



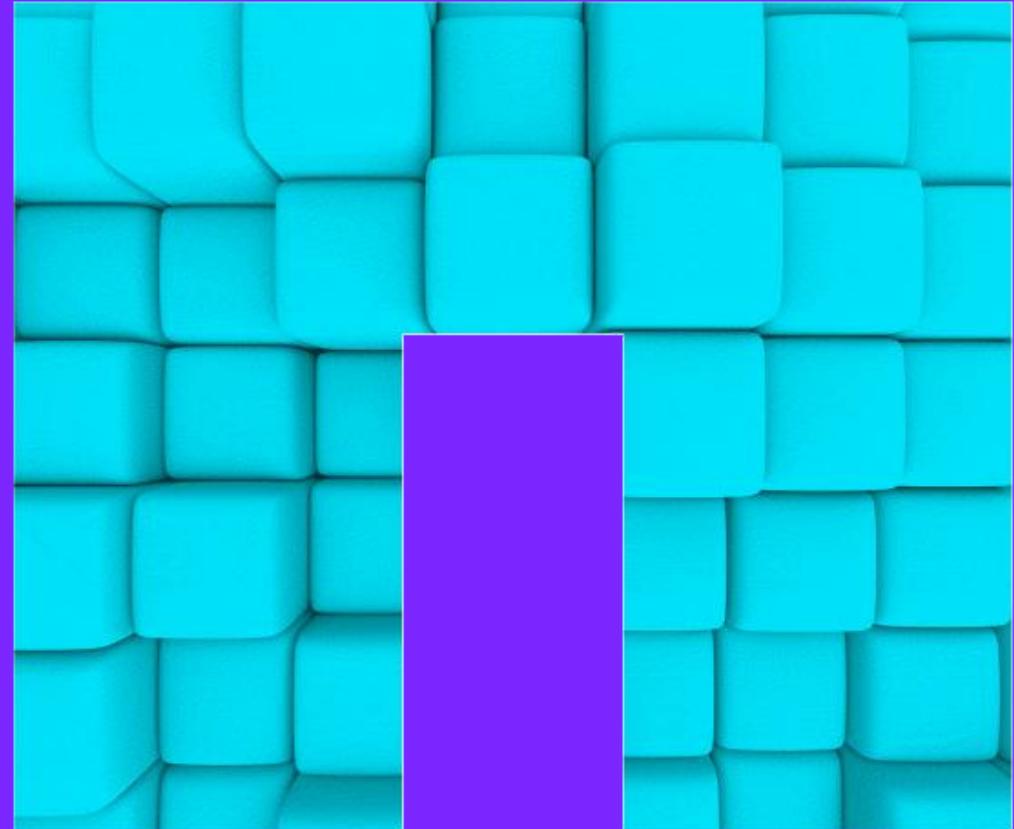
# connect

## TECHNOLOGIE FORUM



# NEW ASA ON THE BLOCK

Was ist denn anders?



# Unified data storage systems, powered by ONTAP

Unified

Lowest cost of data across  
its life cycle, secondary  
storage

HYBRID FLASH

FAS



RELEASED  
IN  
September

Capacity-optimized for best  
price/ performance

CAPACITY FLASH

AFF C-Series



NEW

ASA C-Series



Block  
Optimized

Best performance for  
mission-critical workloads

PERFORMANCE FLASH

AFF A-Series



High-End  
RELEASED  
in  
May

Low-Mid  
NEW

ASA A-Series



RELEASED  
IN  
September

Low-Mid  
NEW

ONTAP

Comprehensive data management software delivering automation, efficiency, data protection, and security capabilities for file, block, and object



Keystone  
STaaS



Microsoft  
Azure

Google Cloud



# NEW ASA?

# NetApp ASA (All-Flash SAN Array)

Modern all-flash SAN storage family ideal for VMware and database applications

**High-availability – guaranteed.** Comes with a 99.9999% data availability guarantee.

**Efficiency – guaranteed.** Comes standard with a 4:1 storage efficiency guarantee. Leading raw-to-effective capacity.

**Secure and Protected.** Recover rapidly from Ransomware attacks. Protect against disasters with business continuity across sites.

**Sustainable.** Up to 50% lower emissions relative to competing all flash arrays.



**NetApp is trusted and proven by over 20,000 customers for their SAN workloads**



# What's the classic ASA A-Series?



## ASA vs. AFF - What's the difference?

- Only SAN! No NAS or Object Protocols!
- Attractive Pricing
- Different Path Handling



# New ASA A-Series

## High-performance all-flash block storage

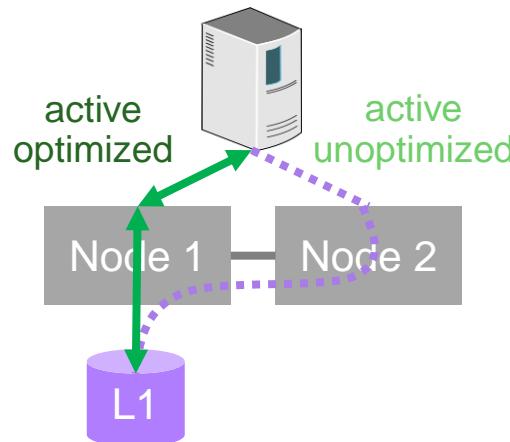
	 <b>ASA A20</b>	 <b>ASA A30</b>	 <b>ASA A50</b>	 <b>ASA A70</b>	 <b>ASA A90</b>	 <b>ASA A1K</b>
<b>HA System</b>	<ul style="list-style-type: none"><li>• 15TB – 734TB raw</li><li>• Up to 3.2PB effective</li><li>• 2U base / 24 drives</li></ul>	<ul style="list-style-type: none"><li>• 15TB – 1.1PB raw</li><li>• Up to 4.8PB effective</li><li>• 2U base / 24 drives</li></ul>	<ul style="list-style-type: none"><li>• 68TB – 1.8PB raw</li><li>• Up to 8PB effective</li><li>• 2U base / 24 drives</li></ul>	<ul style="list-style-type: none"><li>• 68TB – 2.67PB raw</li><li>• Up to 11.6PB effective</li><li>• 4U base w/ 48 drives</li></ul>	<ul style="list-style-type: none"><li>• 91TB – 2.67PB raw</li><li>• Up to 11.6PB effective</li><li>• 4U base w/ 48 drives</li></ul>	<ul style="list-style-type: none"><li>• 91TB – 2.67PB raw</li><li>• Up to 11.6PB effective</li><li>• 2x2U base + 2U drive shelf</li></ul>
<b>Cluster</b>	<ul style="list-style-type: none"><li>• 15TB – 4.4PB raw</li><li>• Up to 19PB effective</li></ul>	<ul style="list-style-type: none"><li>• 15TB – 6.6PB raw</li><li>• Up to 29PB effective</li></ul>	<ul style="list-style-type: none"><li>• 68TB – 11PB raw</li><li>• Up to 48PB effective</li></ul>	<ul style="list-style-type: none"><li>• 68TB – 16PB Raw</li><li>• Up to 69PB effective</li></ul>	<ul style="list-style-type: none"><li>• 91TB – 16PB raw</li><li>• Up to 69PB effective</li></ul>	<ul style="list-style-type: none"><li>• 91TB – 16PB raw</li><li>• Up to 69PB effective</li></ul>
<b>Supported NVMe drives</b>	1.92TB, 3.84TB, 7.68TB, 15.3TB					
<b>Protocols</b>	NVMe/FC, NVMe/TCP, FCP, iSCSI					



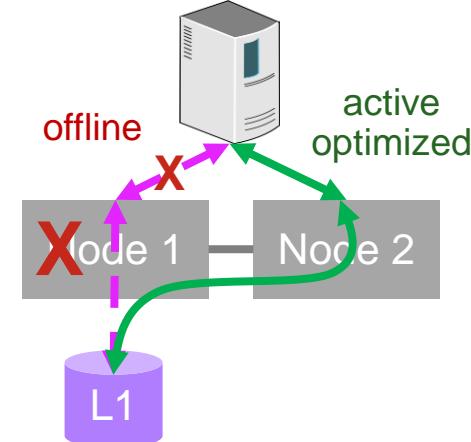
# Unified AFF / All SAN Array Data Path Comparison

## Unified AFF – Active Optimized/Unoptimized

### Normal Operation



### Failure Scenarios



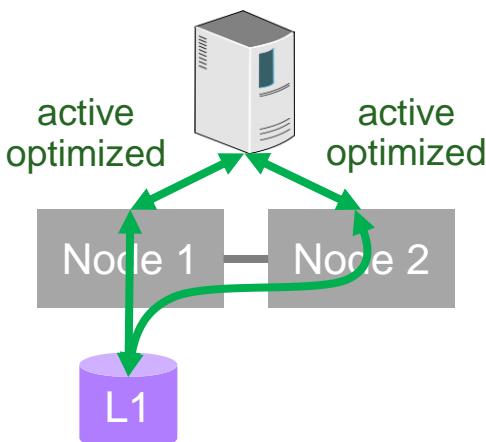
Only 1 host-to-LUN path is used at any time

When the primary controller or optimized path fails, data traffic pauses for a short time (typ. 2-10 secs)

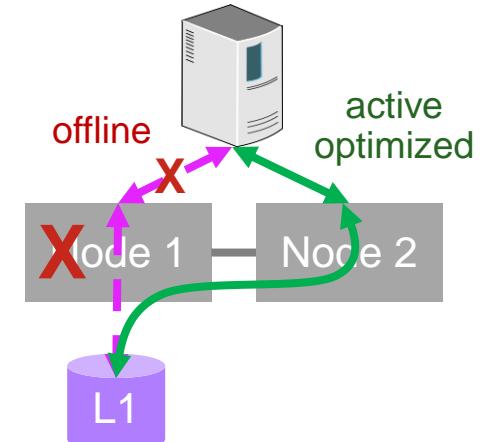
- These pauses are OK for many application workloads and customers, but not all

## All SAN Array – Symmetric Active-Active

### Normal Operation



### Failure Scenarios



All available host-to-LUN paths are used

When a path fails, data continues to flow on other paths – continuous data availability

When a storage controller fails, the pause in data traffic is short (typically <2 sec)



# WHAT'S NEW?

# Introducing the new ASA A-Series

Modernize with simple, powerful, affordable all-flash block storage

## Simple

Leverage a storage solution so simple that anyone can deploy it, manage it, and upgrade it

## Powerful

Accelerate VMware and database apps with market-leading performance, proven reliability, and intelligent data management

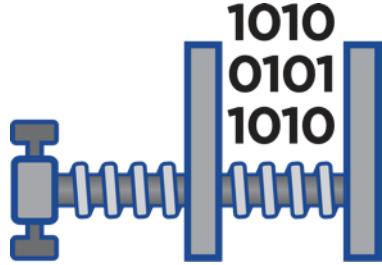
## Affordable

Get unmatched value with a 25-50% lower upfront price and better ROI overall



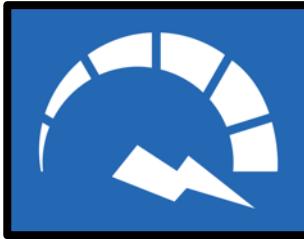
# Storage efficiency with new ASA

## Storage efficiency with consistent performance



**Always on,  
inline, data  
reduction**

- No cold data policy to manage
- Nothing for customers to configure
- Confidently meet guaranteed storage efficiency ratios



**No performance  
impact thanks to  
QAT offload**

- Never choose between performance or efficiency

Up to **2.5X**

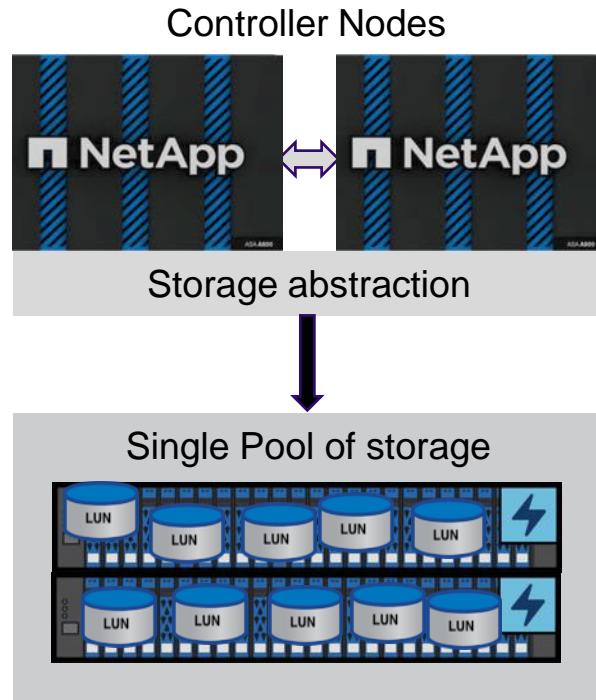
**Storage efficiency  
improvement<sup>(1)</sup>**

- Reduce power and cooling costs and achieve sustainability goals

(1) Oracle data 2.78:1 to 7.18:1 SE ratio



# New ASA innovations drive simplicity for IT Generalists and Storage Admins



## Architectural Optimizations

### Simplified SAN object model

Abstraction of aggregates, Flex Volumes, SVMs, and alignment to block LUN identification

### Single capacity pool across HA pair

Holistic view into data assets, utilization, and performance

### Cluster bring-up on boot media

Moved cluster config to boot media

### Simplified ONTAP upgrades

Single reboot

### Network discovery simplification

Automatic cluster discovery, recommended nodes and ports for IP addresses

## Customer Outcome

Simple and automated LUN management

Operational simplicity, technical foundation for improved storage efficiency

Increased cluster resiliency

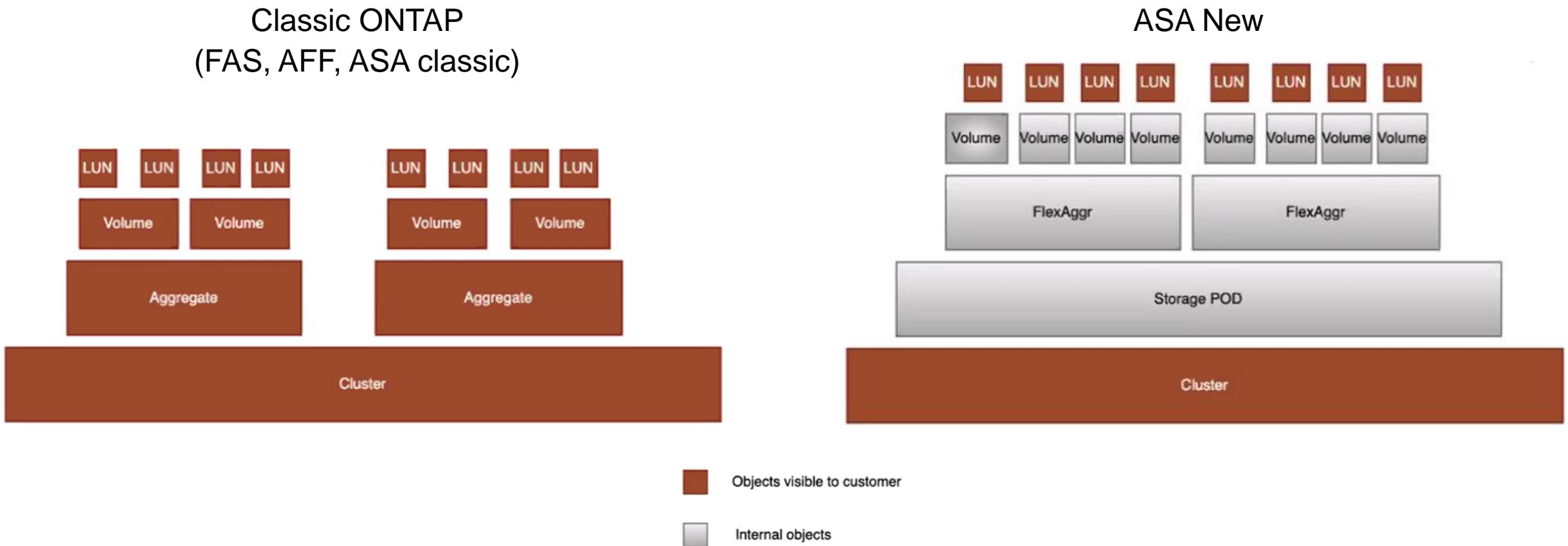
Greater confidence in upgrades

Operational simplicity increases admin/generalist efficiencies



# New ASA

## Object Model



# New ASA enables simplicity

IT Generalists & Storage Admins are delighted

### Configure protocols

IP       FC

Configure IP interfaces

Select the data network to use. ONTAP will recommend a set of network interfaces appropriate for your configuration. You can adjust the recommendation if necessary.

Subnets

data  
172.21.85.150/20 Available IP addresses: 6 of 10 available Broadcast domain: Default

[+ Add a subnet](#)

*ⓘ* ONTAP will create 4 interfaces with these addresses: 172.21.85.152, 172.21.85.153, 172.21.85.154, 172.21.85.155

[▼ Details](#)

Automate Network Configs



# New ASA enables simplicity

Modern look & feel, aligned with BlueXP

Dashboard

SQL\_1

Storage

Overview Snapshots Replication

Edit More

Hosts

Network

Events & jobs

Protection

Cluster

Overview

Settings

Storage VMs

Disks

Support

Protection

Show uninitialized

Status

Online

Storage VM

svm1

Serial No.

wtlej+Wen6m0

Format

linux

Storage

4.74 MiB Physical used

15.5 MiB Available

Data reduction

7.41 to 1

Snapshot used

2.14 MiB

Performance

Hour

Latency

0.85 ms

IOPS

481

# New ASA is simple to manage

Add storage units

Name:

Number of units:  Capacity per unit:  GiB

Host operating system:  Format:

Host mapping:

Provision in seconds

Protect storage unit

Local protection

Add a snapshot now  Schedule snapshots

Snapshot policy:

Schedule name	Maximum snapshots	Schedule
hourly	6	At 5 minutes past the ho
daily	2	At 12:10 AM, every day
weekly	2	At 12:15 AM, only on Sun

Remote protection

Replicate to a remote cluster  
SnapMirror copies snapshots to a remote cluster.

Protect with 1-click



# ONTAP for new ASA with 9.16.1

Platform support on new ASA models ASA A20, ASA A30, ASA A50, ASA A70, ASA A90 & ASA A1K

Single pool of storage across HA pair

Scale up to 10,000 Storage Units HA pair\*

Scale-out up to 12 nodes /6 HA pair

Self-optimizing storage - load balancing within HA pairs

NVMe deallocate / unmap

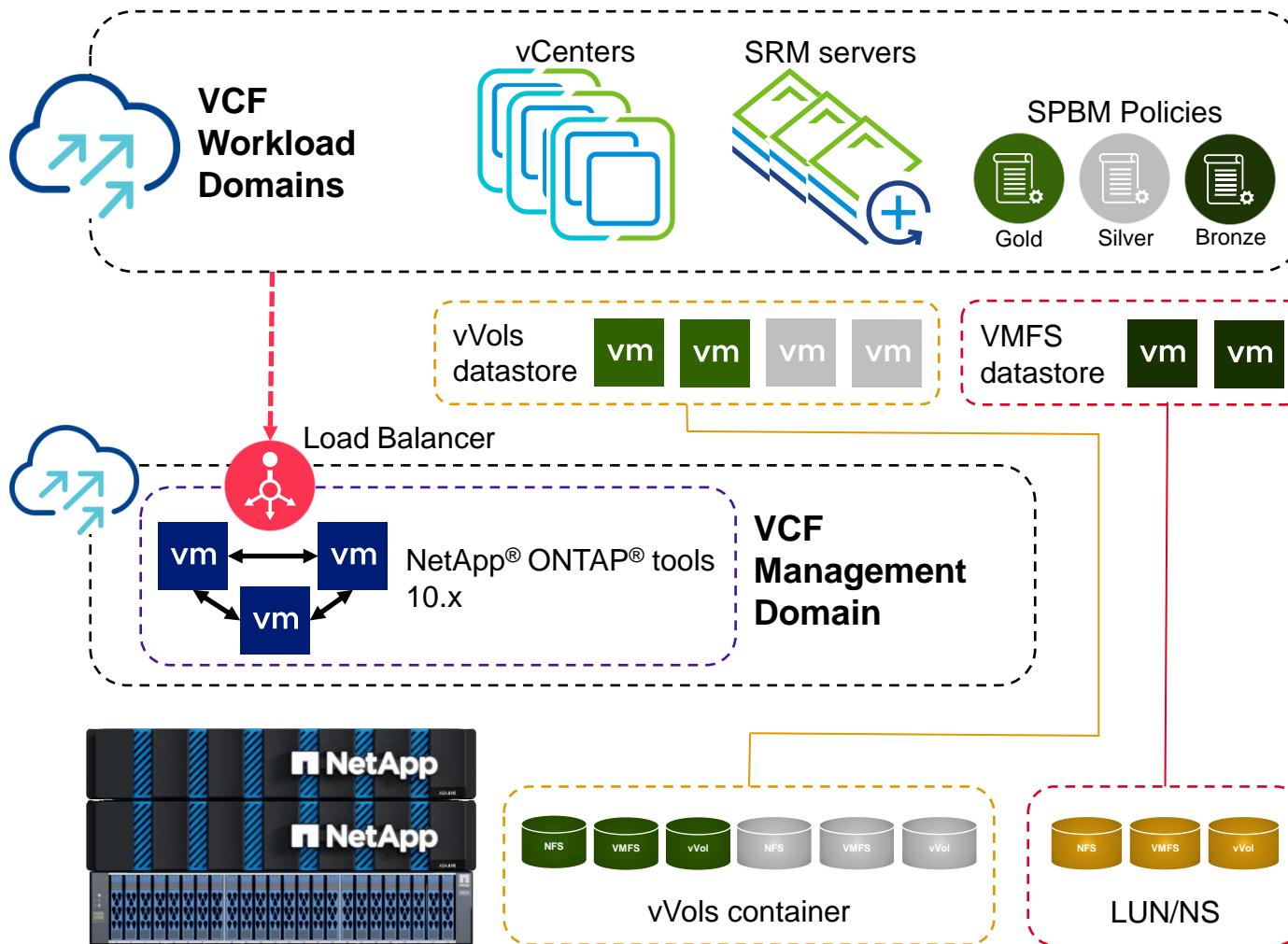
NVMe active/active pathing

Full VMFS support for all protocols in OTV10.3

vMSC across SnapMirror active sync with symmetric A/A

\* On Models ASA A90 and ASA A1K

# NetApp ONTAP tools 10.3 with ASA r2



Manage Unified, ASA & ASA r2 platforms in a single OTV deployment

Supports iSCSI, FC, & NVMe for VMFS, iSCSI and FC for vVols added for ASA r2

Simplified Datastore workflows and enhanced UI

Create vVols datastores without backing volumes

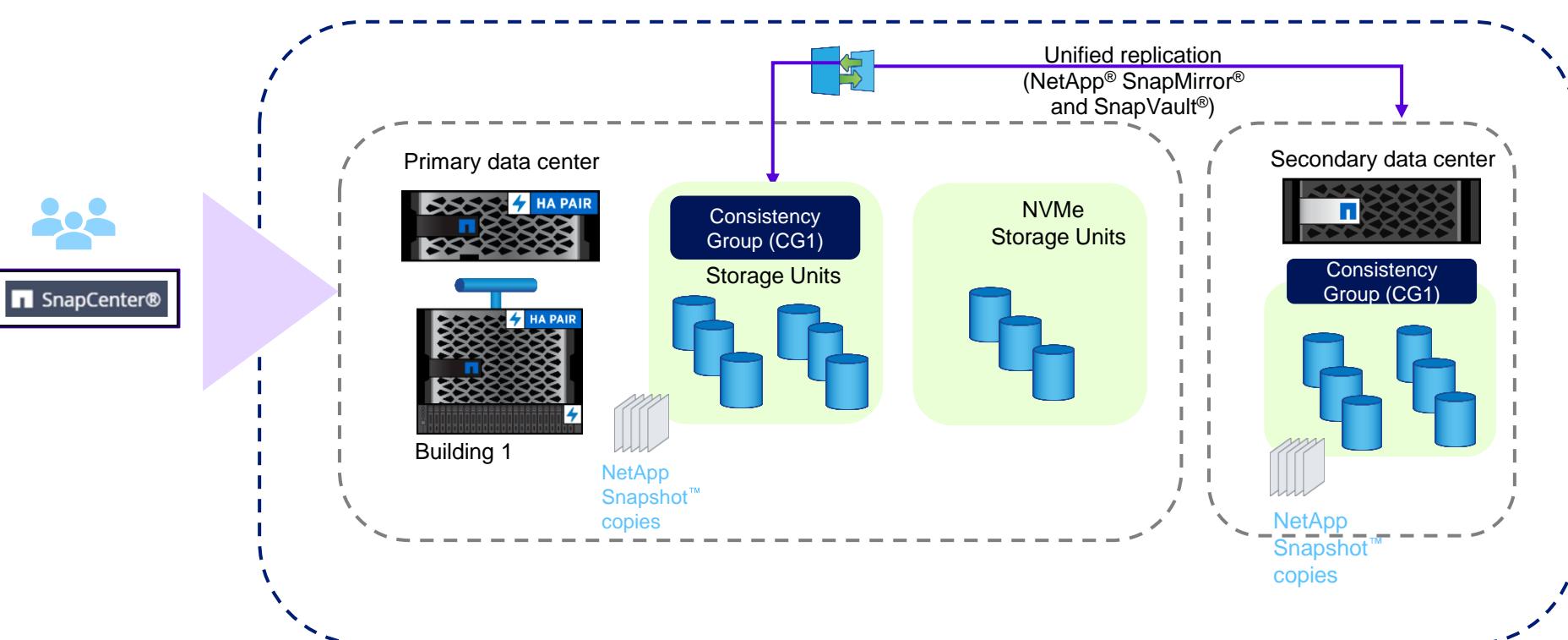
Smart observability (data irrelevant for ASA.r2 are hidden)

Twin protocol endpoints per ASA r2 SAZ

SRM-SRA, SMAs enablement for VMFS with iSCSI and FC

Simple scale-up and/or scale-out post-deployment

# SnapCenter support for ASA R2



- Consistency group discovery/creation on Primary and Secondary storage system
- Snapshots managed and transferred at CG level
- Support for storage units in place of volume
- VMFS layouts supported for VMs & databases in **Jan 2025 ( SC 6.1)**
- vVols, physical layouts and hierarchical CG support planned for **July 2025 ( SC 6.2)**



# Supporting ASA across the SAN Fabric

- Infrastructure Change Analysis** – Identify Cause/Effects
  - Reduction in MTTR and improvement in cross-silo collaboration
- Anomaly Detection** - Detect performance or error anomalies for proactive resolution using AIOps
  - Auto-learning algorithm adapts with workload trends / seasonality

## SAN Analyzer - VM-to-LUN visibility for block workloads

- Topology, Workload contentions, Top contributors

### Expert View

Resource bos\_postgresql\_01 > 1 Alert

Top Correlated bos\_ESX02\_prod 72% 1 Alert Datastore02\_bos\_prod 92% archive 58%

Additional Resources

### Changes

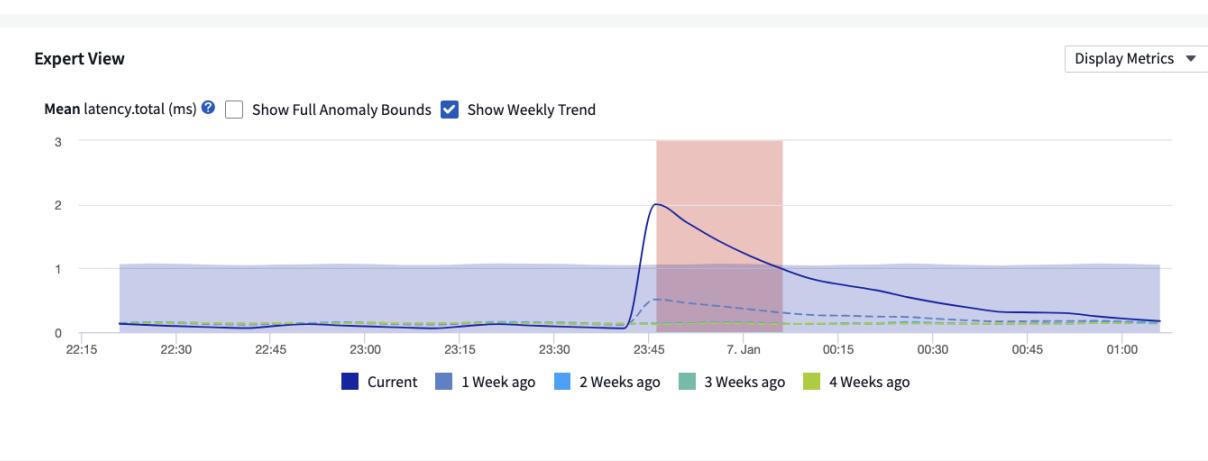
Display Changes and Metrics ▾

bos\_postgresql\_01 !

4:40 PM 4:50 PM 5:00 PM 5:10 PM 5:20 PM 5:30 PM

2 items found

Type	Summary	Start Time	Triggered on	Status
<span style="color: red;">!</span> AL-76754	Abnormal high VM latency	05/13/2023 4:58:17 pm	Virtual Machine: <span style="color: blue;">bos_postgresql_01</span>	Active
<span style="color: purple;">!</span> Config Change	Path removed	05/13/2023 4:46:22 pm	Path: <span style="color: blue;">bos_postgresql_01</span> to <span style="color: blue;">Datastore02_bos_prod</span>	-



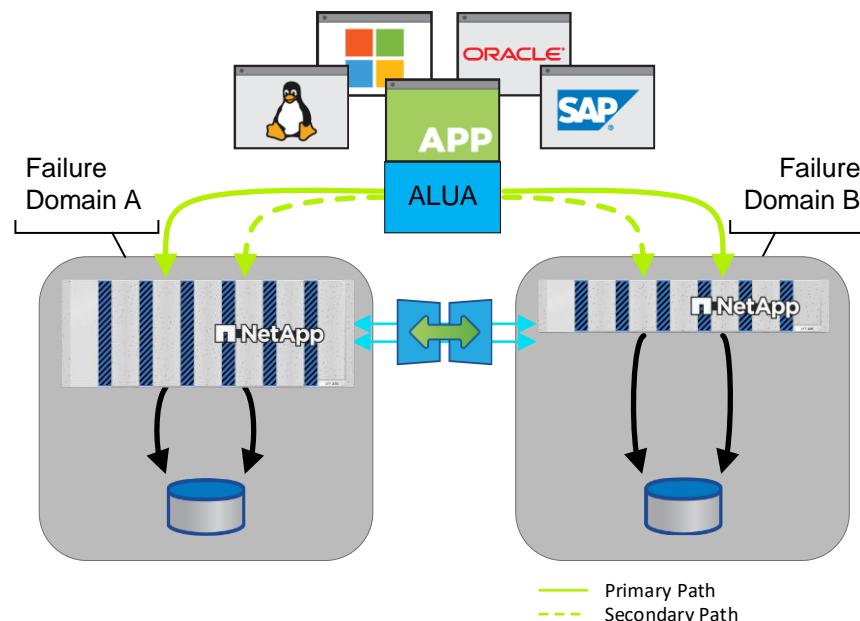
# Uninterrupted Business Continuity: SnapMirror & MetroCluster

Tailored Solutions for Applications and Infrastructure Availability

## SnapMirror active sync

Continuous availability for **applications**.

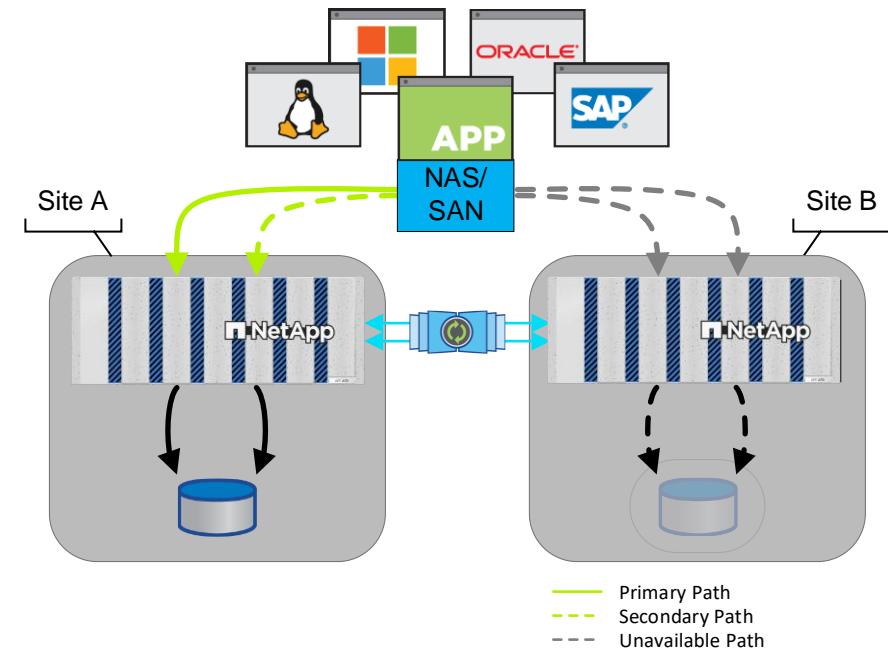
- Enables workload consolidation with non-stop availability for crucial SAN tasks.
- Allows cost-effective custom configurations.
- Offers refined control for streamlined application management.



## MetroCluster

Continuous availability for **infrastructure**

- Allows consolidation of critical SAN and NAS workloads within a dedicated solution.
- Reduces risk through automated management.
- Ensures exceptional reliability and performance at scale



# NetApp ONTAP One for New ASA

All available ONTAP features in one license

- The most comprehensive storage software suite in the industry
- Cost predictability and ultimate functionality

## NetApp ONTAP One for SAN

Integrated remote backup/disaster recovery

Tamper-proof Snapshots

Application-consistent NetApp Snapshot™ copies

Multi-admin verification

Regulatory-compliant data retention

In-flight and data-at-rest encryption

Multifactor admin access

AI-informed predictive analytics and corrective action

Quality of service (QoS) workload control

Intuitive GUI, REST APIs, and automation integration

Inline data compression, deduplication, and compaction

Symmetric active-active multipathing

FC, iSCSI, NVMe-oF, NVMe/TCP

 Core Capability  Data Management  Security Feature  Data Protection Feature

# Programs that deliver a best-in class ownership experience for ASA

No other vendor offers a suite of programs this comprehensive



STORAGE  
LIFECYCLE  
PROGRAM



4:1 STORAGE  
EFFICIENCY  
GUARANTEE



SIX NINES DATA  
AVAILABILITY  
GUARANTEE<sup>1</sup>



RANSOMWARE  
RECOVERY  
GUARANTEE<sup>2</sup>

# connect

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