



Accelerate Modernization to AWS with Amazon Elastic VMware Service (EVS)

Using Amazon FSx for NetApp ONTAP

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Amazon EVS with Amazon FSx for NetApp ONTAP

What is Amazon EVS?

What is Amazon FSx for NetApp ONTAP?

Why FSx for ONTAP?

Effectual Partner Benefits

Additional Resources





Amazon Elastic VMware Service

The fastest path to migrate and operate
VMware-based workloads on AWS

- Simplify and accelerate your migration to AWS

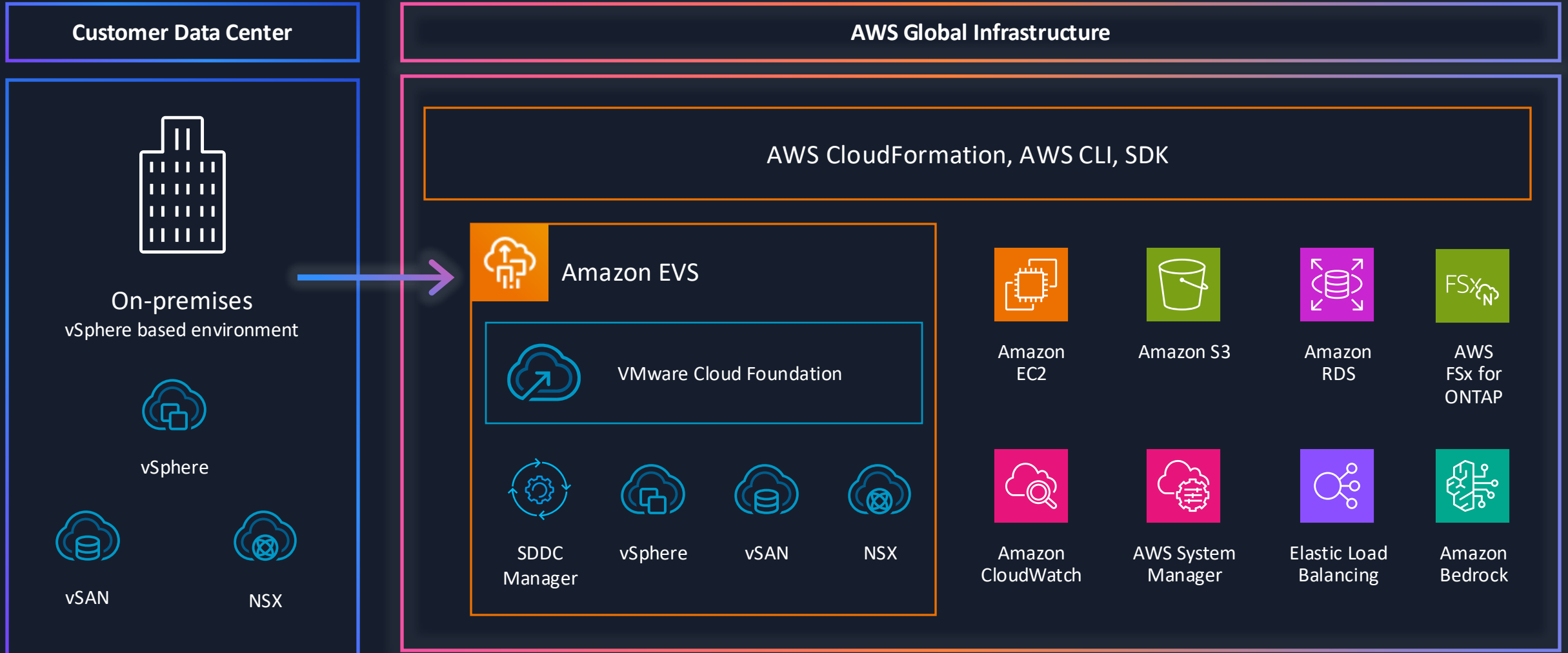
- Retain control of your VMware architecture in the cloud

- Choose to self-manage or leverage AWS Partners such as Effectual managed services

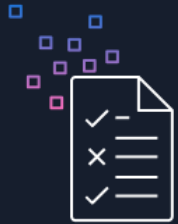
- Embrace AWS innovation to transform your workloads

Amazon EVS overview

Run VMware Cloud Foundation (VCF) on EC2 bare-metal instances directly within Amazon Virtual Private Cloud (Amazon VPC)

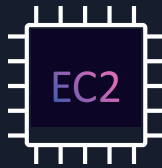


Amazon EVS features



AUTOMATED PROVISIONING

- Console and API
- Cloud Builder



EC2 BARE METAL INSTANCES

- i4i.metal instances
- Dedicated hosts



STANDARD VCF SOFTWARE

- VCF 5.2.1
- SDDC Manager



STORAGE

- FSx for NetApp ONTAP



CONTROL

- Full administrative access
- Deployed in a VPC in your account



FLEXIBILITY

- Consumption Models (OD/1Y/3Y)
- Bring-your-own-subscription (BYOS)

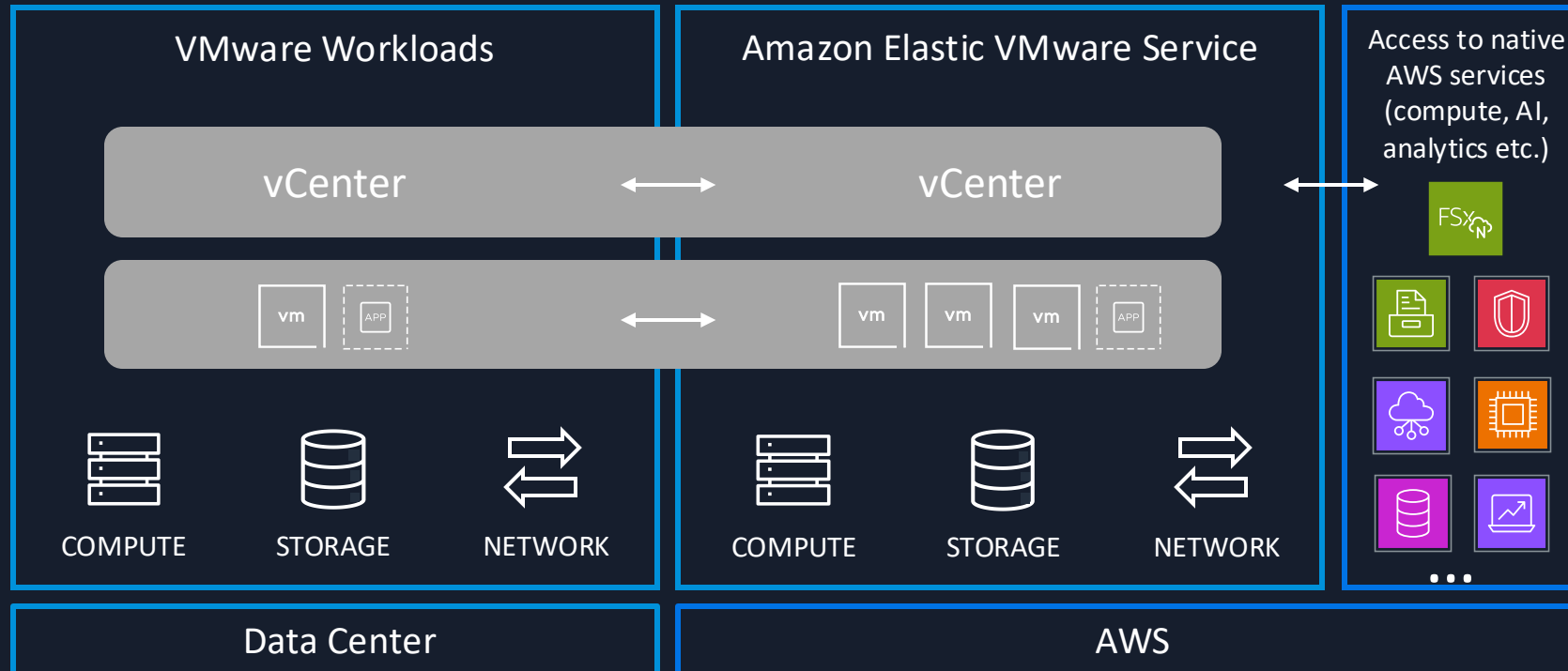


CHOICE

- Customer or Partner Managed

Relocate to Amazon EVS

MEET BUSINESS DEMAND WITH OPERATIONAL CONSISTENCY, FLEXIBILITY, AND REDUCED COSTS



Run VMware-based workloads on AWS with Amazon EVS

Challenges with VMware data storage

BUILDING, MANAGING, AND FINANCING VMWARE WORKLOADS IS NO SMALL FEAT

High total cost of
ownership



Inefficient
data protection



Hybrid cloud
complexities





Amazon FSx for NetApp ONTAP

AWS storage service certified for Amazon EVS

FSx for NetApp ONTAP is a fully managed AWS storage service



Enterprise cloud storage for any workload

COMPREHENSIVE SET OF FEATURES FOR OPTIMAL COST/PERFORMANCE

FSx_{cloud}



Accessibility

- ✓ File, block and object storage
- ✓ Multi-protocol access (NFS, SMB, S3)



Resilience and protection

- ✓ High availability
- ✓ Local and remote copies for data protection



Data security

- ✓ Isolated data and security per tenant
- ✓ Active Directory Authentication
- ✓ Immutable storage
- ✓ Malware protection



Price/performance

- ✓ Data footprint reduction
- ✓ On demand performance control



Data mobility and copies

- ✓ Instant space-saving clones
- ✓ Remote writeable data cache
- ✓ Full copy of a storage volume

Why Amazon FSx for NetApp ONTAP with VMware based workloads

SUPPORTING DATA SERVICES FOR VMWARE WORKLOADS AT SCALE IN THE CLOUD

Cost optimize



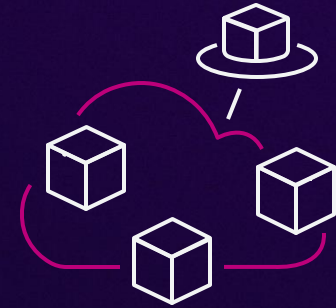
Save up to 50% on costs by decoupling compute and storage

Improve performance and reliability



Strengthen protection and meet SLAs with enterprise data protection

Improve operational excellence



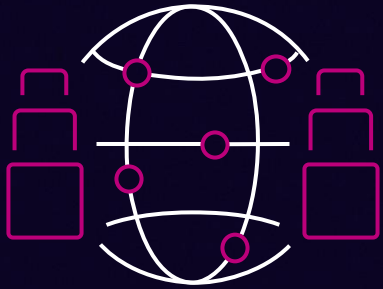
Ease migration with architectural consistency and feature parity

Amazon FSx for NetApp ONTAP: Lower total cost of ownership



Optimize your TCO with FSx for ONTAP

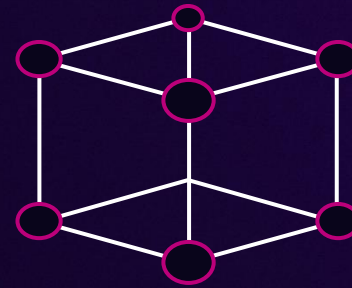
USE THE MOST OPTIMIZED SERVICE FOR EACH WORKLOAD AND PAY FOR ONLY WHAT YOU USE



Single-AZ or
multi-AZ
deployments



Multiple storage
type and performance
options



Snapshot, backup,
and replicate
your data

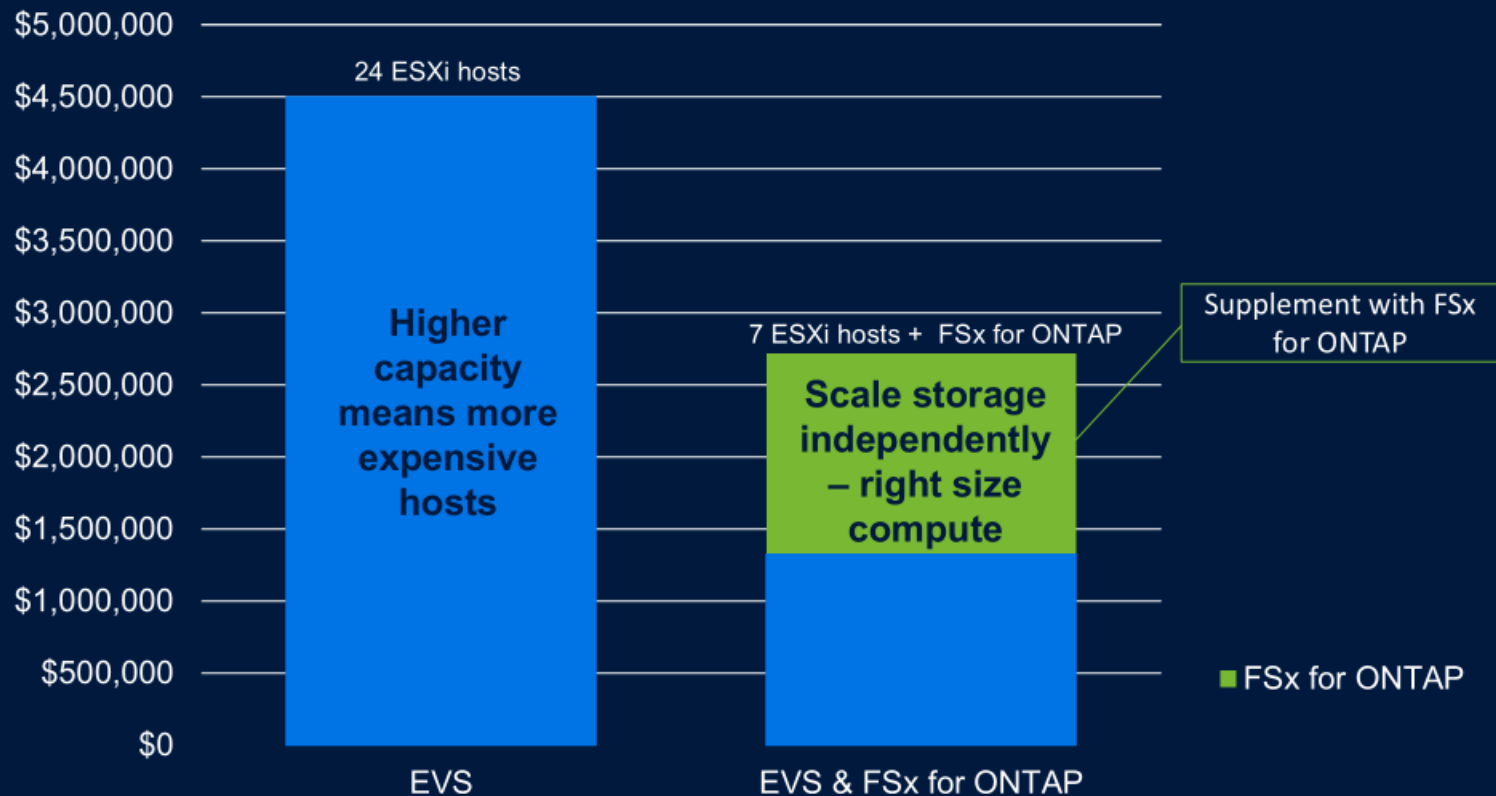


Built-in storage
efficiencies

Imaging use case: 40% lower TCO

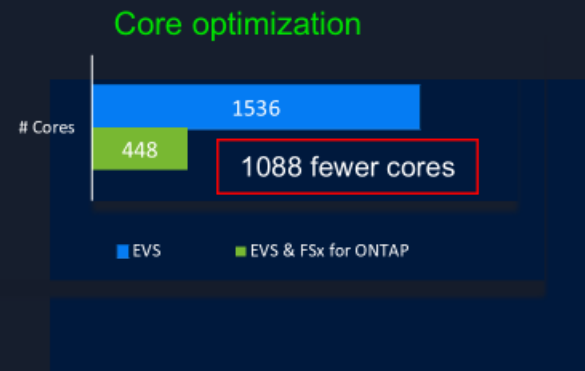
500TB | 3YEAR COMPUTE SAVINGS PLAN | I4I.METAL SHARED INSTANCES

3-year savings = \$1,782,732 USD
1088 fewer cores



Benefits

- **Reduced TCO** by decoupling storage from compute
- **Flexible scalability** to handle rapid data growth without scaling out ESXi hosts
- Fewer cores and nodes reduce licensing costs

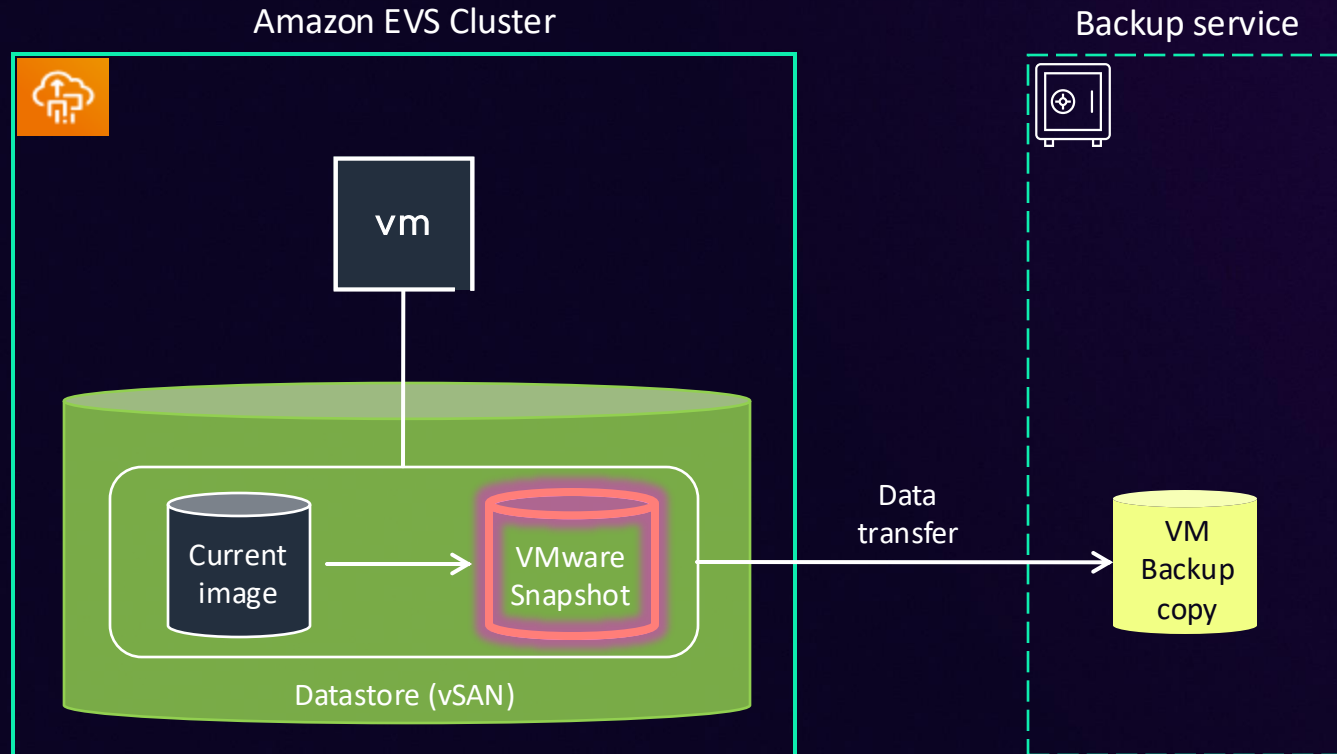


Amazon FSx for NetApp ONTAP: Improved data protection for VMware



Backup in Amazon EVS

BACKING UP VIRTUAL MACHINES WITH VMWARE SNAPSHOTS AND EXTERNAL BACKUP



Slow backup process

The presence of VMware Snapshot incurs:



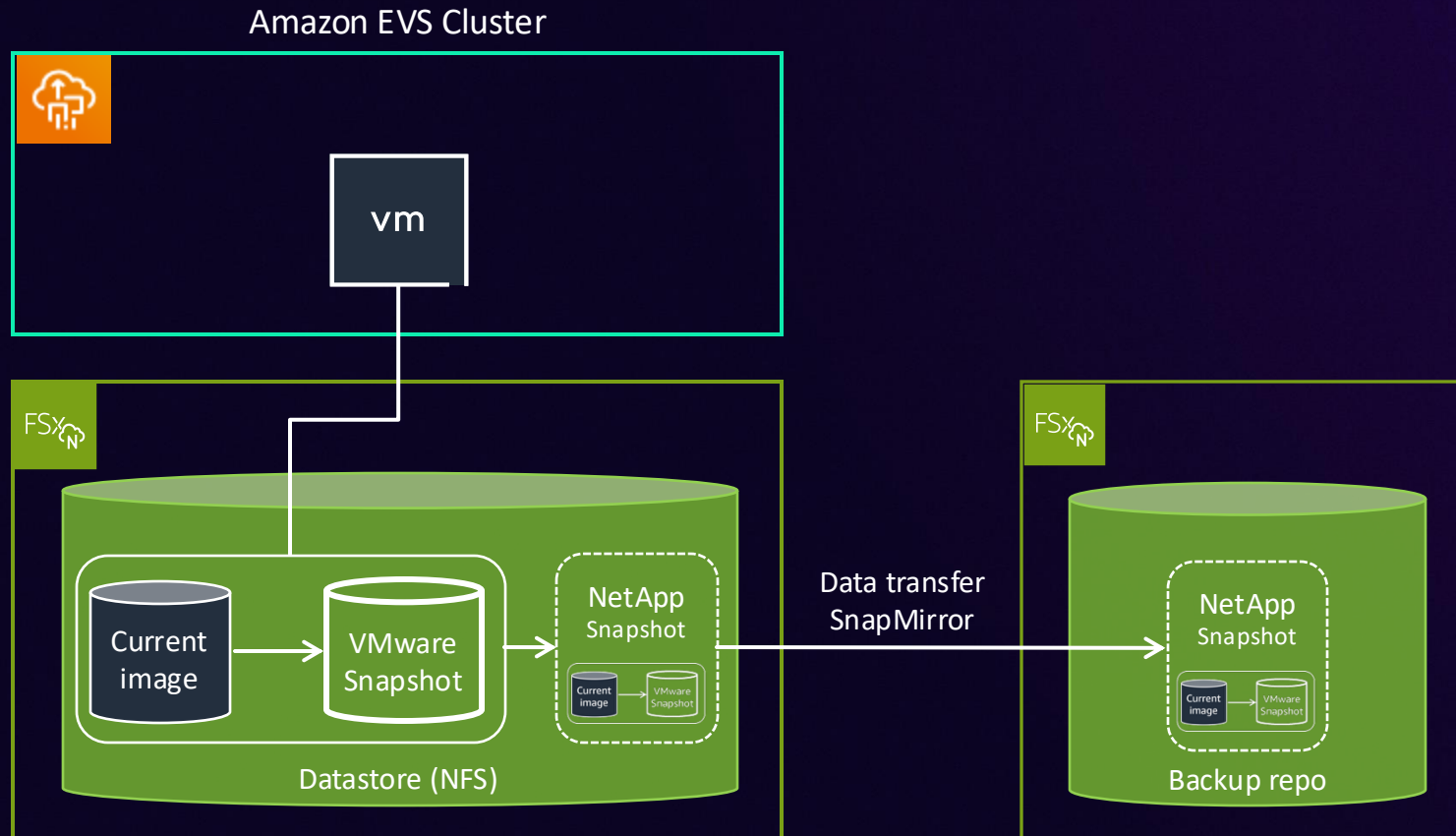
Performance penalty



Management difficulty

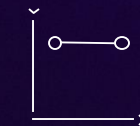
Backup in Amazon EVS with FSx for ONTAP

BACKING UP VIRTUAL MACHINES WITH NETAPP SNAPSHOTS AND SNAPMIRROR



Fast backup process

Since the VMware Snapshot is deleted instantly there is:



Zero performance impact



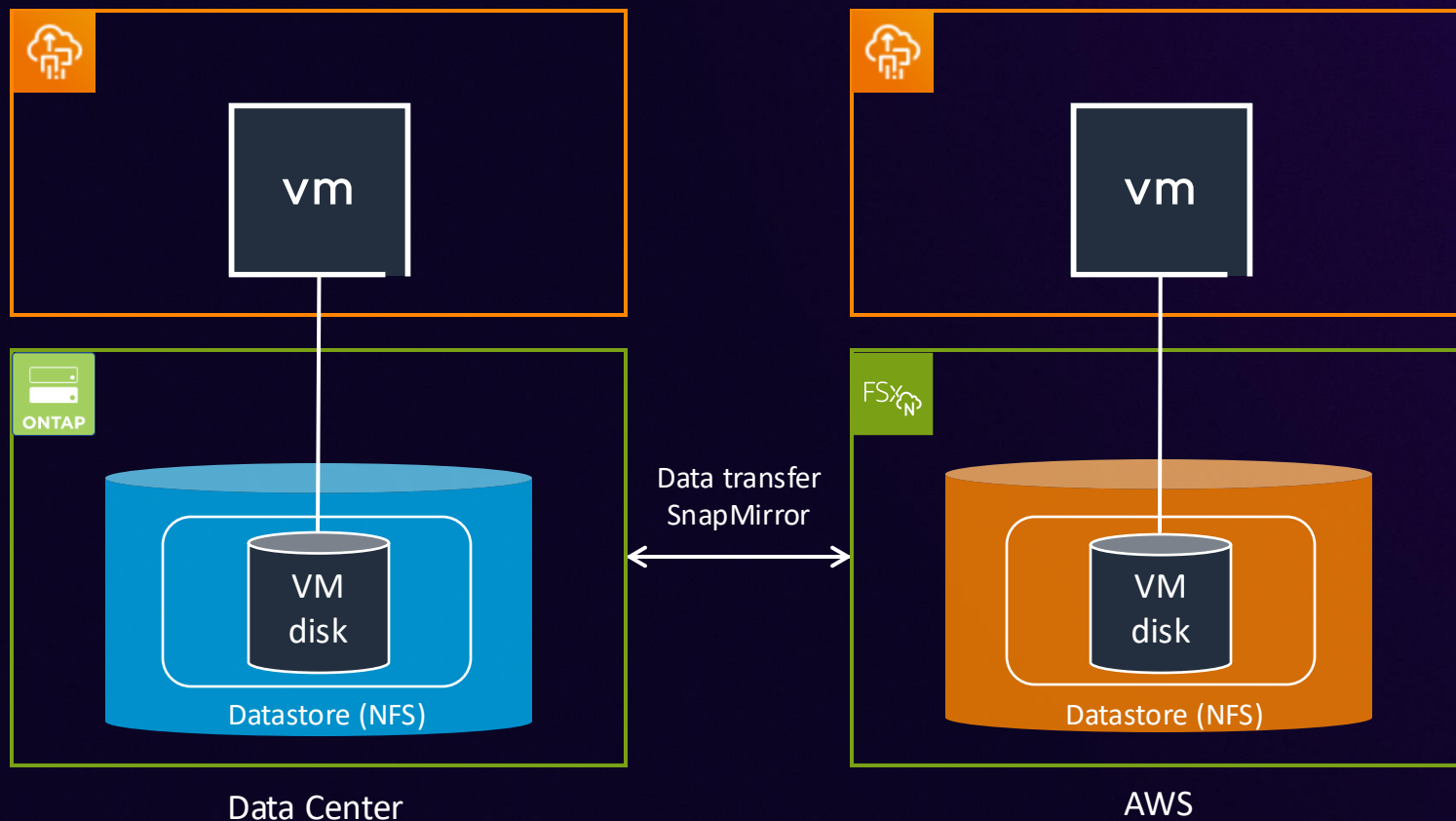
Minimal storage overhead

Amazon FSx for NetApp ONTAP: Simplified operations with a familiar experience



Consistent operational experience

ENABLING WORKING IN HYBRID RISK-FREE



Simple discovery and planning

Avoid rewriting applications

Simple and safe migration with SnapMirror

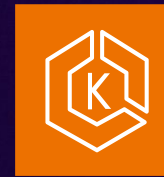
Full interoperability

Preserve enterprise-grade capabilities in the cloud

Your storage throughout the modernization journey

AMAZON FSX FOR NETAPP ONTAP

FSx_N



EVS

EC2

EKS

FSx for ONTAP provides a **proven, consistent storage platform** and shell base for your modernization journey

FSx for ONTAP with VMware Use Cases

DESIGN PARTNER FOR MANAGED STORAGE

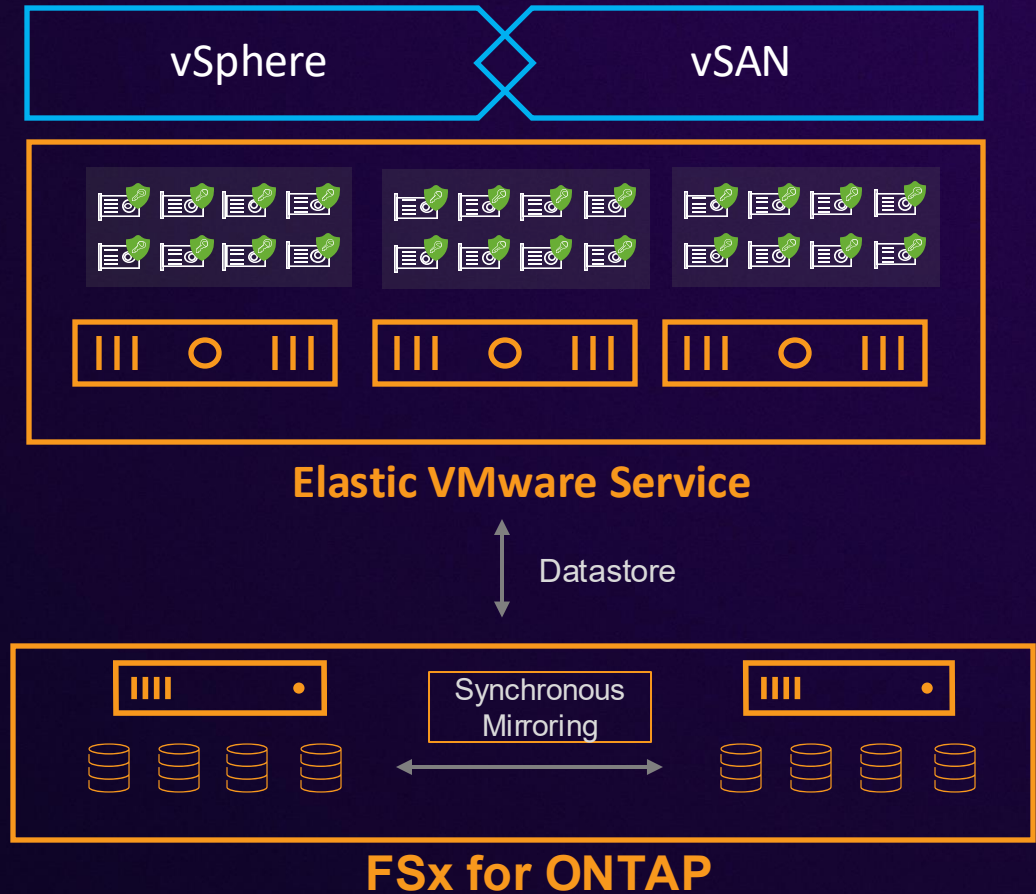
Underlying storage for EVS

- NFS datastores
- iSCSI datastore
- NFSv3.0 shares in guest mounts for VMs
- SMB3.x shares in guest mounts for VMs

VMware
Administrator

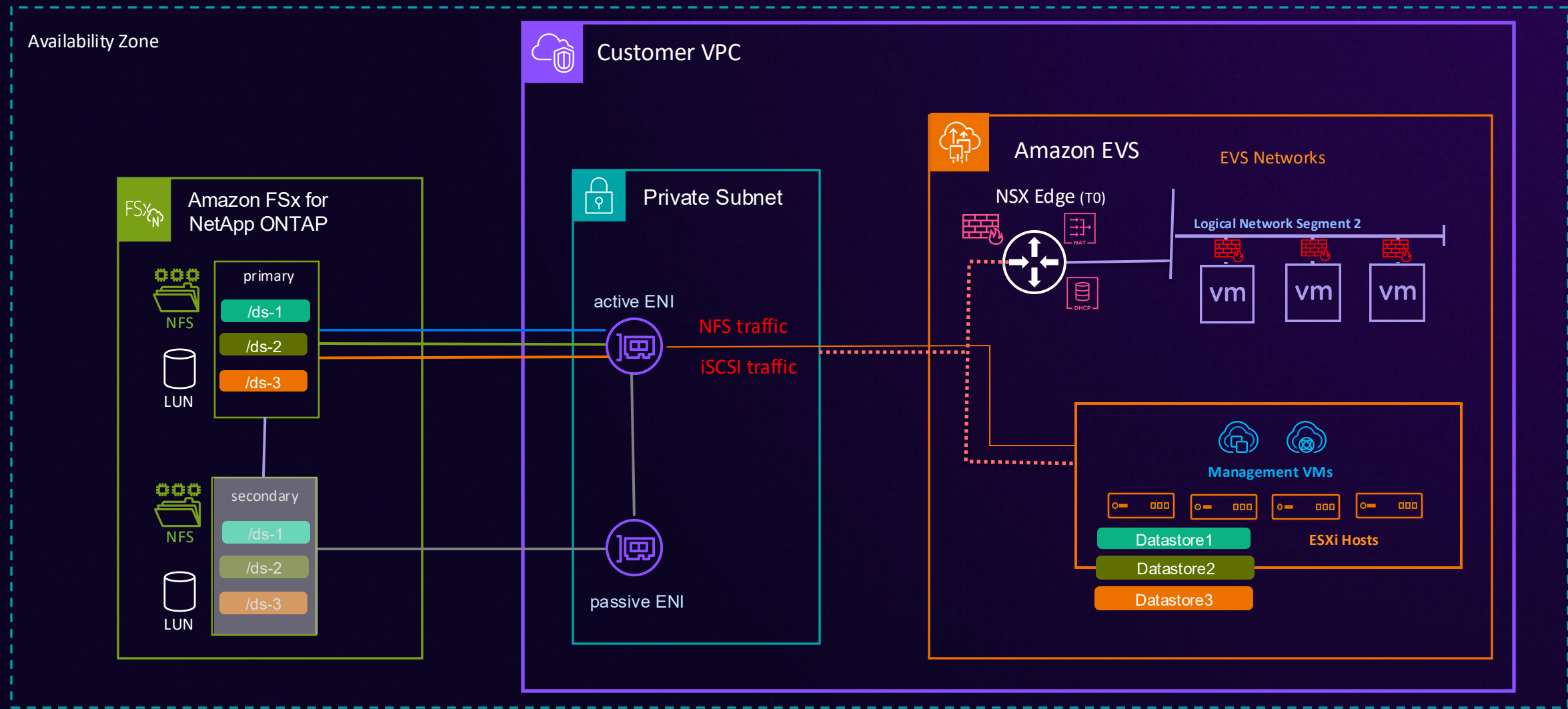


AWS
Administrator



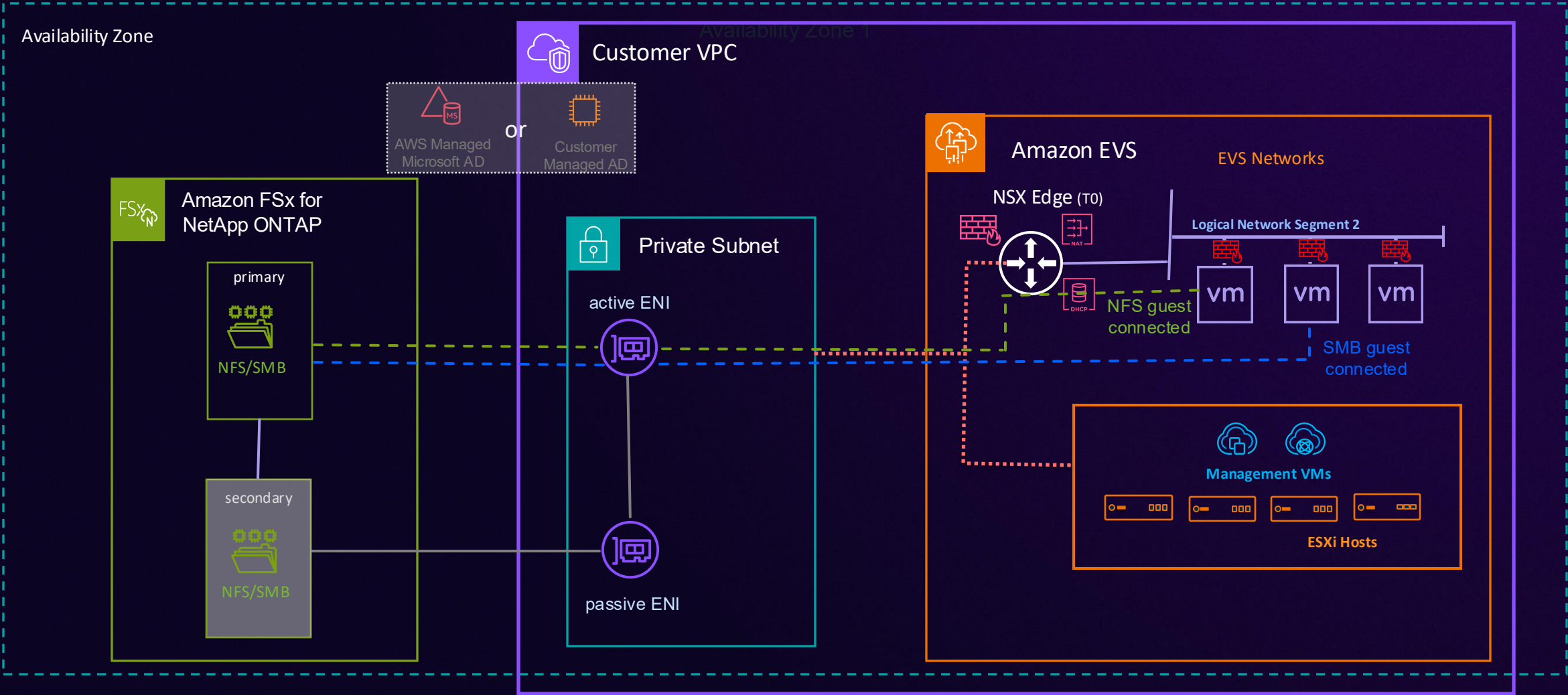
Architecture – Amazon EVS + Amazon FSx for ONTAP

NFS OR ISCSI DATASTORE OPTIONS



Architecture – Amazon EVS + Amazon FSx for NetApp ONTAP

GUEST CONNECTED STORAGE (NFS/SMB)



High-impact workloads where FSx for ONTAP provides extra value

Storage-heavy

Offloads from compute and memory, frees up resources for actual VMs

Add storage to scale out capacity without adding new nodes

Modify the datastore's size dynamically

VDI | Electronic health records | Video editing and broadcasting

High-performance

Optimal for low latency (<1ms) and high transactional workloads

Well suited for databases and metadata sensitive workloads

Modify the datastore's throughput and IOPs dynamically

Trading platforms | Simulations and modeling | Big data analytics

Services-intensive

Use volume clones to rapidly create copies, snapshots to checkpoint changes

Efficient incremental block transfer based regional DR and backup

Support block, file and object workloads from the same source

E-commerce platforms | ERP applications

Leverage FSx for ONTAP

OPERATIONAL BENEFITS

Native AWS Service

Use AWS credits, AWS console and connect to other AWS services

Reduce cost by decoupling storage

Scale independently, protect data independently

Migrate faster with less-risk

Assess, automate & reduce planning time leveraging industry best practices

Improve data management

Deliver services that compare to on-premises workloads

BlueXP Workload Factory

Accelerate Cloud Migration with the Industry's Best Practices



Cut migration
planning time from
days to hours



Data collector to
right size your
architecture



Generate a
deployment plan
and import VMs
consistently



Reduce error prone
manual steps by up
to 90%



Centralized
management of
storage workloads



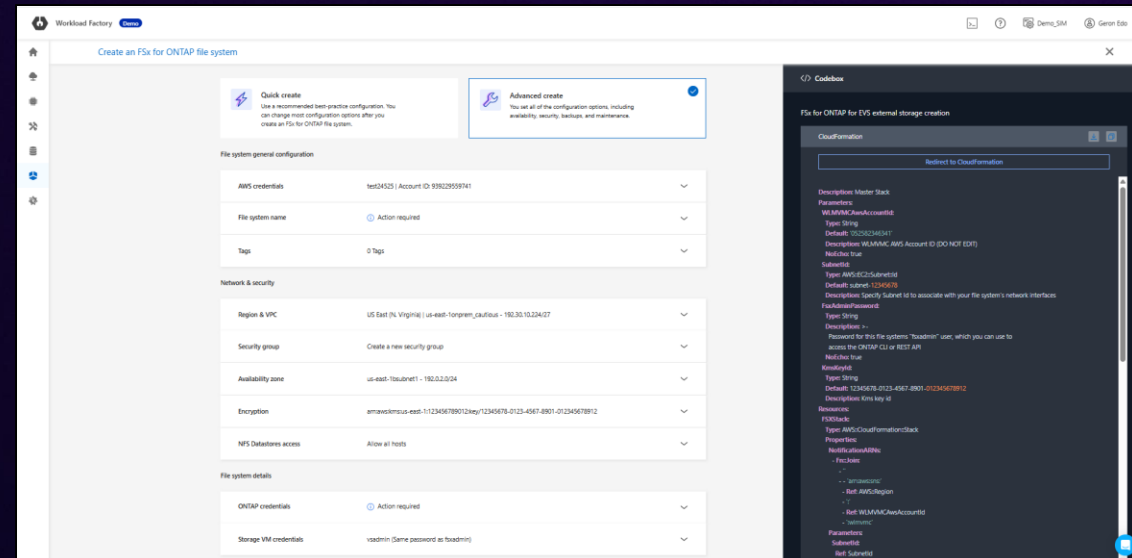
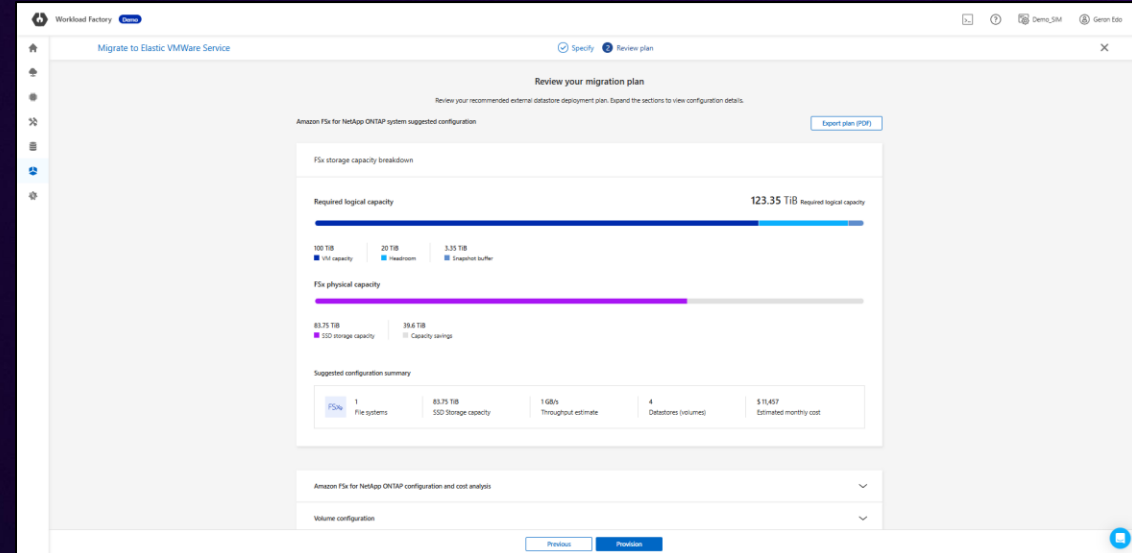
Realize storage cost
savings of 50% (avg)

Workload Factory Migration Advisor

EXPEDITE DEPLOYMENT OF FSX FOR ONTAP IN AMAZON EVS

Plan your FSx for ONTAP datastores configuration

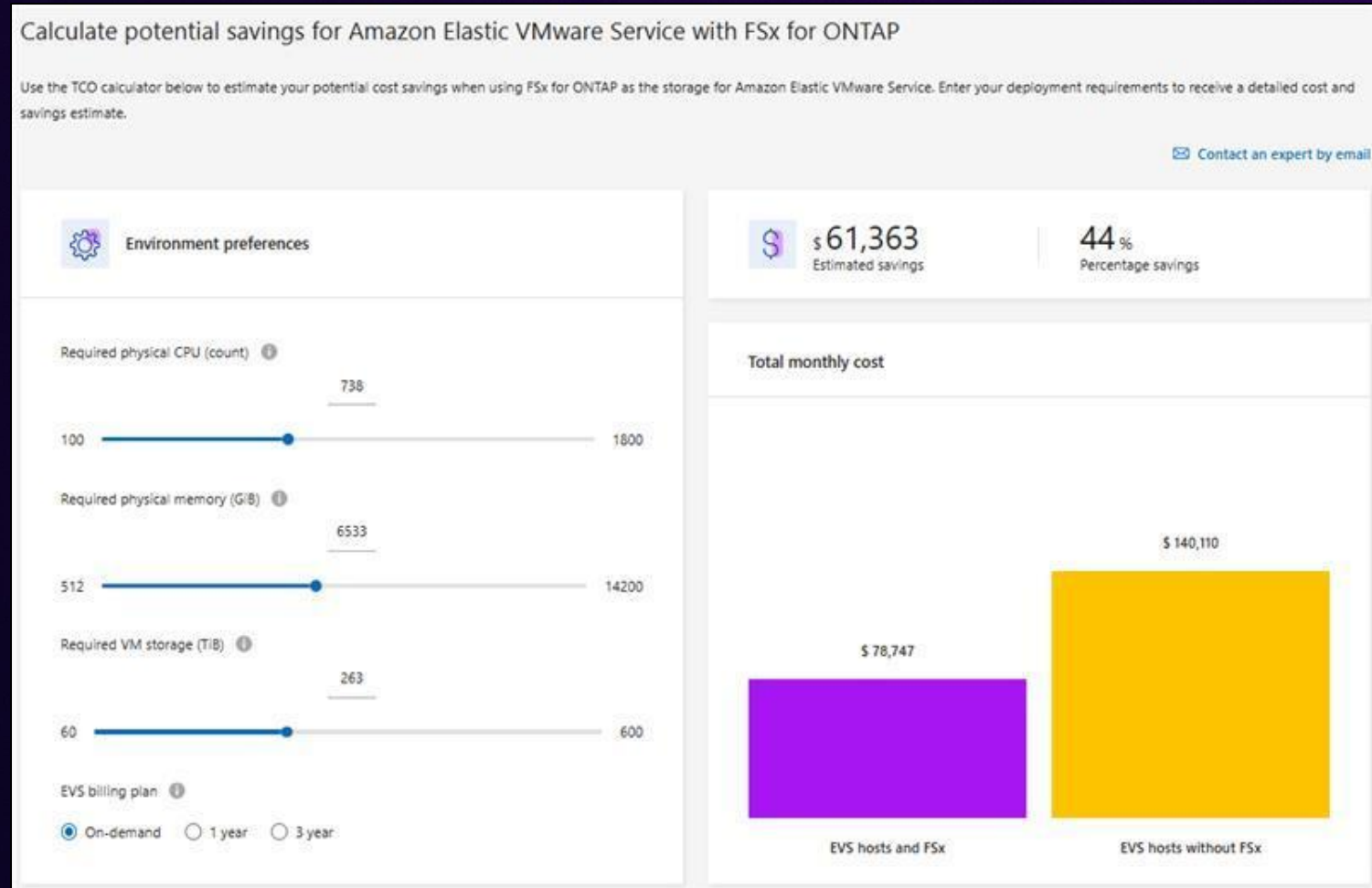
Automate deployment and connectivity while performing all required ONTAP and Amazon EVS **best practice configurations**



Amazon EVS TCO Calculator

WORKLOAD FACTORY

- Estimate Total Cost of Ownership in just 4 clicks
- Identify **cost optimization** opportunities
- Produce a **detailed cost breakdown** for a given Amazon EVS environment



Get started

TCO calculator for Amazon EVS

Estimate cost savings from adding
FSx for ONTAP



Key Strategic Ecosystem of Partners



- ▶ 2021 VMware Partner of the Year
- ▶ 2021 Best Public Sector Transformation



- ▶ 2023 Rising Star Partner of the Year
- ▶ Hyper-Specialized Tier Partner
- ▶ Infrastructure & Security Competencies
- ▶ Terraform Certified Implementation Partner
- ▶ Vault Certified Implementation Partner



- ▶ Kubernetes Certified Service Provider (KCSP)
- ▶ Member: The Linux Foundation
- ▶ Member: Cloud Native Computing Foundation



- ▶ Amazon FSx for NetApp ONTAP Migrations
- ▶ Sr. Leadership on Effectual Board



- ▶ **AWS Premier Tier Services Partner**
- ▶ **AWS Managed Service Provider**
- ▶ **10 AWS Competencies**
- ▶ **8 AWS Partner Programs**
- ▶ **7 AWS Service Validations**
- ▶ **300+ AWS Certifications**

Highlight Competencies

- ▶ Cloud Operations Services
- ▶ Data & Analytics Services
- ▶ DevOps Services
- ▶ Financial Services
- ▶ Government Services
- ▶ Migration & Modernization
- ▶ Storage Services

Highlight Partner Programs

- ▶ ATO on AWS
- ▶ Public Sector Partner

Highlight Service Validations

- ▶ EKS Delivery
- ▶ Control Tower Delivery
- ▶ GovCloud (US) Delivery
- ▶ Redshift Delivery

Certifications & Compliance



SOC 2 Type II Audited



CMMI DEV / 3SM
CMMI DEV 3.0 / Rev. 2025-03-31 / Approval 218832

**Appraised at
CMMI Level 3**



ISO 9001:2015 Certified

Why Effectual?

EXPERIENCE-EXPERTISE-EXECUTION

AWS Only Services Provider

100% focused on AWS, ensuring deep expertise and alignment with AWS best practices

AWS Funding Program Partner

Ability to leverage funding programs including MAP, VMCCO, AML, POC, and more

AWS ProServe Partner

Successful engagements in partnership with AWS ProServe teams in “better together” model

Outcome Assurance Delivery Model

Structured, results-driven approach to efficient and successful cloud transformation from AWS certified experts, best in class tooling, and agile methodologies

Why Effectual?

OPERATIONAL BENEFITS

Subject Matter Experts

Extensive experience with migrations at scale with VMware, Storage, Databases, and more

Dedicated Engineering Teams

Engineers and architects with infrastructure, DevOps, and AppDev backgrounds

Managed Services Group

We can help close the skill gap for customers that don't yet have cloud operating experience

AWS Assessment Partner Provider

We can provide the full range of assessments to help define, design, and execute your migration project

Meet You Where You Are

WHAT ARE YOUR MIGRATION GOALS?

Migrate Everything

Move the entire infrastructure from VMware in your data center to EVS or native

Modernize the Application

Restructure the application and infrastructure to leverage native services such as EKS, RDS, or FSx

Blended Approach

Move what can't be changed, modernize what can, plan for future enhancements

What Do I Have?

Full assessment portfolio will aid discovery, report on current state of your world, and help with planning for the future

Migration Assessments

AWS Optimization and Licensing Assessment (OLA)

- No cost
- Report on resource & licensing utilization
- Recommendations for optimization on compute and licensing strategies

NetApp Cloud Design Workshop

- Executive-level consulting
- Comprehensive analysis of performance, configuration and capacity of the storage infrastructure
- Service level designs for a hybrid cloud
- TCO and financial model plus implementation roadmap
- Cost: complimentary to selected customers
- Duration: 6 to 8 weeks from request to completion

Resources

- [FSx for ONTAP EVS Deployment guide](#)
- [Amazon FSx for NetApp ONTAP](#)
- [Amazon Elastic VMware Service](#)
- [BlueXP Workload Factory](#)
- [TCO Calculator for Elastic VMware Service](#)
- [Effectual Resources](#)
- [Effectual EVS](#)

Q&A

Thank you!



VMC vs EVS Comparison

VMware Cloud Service (VMC)

- Fully managed service
- Licensing included*
- Controlled environment (guardrails)
- 1Y & 3Y contract

Elastic VMware Service (EVS)

- Self-managed service
- Bring your own license**
- Full control (same as on-prem VPC)
- Consumption model: on demand, 1Y & 3Y

Amazon EVS Availability and Roadmap

- **Public Preview:**

- Date: **late May**
- Ungated preview
- Not to be used for production workloads
- Environments will not be torn down on GA

- **General Availability (GA):**

- GA date: **To be added**
- Bring your own subscription (BYOS)
- 6 regions
 - US-East-1 (N. Virginia)
 - US East -2 (Ohio)
 - US West -2 (Oregon)
 - EU-West-1 (Ireland)
 - EU-Central-1 (Frankfurt)
 - AP-Northeast-1 (Tokyo)

- 1 instance type: i4i.metal

- **Fast follow features:**

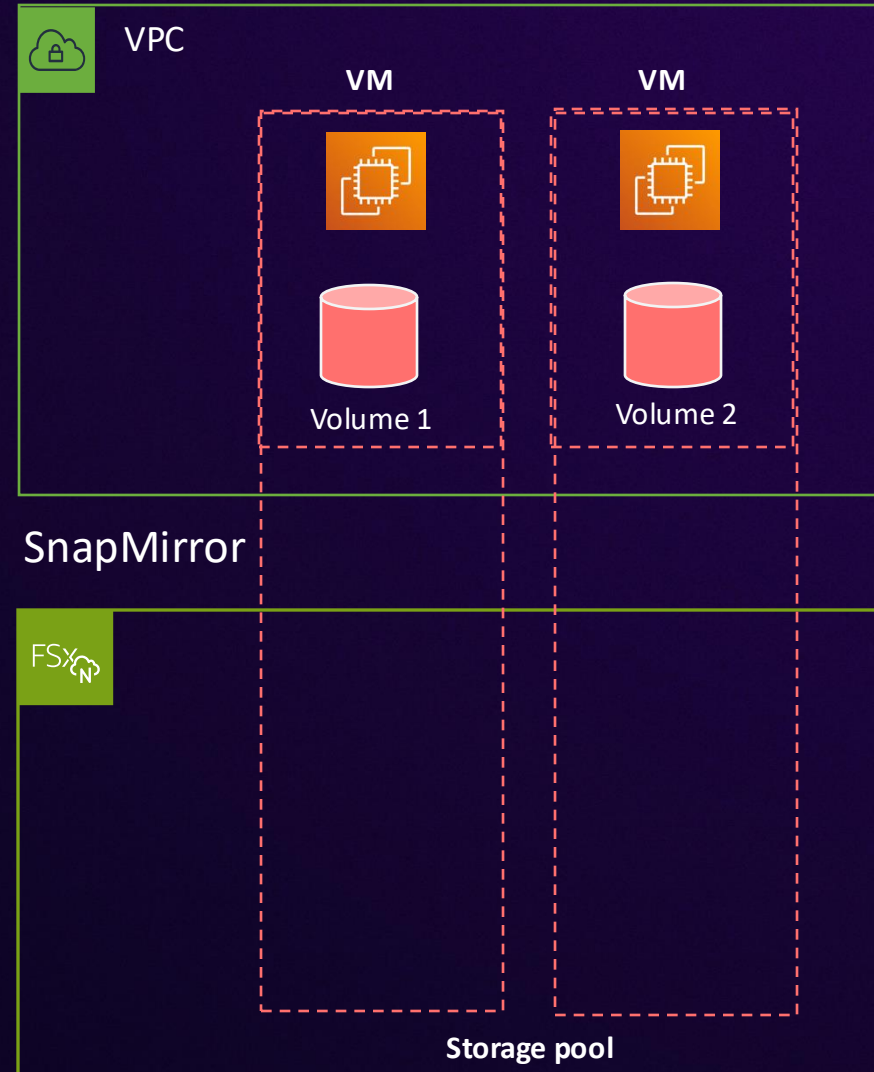
- VCF License Included (LI)

- **End of 2025**

- Available in all regions
- Additional instance types

Migrating VMware Workloads with FSx for ONTAP

SnapMirror allows for reliable, cost effective, real-time replica of your working data at the volume level to move data securely.



Data Infrastructure Insights

SUCCESS STORY

Annual Cloud Spend Savings

\$5M

North American Life Sciences Company

- Customer did a Lift & Shift their VMs to cloud but down the line under budget pressure, they needed to investigate how to shrink their cloud spend *without impacting key workloads workloads*
- Cloud Insights helped them analyze IO profiles of all compute instances, and identify the correct performance tier and capacity required of allocated storage to provide the correct level of service