Webinar:
VMware vSphere 7, 2.7.2020.

Herzlich Willkommen.

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Leiter Business Development

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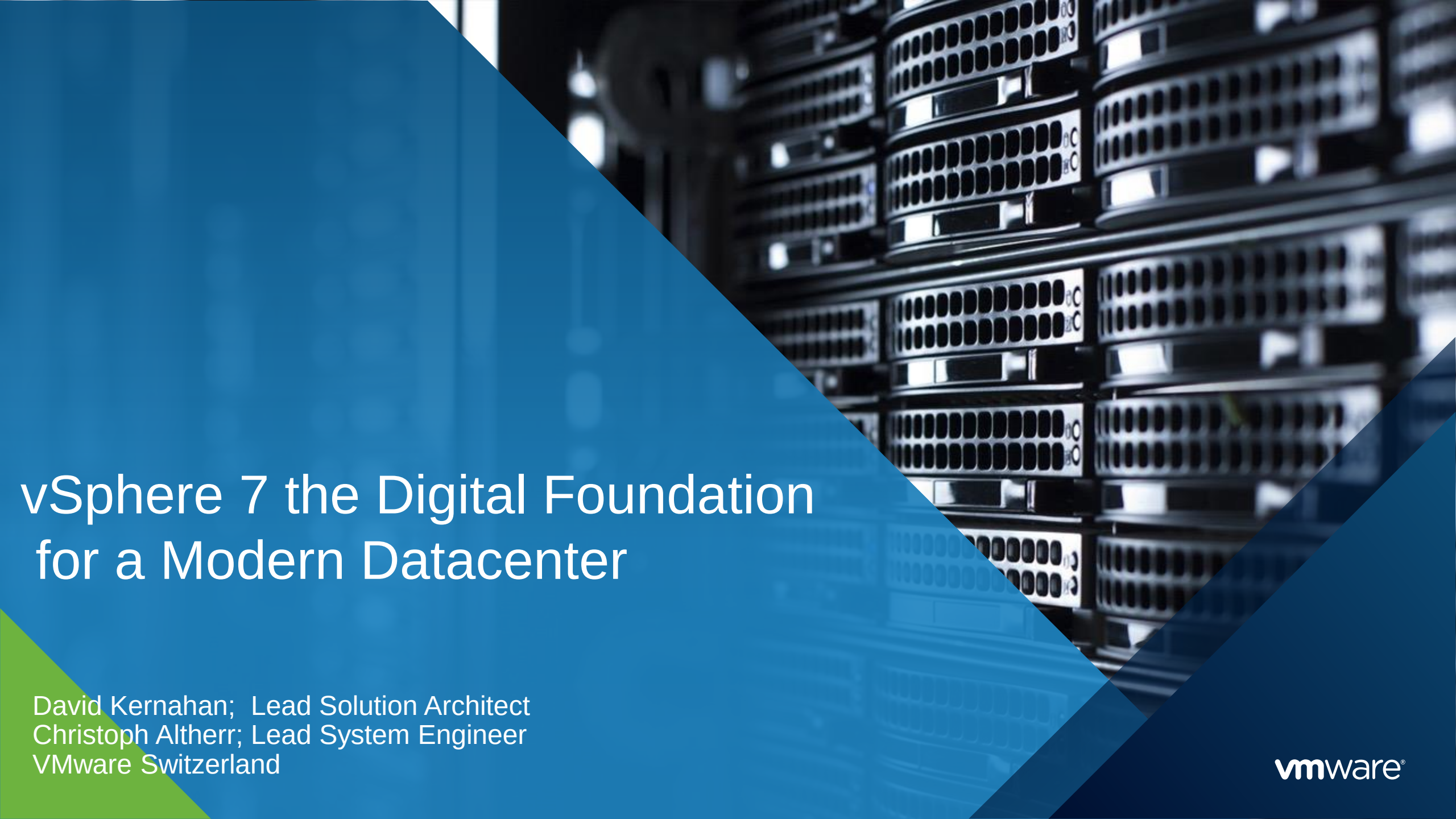
Agenda

1. VMware Vision & Strategie
2. Cloud Foundation - kurzer Überblick
3. vSphere/vCenter Version 7 - Neuheiten
4. Demo: vSphere 7 & Kubernetes
5. Fragen & Antworten



vSphere 7 the Digital Foundation for a Modern Datacenter

David Kernahan; Lead Solution Architect
Christoph Altherr; Lead System Engineer
VMware Switzerland

vmware

[VMworld 2020 Register now]

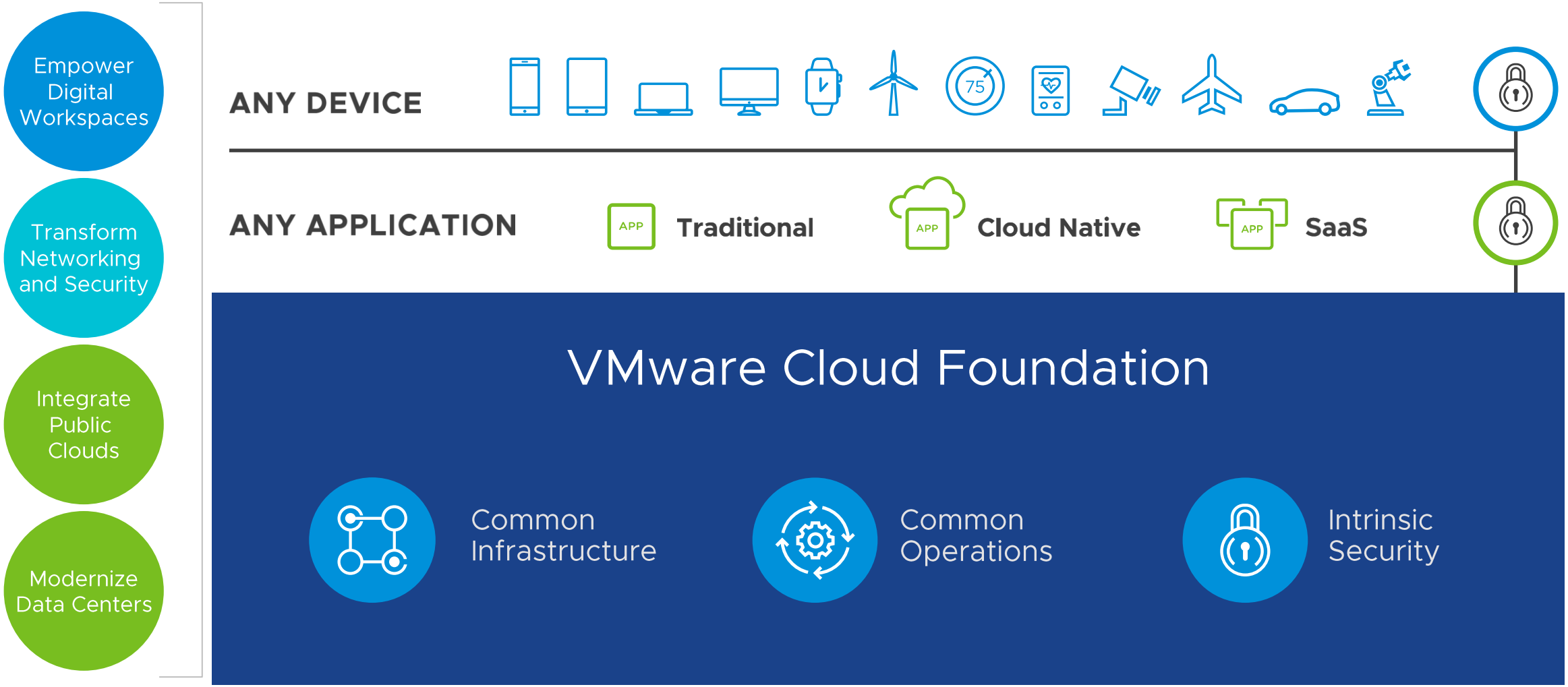
VMware Cloud Foundation

The simplest path to Hybrid Cloud

vmware®

Our Vision

A digital foundation built on VMware



Modernize to Power Innovation and Growth

Solves the challenges of the traditional data center

Traditional Data Center		VMware Cloud Foundation
Complex to plan, deploy, and operate	➤	☑ Integrated platform with built in lifecycle automation for the cloud
Challenging to meet business requirements for speed and flexibility	➤	☑ Agile, scalable, and highly responsive IT service delivery capability
Inefficient and hard to manage	➤	☑ Highly efficient, self-driving operations
Significant security and compliance risks	➤	☑ Security built in at every level of infrastructure and operations
Incompatible public and private clouds	➤	☑ Common platform across clouds

Architecture Built on VMware Validated Designs

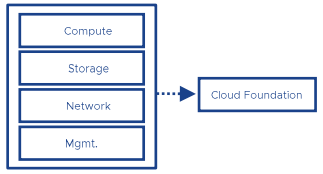
- Complete Datacenter-level Designs
- Standardized and Consistent
- Proven and Robust
- Applicable to a Broad Set of Use-Cases

VMware Cloud Foundation

Consistent infrastructure and operations to speed innovation

Consistency & Security

Standardized Architecture



Full Stack Approach

Tested and Validated

Apps/Services/ Infrastructure Automation

Simplified Experience

Built-in Security

VMware Cloud Foundation

Management | Compute | Storage | Networking

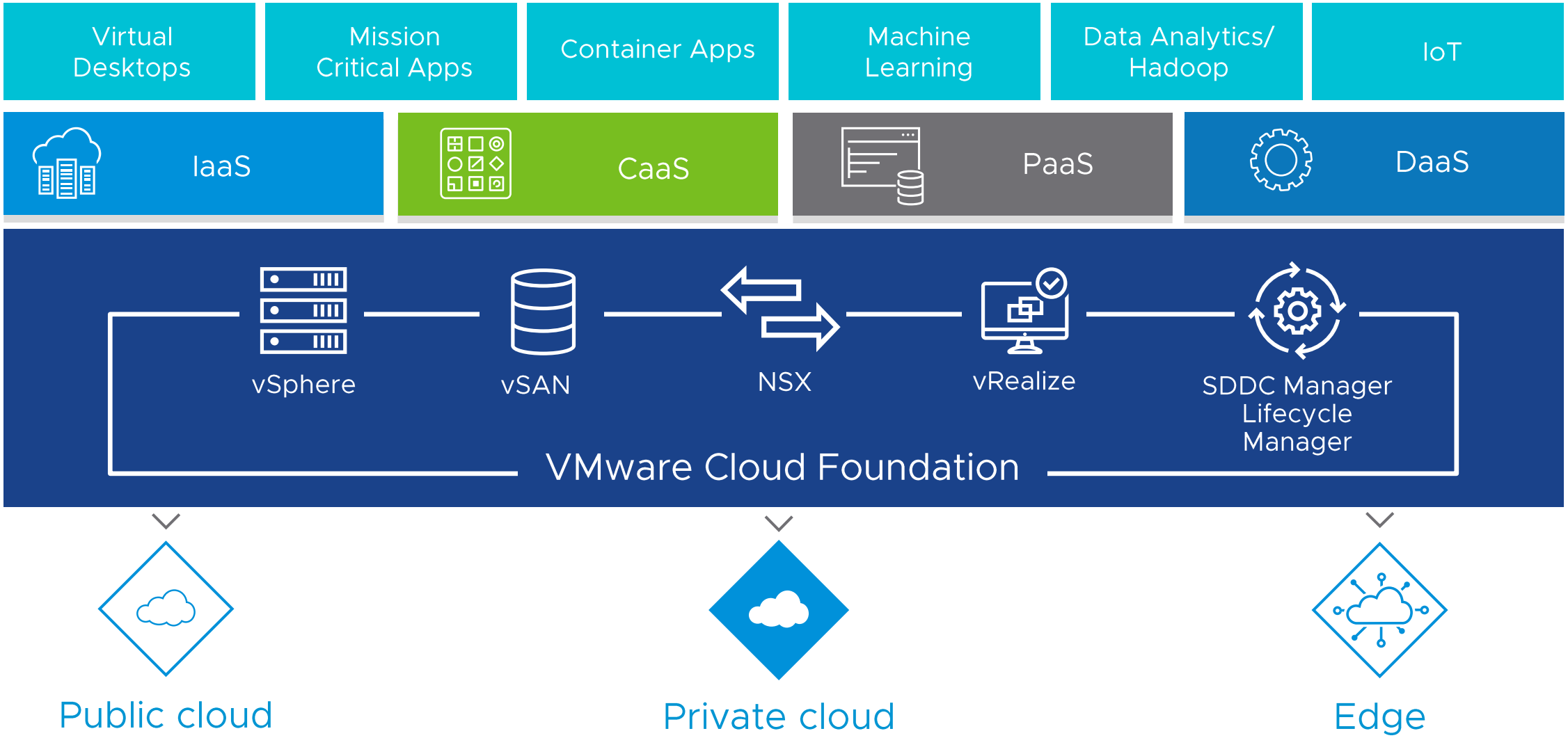
Public Cloud

Data Center

Edge

Cloud Operating Model – Deliver what the Business Cares About

A Universal Workload Platform – Built for Today and The Future

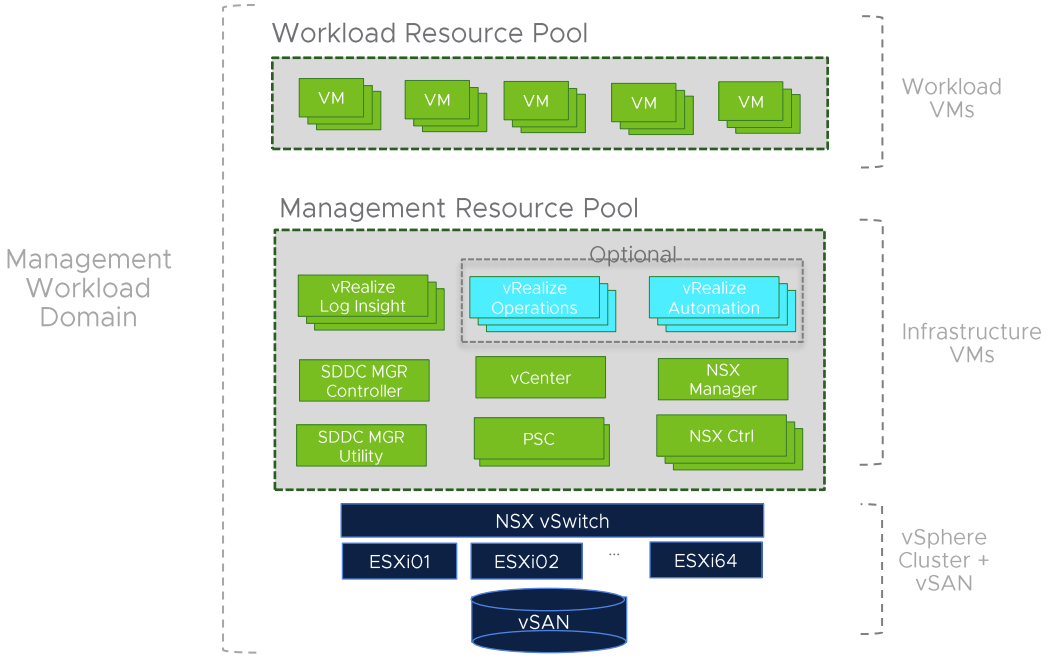


Deployment Architectures

VMware Cloud Foundation

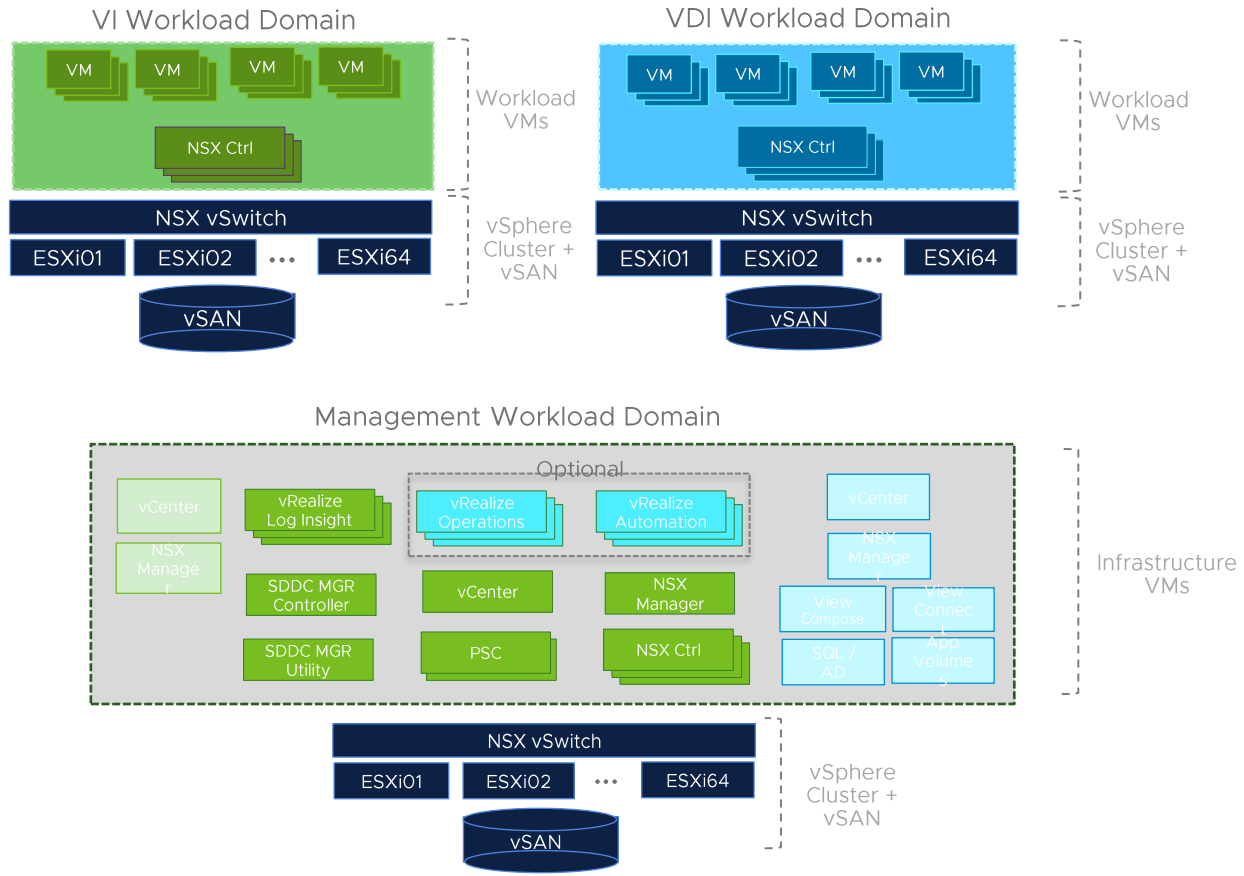
Consolidated Architecture

Infrastructure and Workload VMs run together on the Management Workload Domain inside separate resource pools.



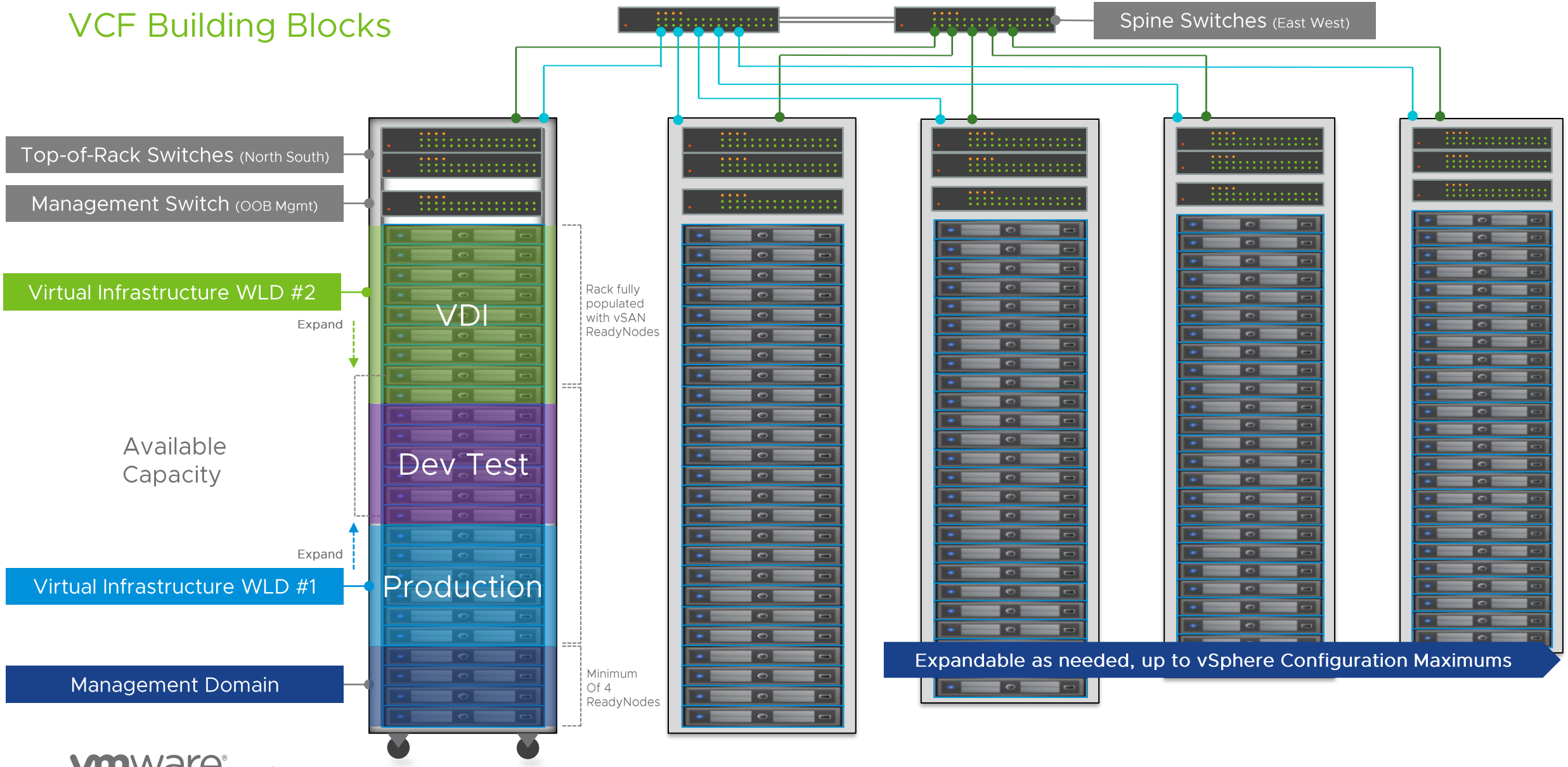
Standard Architecture

Infrastructure runs on a dedicated Management Workload Domain. Workload VMs run in dedicated VI and/or VDI workload domains.



A Cloud-like Experience in your own Data Center

VCF Building Blocks



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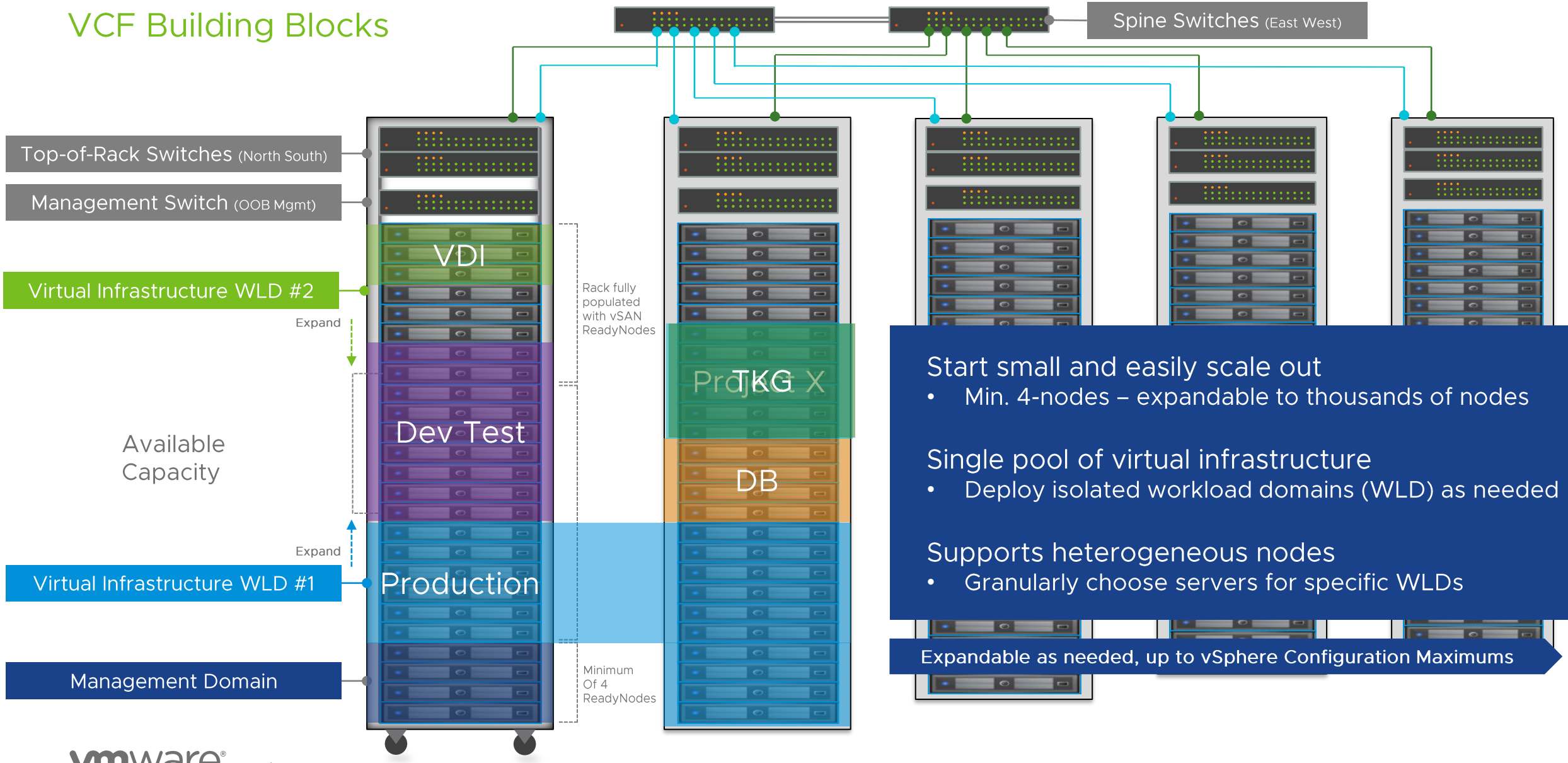
VCF Building Blocks



The Power of Choice

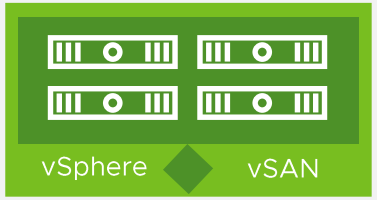
Flexible consumption models

ReadyNode™ + Customer Switching

21 server vendors

Choice in switch hardware and topology

Validated configurations



Integrated System

Factory racked and cabled

Pre-installed software

Value-added capabilities

Cloud Service

Managed service

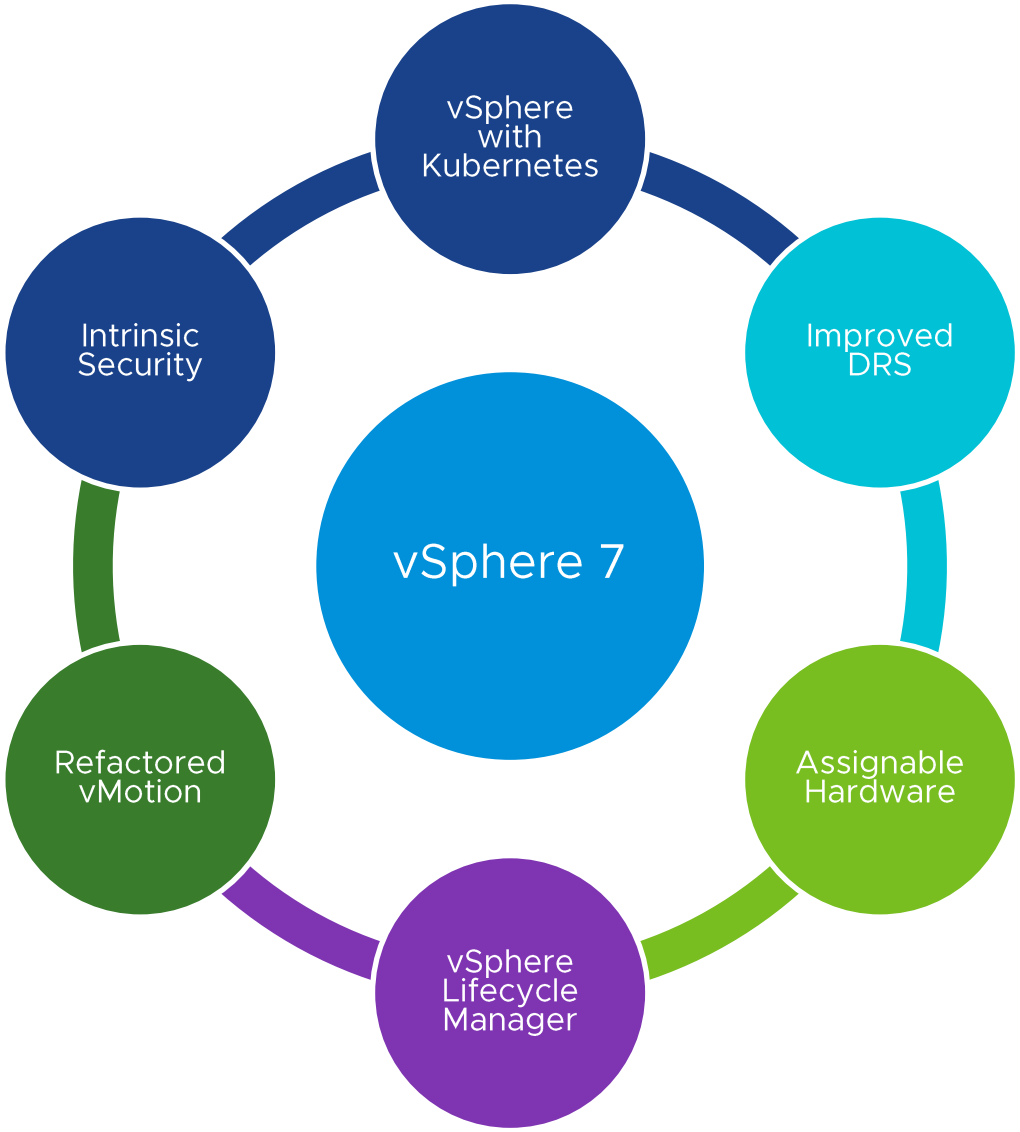
Greater abstraction of infrastructure

OpEx model

VMware Cloud on AWS

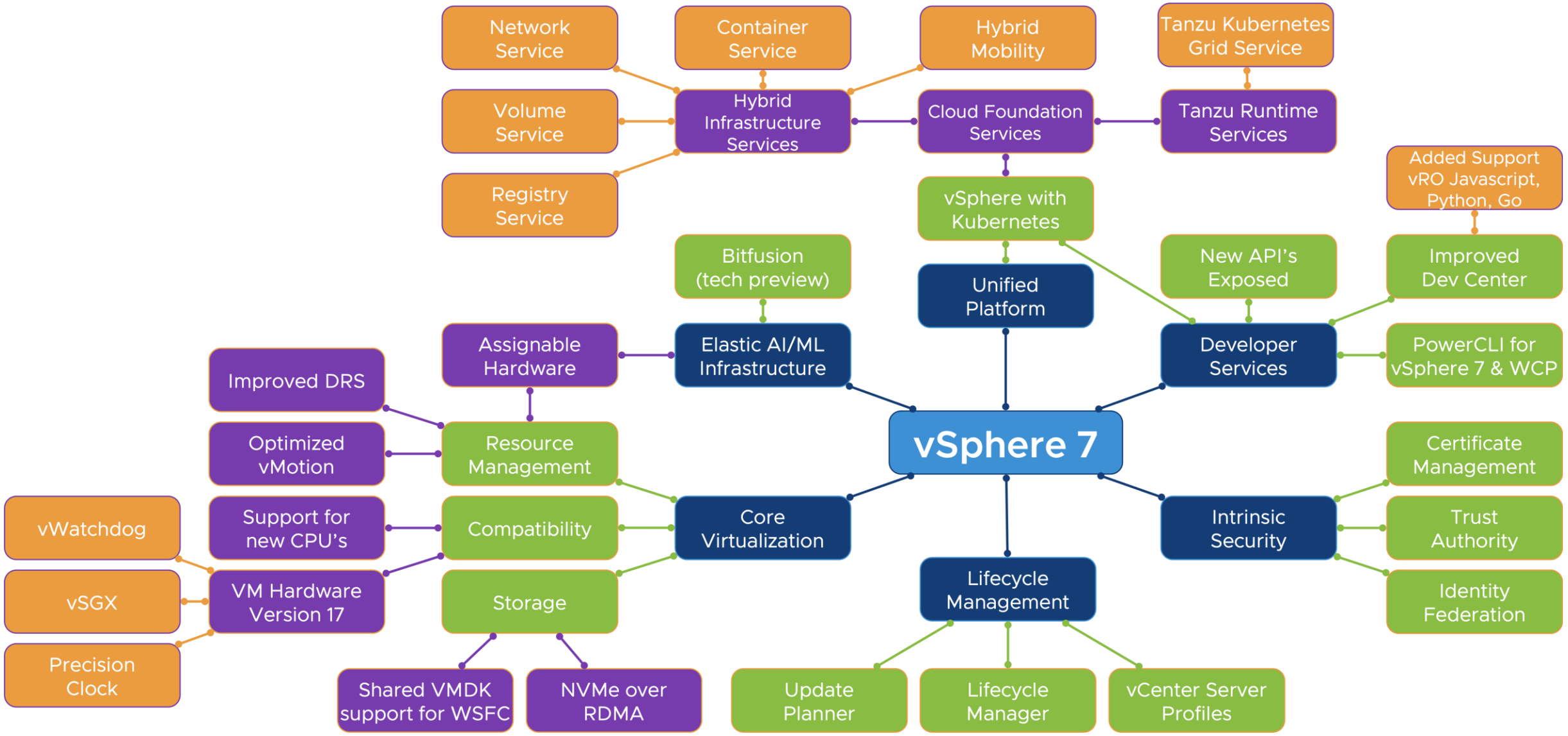
Introducing vSphere 7

vSphere 7 Overview



https://blogs.vmware.com/vsphere/2020/03/vsphere-7-features.html

vSphere 7 Overview



vSphere 7 with Kubernetes

vSphere 7 with Kubernetes Powers VMware Cloud Foundation

vSphere 7 and VCF 4: Launched on March 10, 2020

Developer

Namespaces

DB & Analytics

AI/ML

Business

Time-critical

VMware Cloud Foundation Services

Compute Services incl. Tanzu Kubernetes Grid Service

Network Services

Storage Services

Future Services

vCenter Server

VI Admin

Data Center | Edge | Service Provider | Public Cloud

VMware Tanzu

Build

Pivotal

bitnami

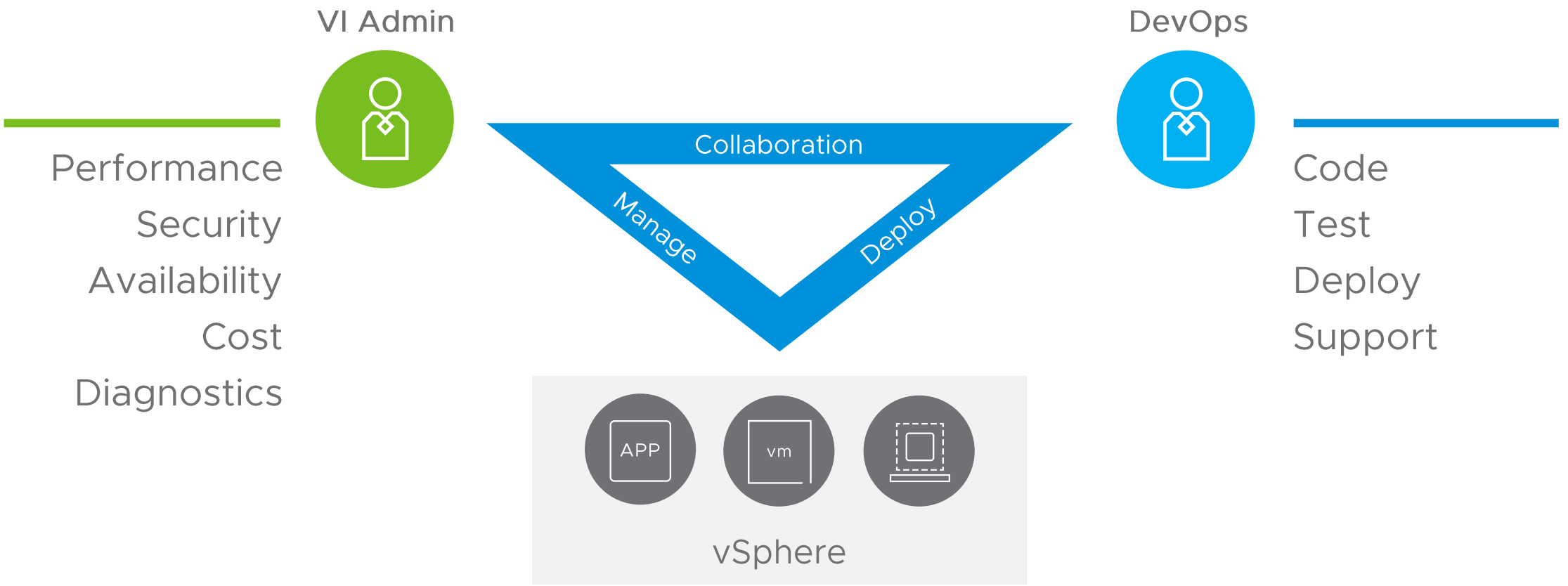
Run

vSphere with Kubernetes

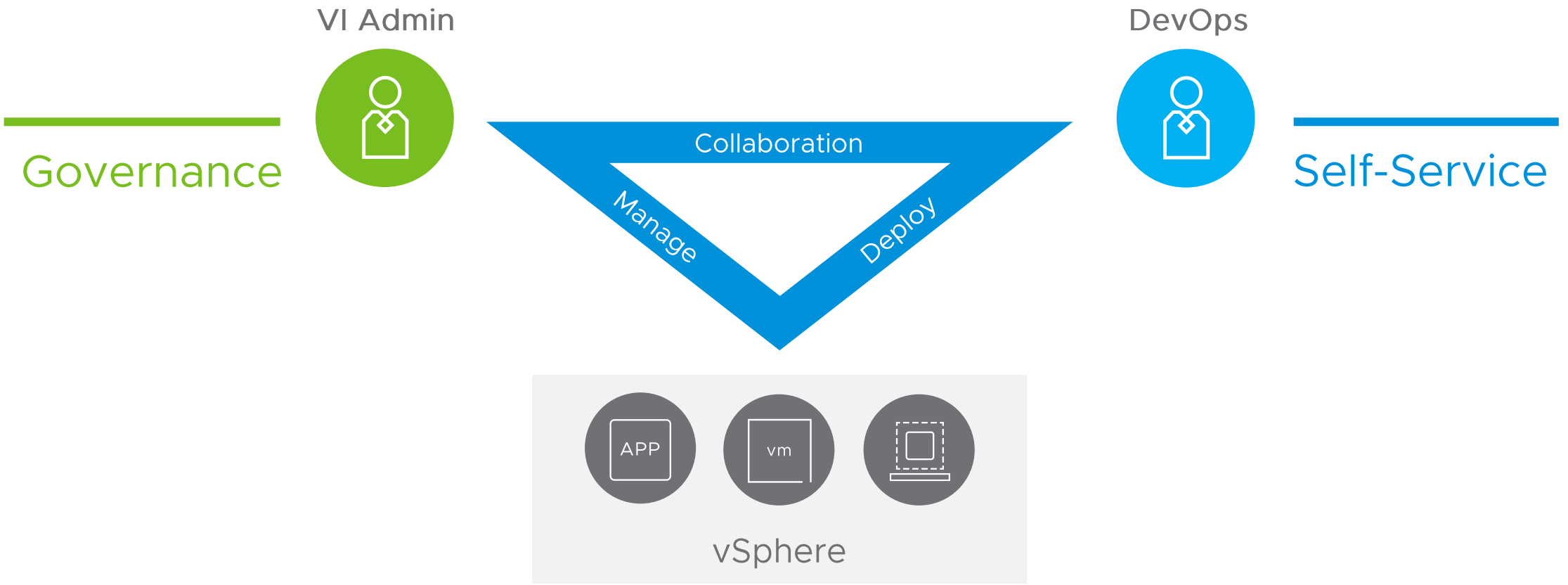
Manage

VMware Tanzu Mission Control

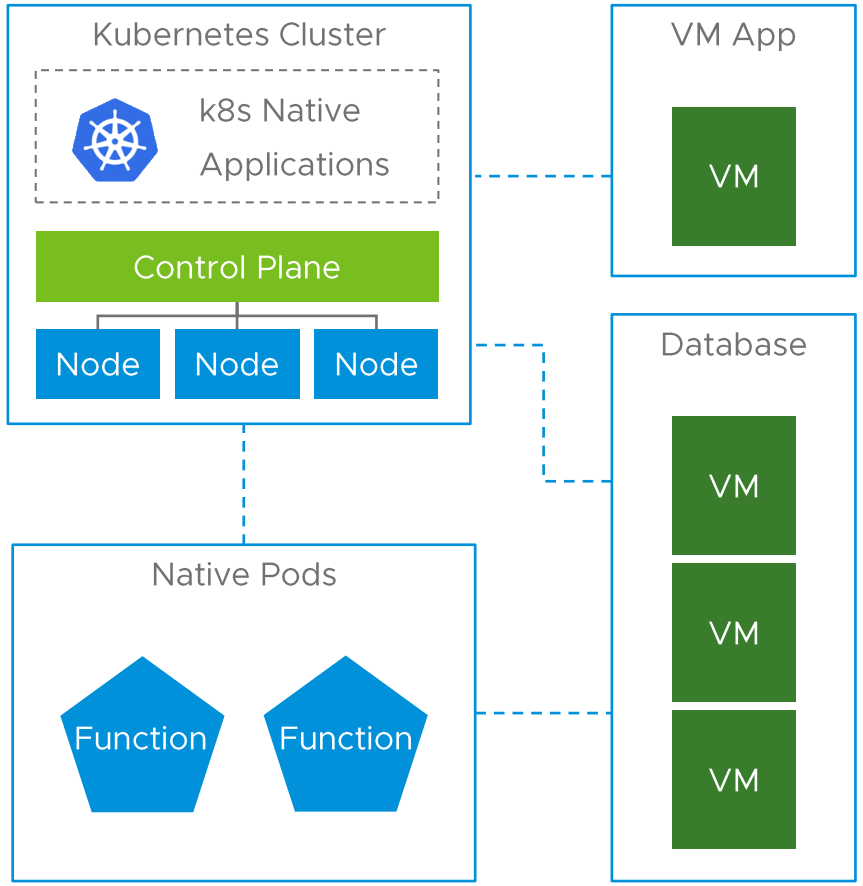
VMware as the platform that connects DevOps and VI Admins



Empower DevOps, assure the VI admin



What's a workload?



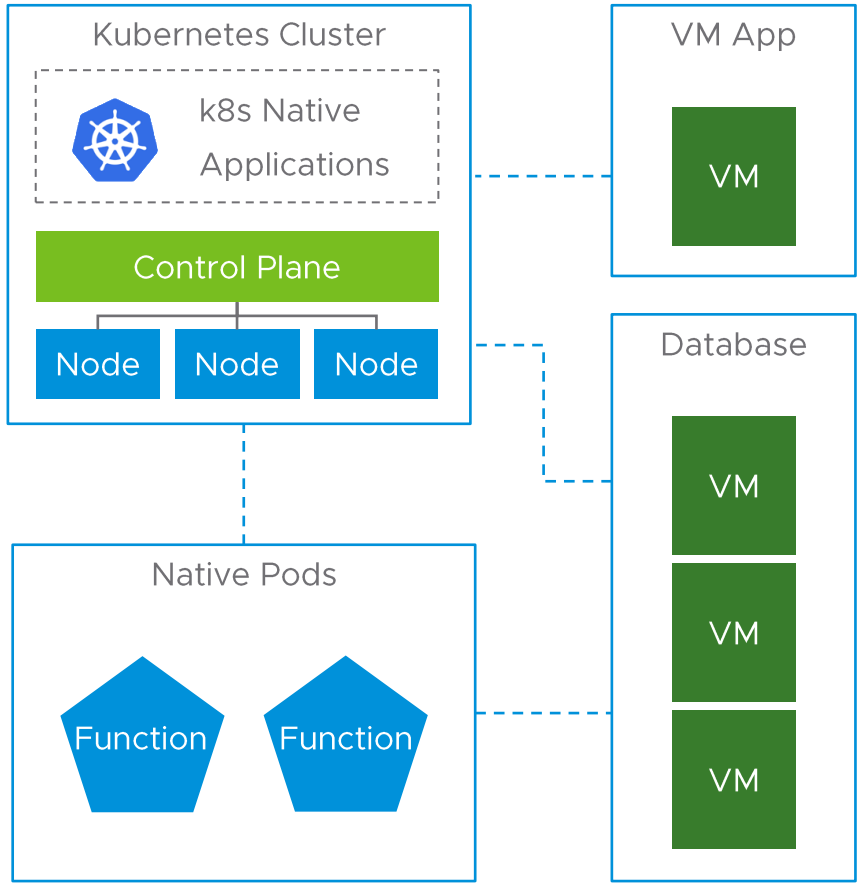
Challenges

DevOps

Deploy this app

Operate it on Day 2

Tool choice



VI Admin

Ensure availability

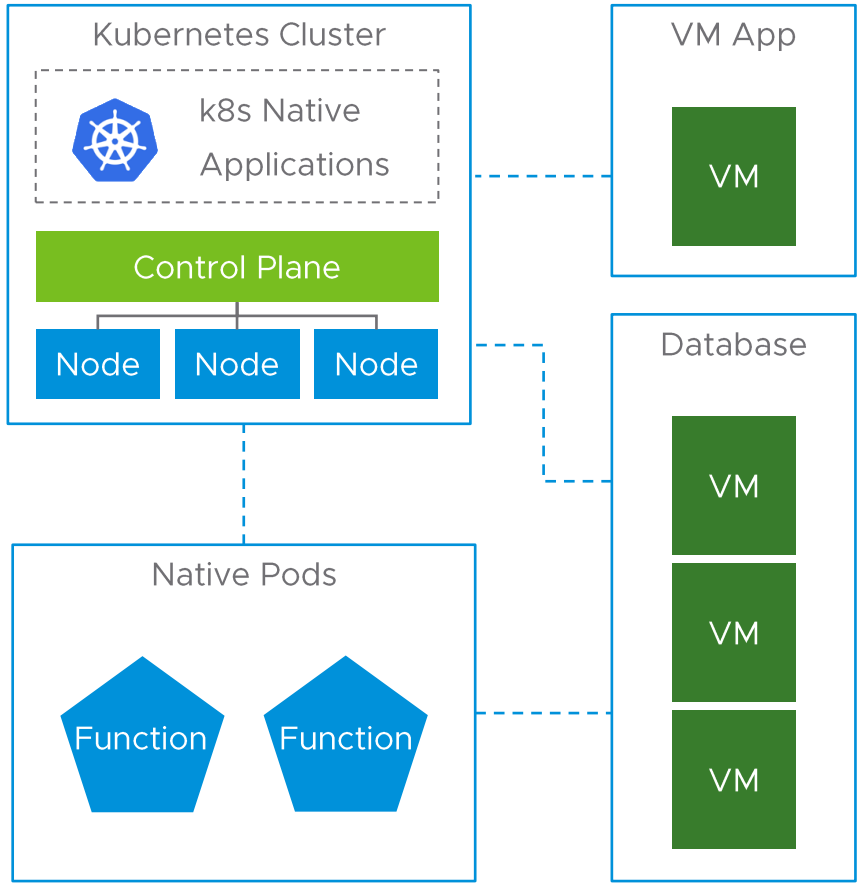
Ensure security

Deliver quality of service

Cost control

Using Kubernetes to manage workloads!

```
kind: KubernetesCluster
apiVersion: vks.vmware.com/v1
metadata:
  name: My Application
spec:
  topology:
    workers:
       count: 3
       class: small
  distribution: v1.15.1
```

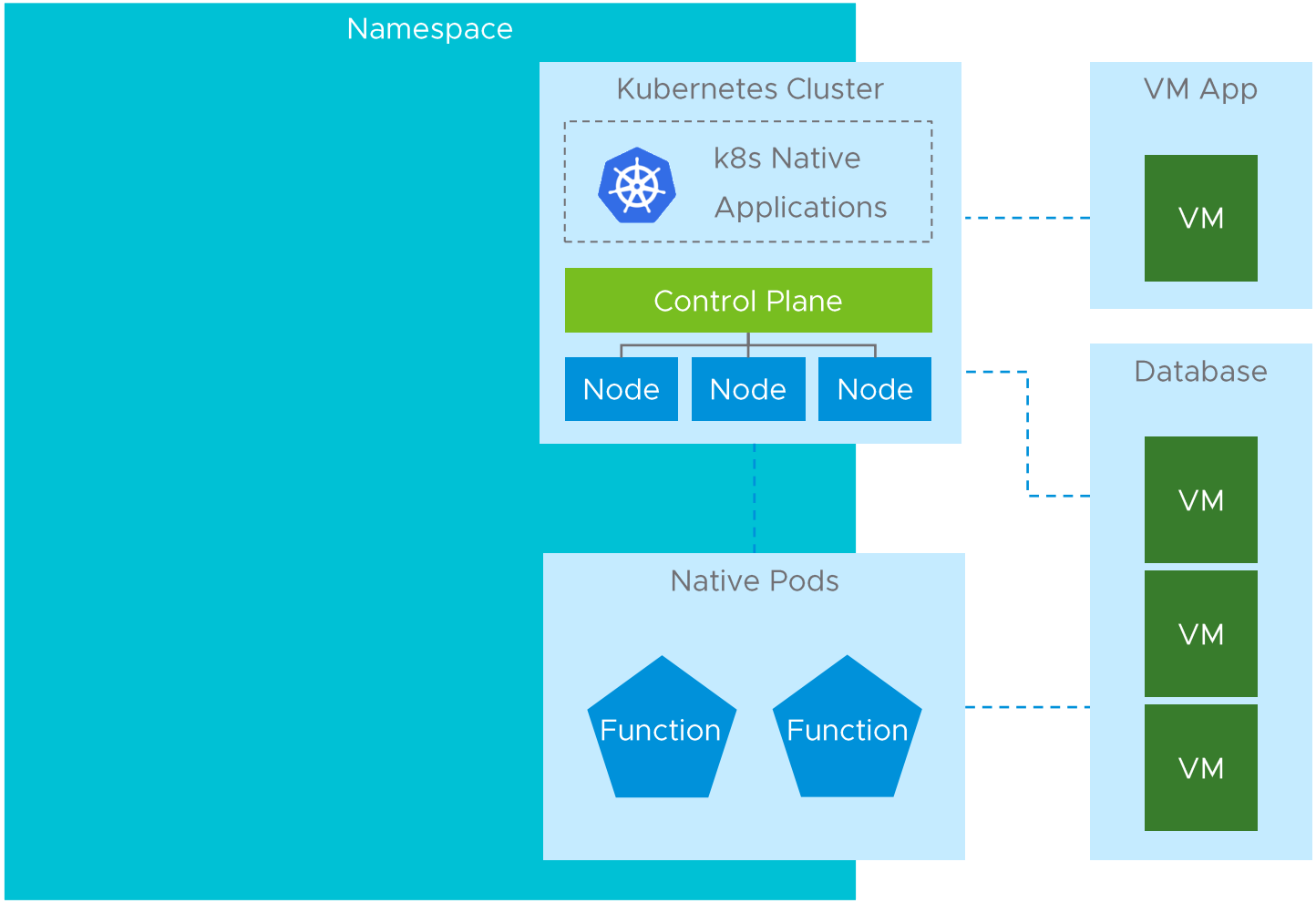



```
kind: VirtualMachine
apiVersion: vms.vmware.com/v1
metadata:
  name: COTSapp
spec:
  className: large
  imageName: my-app.ova
  powerState: poweredOn
  policy:
    restartPolicy: OnFailure
```

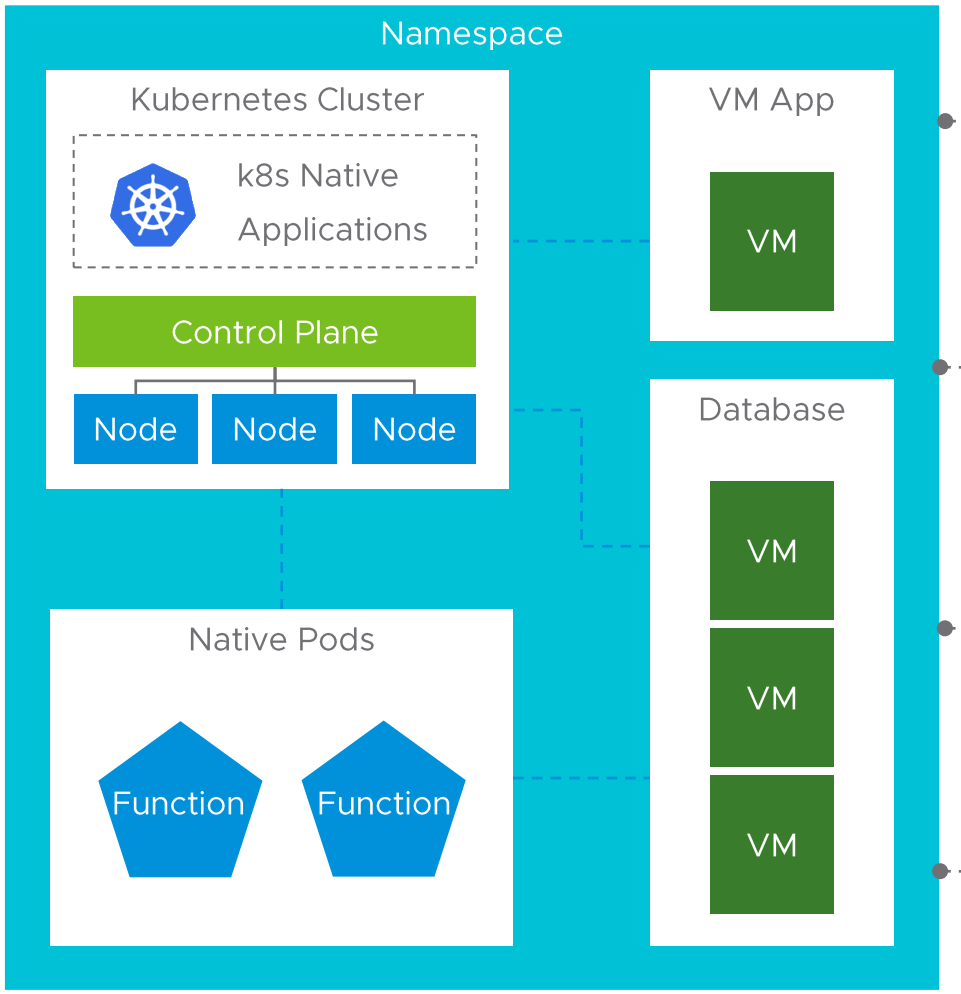
```
kind: Pod
apiVersion: v1
metadata:
  name: Function 1
spec:
  containers:
  - name: func1
    image: func1
    ports:
    - containerPort: 80
```

```
kind: HanaDatabase
apiVersion: hana.sap.com/v1
metadata:
  name: ERP database
spec:
  nodes: 3
  class: extra-large
```

Namespaces as the unit of management



Namespaces as the unit of management



Quality of Service

- Priority: High
- Reserved vCPUs: 128
- Reserved Memory: 1 TB

Security

- Encrypt all persistent data
- Disallow all ports but 443
- Audit developer changes

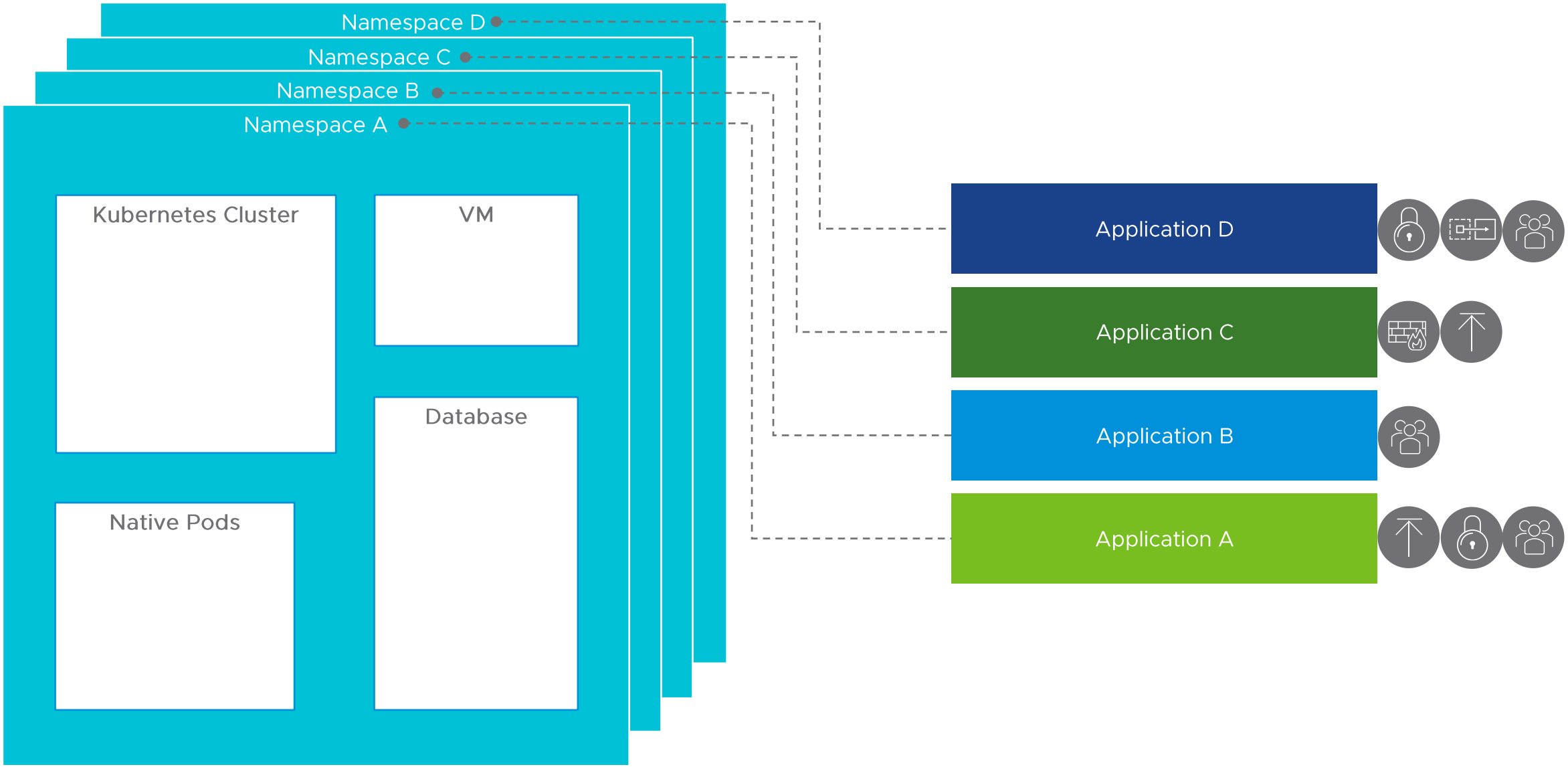
Availability

- Failures to tolerate: 2
- Disaster recovery site: us-east
- Hourly snapshots to backup

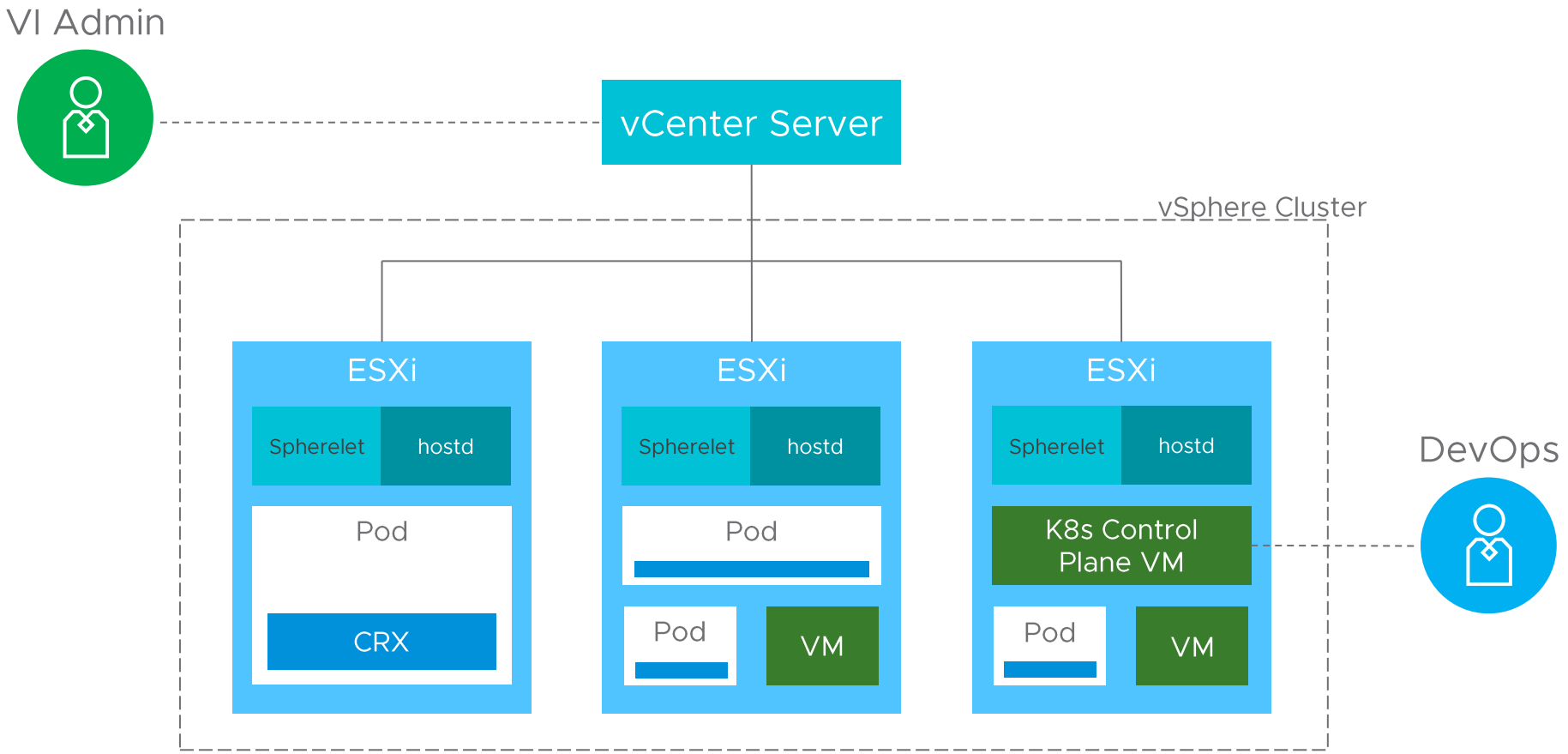
Access controls

- Users in group app-admin: Write
- Users in group ops: Read Only
- Disallow MySQL

Namespaces map to applications



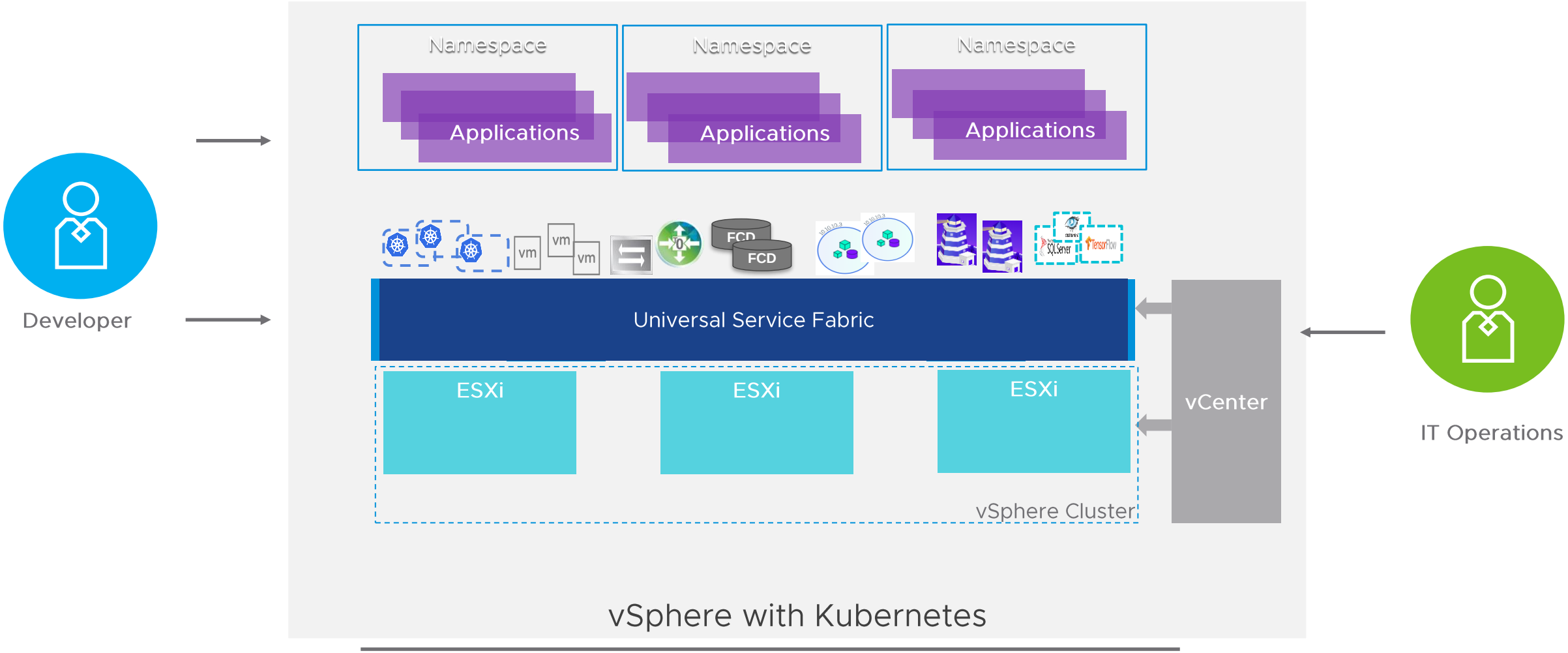
Enable vSphere with Kubernetes Supervisor Clusters



https://blogs.vmware.com/vsphere/2020/05/vsphere-7-vsphere-pods-explained.html

vSphere Developer Services

Developer Self-Service Using Kubernetes API



vSphere Client | Menu | Search | TECHNOLOGY PREVIEW

ue-vc-client.eng.vmware...
- Palo Alto
  - Test xyz
  - Underdesk Hosts
- test abc
- Wenatchee
  - Production
  - Cluster 1
    - m-03.eng.vmwa...
    - m-04.eng.vmwa...
  - Namespace(RP)
    - work-auth
      - k8-Cluster -1
      - k8-Cluster-2
      - K8S Cluster 3
        - pod-vm-1
        - pod-vm-2
    - finance-app

work-auth | ACTION

Summary | Monitor | Configure | Compute | Storage | Network | Permissions

Status

Created 08/27/2019

Config Status

Running

Kubernetes status

Active

Location

ue-vc-client.eng.local

Cluster 1

Link to CLI

Copy Link | Open

Storage

0

Presistant volume claims

Storage Policies 2

Gold Policy

3 PVCs | 80 GB

Silver Policy

4 PVCs | 50 GB View all

EDIT STORAGE

Permissions

Can view workload 2

mwest

Test-team

Can edit workload 10

WCP Team

pshinh

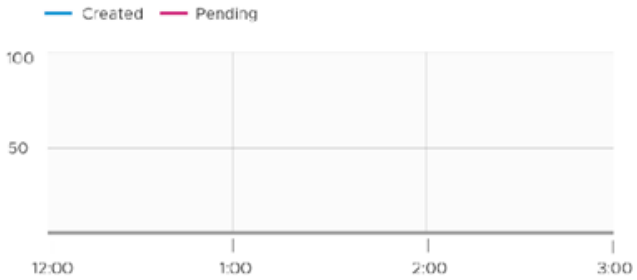
jrosoff

mj-team

MANAGE PERMISSIONS

Pods

0 Total pods



VIEW DETAILS

Capacity and Usage

Last upda

CPU

0 GHz

8 GHz Limit

Memory

0 GB

No Limit

Workloads Run In Namespaces
Governed By Policy

Recent Tasks | Alarms

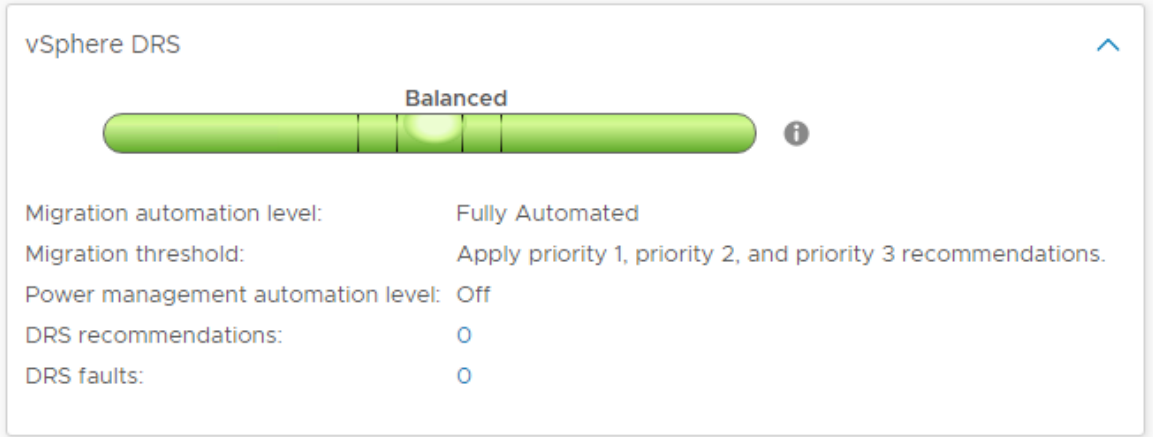
vSphere 7 what's new

Improved DRS

Compared with Previous Releases

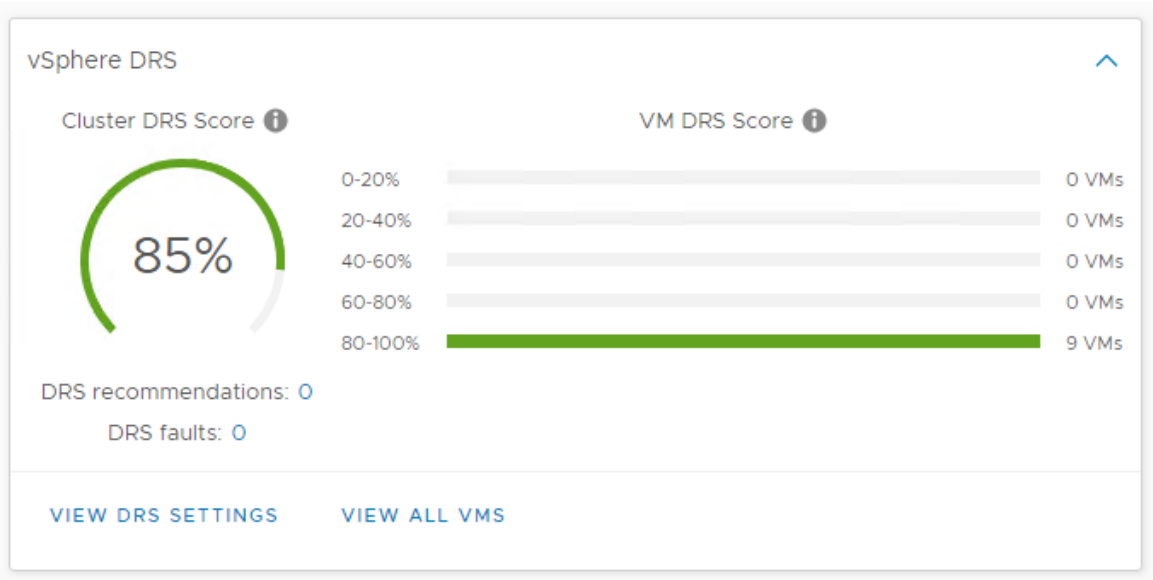
Original DRS

- Cluster centric
- Runs every 5 min
- Uses cluster-wide standard deviation model



Improved DRS

- Workload centric
- Runs every 1 min
- Uses the VM DRS Score
- Based on granted memory

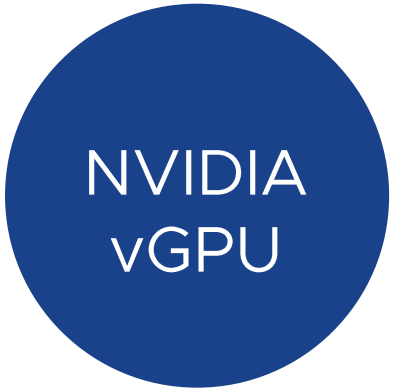


Assignable Hardware

Support for Hardware Accelerators

vSphere DRS initial placement and vSphere HA support

Support for PCIe devices configured in passthrough



Support for NVIDIA vGPU profiles attached to virtual machines

vMotion Improvements

Reducing stun times for large workloads

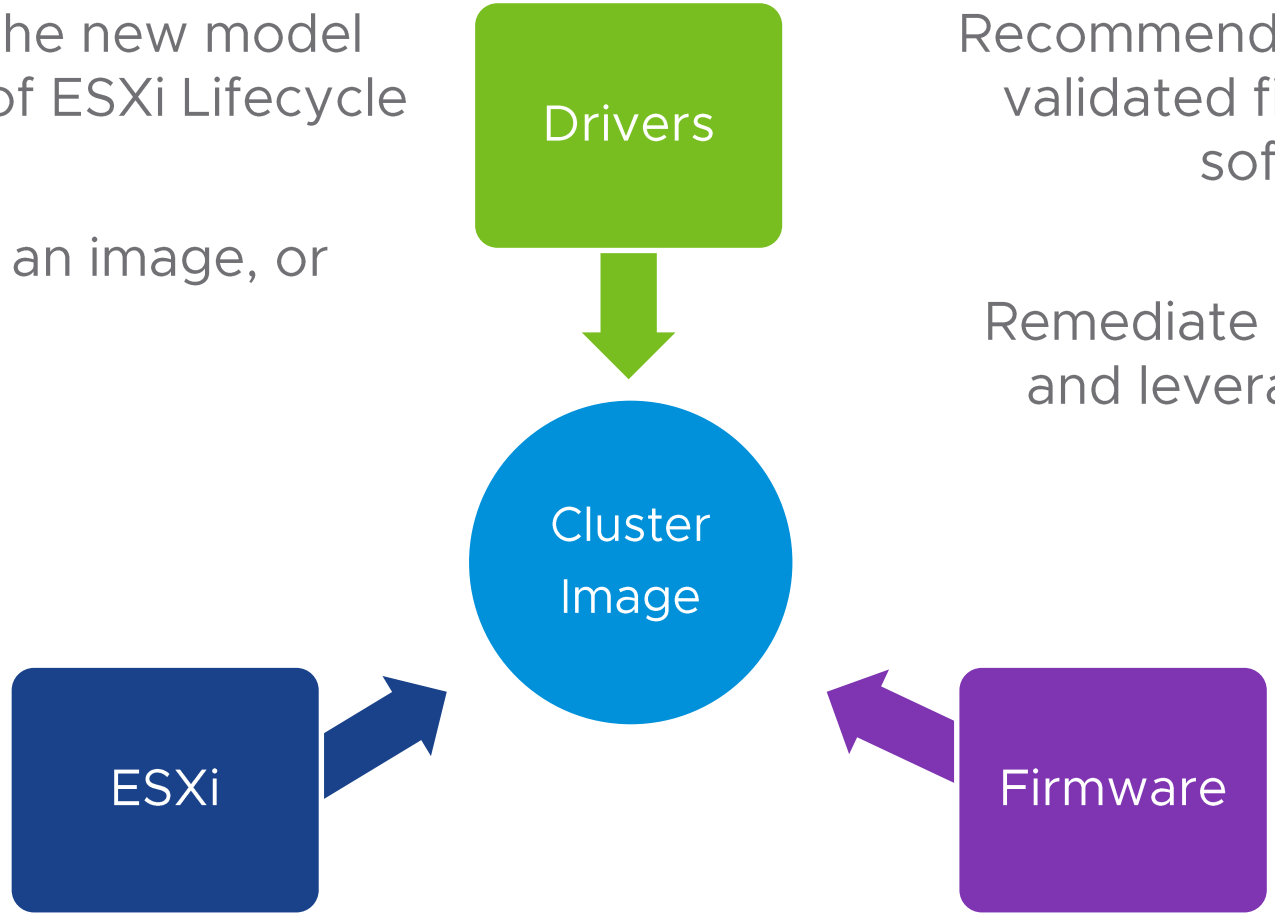
- Increased workload resource consumption asks for changes in vMotion.
- Resource allocations for workloads keeps on growing.
- Challenge today is the performance impact during vMotion and stun time for large (or ‘Monster’) VM’s.
- We refactored vSphere vMotion to solve these challenges!
- Bringing back vMotion capabilities for large workloads like SAP HANA or Oracle.

Cluster Image Management

Consistent ESXi hosts

Cluster Image is the new model for management of ESXi Lifecycle

Can comprise just an image, or more…



Recommendation Engine tracks validated firmware, driver and software compatibility

Remediate everything at once, and leverage a Desired State model

Hardware Management

Consistent ESXi hosts

Management of host firmware from within vSphere

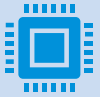
Works in conjunction with vendor management tools like Dell OpenManage and HPE OneView

VCG/HCL checks and Recommendation Engine.
Remove the risk of unsupported drivers/firmware!

Full GUI and REST API available

vCenter Server Update Planner

Native tooling helps with discovering, planning, and upgrading



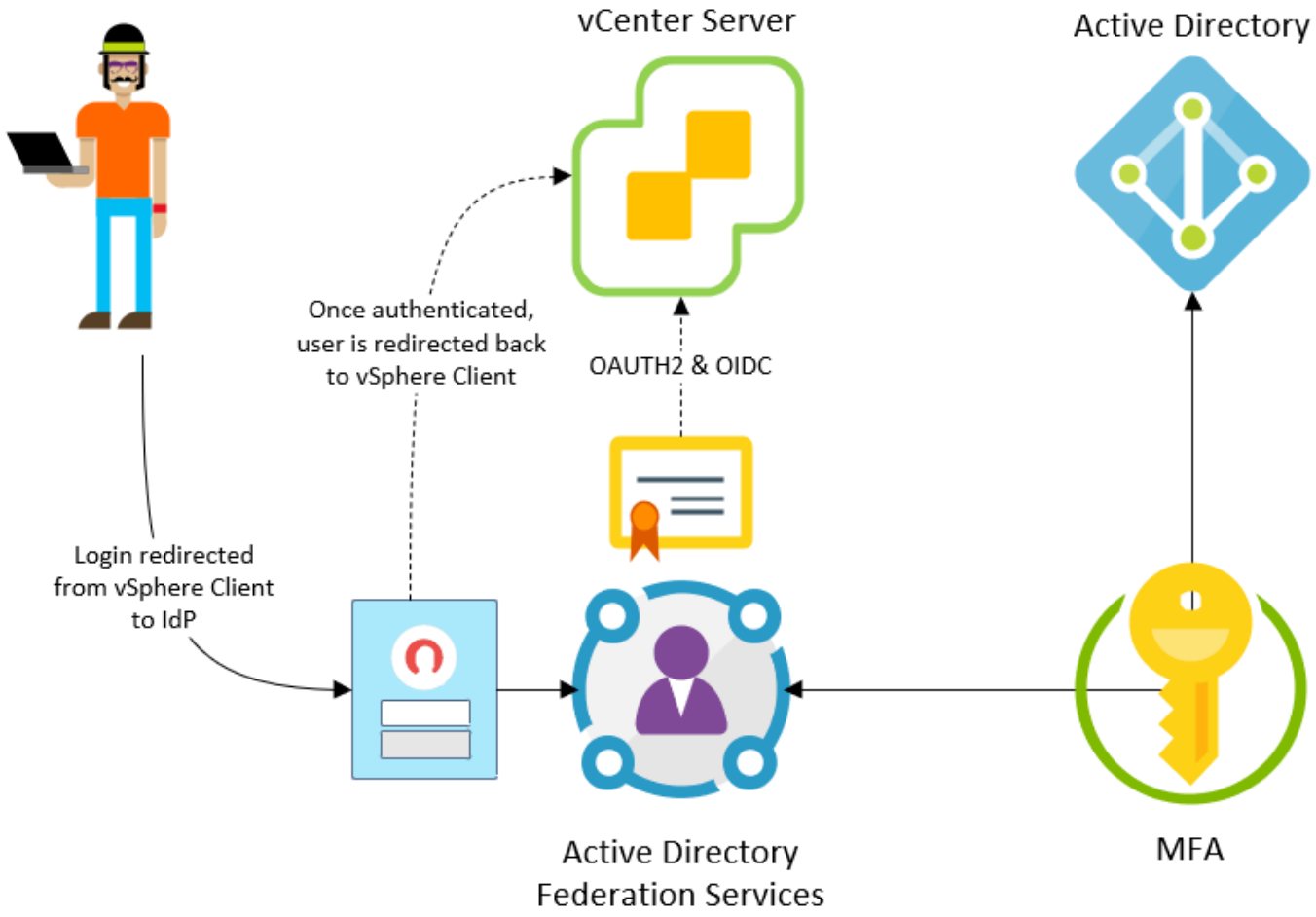
Notifications when an upgrade or update is available

Monitor VMware product interoperability and run “What-If” workflows

Pre-update checks

Identity Federation

Modernizing vSphere Authentication



Standards-based federated authentication with enterprise identity providers (IdPs)

Reduced audit scope & vSphere Admin workload

Flexible MFA options

SSO still exists, though have to choose IdF or AD/LDAP/IWA

ADFS initially

vCenter Server Scalability Enhancements

vSphere 6.7 compared to vSphere 7 (Maximums)

vSphere 6.7

vCenter Server (standalone):

- Hosts per vCenter Server: **2000**
- Powered-on VMs per vCenter Server: **25,000**

Linked Mode vCenter Servers: 15 per SSO Domain

- Hosts: **5000**
- Powered-on VMs: **50,000**

vCenter Server Latency:

- vCenter Server to vCenter Server: **100ms**
- vCenter Server to ESXi Host: **150ms**
- vSphere Client to vCenter Server: **100ms**

vSphere 7

vCenter Server (standalone):

- Hosts per vCenter Server: **2500**
- Powered-on VMs per vCenter Server: **30,000**

Linked Mode vCenter Servers: 15 per SSO Domain

- Hosts: **15,000**
- Powered-on VMs: **150,000**

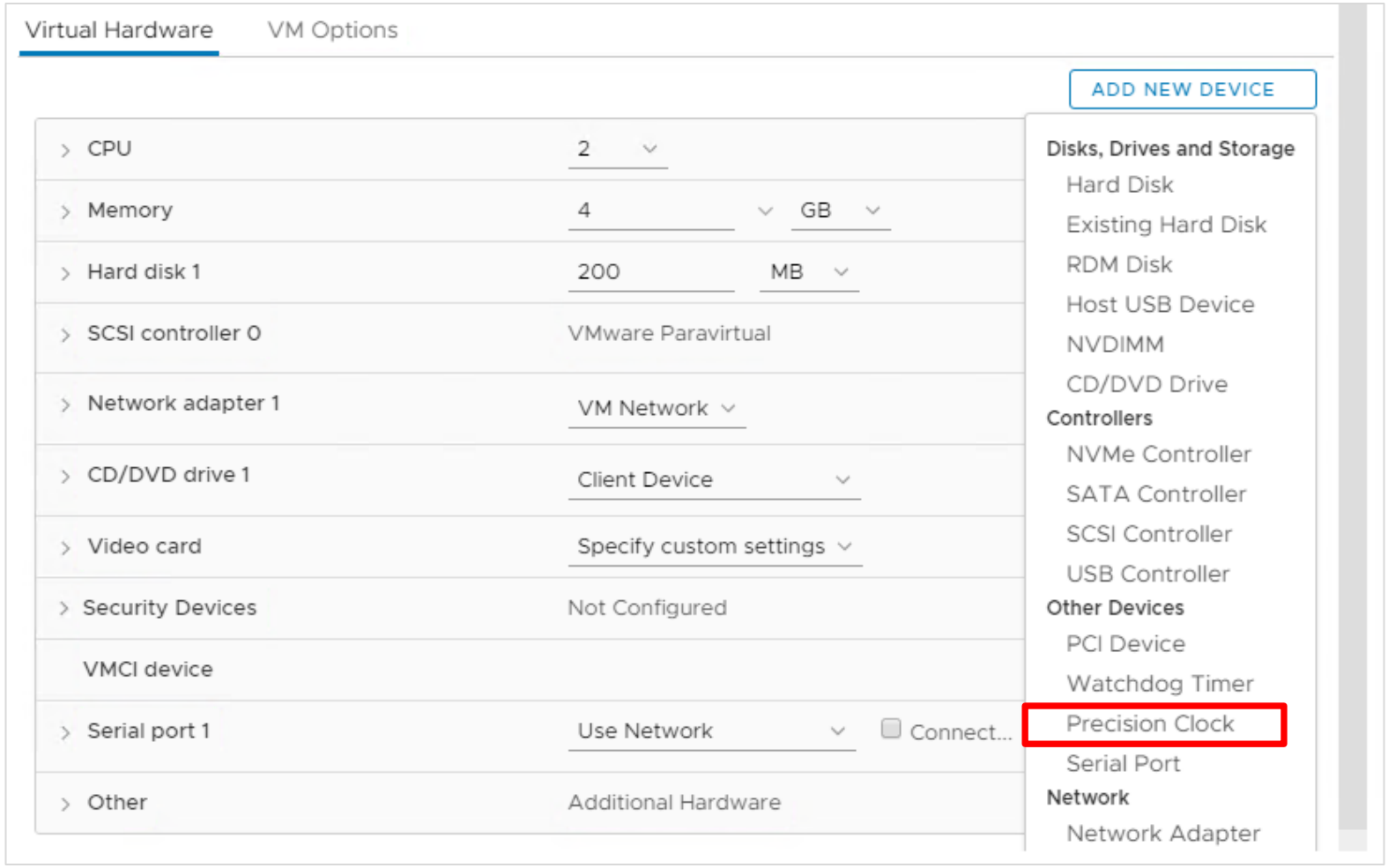
vCenter Server Latency:

- vCenter Server to vCenter Server: **150ms**
- vCenter Server to ESXi Host: **150ms**
- vSphere Client to vCenter Server: **100ms**

*configmax.vmware.com was referenced for all scale limits and/or maximums

Precision Time Protocol (PTP)

Sub-millisecond Timekeeping



Precision Time Protocol helpful for financial & scientific applications

Sub-millisecond accuracy

Requires VM Hardware 17

Requires both an in-guest device and an ESXi service to be enabled

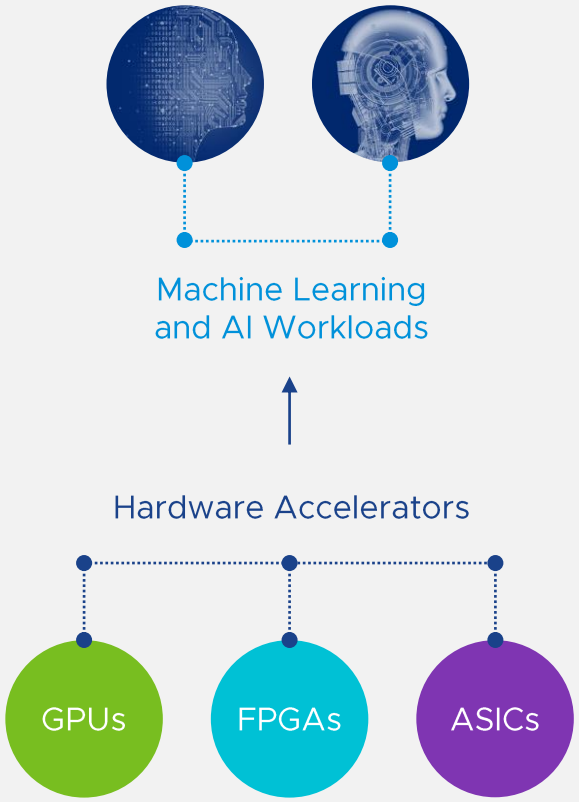
Choose between NTP or PTP

TECHNOLOGY PREVIEW

Works with Any Supported vSphere Version

VMware Changes the Game with Bitfusion

Embracing Hardware Acceleration for Modern Apps



Optimize vSphere for Machine Learning and AI Workloads

Modern apps like ML and AI need compute acceleration to handle large and complex computation. vSphere leverages powerful accelerators for workloads in VMs or containers. Infrastructure can also be used for some HPC workloads.

Identify, consolidate and share hardware accelerators

Easily identify isolated and expensive resources that are underutilized. Hardware accelerators can be shared remotely (fully or partially) regardless of location.

Extend now and in the future

Leverage GPUs across an infrastructure plus integrate evolving technologies such as FPGAs and custom ASICs using the same infrastructure.

vSphere 7 with Kubernetes Demo

vSAN 7
What's New

April 2020

How vSAN Addresses IT's Needs

Simplifies provisioning and storage management

Improves IT productivity

Supports VMs and containers

First step to hybrid cloud

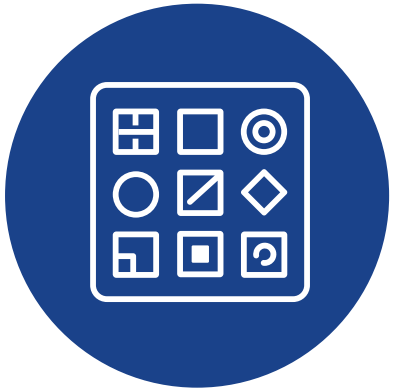
Modernize Your HCI with vSAN 7

Simpler Lifecycle Management

Increase reliability and reduce number of tools

Integrated File Services

Unified management of block and file storage



Enhanced Cloud-Native Storage

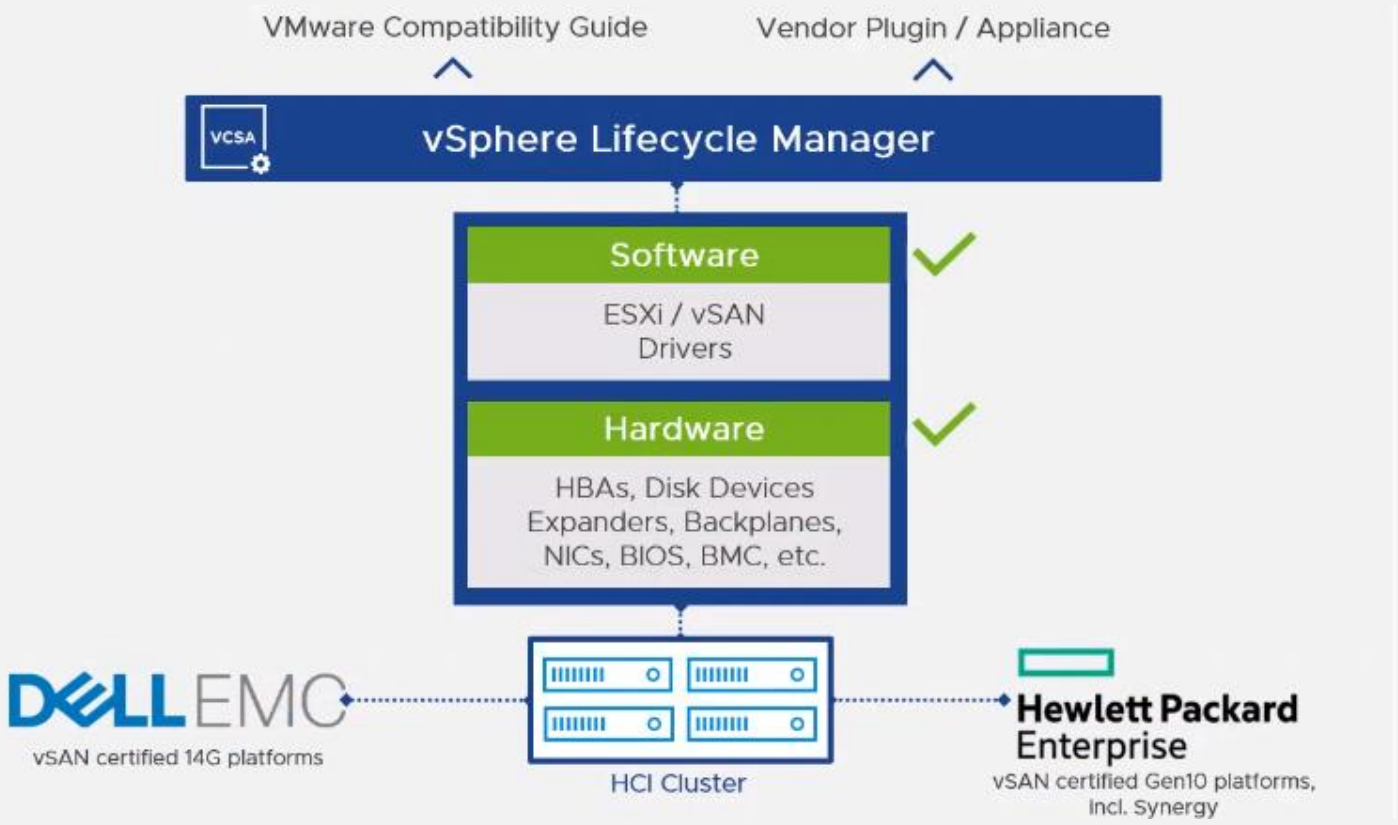
Expanded data services enable more use cases

Update Confidently with vSphere Lifecycle Manger

vSphere Update Manager

vSphere Lifecycle Manager

Consistent, Reliable Day 2 Operations

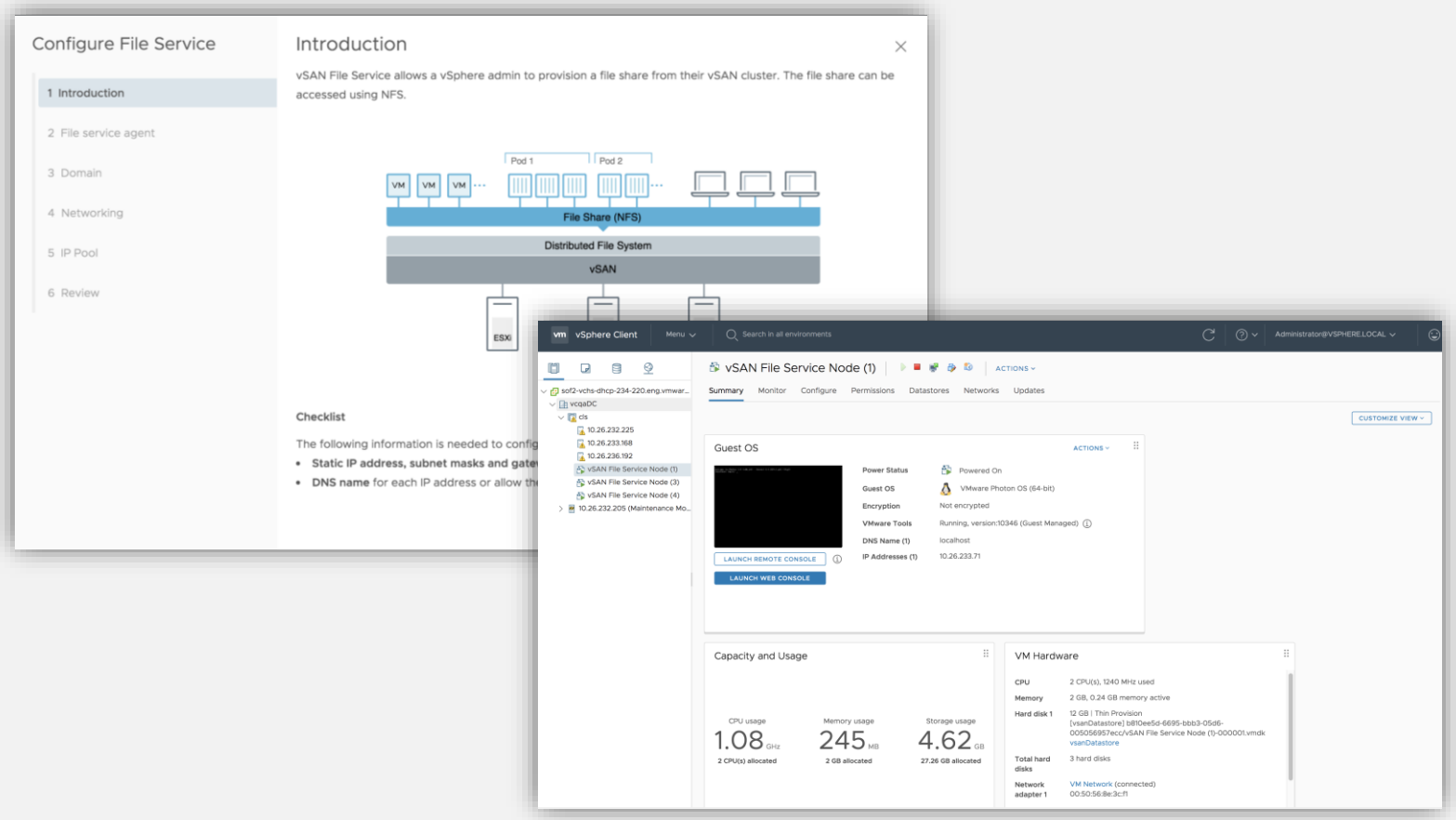


Simplify day 2 operations with a single tool

Increase update success with firmware HCL validation (HBA only initially)

Reduce monitoring and remediation time through automation

Native File Services Reduces Management Complexity



- Unify storage management with a single control plane for block and file protocols
- Simplified provisioning with a single file service workflow
- Use cases: cloud-native apps, test/dev, file repository
- Support for NFS v4.1 and v3 protocols

Thank You

Besten Dank! Stellen Sie uns Ihre Fragen.

Handeln Sie jetzt. Kontaktieren Sie uns.

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