

Operational efficiency with VVF/VCF 9

Balazs Lovas
Solution Engineer



Adria Forum 2025



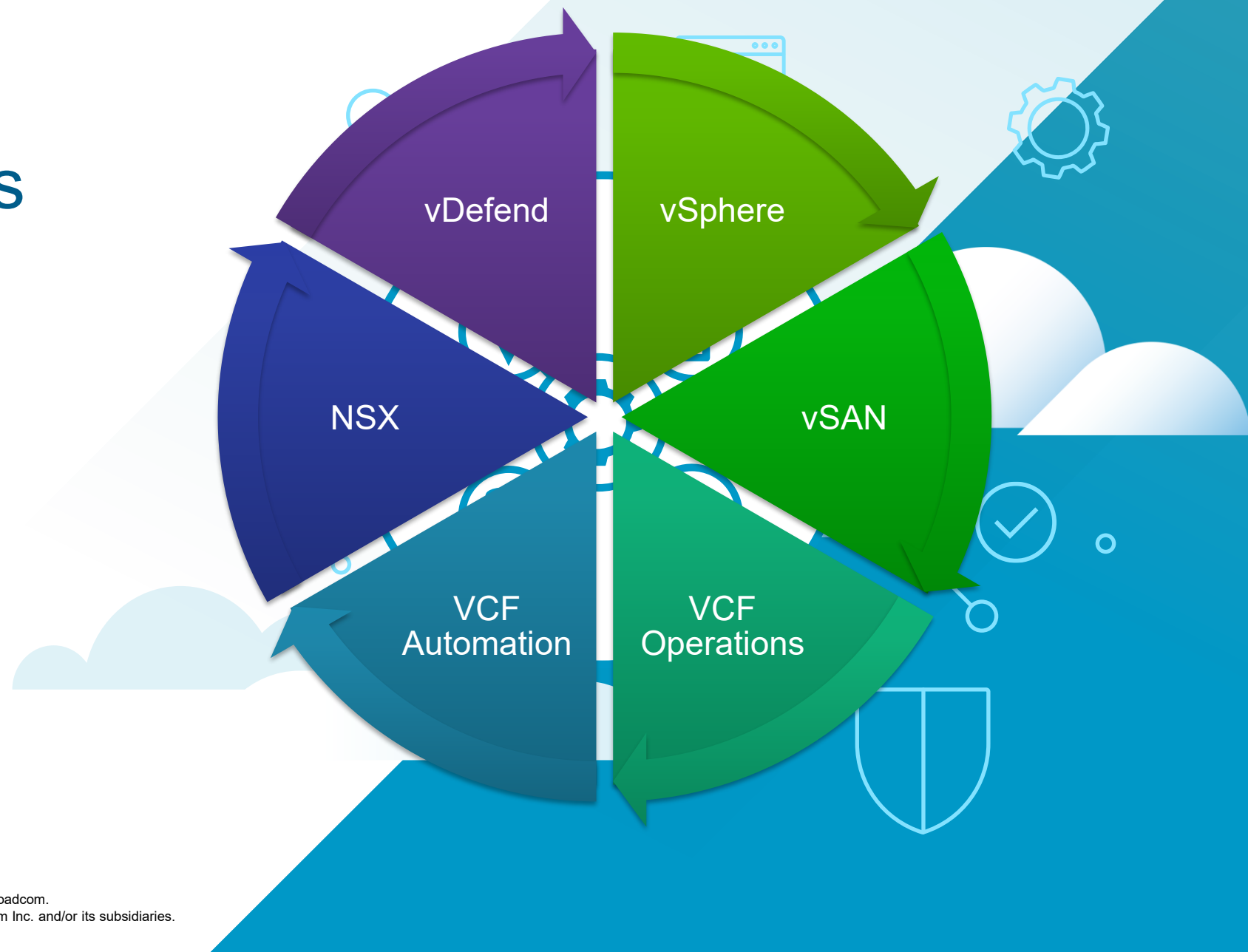
“WHEN YOU’RE LOOKING FOR VSPHERE 9 STANDARD EDITION...”

Broadcom

**vSphere
customers**

**VSPHERE 9
STANDARD EDITION**

Efficiency choices



Efficiency choices

vSphere



Memory Tiering with NVMe

Up to 40% Lower TCO



Cost-effective and seamless scaling of memory tiers with a **homogeneous** consumption model

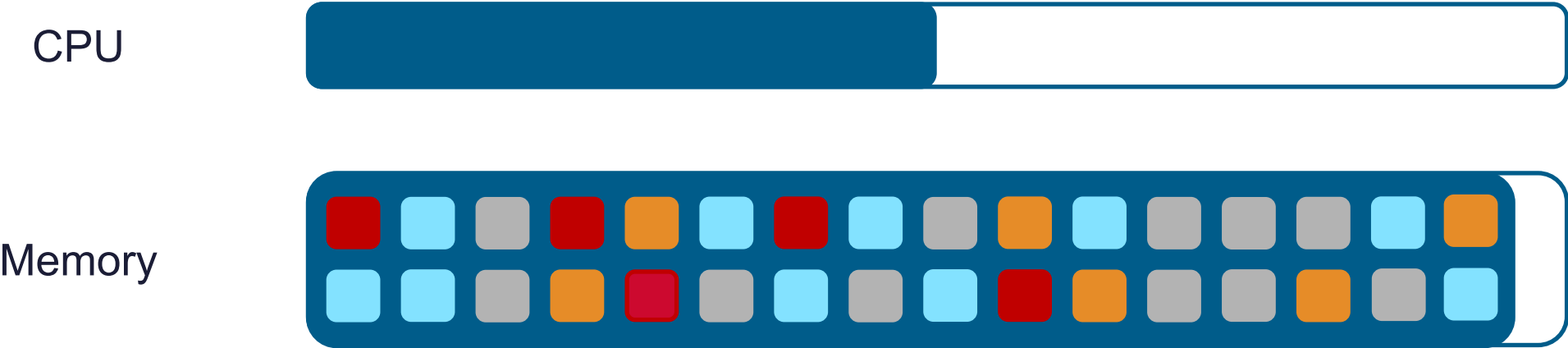


Improved memory allocation for **higher** VM Consolidation Ratios

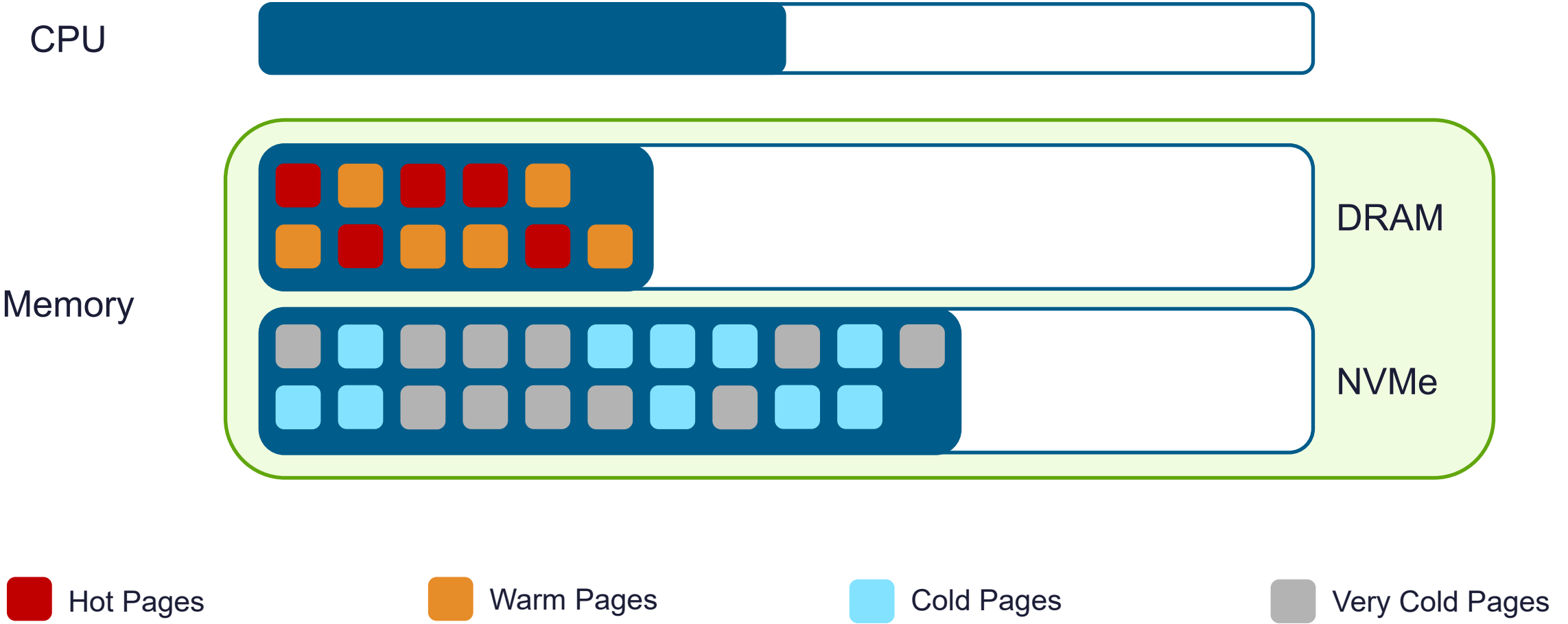


Improve CPU utilization by freeing up CPU cores for workloads

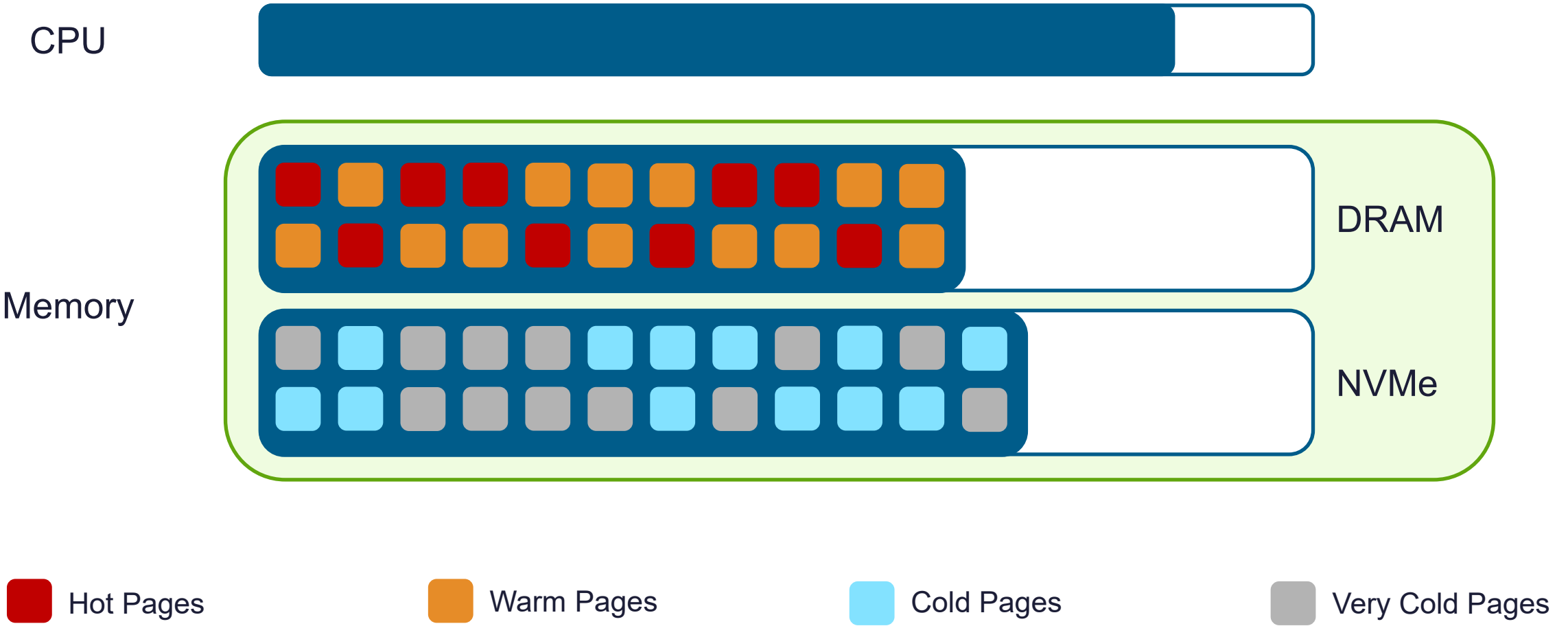
Page Classification Unique Approach



Better Resource Utilization

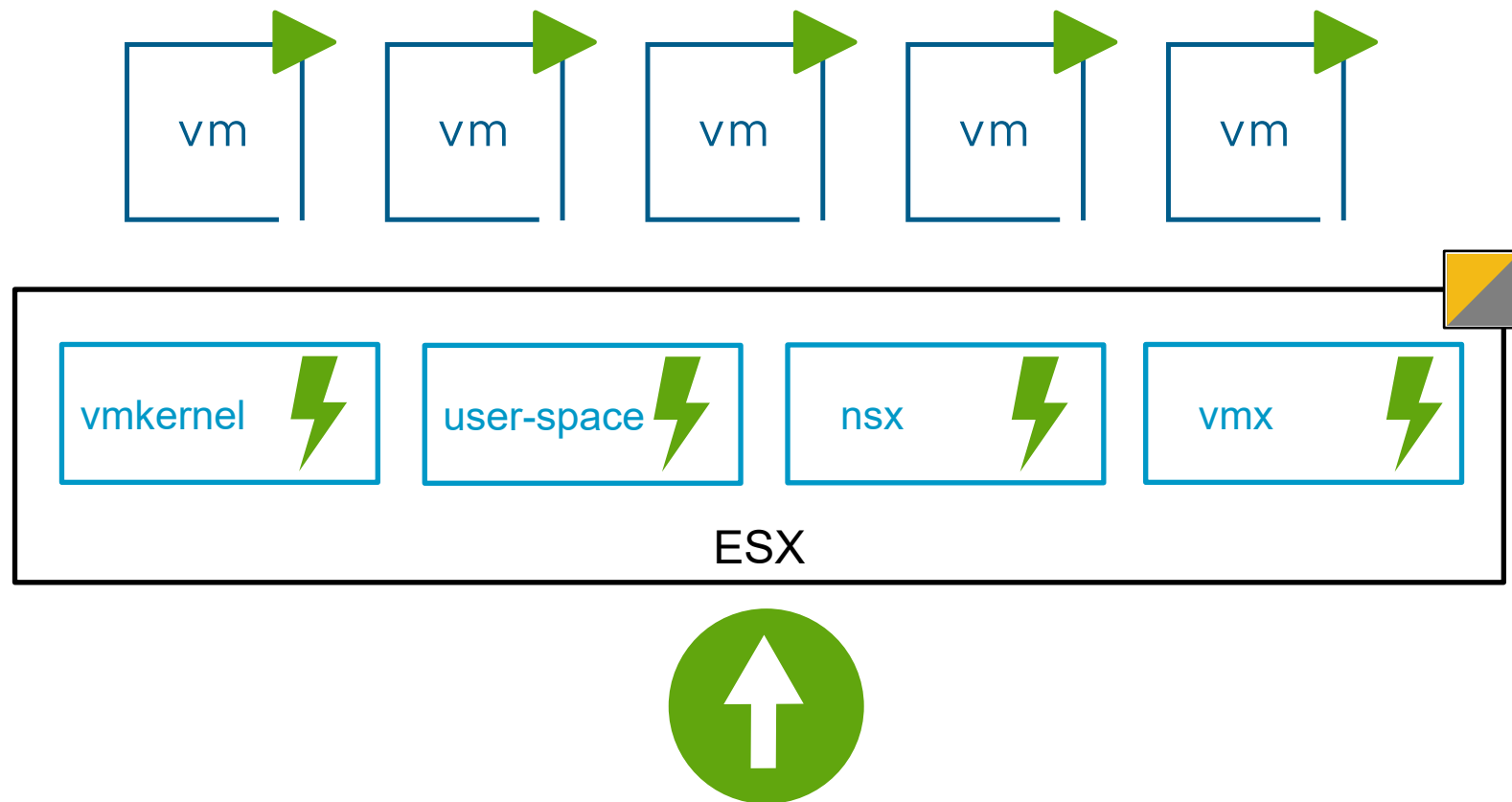


Better Resource Utilization



Patch vSphere Clusters Faster and Less Disruptive

Live Patch even more of ESX



Live Patch vmkernel,
user-space and NSX
components

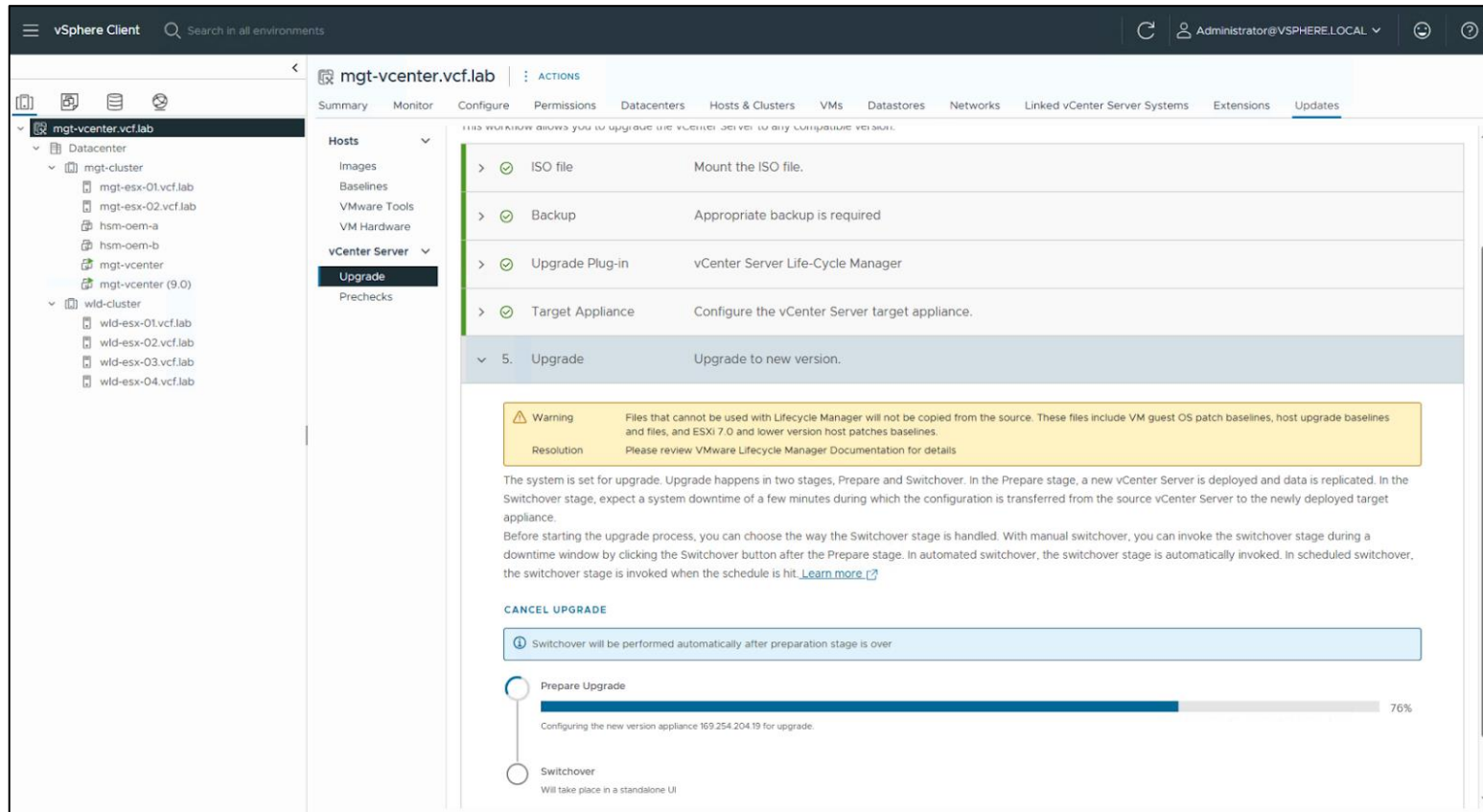
ESX service restarts
required (non-
disruptive)

Fast-Suspend-
Resume large vGPU
VM even faster

No Evacuation.
VMs stay running

Reduce Risk and Downtime When Patching

vCenter Reduced Downtime Update



Upgrade to vCenter 9 from any topology

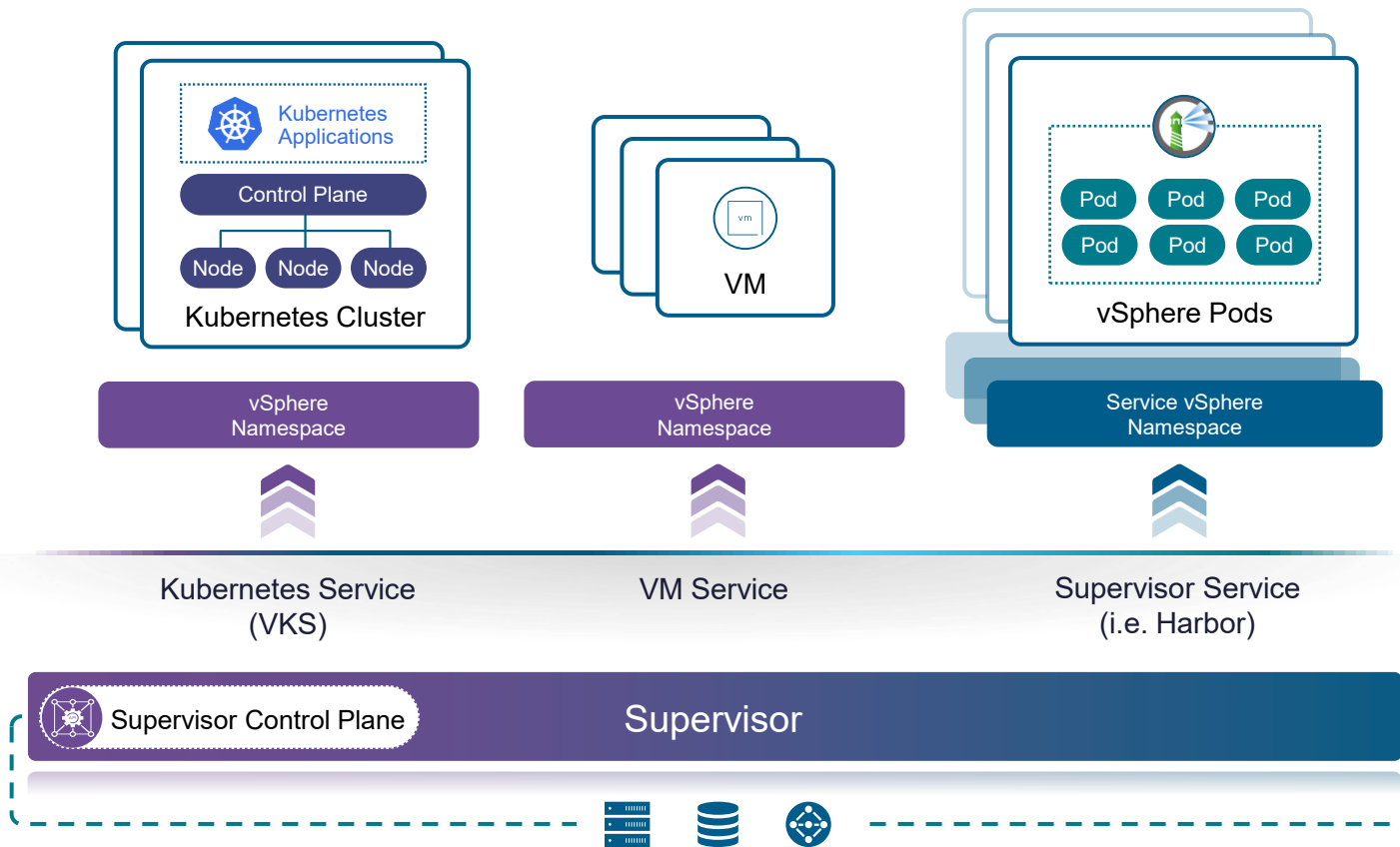
CLI and API options available

Automatic network configuration for data migration

Switchover phase can be scheduled

Address security vulnerabilities quickly and with lower risk

vSphere Supervisor



vSphere Supervisor is an integrated **Kubernetes-based Declarative API**

Define **what** you want, let the system figure out **how to** make it happen

Deploy **Kubernetes Clusters** with **vSphere Kubernetes Service**

Deploy **Virtual Machines** with **VM Service**

Add additional Supervisor Services to **extend the capabilities** of the platform

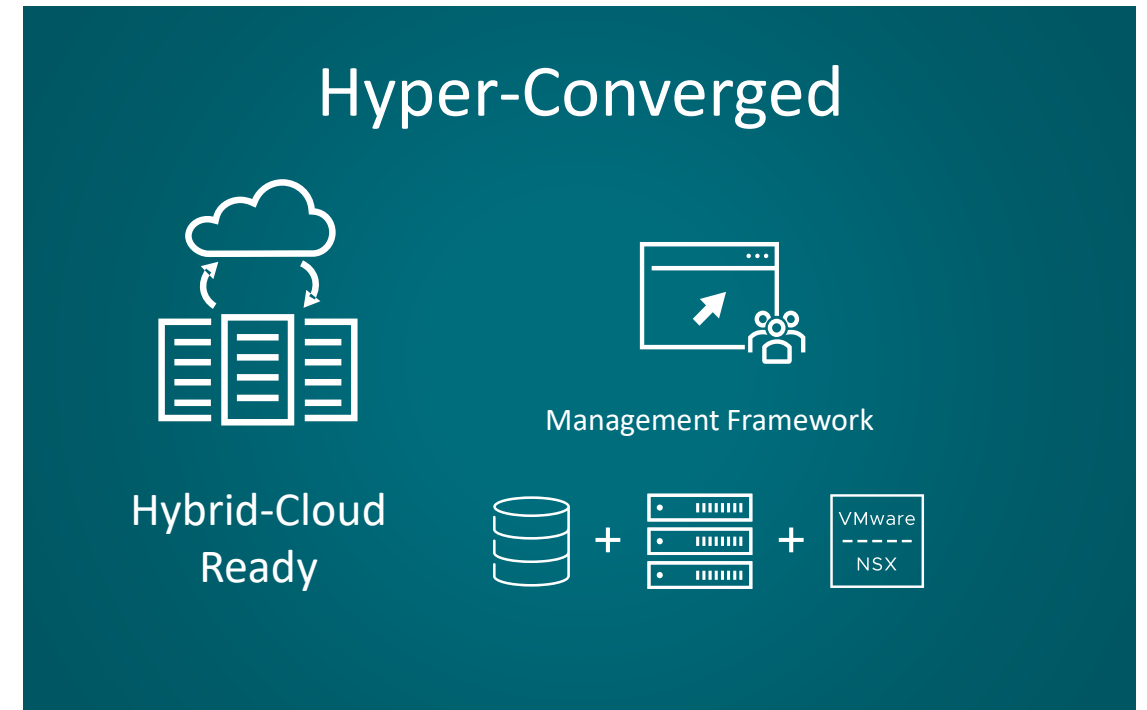
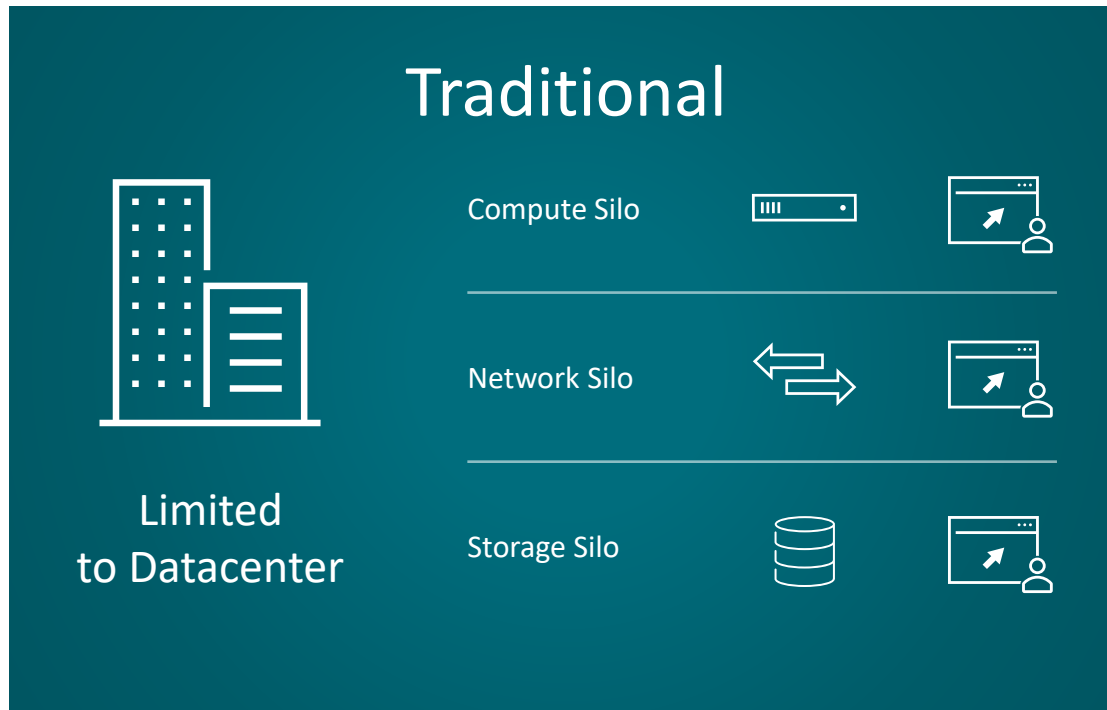
Efficiency choices

vSAN



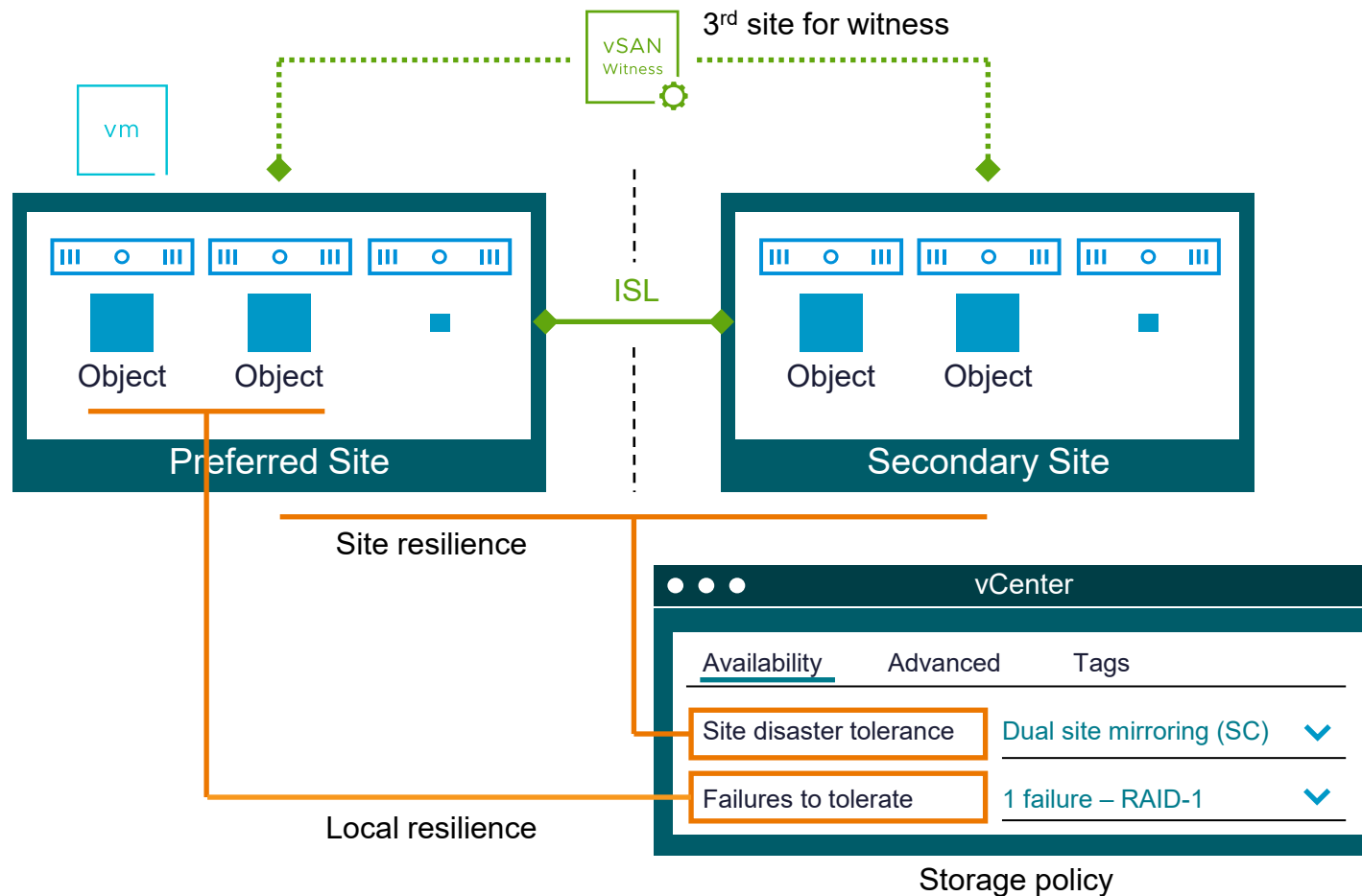
Firm Foundations Start with Software-Defined Architectures

Remove hardware dependencies, decrease TCO, increase agility



Low Cost GeoCluster

Integrated **stretched clustering** technology



Stretch a **single vSAN cluster** across 2 physical sites

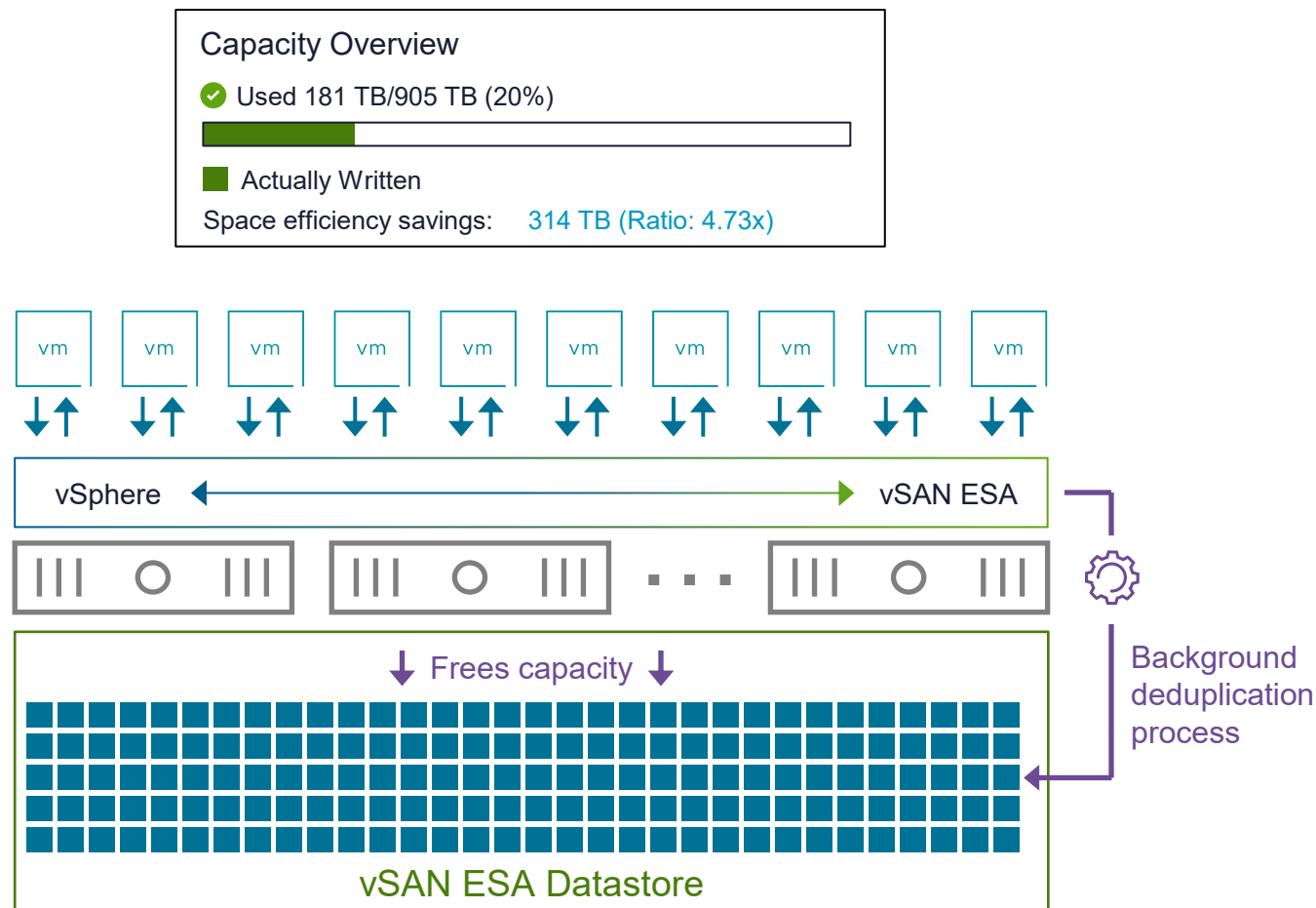
Maintains **object data availability** during:

- Failures within a site
- Failures of a site

Resilience settings applied using **storage policies**
Integrated with vSphere **HA** and **DRS**

Global Deduplication

Additional Space Efficiency Reducing Cost Per TB



Effective. Optimized for maximum space efficiency

- Uses 4KB granularity
- Cluster-wide dedup domain

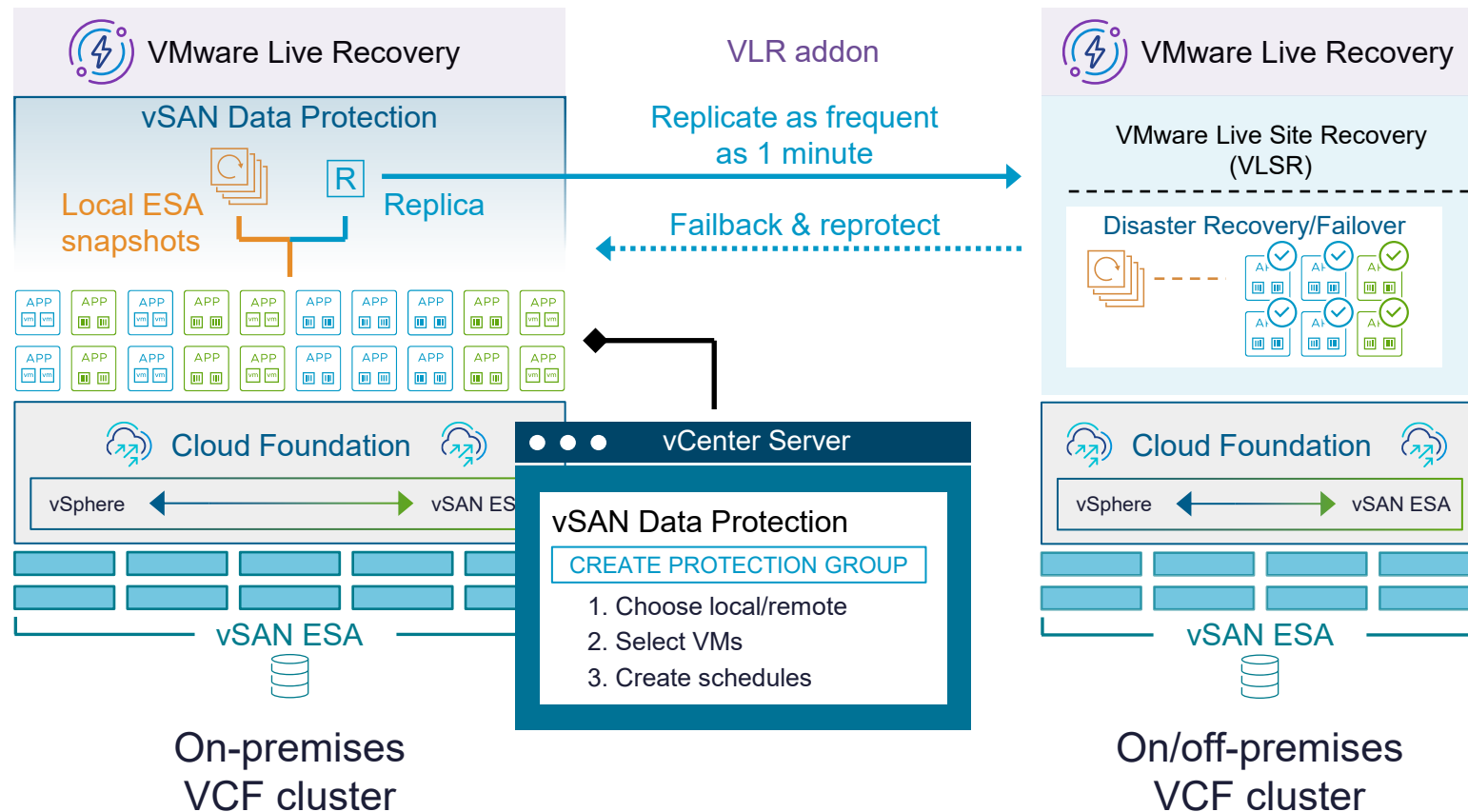
Runs asynchronously

- Adaptive throttling
- Minimal performance impact

intelligent post processing

- performs the deduplication tasks at times that are ideal for the cluster, while minimizing the amount of I/O activity for the processes

VM-Level Data Protection to Remote vSAN Clusters



Protect VMs **locally and remotely** using vSAN ESA snapshots

Replicate and recover courtesy of the **VMware Live Recovery (VLR)**

Use policy-based **protection groups** to define local and remote protection outcomes

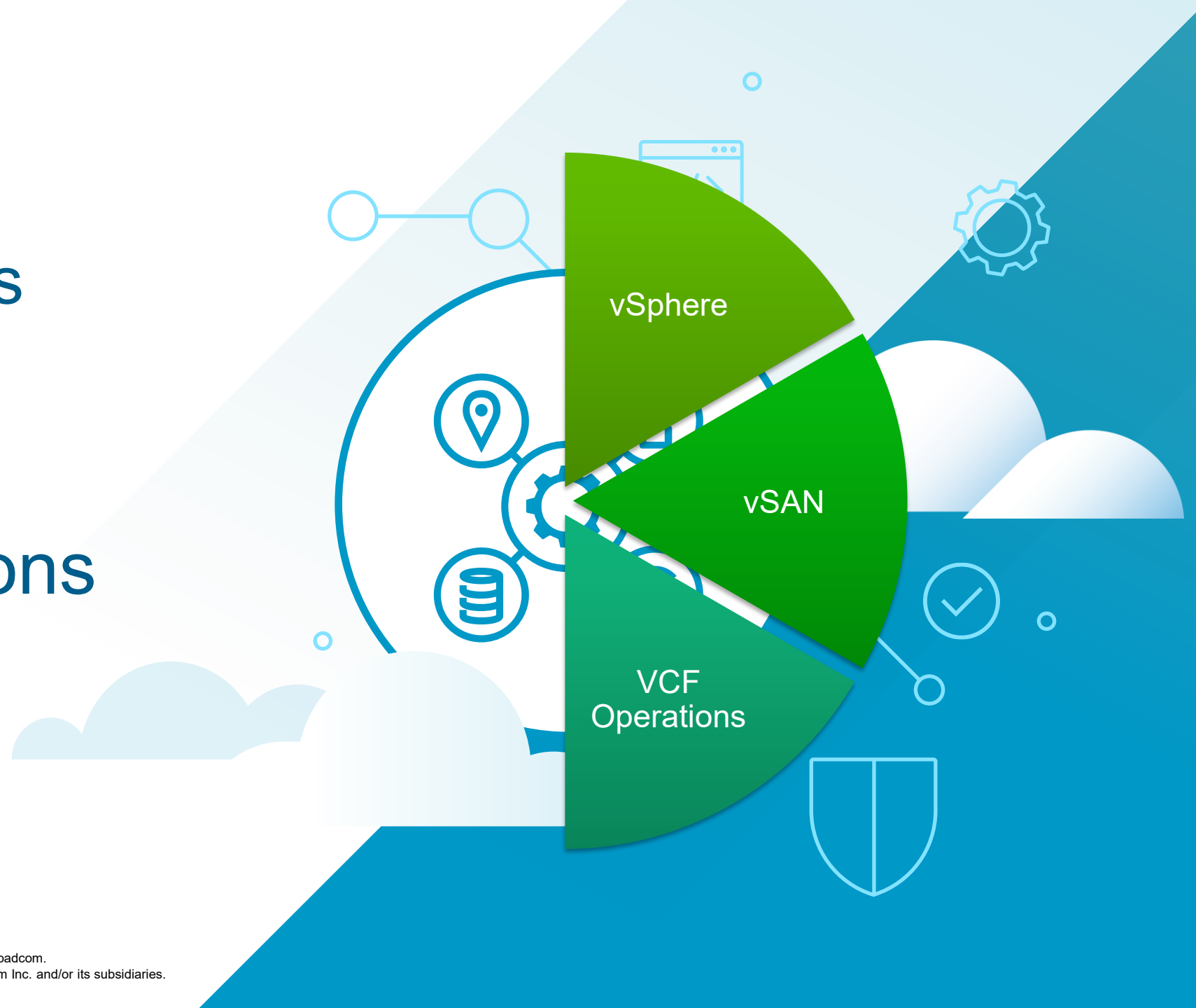
Create relationships between multiple sites using site pairs

Ideal for **disaster recovery, isolated recovery or long-term archiving**

Supports **vSAN HCI and vSAN storage clusters**

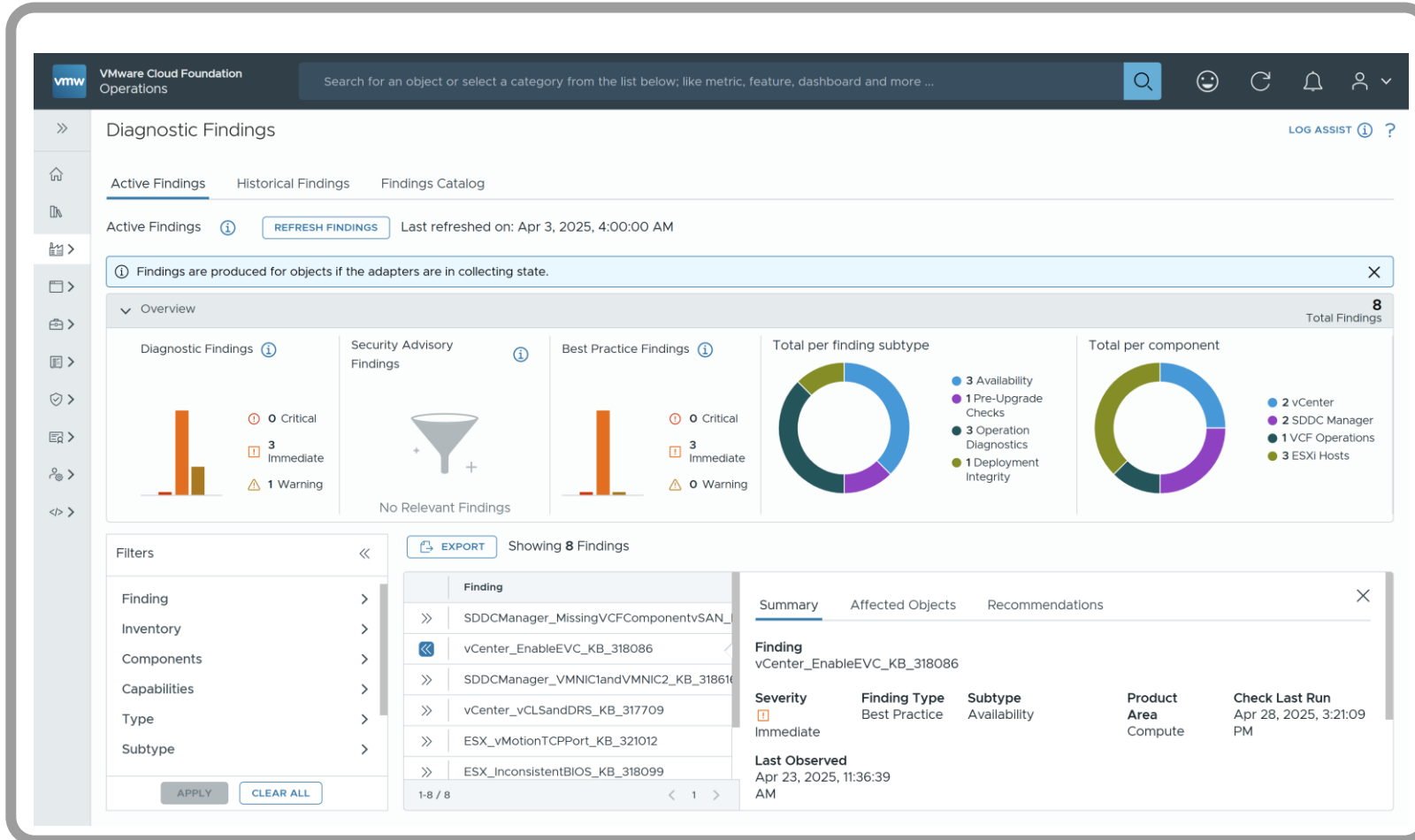
Efficiency choices

VCF Operations



Diagnostics

Active Findings



- See current issues
- Apply filters
- See actionable recommendations
- Export Findings
- Increases visibility & speeds discover
- Drives faster resolution
- Improves environment stability

Log Assist

SR Tracking

Log Assist

Control Panel / Log Assist

With Log Assist, you can select any Inventory object to generate a log bundle and attach it to your support case in the Broadcom Support Portal

INITIATE FOR TRANSFER

Transfer History

	Support Case	Created
>>	35989242	04/08/25 10:10 AM
>>	35989242	04/08/25 10:18 AM

Activity Feed Log Bundle Details

Log Update

04/08/25 10:10 AM	Log Transfer initiated.
04/08/25 10:12 AM	Diagnostic Report Transfer completed with state Completed.
04/08/25 10:13 AM	Log Transfer of LifecycleManager-dhcp-10-119-167-215.dhcp.broadcom.net completed with state Completed.
04/08/25 10:18 AM	Log Transfer of VCF Operations Cluster-vans-replica completed with state Completed.
04/08/25 10:18 AM	Log Transfer completed with status Completed.

File(s) Transfer Status

✓ Completed

- VCF Operations Fleet Management
LCM-host.docker.internal-1744121498260.zip
- VCF Operations

- Generate Log bundles on demand
- Link bundles to Support Requests
- Use the logs for troubleshooting
- Automate Log Bundle creation
- Transmit secure logs bundles directly
- Track log bundle deliver and SRs status

Rightsize VMs

vmvRealize Operations

Filter

ALL DATACENTERS

vRops Cloud

Filter

Home

Data Sources

Environment

Visualize

Troubleshoot

Optimize

Capacity

Reclaim

Workload Placement

Rightsize

Compliance

Plan

Configure

Automation Central

SA-Datacenter

> 1 Year Remaining

US\$117
Cost Savings

Not Optimized

SA-Datacenter

Oversized VMs

3 VMs
To Downsize

Resource	Recommended Reduction	% Reduction
CPU	2 vCPUs	
Memory	5 GB	

Undersized VMs

1 VMs
To Upsize

Resource	Recommended Increase	% Increase
CPU	0 vCPUs	
Memory	1 GB	

Oversized VMs

Undersized VMs

SCHEDULE ACTION

RESIZE VM(S)

EXCLUDE VM(S)

EXPORT ALL

SA-Compute-02

2 vCPUs

0 KB

SA-Compute-01

0 vCPUs

5 GB

SHOW EXCLUDED VMs

vmware®
by Broadcom

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Reclaim capacity

Before you buy new hardware, consider the opportunities for reclaiming the resource capacity.

The screenshot shows the VMware vRealize Operations 'Reclaim' interface. The left sidebar contains navigation options: Home, Data Sources, Environment, Visualize, Troubleshoot, Optimize, Capacity, **Reclaim** (highlighted), Workload Placement, Rightsize, Compliance, Plan, Configure, Automation Central, and Administration.

The main content area is titled 'Reclaim' and shows the following information:

- SA-Datacenter**: > 1 Year Remaining, US\$98 Cost Savings, Not Optimized.
- SA-Datacenter**: How much you can potentially save.
 - 10 VMs With Reclaimable Resources
 - 3 Orphaned Disks To Reclaim
 - US\$102/mo. Cost Savings
- Total Reclaimable Capacity**:

Resource	Reclaimable Capacity	% Reclaimable
CPU	19 vCPUs	
Memory	19.43 GB	
Disk Space	62.48 GB	
- Duration older than:** Filter
- Calculated based on:** Allocation (selected), Demand
- Powered Off VMs** US\$0/mo. **Idle VMs** US\$102/mo. **Snapshots** US\$0/mo. **Orphaned Disks** US\$0/mo. **EXPORT ALL**
- | VM | Cost | vCPUs | Memory | Disk Space |
|---------------|------------|----------|----------|------------|
| SA-Compute-02 | US\$33/mo. | 8 vCPUs | 5.84 GB | 17.78 GB |
| SA-Compute-01 | US\$68/mo. | 11 vCPUs | 13.58 GB | 43.88 GB |
- SHOW EXCLUDED VMS**

Cost Optimization Opportunity

Projected Monthly Cost ⓘ

\$ 35,473

▲ + 40% vs last month

Savings Opportunity ⓘ

\$ 9,095.17

Cost Drivers

■ Last month

■ Current month



CPU



Memory



Disk



Recommendations

Powered Off VMs

Total CPU	Total Memory	Total Disk
16 Cores	128 GB	80 TB

[VIEW DETAILS](#)

VM Snapshots

Total CPU	Total Memory	Total Disk
86 Cores	184 GB	60 TB

[VIEW DETAILS](#)

Oversized VMs

Total CPU	Total Memory	Total Disk
52 Cores	347 GB	42 TB

[VIEW DETAILS](#)

Automation Central Updates

Schedule new Config Drift check job

VMware Cloud Foundation Operations

Create New Job - Configuration Drift Check

Automation Central / Create New Job

1 - Configuration Drift Check Information 2 - Select an Object 3 - Filter Criteria 4 - Schedule

Start Date: 29/04/25

Time zone: Host

Start Time: 06:00

Recurrence: Weekly

Run Every: 1 Week(s)

On (Days of the week): Su M Tu W Th F Sa

End: No end date

Notifications

Receive status notifications including job success, job failure, and a reminder

☐ Receive Updates on Job via Email

No Email Outbound plugin available

Automation Central

Build Automated Jobs

Upcoming Jobs

Schedule Report History Jobs

May 2025

Sun	Mon	Tue	Wed	Thu	Fri	Sat
27	28	29	30	1	2	3
	11:30 Config Drift check		11:30 Weekly			
4	5	6	7	8	9	10
	11:30 Config Drift check		11:30 Weekly			
11	12	13	14	15	16	17
	11:30 Config Drift check		11:30 Weekly			
18	19	20	21	22	23	24
	11:30 Config Drift check		11:30 Weekly			
25	26	27	28	29	30	31
11:30 Monthly BI	11:30 Config Drift check		11:30 Weekly			

- A proactive way to detect configuration changes
- Schedule **automated config drift to report**
- vCenter Config changes
- vCenter Cluster config changes

What-If Analysis Scenario

What-If Analysis

Overview

Saved Scenarios



Workload Planning: Traditional

Workload

Setup a scenario to 'deploy applications' by adding new workload or 'deprecate applications' by removing existing workload. You can also evaluate the impact of 'reclaiming inefficient workload' by using remove workload scenario.

ADD VMS

REMOVE VMS



Workload Planning: Hyperconverged

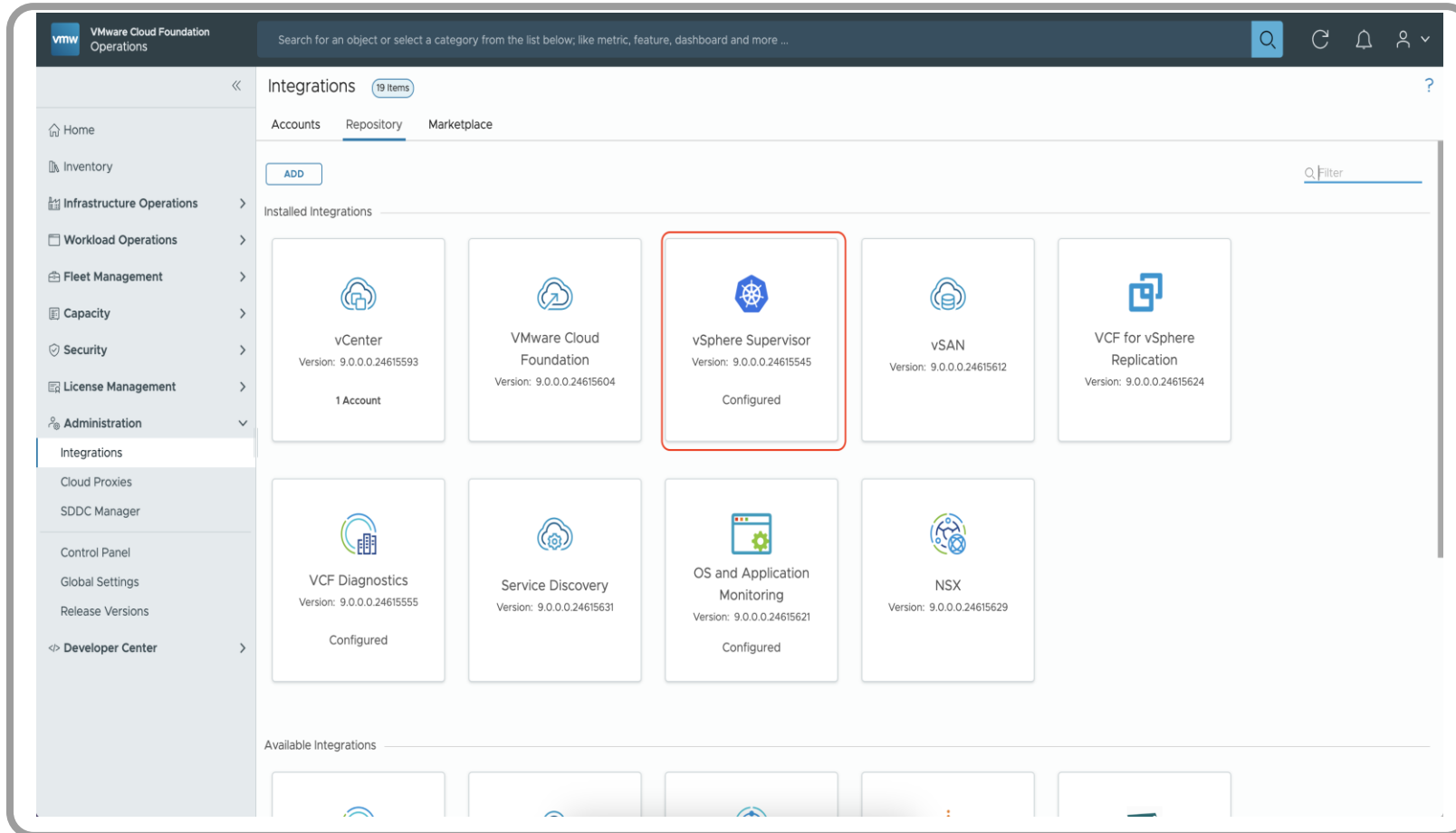
Workload

Plan for 'future workload' to be deployed in VMC on AWS or vSAN environment with VMs associated with specific storage policy related factors (such as FTT, RAID), to evaluate if the usable capacity can cater to workload to be deployed. You can also evaluate the impact of 'reclaiming inefficient workload' on vSAN cluster by using remove VMs scenario.

ADD VMS

REMOVE VMS

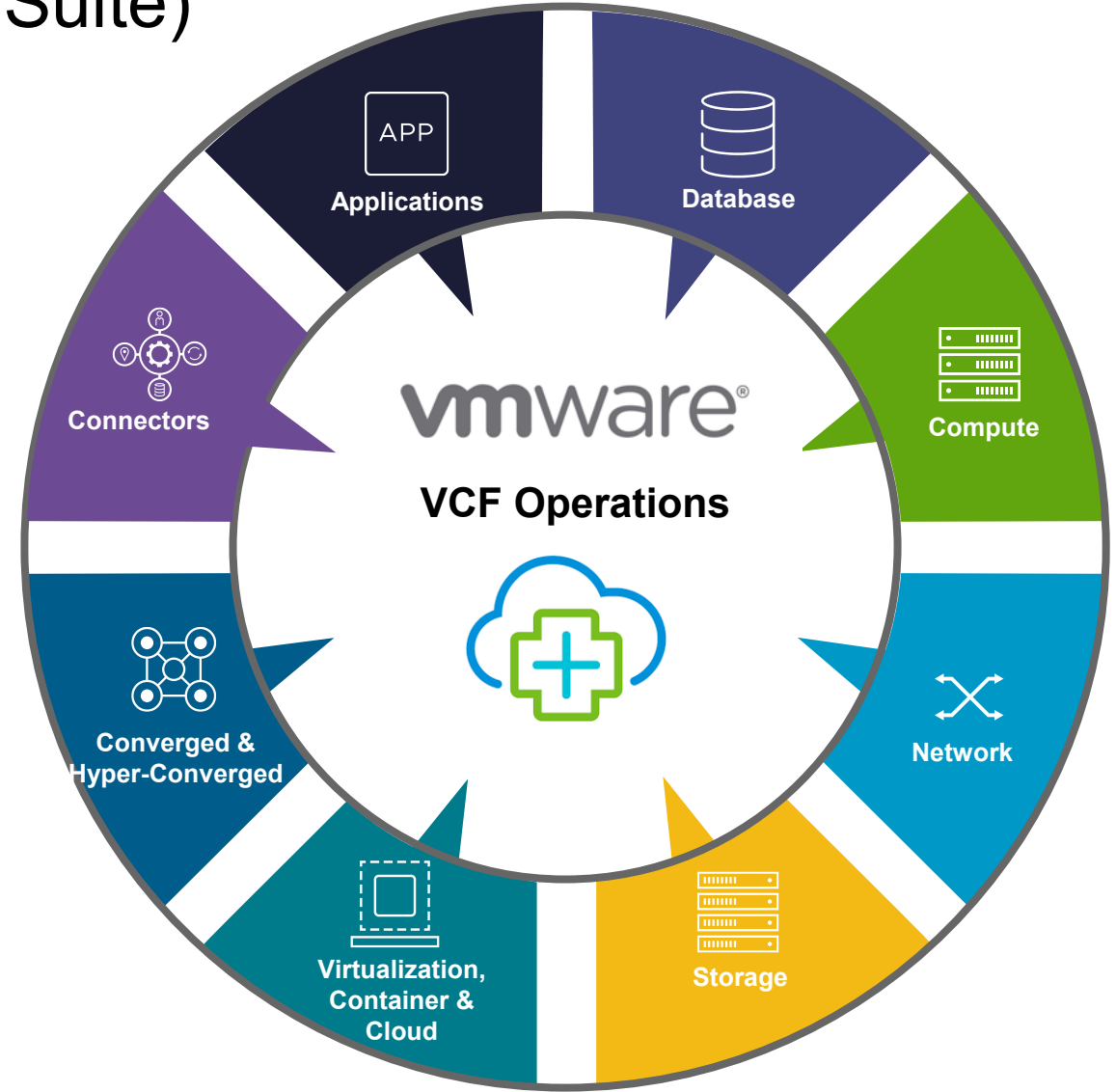
Native Integration for Supervisor and VKS clusters



- Native Integration with Supervisors on configuring vCenter integration
- Automatically monitor Supervisor clusters
- No need of separate Kubernetes MP to monitor k8s services

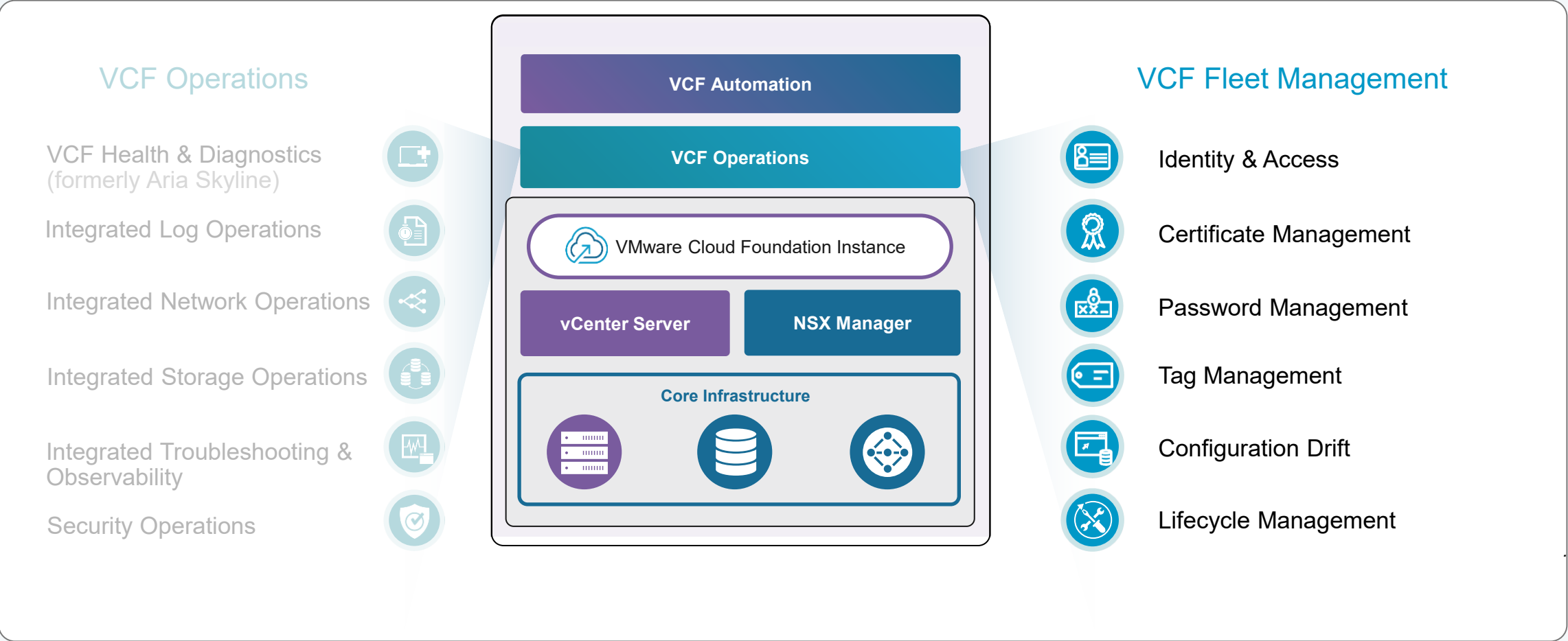
Management packs (True Visibility Suite)

- Management packs for over 30 external solutions
- Unlimited number of services/devices



Unified Operations Experience

VCF Operations and VCF Fleet Management



Infrastructure Configurations

mgmt-west-stage-01

SCHEDULE DRIFT DETECTION

Config template 4 Fitness-vc-standard

DETECT DRIFT

VIEW TEMPLATE

Search settings

⚠️ 4% drifts (8) are detected for this vCenter since last configuration drift check on Aug 18, 2024 at 11:55 PM.

Current vCenter Value		Config Template Value	
63	"appliance": {	63	"appliance": {
64	"software_update_policy": {	64	"software_update_policy": {
65	"password": "<secret>",	65	"password": "<secret>",
66	"enable_SSL_cert_validation": false,	66	"enable_SSL_cert_validation": true,
67	"default_URL": "https://vapp-updates.acme.com	67	"default_URL": "https://vapp-updates.acme.com
68	"check_schedule": [],	68	"check_schedule": [],
69	},	69	},
70	"smtp": {},	70	"smtp": {},
71	"user_account_settings": {	71	"user_account_settings": {
72	"local_accounts_policy": {	72	"local_accounts_policy": {
73	"warn_days": 7,	73	"warn_days": 7,
74	"max_days": 90,	74	"max_days": 30,
75	"min_days": 1,	75	"min_days": 1,
76	},	76	},
77	"access_settings": {	77	"access_settings": {
78	"shell": {	78	"shell": {
79	"timeout": 0,	79	"timeout": 0,
80	},	80	},
81	"ssh": {	81	"ssh": {
82	"enabled": true,	82	"enabled": false,
83	},	83	},
84	"console_cli": {	84	"console_cli": {
85	"enabled": true,	85	"enabled": false,
86	},	86	},
87	},	87	},
88	"root_account_policy": {	88	"root_account_policy": {
89	"warn_days_before_password_expiration": 7	89	"warn_days_before_password_expiration": 7

Home

Inventory

Infrastructure Operations >

Workload Operations >

Management >

Single Sign-On

Certificates

Passwords

Tags

Infrastructure Configurations

Lifecycle

Tasks

Capacity >

Security >

Licences >

Administration >

Developer Center >

Software Defined Data Centers

VCF_WEST_PROD_01

mgmt-west-prod-01

VCF_WEST_STAGE_01

mgmt-west-stage-01

wld-west-stage-01

wld-west-stage-02

wld-west-stage-03

wld-west-stage-04

wld-west-stage-05

VCF_WEST_DEV_01

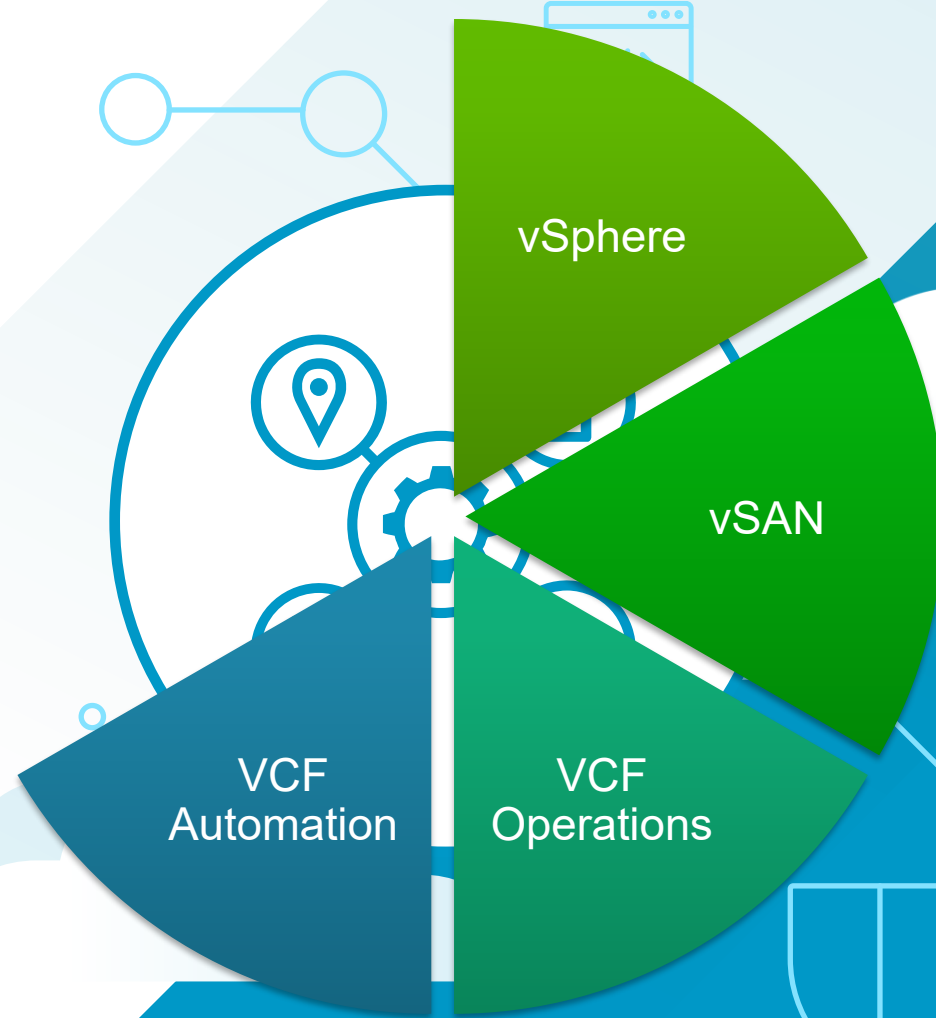
mgmt-west-dev-01

wld-west-dev-01

wld-west-dev-02

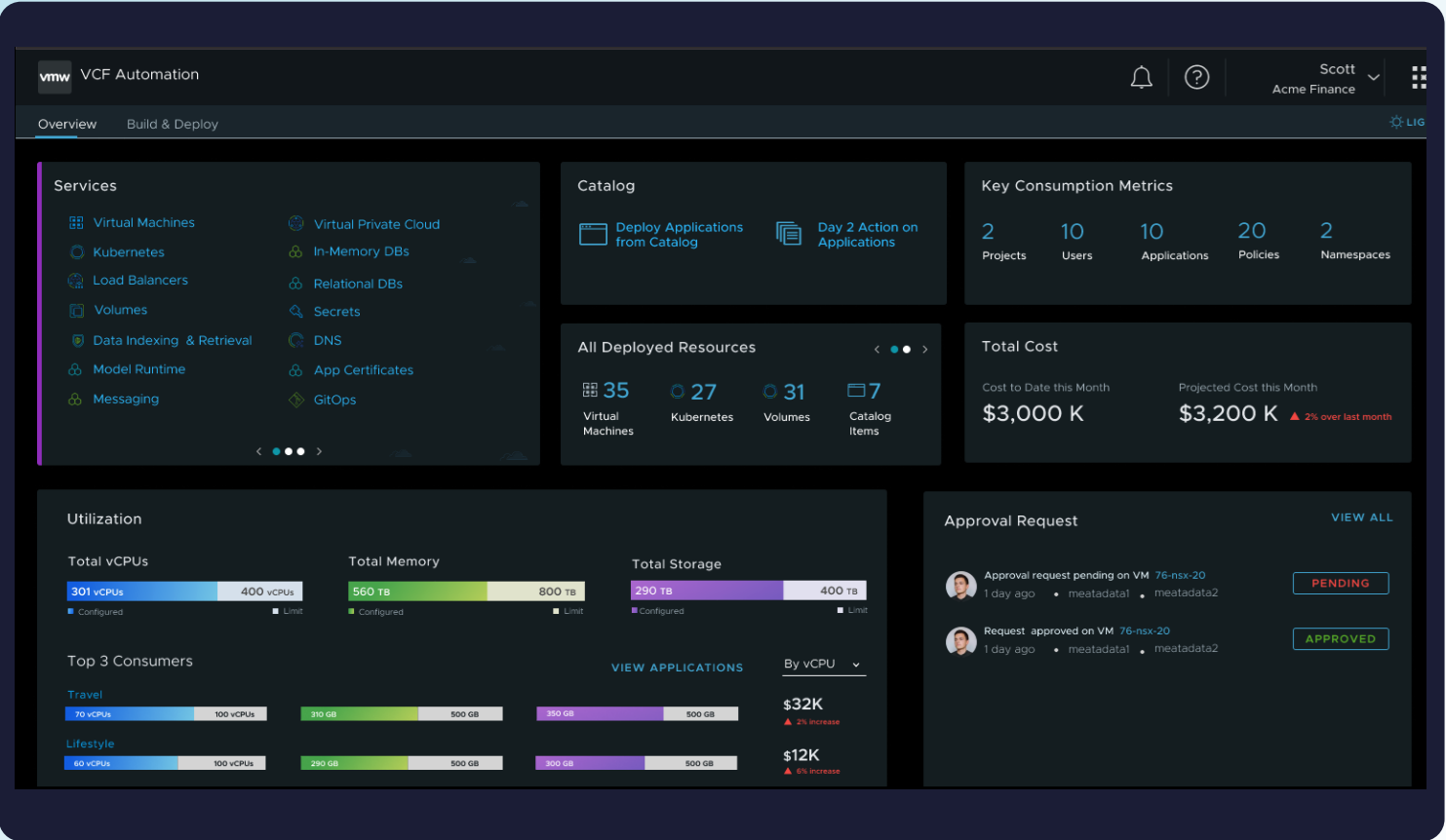
Efficiency choices

VCF Automation



One Interface For A Cloud Consumption Experience

Unified Consumption Experience with VCF Automation Console



The image is for illustration only

Tenant Management

1. **Seamless Resource Allocation:** Organize and manage tenant resources efficiently.
2. **Simplified Identity Control:** Streamline admin and tenant identity management.

Cloud Governance

1. **Policy Enforcement:** Ensure compliance with governance policies.
2. **Automated Workflows:** Use blueprints for consistent, streamlined deployments.

Developer Experience

1. **IaaS Services** - Built-in automation, governance, and seamless infrastructure scaling.
2. **Catalog-Based Consumption** - Streamline resource access, ensuring consistency and compliance.

«

Context: Global

📁 All Resources

Catalog

📁 Content Hub >

Context: Project-1/Development-1

☑ Services ▼

Virtual Machine Service

Kubernetes Service

Volume Service

Load Balancer Service

Private AI Service

Data Service

Network Service

Catalog

Items 4

FILTER

🔍 Search

Name (ascending) ▼

☰

📄

↺



FITNESS SHOP APP

ACME Fitness Shop is a modern application that is easy to use, powerful, open source online store management program.

Project : Fitness

Type : Blueprint

Version : 1.2

REQUEST



PRIVATE AI K8S CLUSTER

VMware Kubernetes cluster with GPU capable worker nodes to run AI/ML cloud-native workloads.

Project : Travel

Type : Blueprint

Version : 1.0

REQUEST



PRIVATE AI RAG WORKSTATION

GPU-enabled workstation (VM) with Retrieval Augmented Generation (RAG) reference solution.

Project : Lifestyle

Type : Blueprint

Version : 1.0

REQUEST



TRITON SERVER

GPU-enabled workstation (VM) with Triton Inference server.

Project : Travel

Type : Blueprint

Version : 1.0

REQUEST



BASE K8S CLUSTER

Powered by Kubernetes Service

Project : Lifestyle

Type : Blueprint

Version : 1.0

REQUEST



DATABASE SERVICES

Powered by DSM

Project : Fitness

Type : Blueprint

Version : 1.0

REQUEST



FILE SERVICES

Use the VSAN file service to create file shares in the VSAN datastore that workstations or VMs can access.

Project : Lifestyle

Type : Blueprint

Version : 1.0

REQUEST



LOAD BALANCER

Powered by LB service

Project : Travel

Type : Blueprint

Version : 1.0

REQUEST



OBJECT STORAGE

Powered by vSphere Services



VDI LINUX DESKTOP

Standard remote environment



VDI WINDOWS DESKTOP

Standard remote environment

Fitness Prod

Created successfully

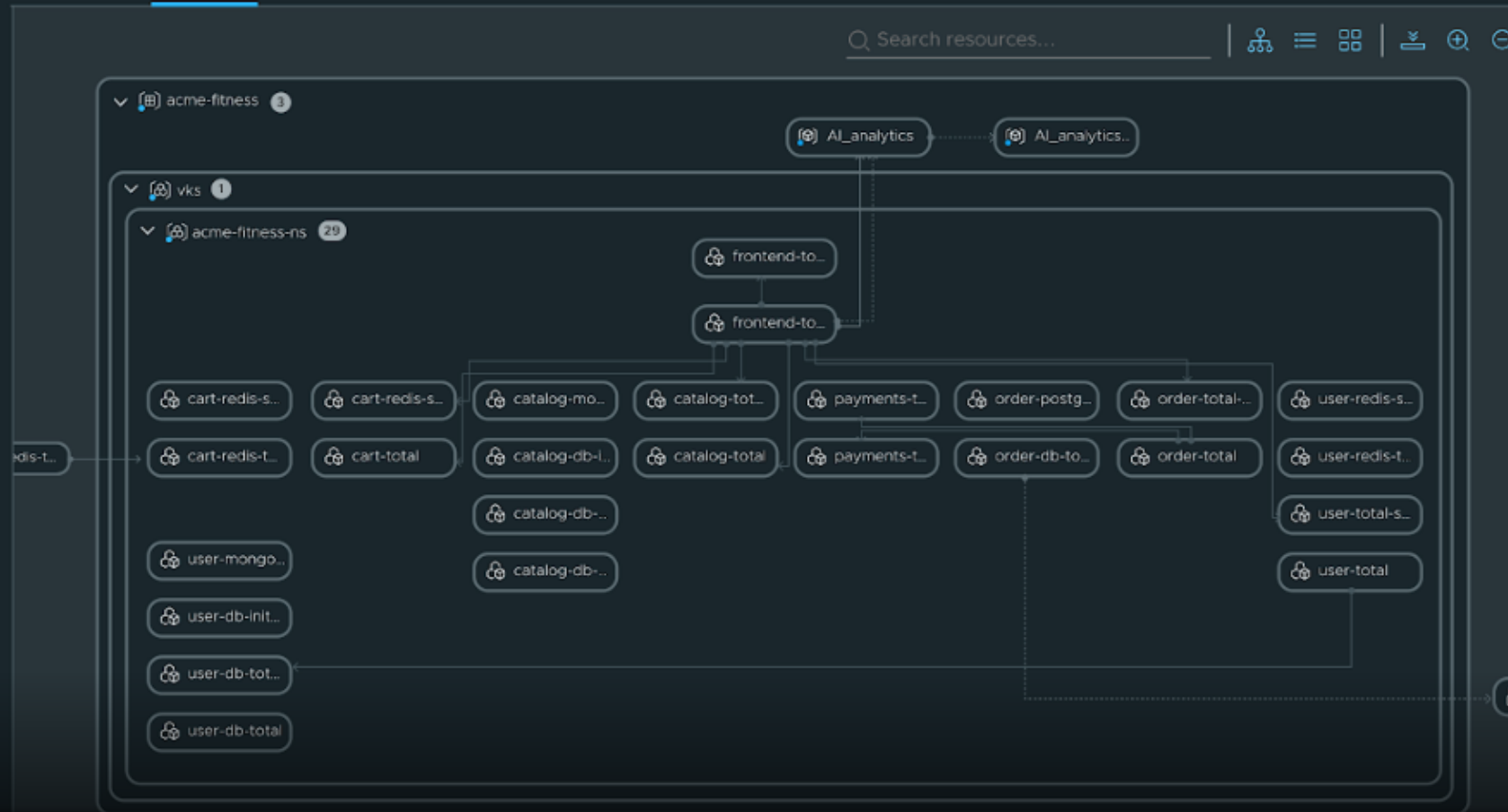
ACTIONS ▾

Owner [scott@acme.com](#)
Project [Fitness](#)
Template [Fitness Shop App](#) ↓

Expires Never
Last modified Aug 27, 2024, 01:42:22
Created Aug 27, 2024, 01:41:16

Daily price estimate

\$30.43



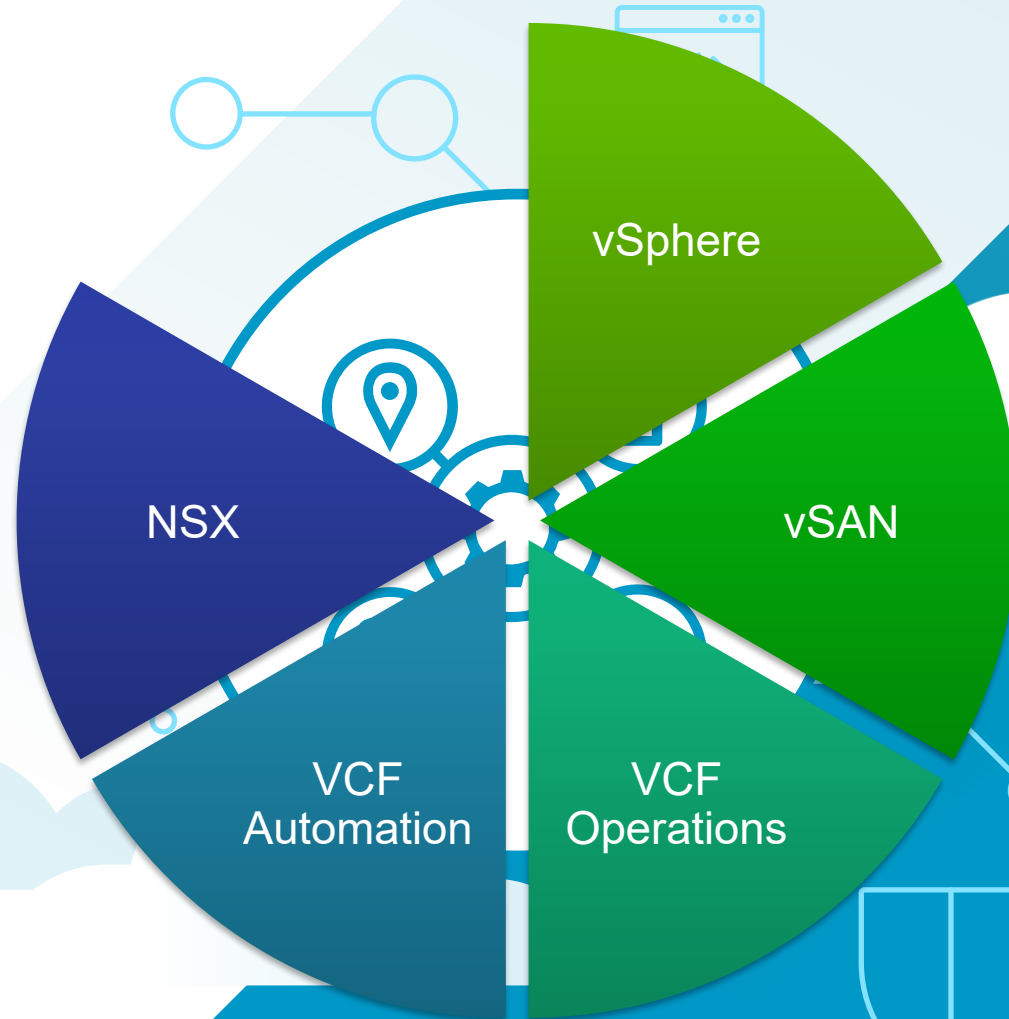
```

1  apiVersion: cluster.x-k8s.io/v1beta1
2  kind: Cluster
3  ▶ metadata:...
4  ▶ outputs:...
5  ▶ inputs:...
6  ▼ resources:...
7  ▶ Namesapces:...
8  ▶ TKG:...
9  ▼ PVC:
10 type: CCI.TKG.Resource
11 properties:
12   context: ${resource.opencart-ns.id}
13 ▼ manifest:
14   apiVersion: v1
15   kind: PersistentVolumeClaim
16   metadata: ...
17 ▼ spec:
18   accessModes:
19     - ReadWriteOnce
20   resources:
21     requests:
22       storage: 8Gi
23     storageClassName: prod-kubernetes-storage-policy
24 ▼ WEB_SVC:
25 type: CCI.TKG.Resource
26 properties:
27   context: ${resource.opencart-ns.id}
28   wait:
29     fields:

```

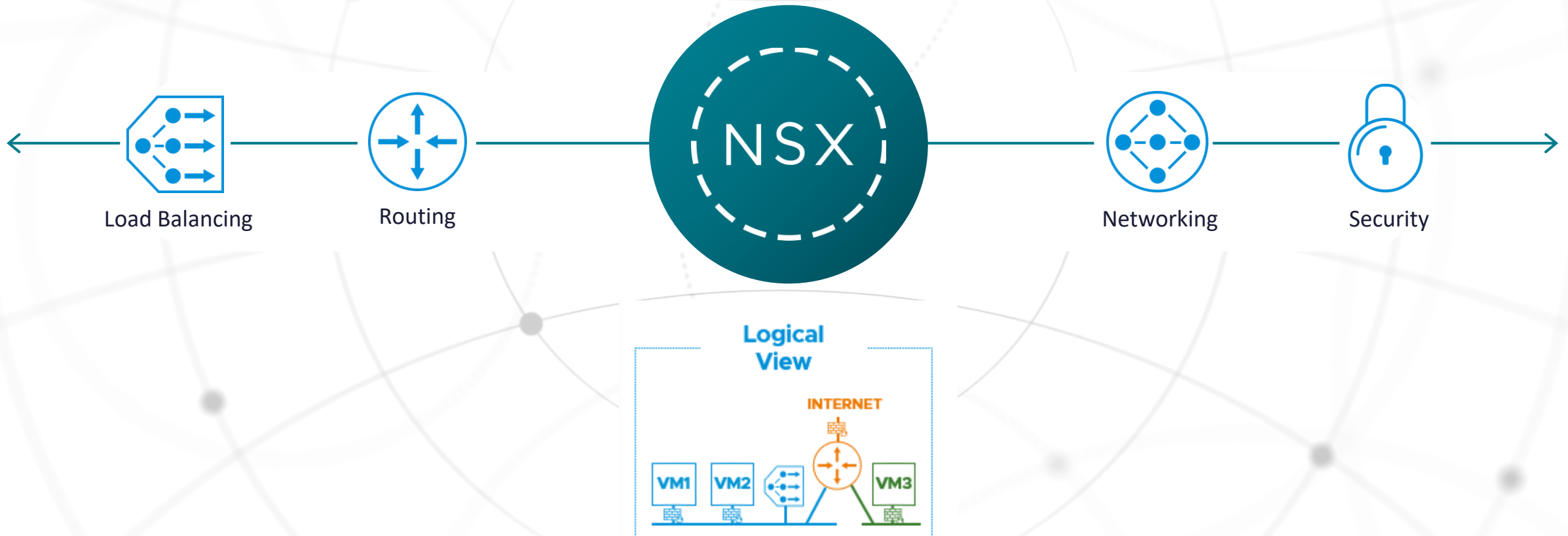
Efficiency choices

NSX



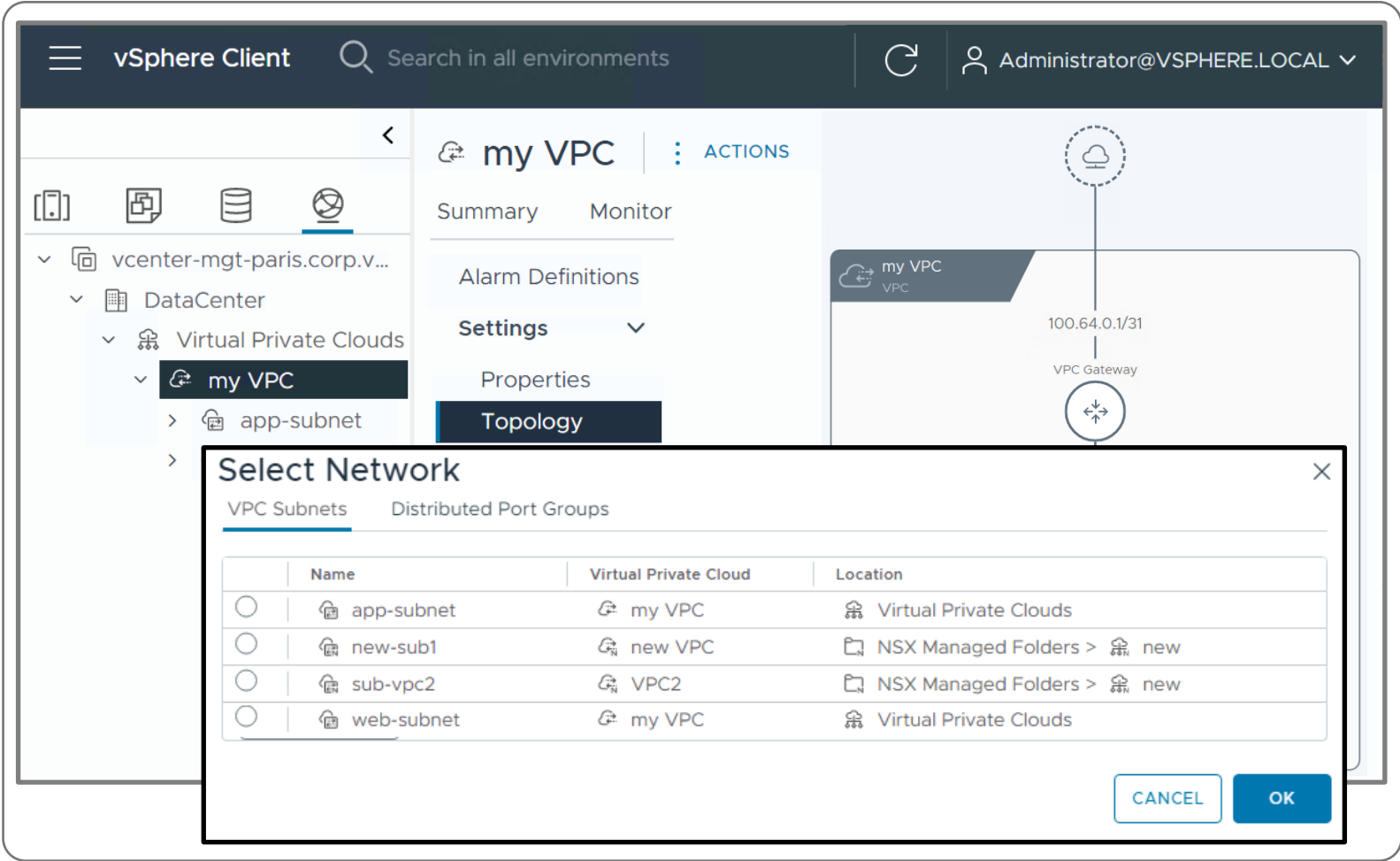
NSX: A Complete Solution

Full Network Automation



Consume VPCs in vCenter and VCF Automation

Consistent implementation of Virtual Private Clouds (VPCs) across the platform



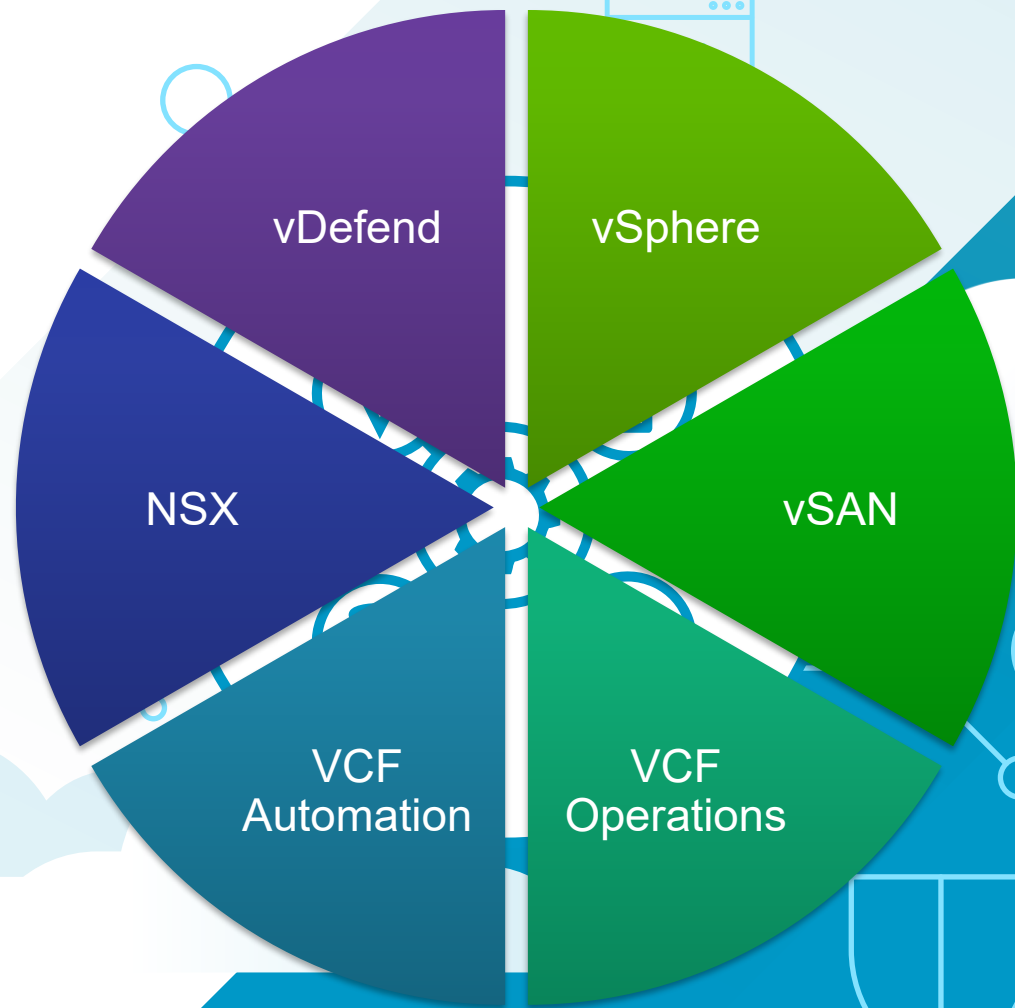
VPCs can be configured directly from vCenter and VCF Automation

VPCs and subnets are first-class objects

Attaching a VM to a subnet is straightforward

Efficiency choices

vDefend



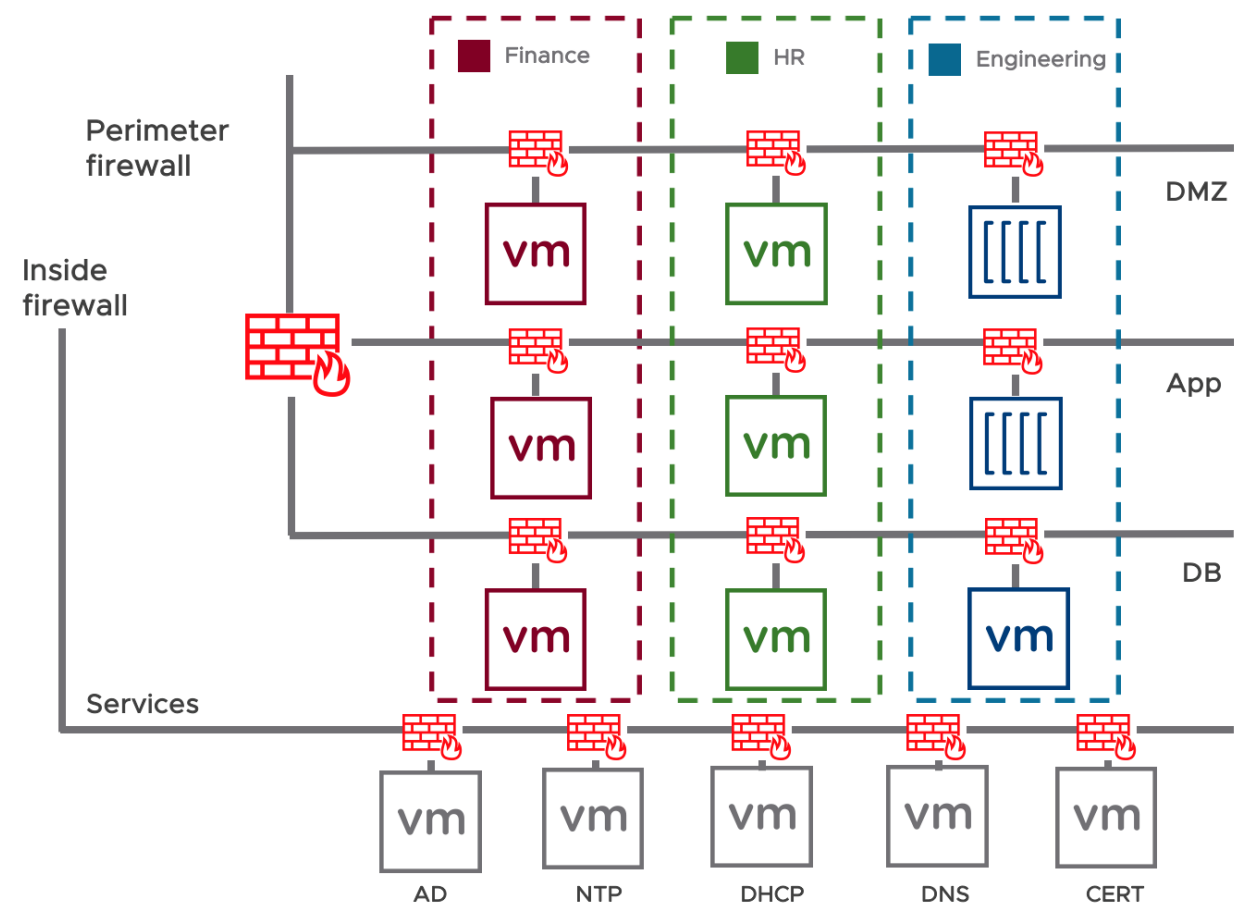
★ DATA ★
SECURITY

IN THIS CORNER, WE HAVE
FIREWALLS, ENCRYPTION,
ANTIVIRUS SOFTWARE, ETC.
AND IN THIS CORNER,
WE HAVE DAVE!!

HUMAN
ERROR

NSX-T DFW Introduction

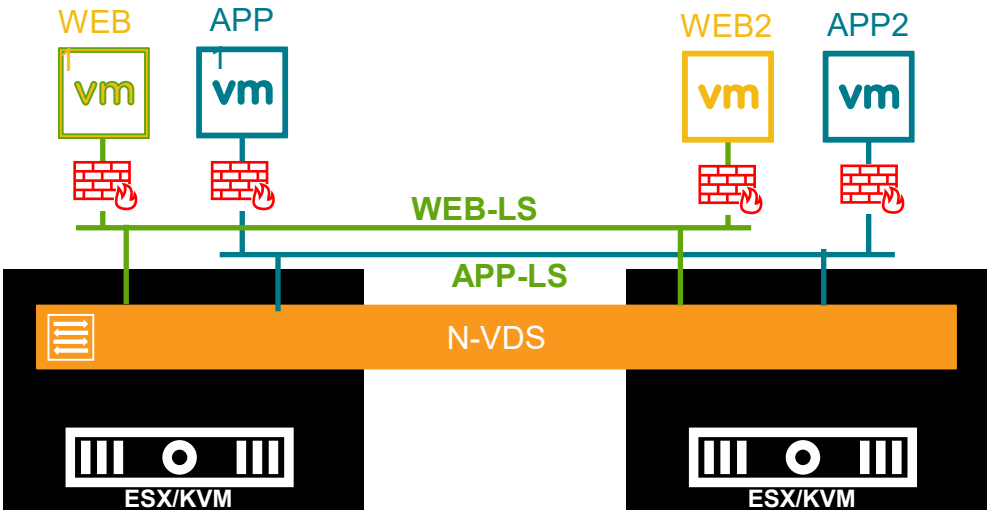
Micro-segmentation Use Case



Rule with Network, Infrastructure & Application Based Grouping

Example

#	Name	Sources	Destinations	Services	Action	Applied To
64	Rule-NetworkBased	WEB-IPSET	10.2.2.0/24	HTTP	Allow	WEB-LS APP-LS
65	Rule-InfrastructureBased	WEB-LS	APP-LS	HTTP	Allow	WEB-LS APP-LS
66	Rule-ApplicationBased	WEB-NSGROUP	APP-NSGROUP	HTTP	Allow	WEB-NSGROUP APP-NSGROUP



vDefend Distributed Firewall

Expression Based Dynamic Membership Criteria

Select Members | GROUP-1

Add Compute Members either by creating or by directly adding them. You can also add Identity members separately. Identity members intersect with the Compute members to define effective membership of the group.

Membership Criteria (2) Members (0) IP Addresses (0) MAC Addresses (0) AD Groups (0)

+ ADD CRITERIA

Maximum: 5 Criteria

Criteria 1

Virtual Machine	Tag	Equals	PROD	Scope		+ -
AND	Tag	Equals	LINUX	Scope		-

Criteria 2

Virtual Machine	Tag	Equals	PROD	Scope		+ -
Segment Port	Name	Equals	WINDOWS	Scope		-
Segment	Tag					
IP Set	OS Name					
	Computer Name					

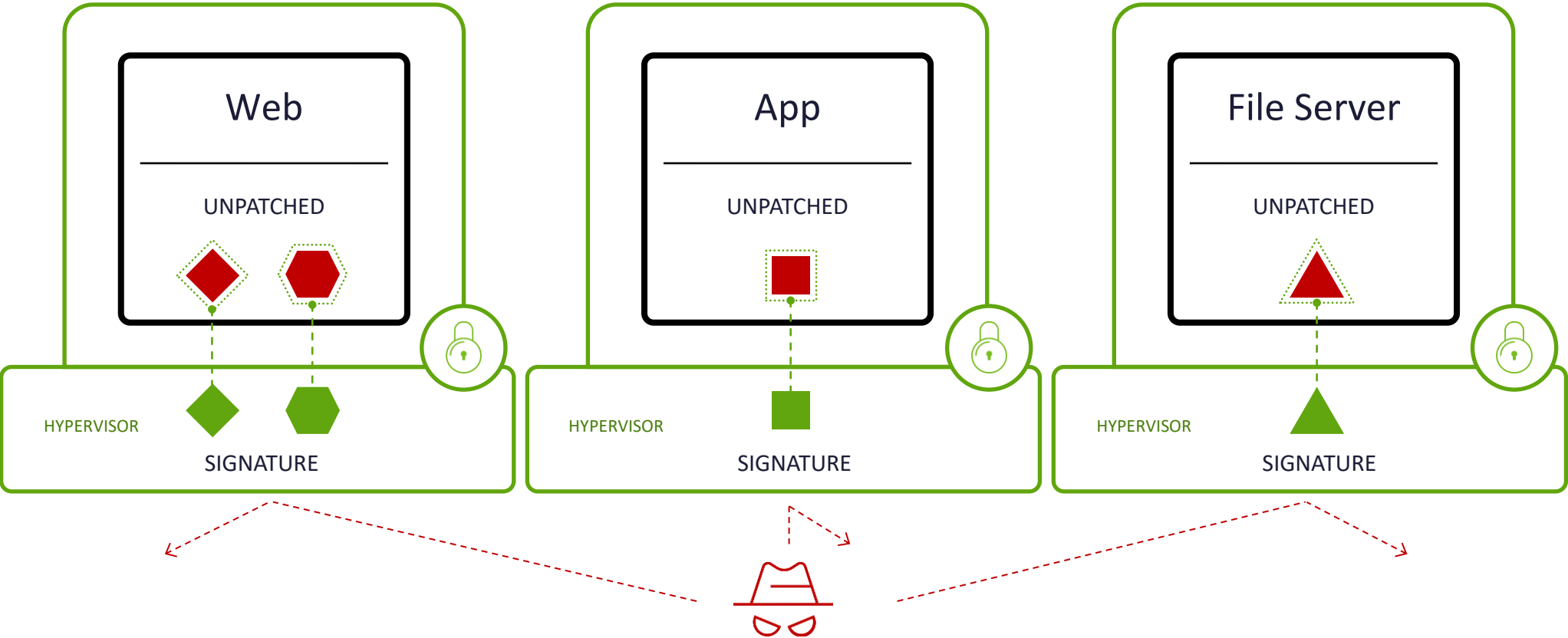
CANCEL APPLY

Overview

- Grouping: Mix of Expression Based and Static members
- Tag based expressions for Segment Ports, Segments and VMs
- Tag consists of Tag and Scope and is applied to the above objects.
- Name based expressions for VMs
- Limited to 5 (Tag based) criteria expressions - AND & OR criteria

Ubiquitous Virtual Patching Inside the Datacenter

Made Easy with the Distributed IDS/IPS and Signature Curation



Learning @ Broadcom

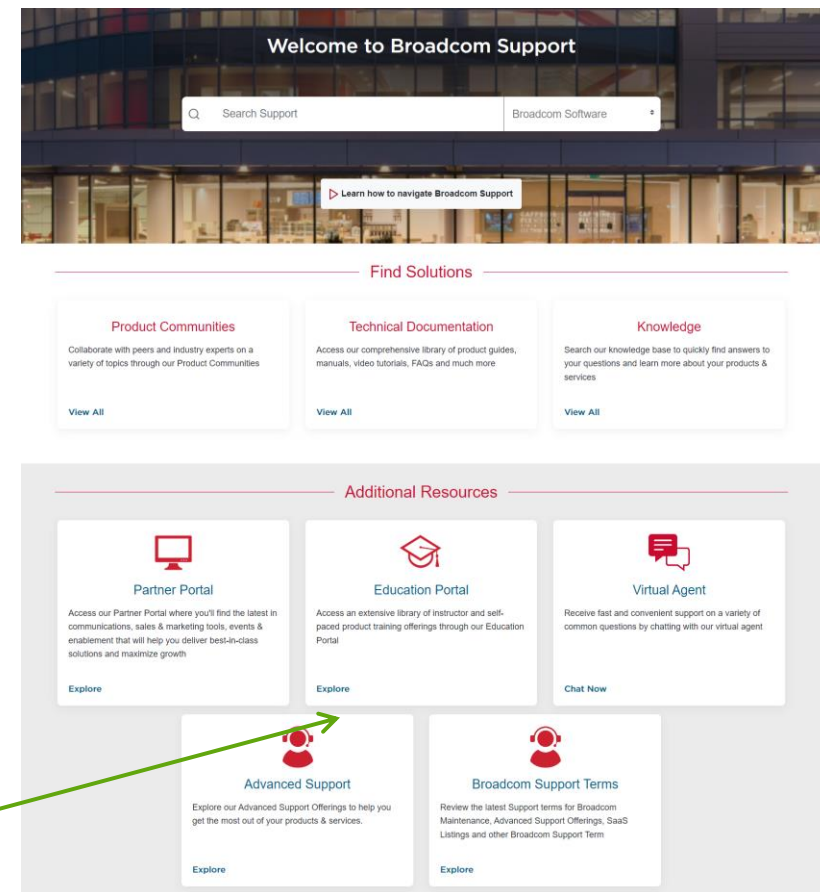
Learning materials

All official VMware course materials are available for free **to VCF customers and Partners !**

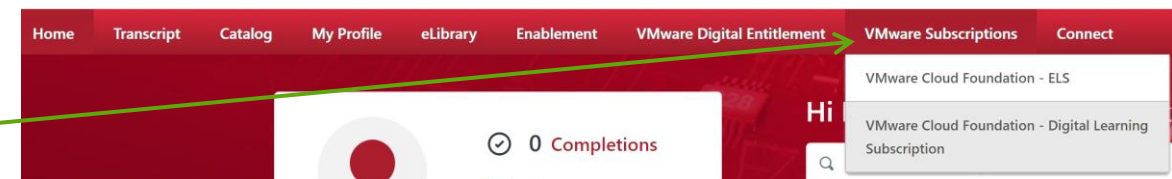
ELS – Enterprise Learning Subscription makes the same courses available to anyone for a whole year!
Contact us about this!

Access to tutorials and courses

- 1 [Broadcom Support Portal](#) entry
 - VFC clients and Partners: **any email assigned to** the given company domain can be used!
- 2 Open **Education portal**
- 3 A list of available courses can be found under **VMware Subscription** on the [Learning@Broadcom](#) website .



Learning@  **BROADCOM**





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Thank You