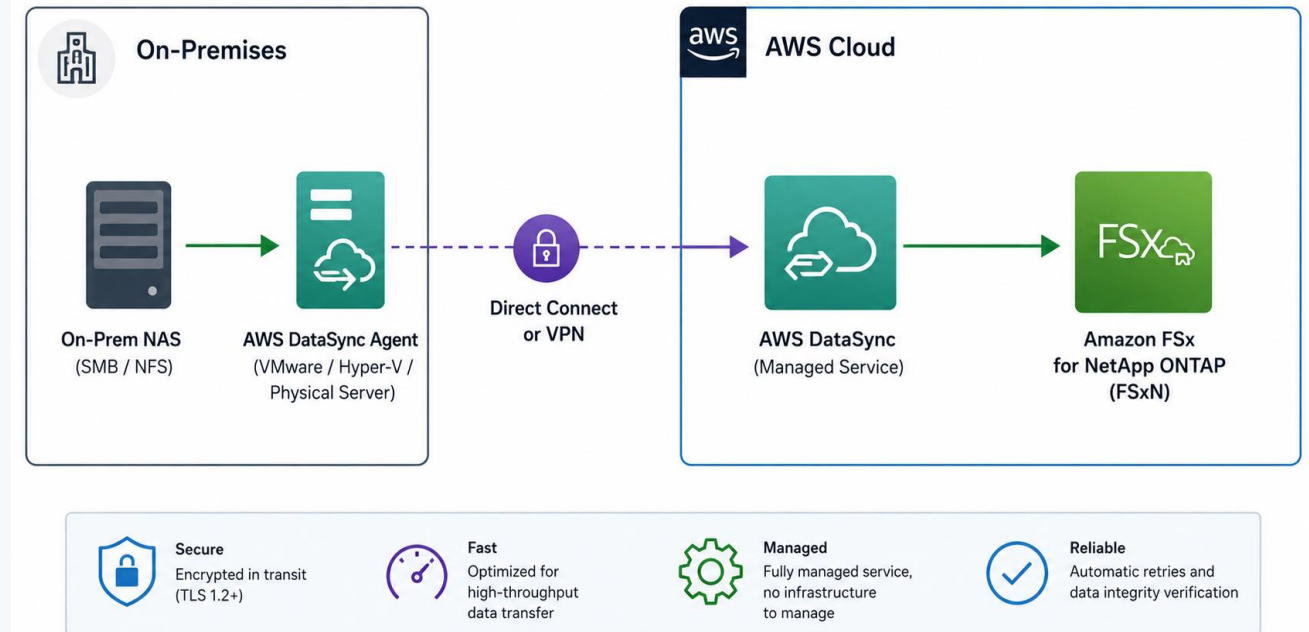
DataSync agents were deployed on customer's on-premises environment

Agents configured to point at source NAS shares

DataSync tasks transferred data into FSxN volumes

Incremental syncs used to minimize cutover window

FSxN volumes pre-joined to target AD domain





FSxN is a real NetApp ONTAP instance: full CLI available over SSH



Key Uses

- Rejoining AD after environment rebuilds
- Diagnosing and repairing connectivity issues
- Verifying replication status



Key Takeaways

Turns a managed service into something you can actually debug

"Not as hard as we imagined": intuitive for anyone with CLI experience

"It's just SSH, and it changes everything"



Granular control without the click-click-click



CLI Advantages

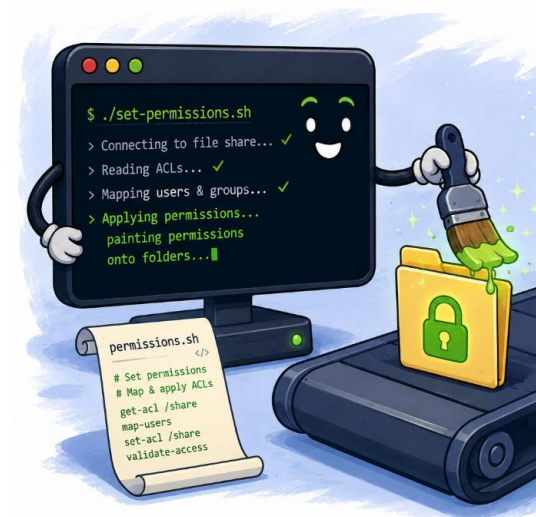
ONTAP CLI for granular NTFS and share-level permission management

Implemented role-based access controls efficiently at scale

More targeted least-privilege model than Windows tooling alone

Scriptable: reduced human error on hundreds of shares

Reduced administrative overhead for the customer long-term



The CLI gave us a way to script and automate permission changes that would have been manual through Windows Server.



FlexClone doesn't copy the data: it's a space-efficient snapshot that only stores deltas



Capabilities

Instantaneous point-in-time volume snapshots

Cloned instance available in minutes (space-efficient, not a full copy)

Our use case: clone production file shares into the bubble for testing

Enabled rapid iteration on security/permission migration tooling

Zero risk to production data



Other use cases: DB refresh to non-prod • Pre-release testing • DR validation

Reasons to Choose FSx NetApp ONTAP Moving Forward

- 1 The additional configuration options unleash a powerful, well-defined storage solution
- 2 Know your data profile: Hot/Cold ratio and deduplication potential drive savings
- 3 Multi-AZ FSxN < Single-AZ FSx for Windows: at scale, the math is not close
- 4 CLI access is a superpower: debuggability other managed storage lacks
- 5 FlexClone enables safe testing patterns, especially during migrations
- 6 DataSync works the same: no new tooling to learn



Questions?



Continue the Conversation!



- Presentation downloads
- Speaker Information
- Additional resources
- Office Hours registration and details
- Follow-up contact information

<https://www.cleanslatetg.com/aws-community-day-resources/>