vFORUM 2019

The Faster Path to Hybrid Cloud with VMware Cloud Foundation and VMware Cloud on AWS

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Agenda

- Current State 2019
- The Hybrid Equation
- Hybrid Operations
- DEMOS!

Disclaimer

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Technical feasibility and market demand will affect final delivery.

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Today’s Hybrid Cloud

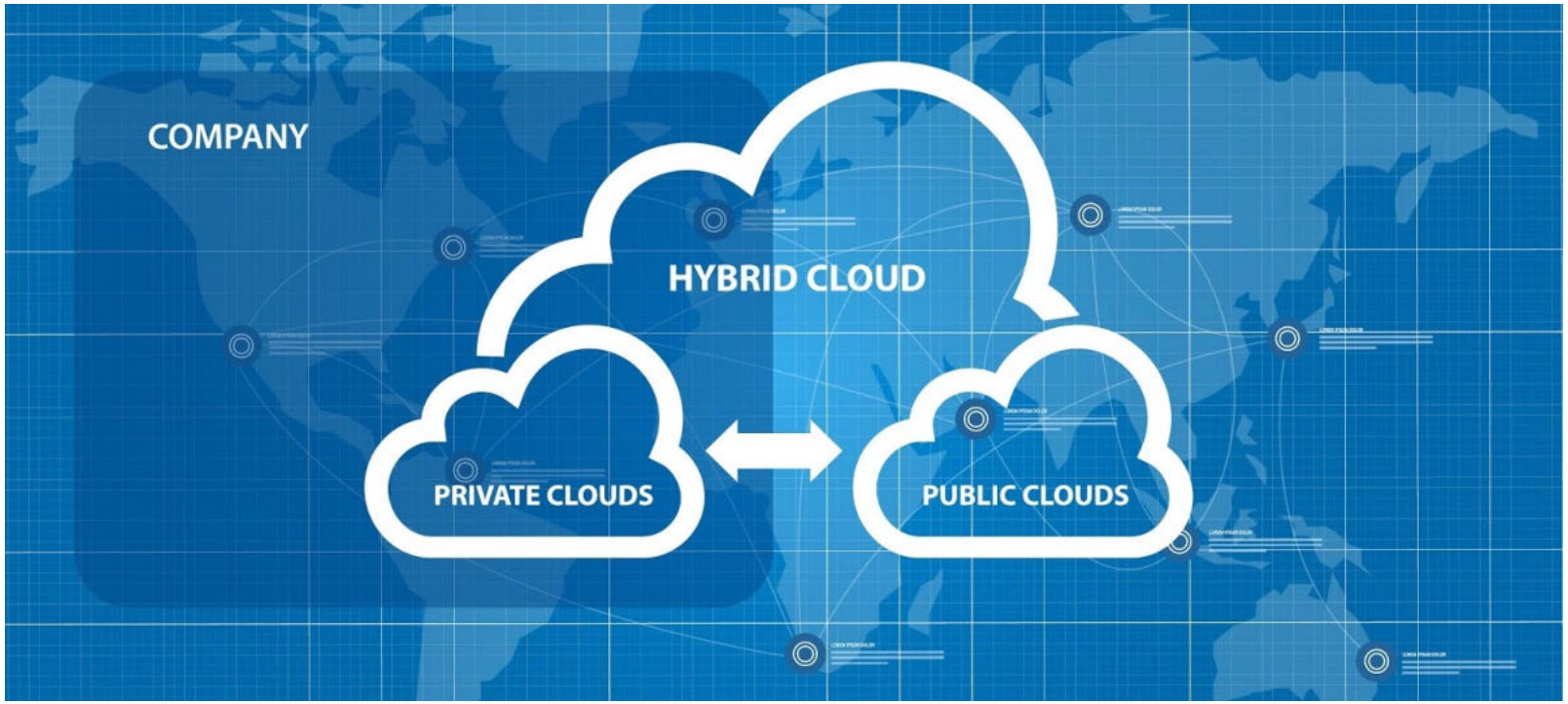
"Nearly all enterprises that AWS works with today start out with a significant on-premises footprint and take a hybrid approach to cloud computing."

Andy Jassy, CEO Amazon Web Services

Wall Street Journal, 2017

True Hybrid Cloud Lost in Translation

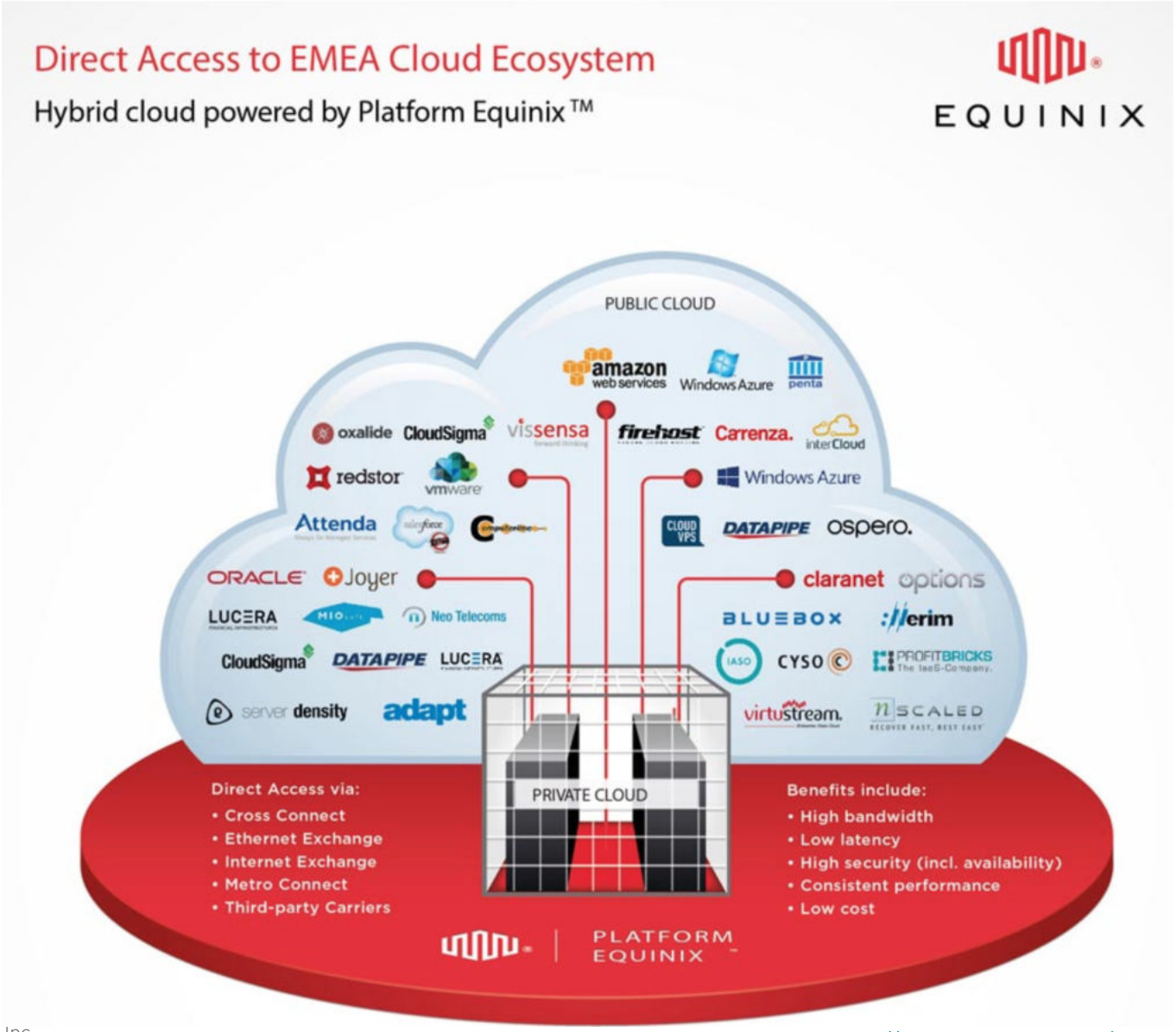
NIST definition



"A composition of two or more distinct cloud infrastructures that remain unique entities, but are bound together by technology that enables ***data and application portability****."*

Hybrid Cloud = Network Connectivity?

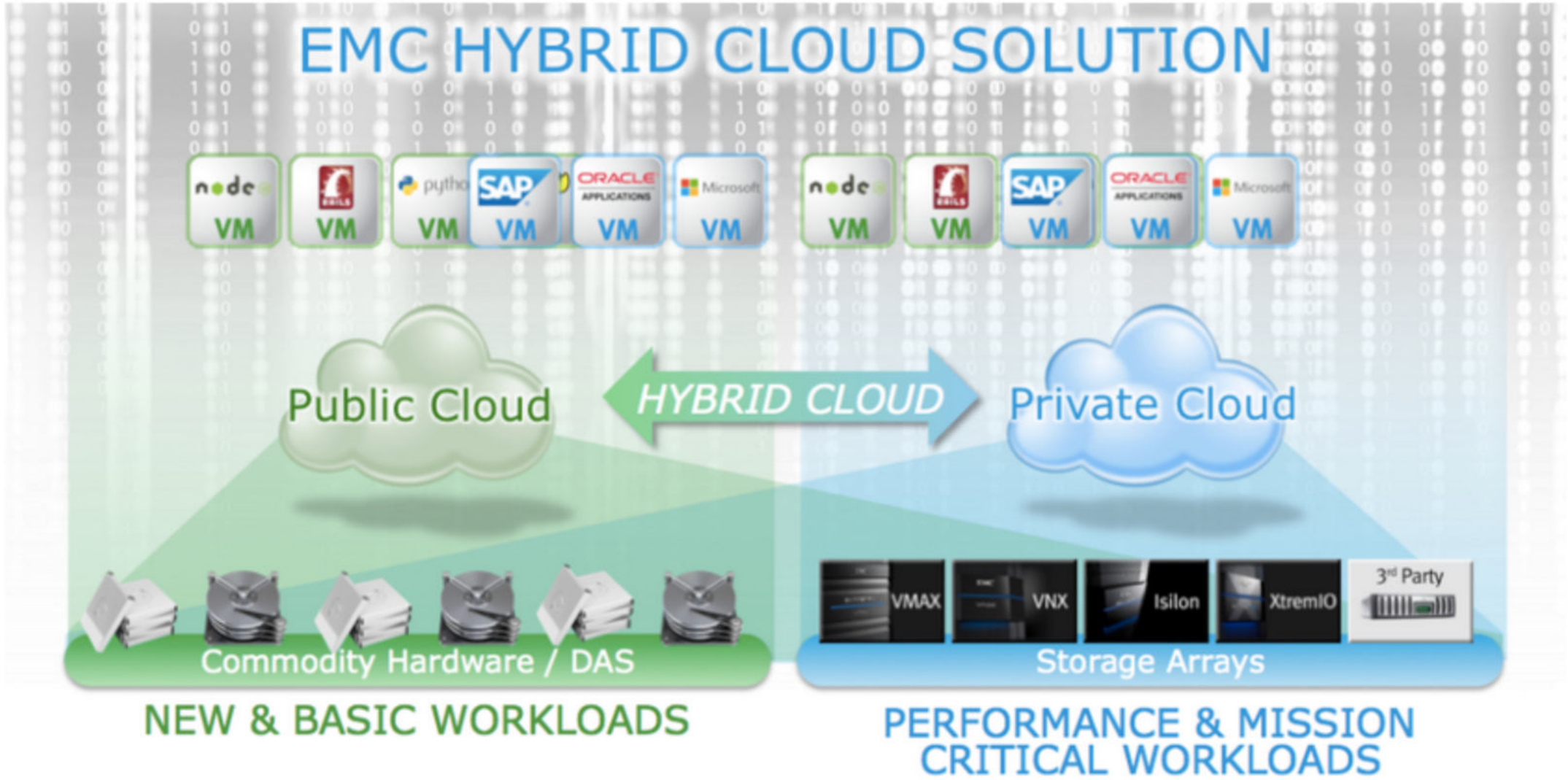
Circa 2014



Source: https://www.bestexecution.net/buyside-challenges-technology-infrastructure-cloud/

Hybrid Cloud = Storage Replication?

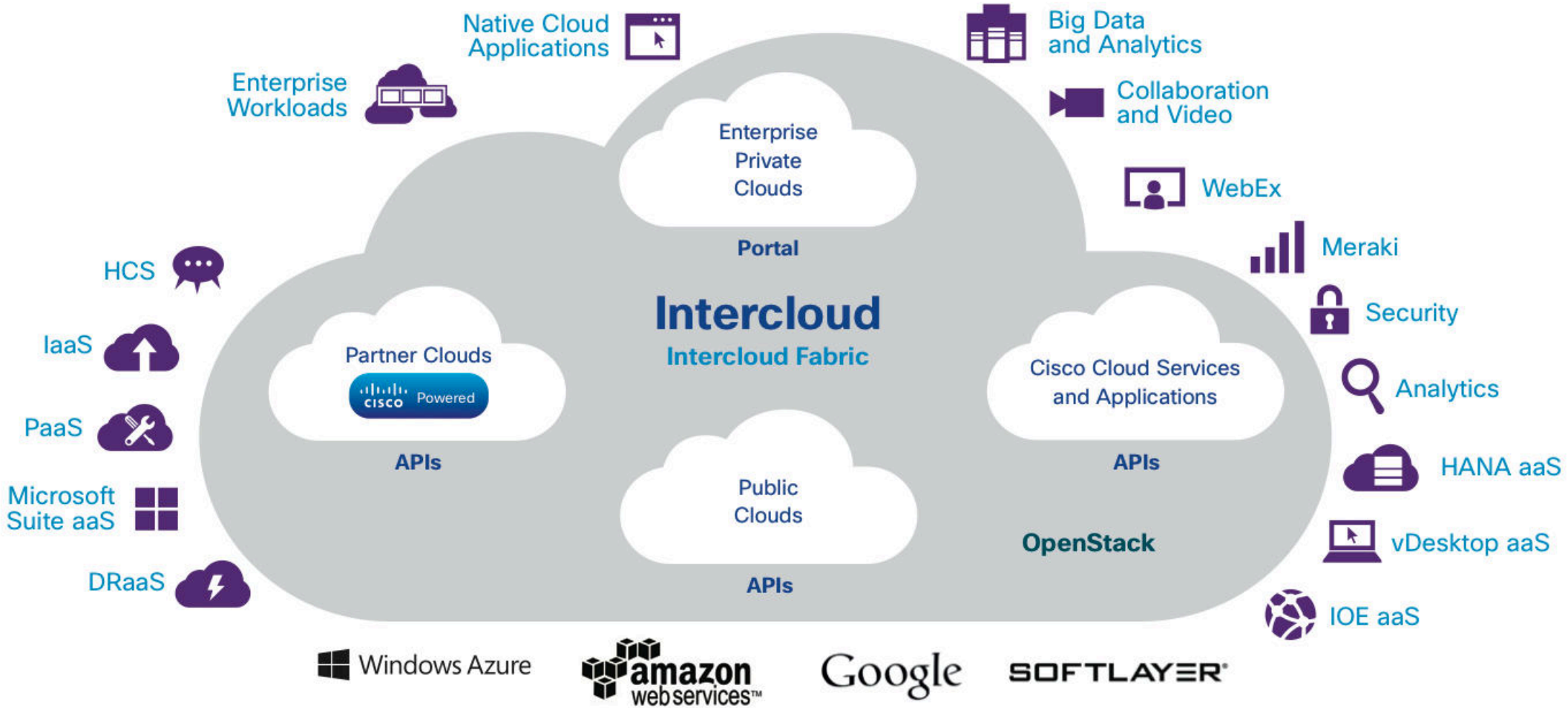
Circa 2014



Source: https://esj.com/articles/2014/05/12/emc-cloud-products.aspx

Hybrid Cloud = Connect EVERYTHING!

Circa 2014



Source: https://blogs.cisco.com/government/intercloud4ps

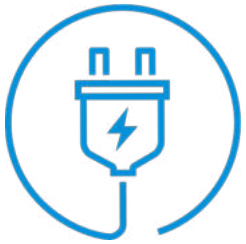
What Does Good Look Like?

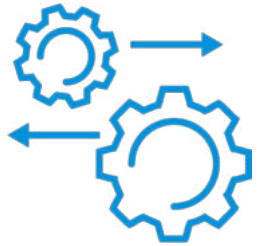
Cloud users define success criteria

Consumer

Developer

Cloud should be treated as a utility





Programmatic Access

API | CLI | GUI

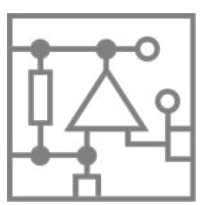
Common Cloud Challenges

Factors affecting hybrid cloud deployments

Consumer

Developer

Re-Architecture | Scaling



Operations | Lifecycle

Consolidation | Migration

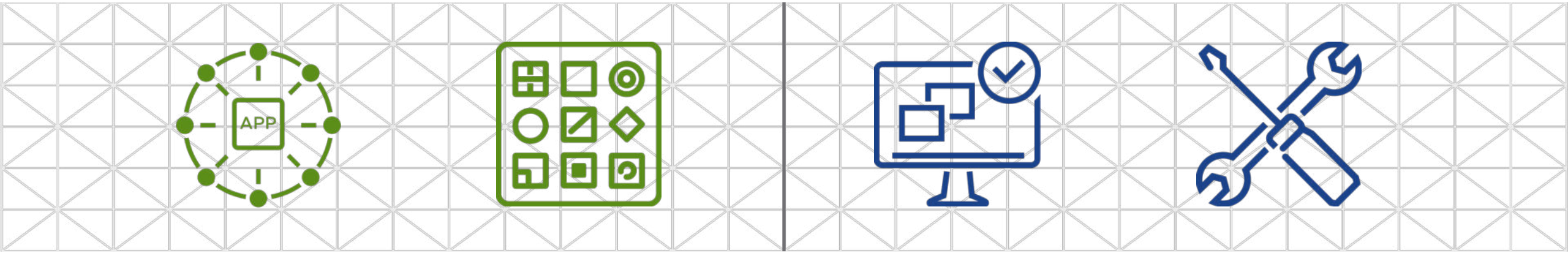
Governance | Security

True Hybrid Cloud Requires **Consistency**

Consistent infrastructure / consistent operations

Developers build and mange applications for consumers without complicated refactoring

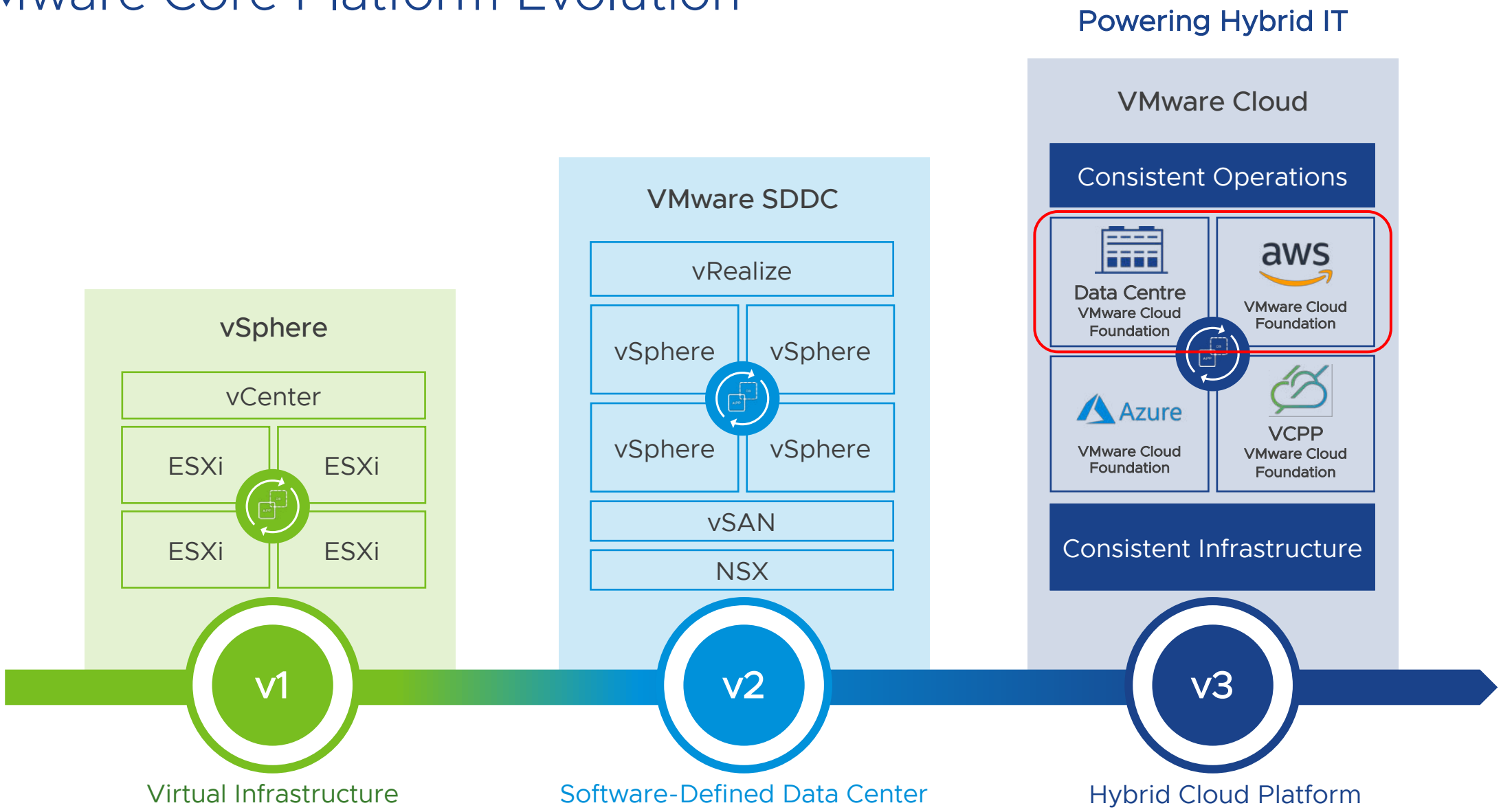
Operations use same tools for administration, migration, security on-prem and in the cloud



VMware Cloud Foundation Platform

Automated Deployment | Lifecycle | Reference Architecture

VMware Core Platform Evolution



On-Premises VMware Cloud

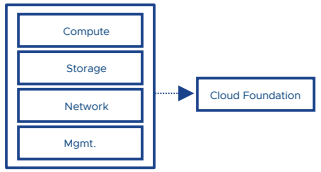
Modernise In Place

VMware Cloud Foundation On-Premises

Consistent infrastructure and operations to speed modernisation

Complete Private Cloud

Standardized Architecture



Full Stack Approach

Tested and Validated

Apps/Services/ Infrastructure Automation

Simplified Experience

Built-in Security

VMware Cloud Foundation

Management

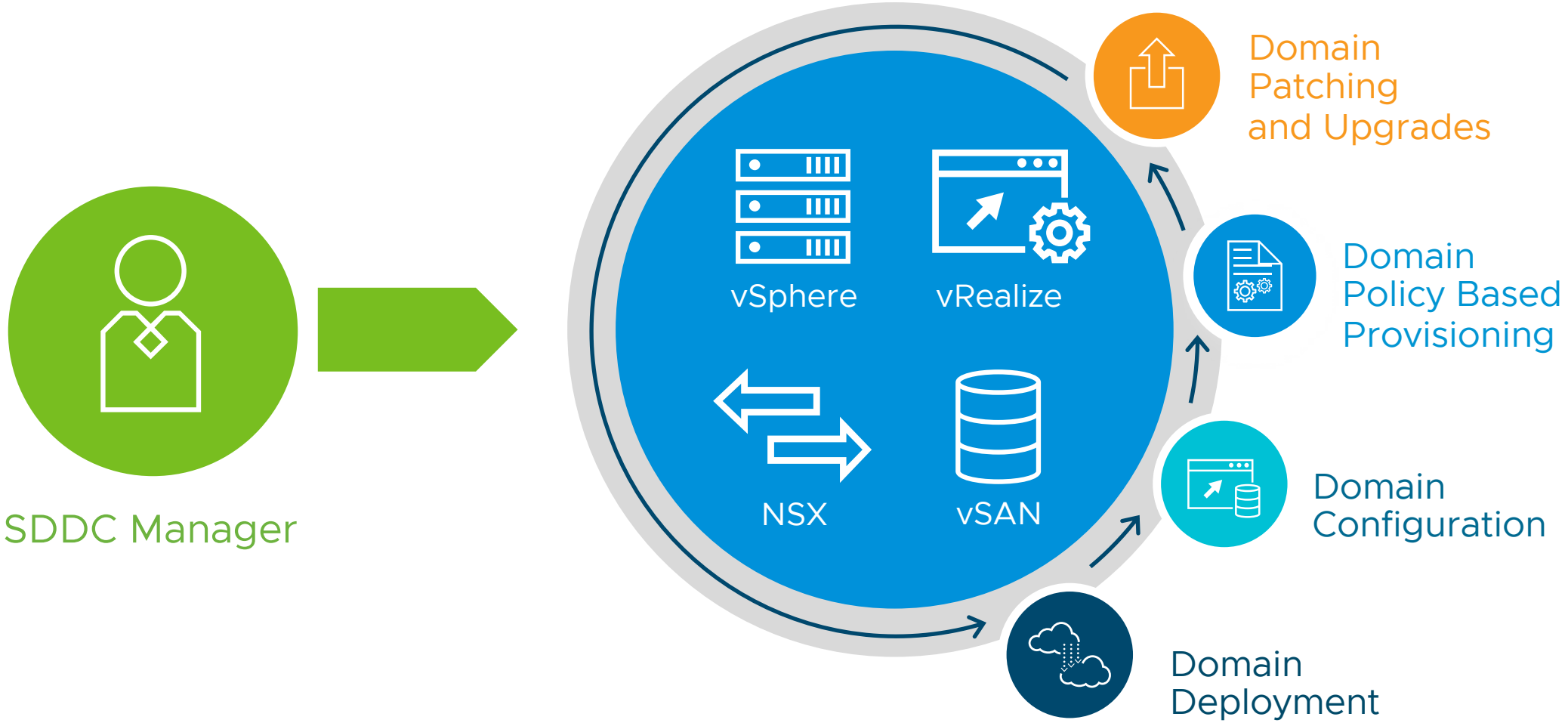
Compute

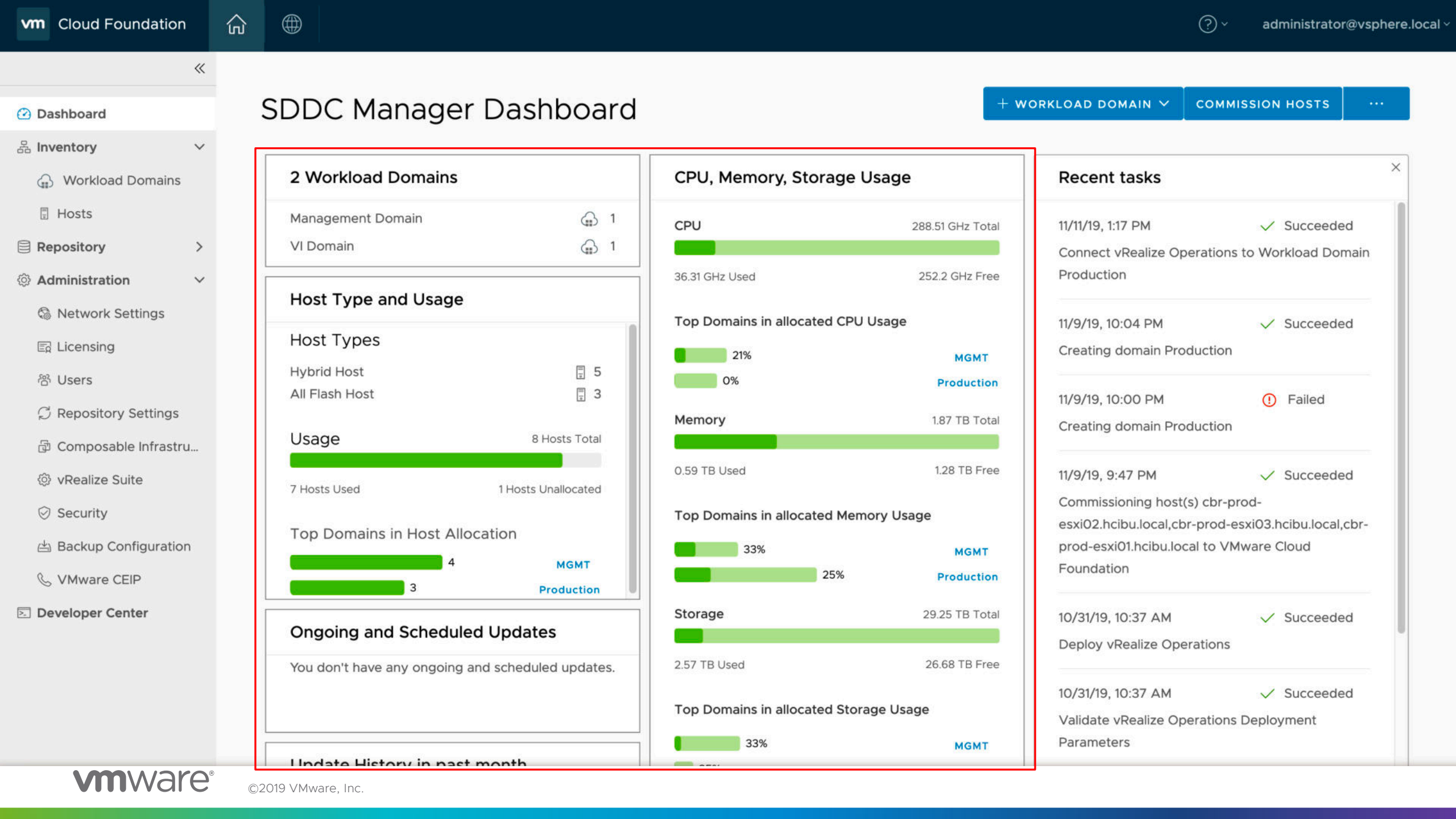
Storage

Networking

Brought Together by the SDDC Manager Control Plane

Automated day 0 to day 2 operations of the entire cloud infrastructure

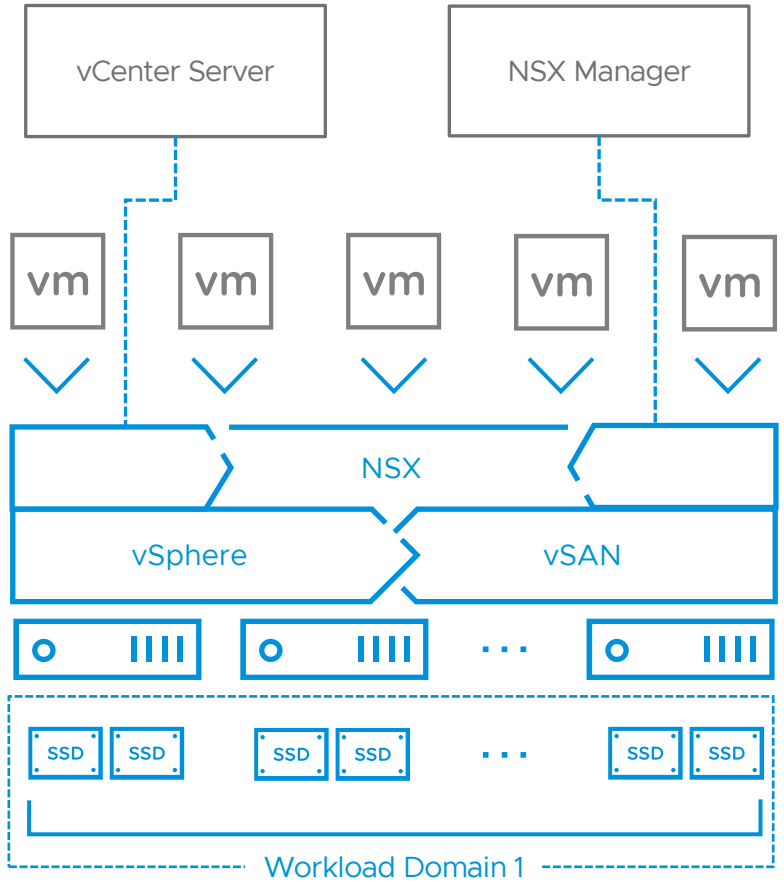




Cloud Foundation Workload Domain

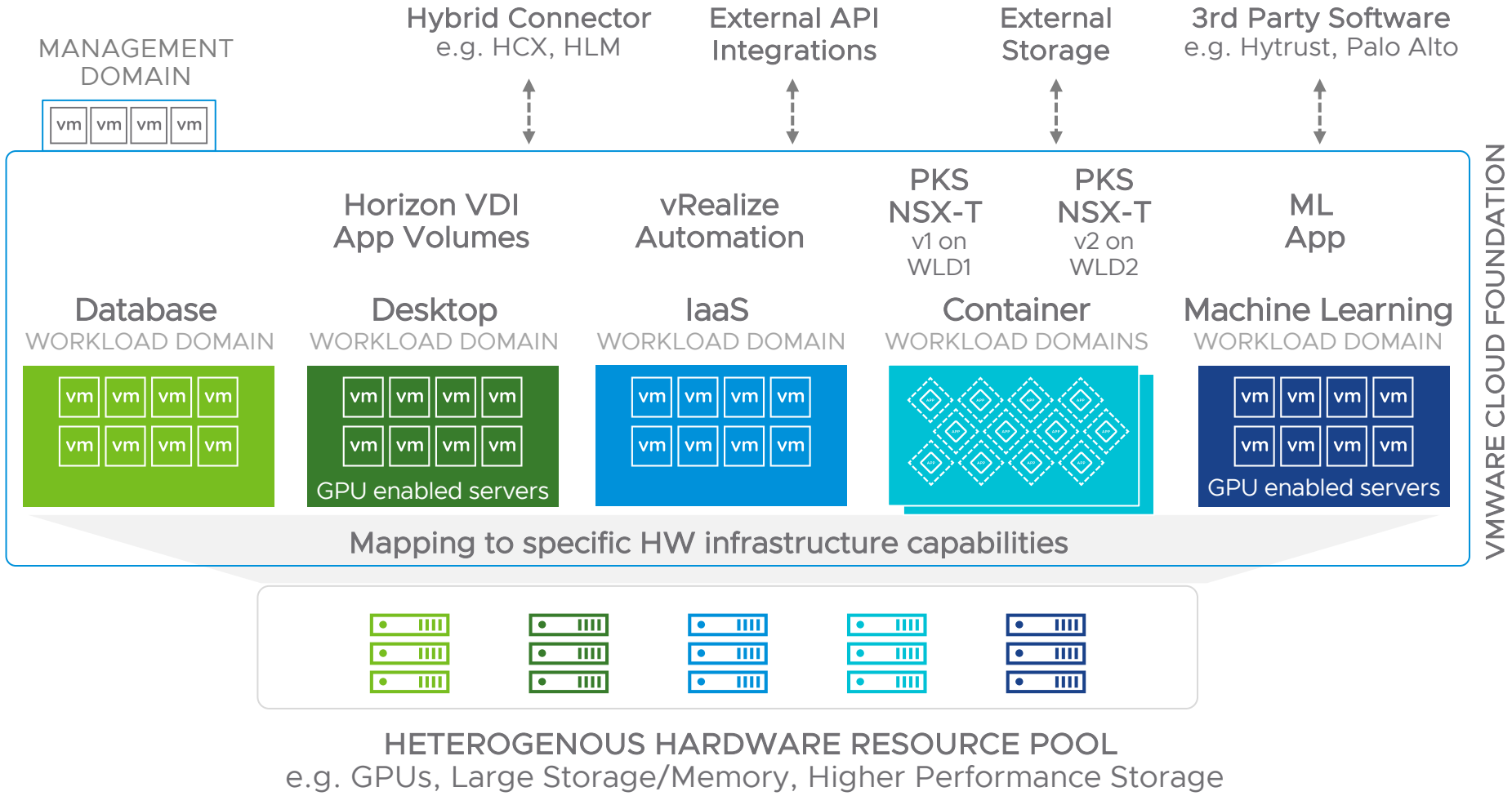
Building block of your modern private cloud

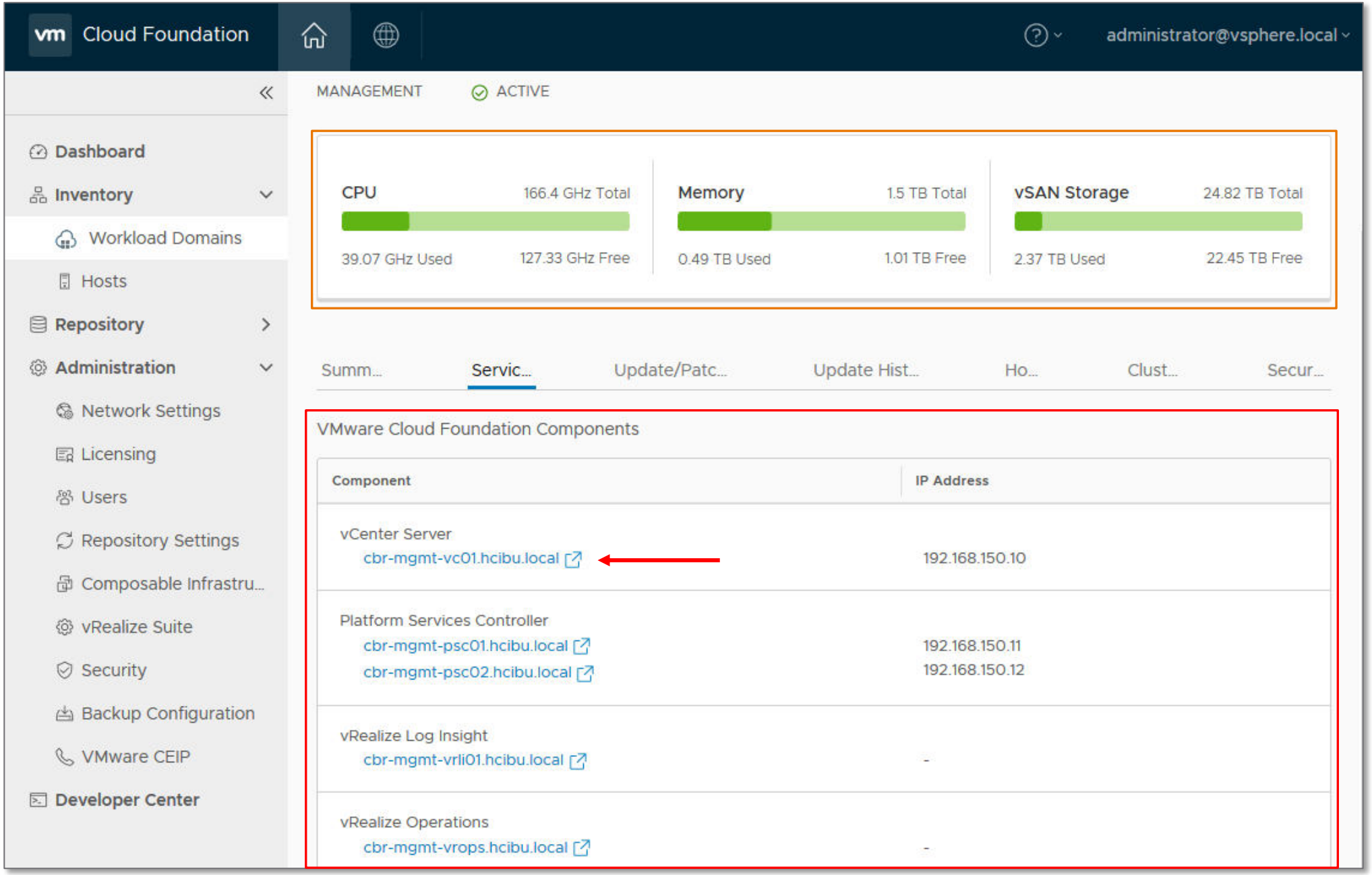
- **Purpose Built SDDC Environment**
  - Dedicated vSAN Ready Nodes
  - Create, expand, and delete independently
- **Automated Provisioning**
  - Management Domain provisioned at initial Bring Up
  - Virtual Infrastructure (VI) WLD provisioned on-demand
  - Horizon – automated deployment to an existing VI WLD
  - Enterprise PKS - automated deployment to an existing VI WLD
- Deploy up to 15 Workload Domains
- Multiple vSphere Clusters per Workload Domain
- Scale out VCF instances for capacity and federation



Cloud Foundation Workload Domains

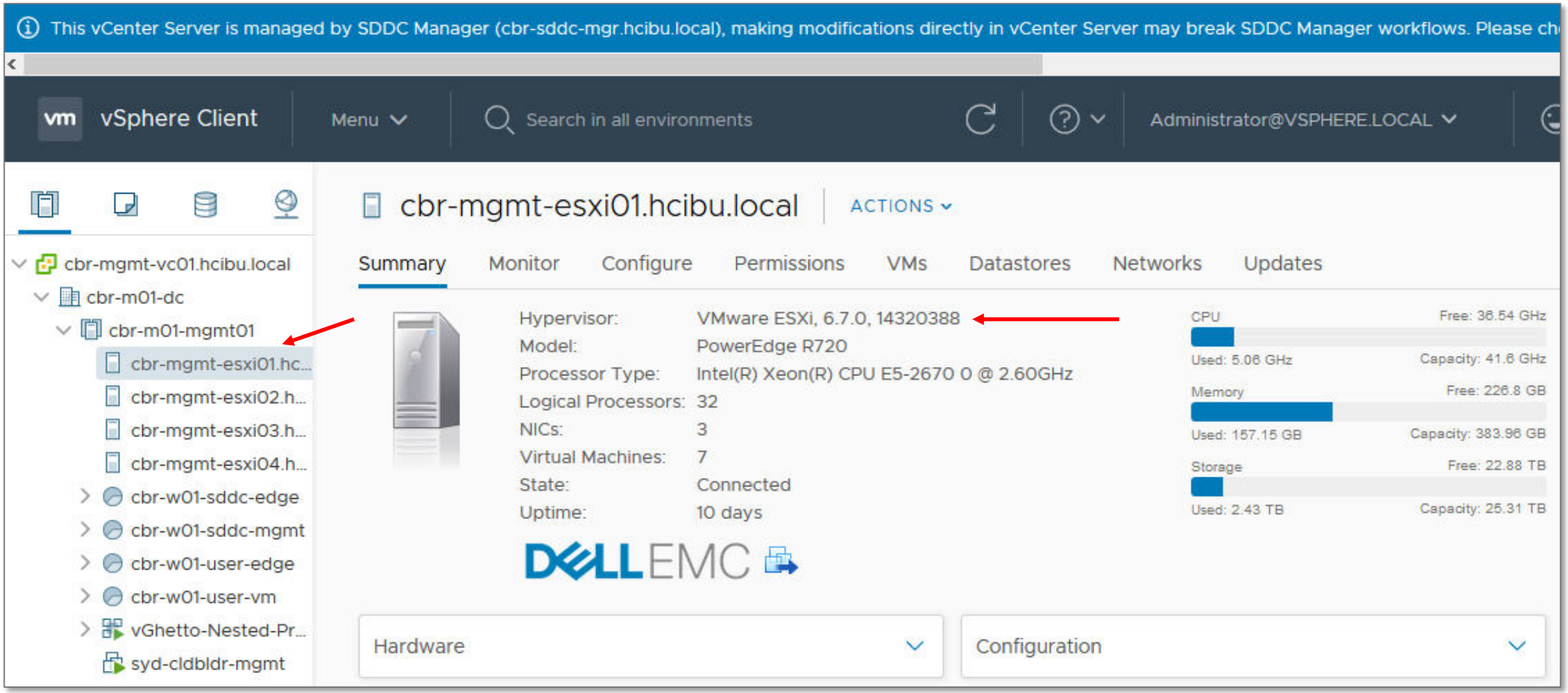
On-demand, policy managed infrastructure for workloads





Cloud Foundation Workload Domain

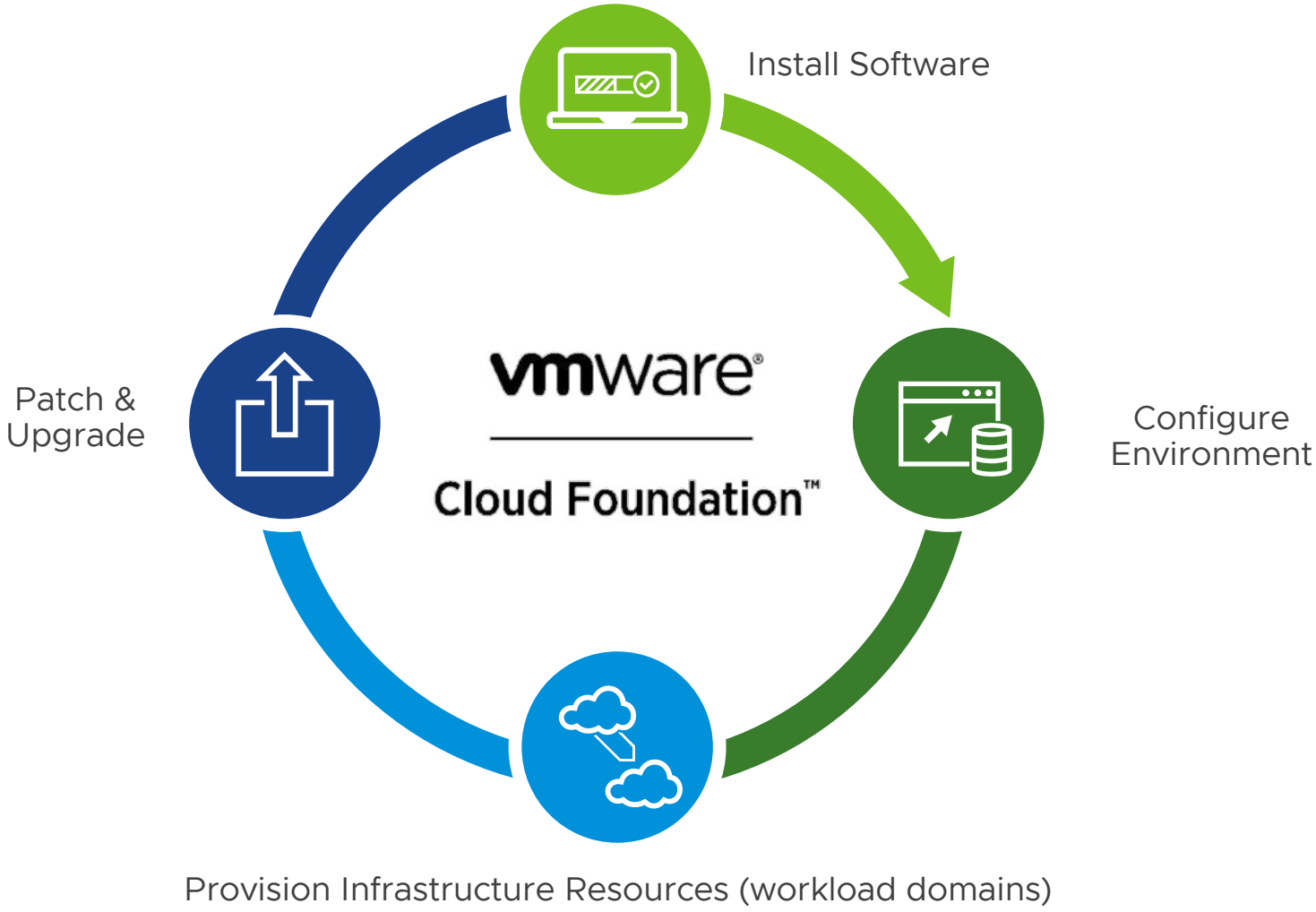
vCenter server managed by SDDC Manager



Ease of the Public Cloud in your Data Center

VMware Cloud Foundation delivers the modern private cloud

- Rapid deployment and configuration
- On-demand provisioning of infrastructure pools
- One-click patching and upgrading



Off-Premises VMware Cloud

VMware Cloud on AWS

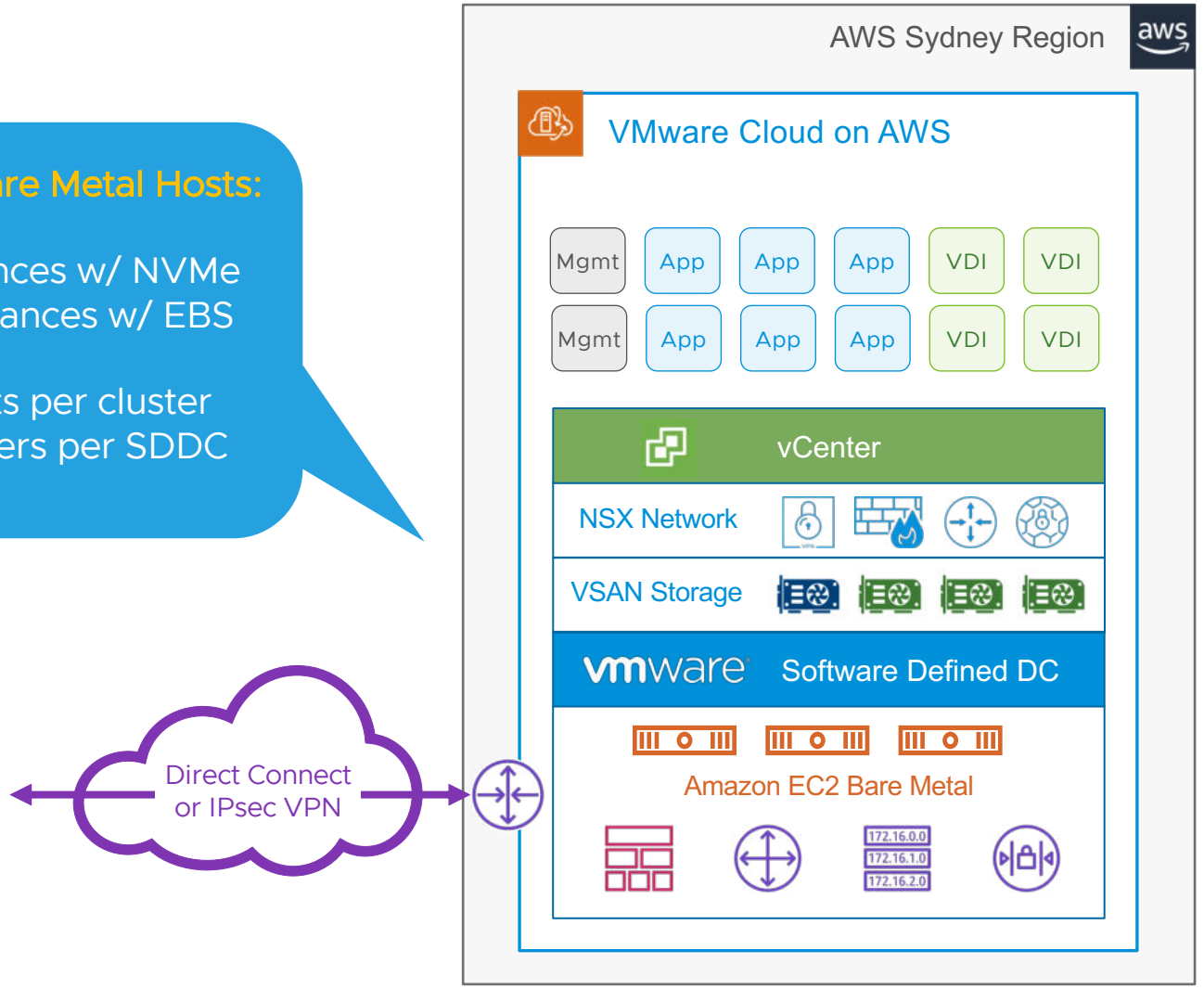
VMware Cloud on AWS

Cloud Foundation Data Centre On-Demand

Amazon EC2 Bare Metal Hosts:

i3 512GB instances w/ NVMe
R5 768GB instances w/ EBS

Up to 16 hosts per cluster
Up to 10 clusters per SDDC

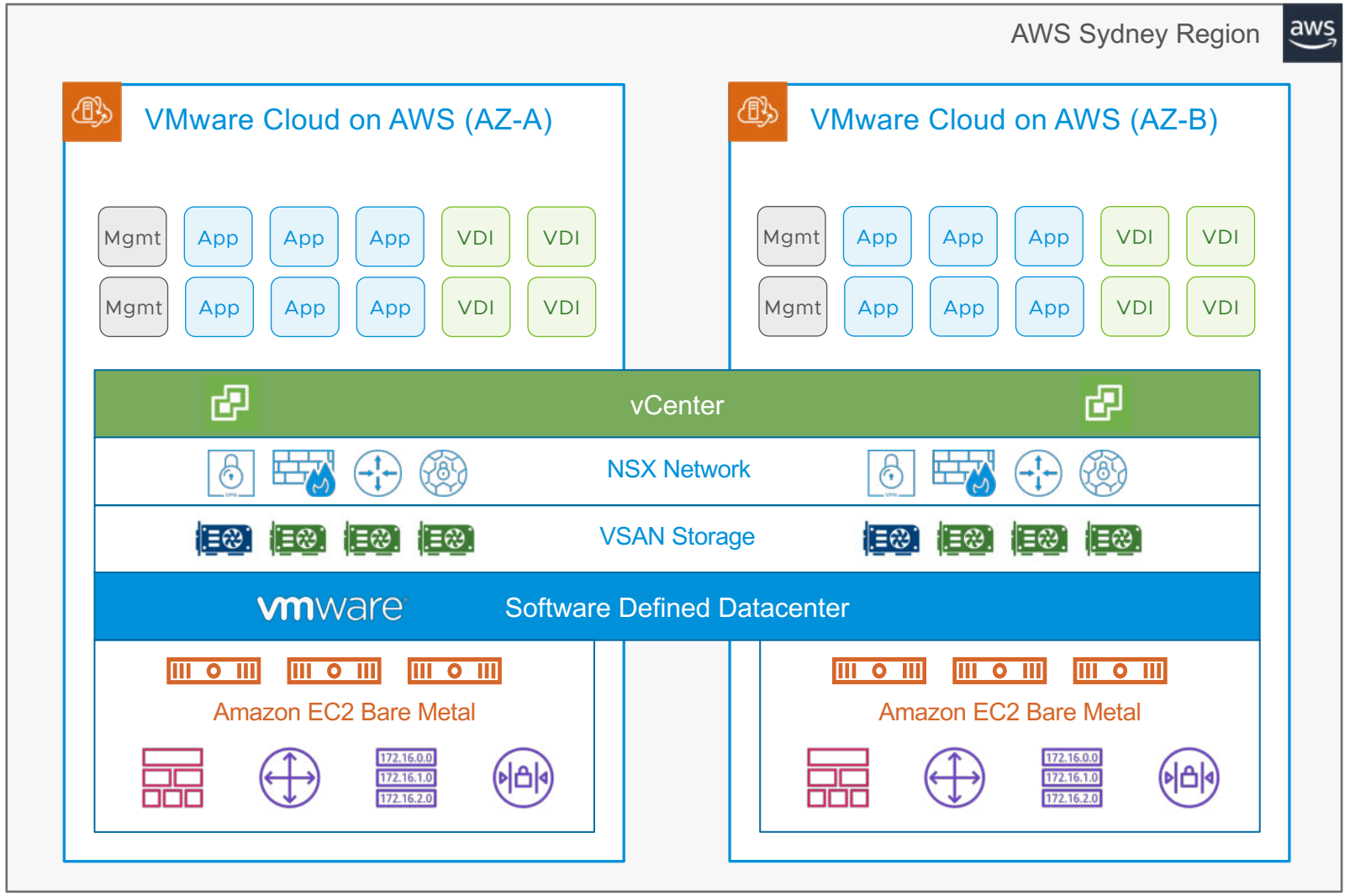


- **Immediately Leverage** VMware Cloud Foundation as a service (vCenter, ESXi, vSAN, NSX)
- **Jointly Engineered** cloud platform by VMware and Amazon Web Services
- All **Lifecycle Management**, patching, updates by VMware
- **Scale Elastically** by adding EC2 nodes on demand in ~15mins
- **Infrastructure Resiliency** for applications in a single AWS Availability Zone (AZ)

vmware

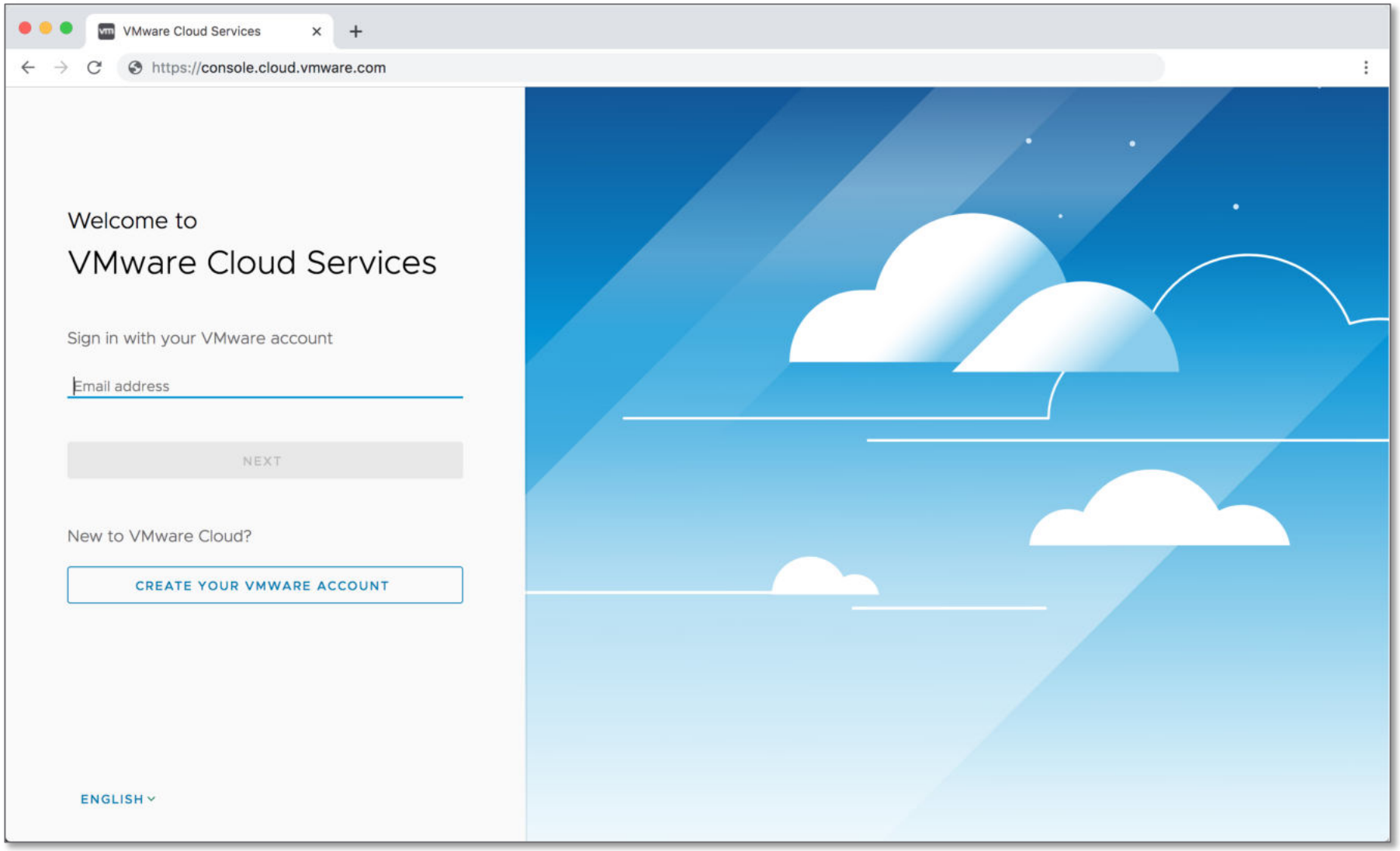
VMware Cloud on AWS

Stretched Cluster SDDC Configuration



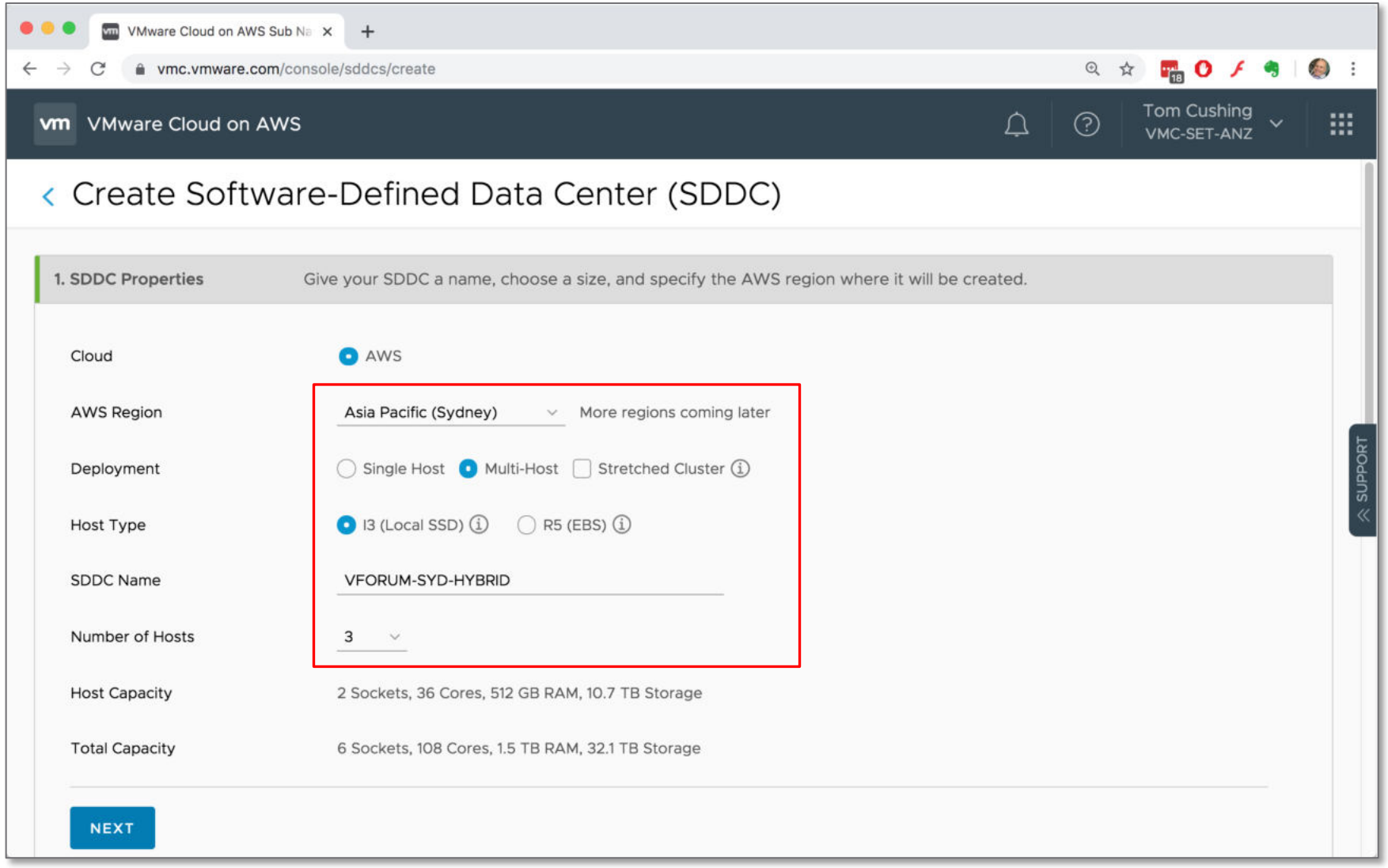
- **Extend SDDC high availability** for applications across AWS Availability Zones
- **Stretched** VSAN storage and NSX logical networks
- AZ downtime treated as a **vSphere HA** event with apps auto-restarted in other zone
- First time **infrastructure level AZ resilience** within AWS!

VMware Cloud Services Console



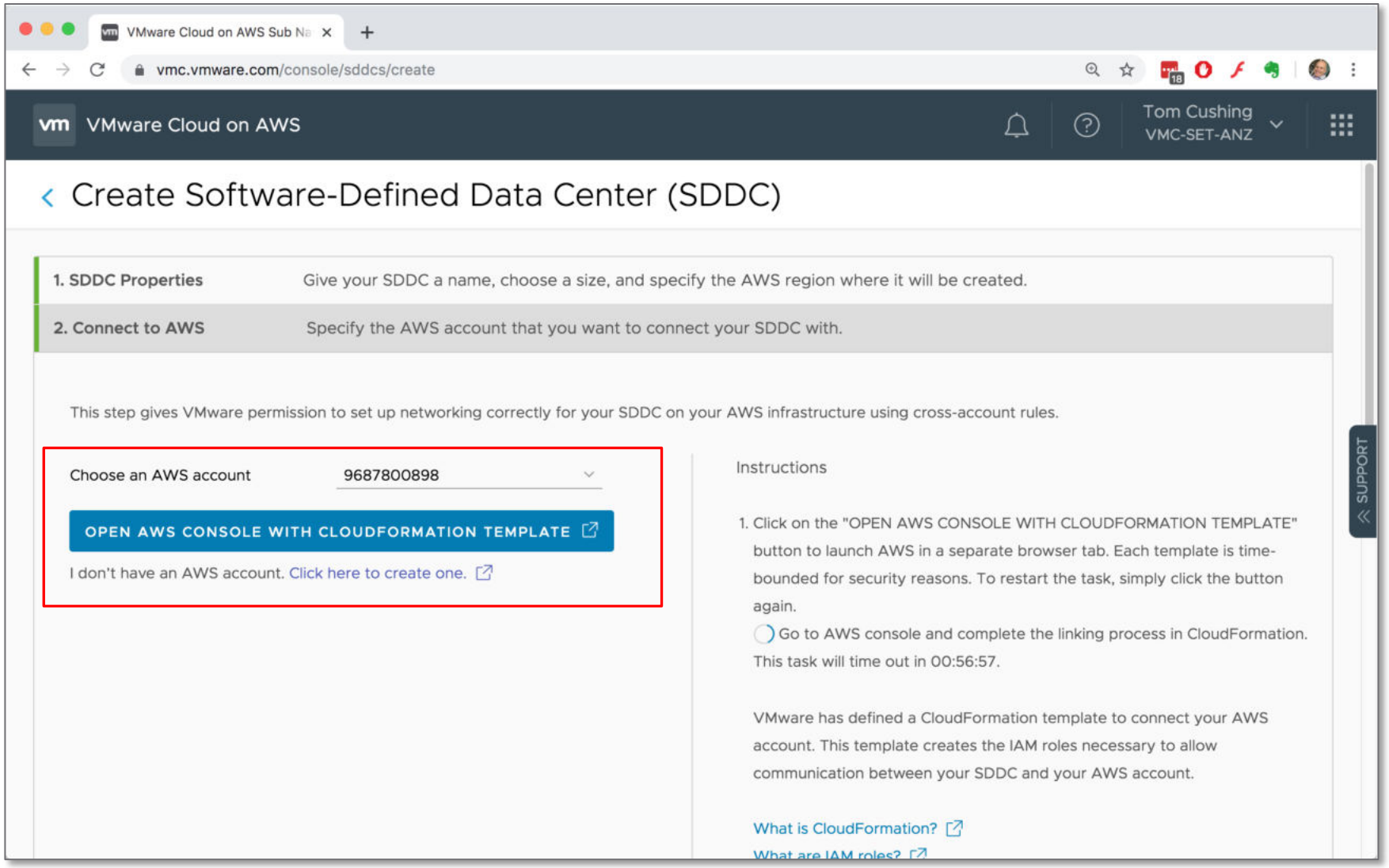
VMware Cloud on AWS Standup

On-Demand SDDC in ~2 Hours



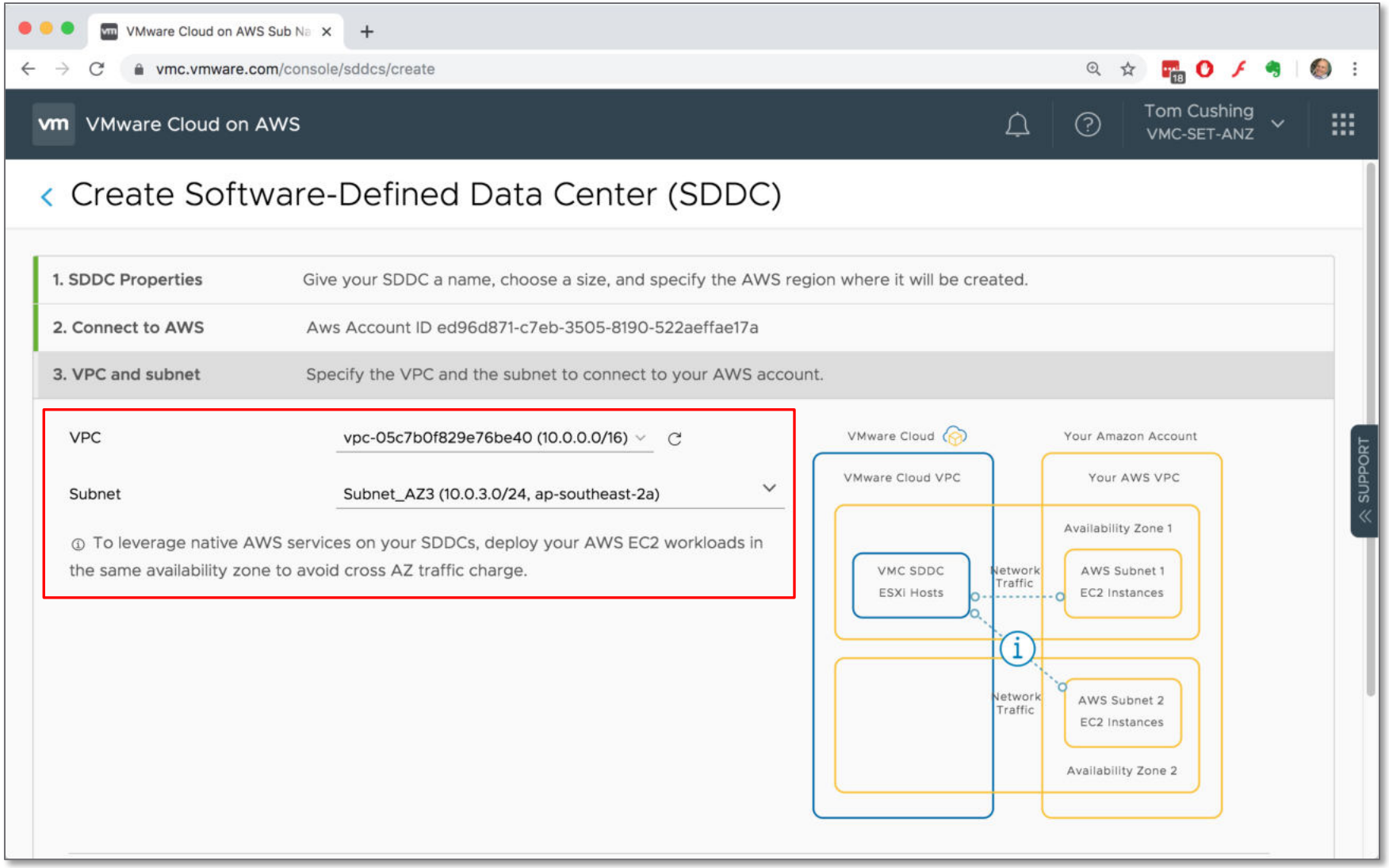
VMware Cloud on AWS Standup

Connect to “sidecar” AWS account



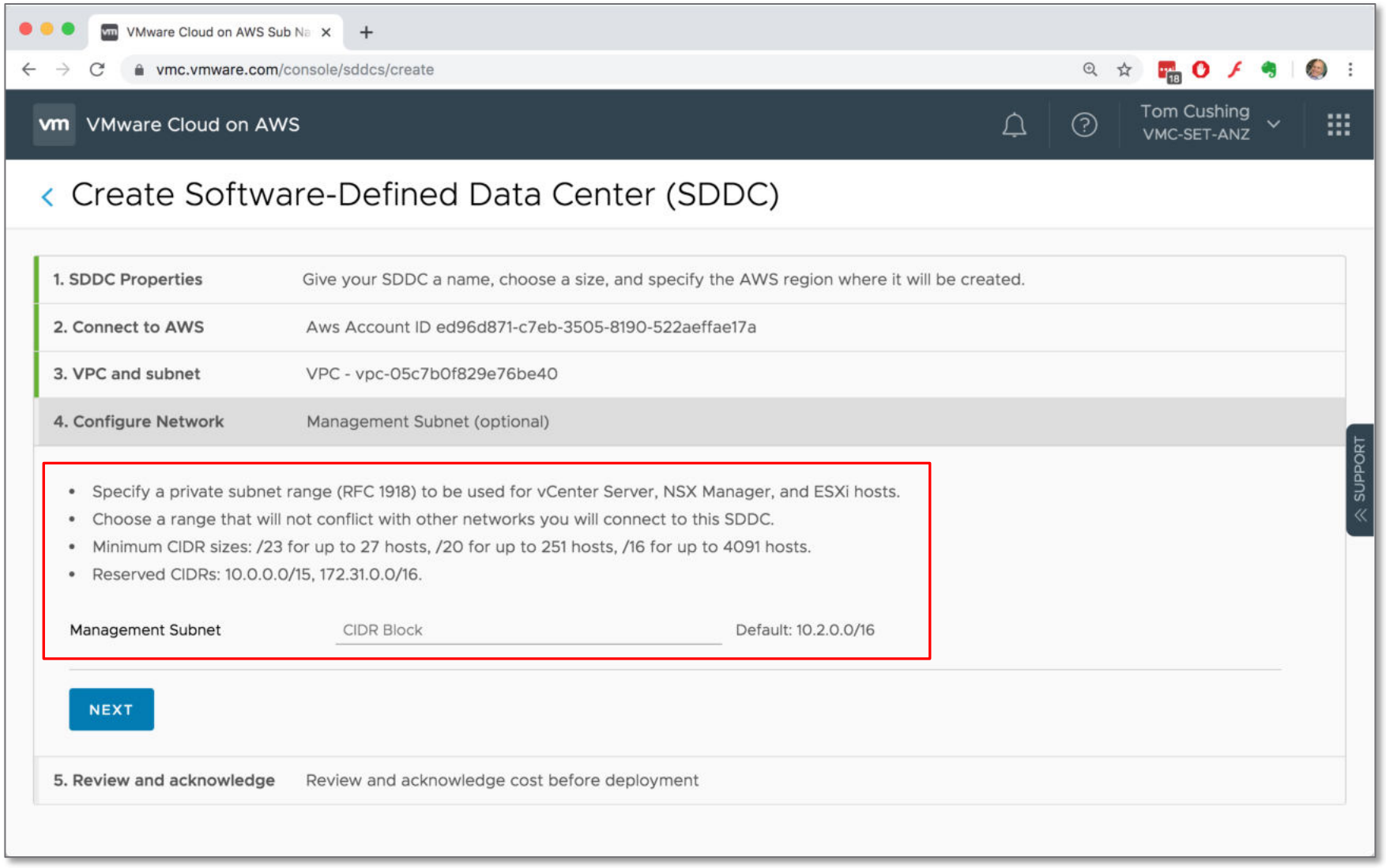
VMware Cloud on AWS Standup

Select sidecar VPC & subnet



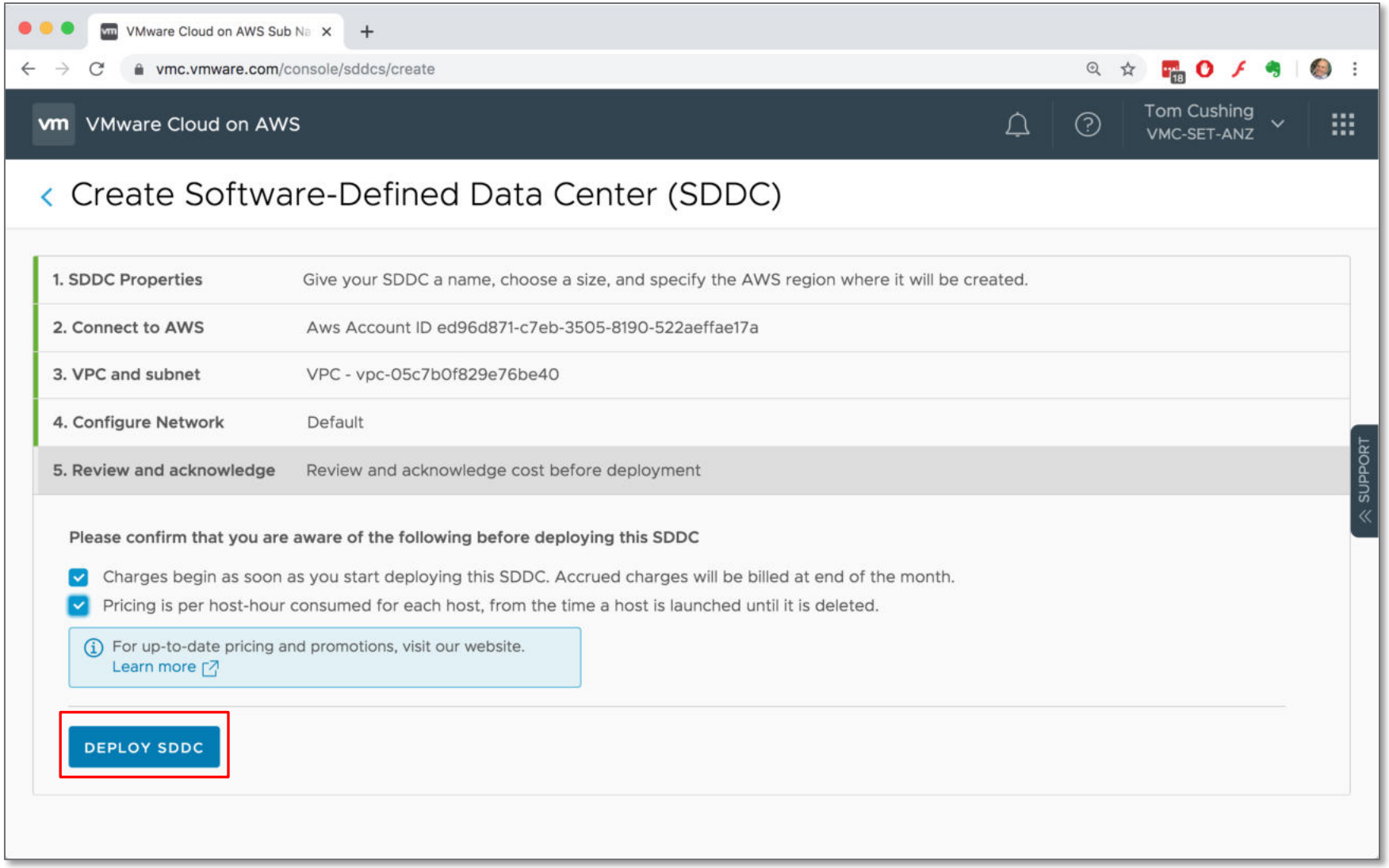
VMware Cloud on AWS Standup

Choose SDDC management network CIDR



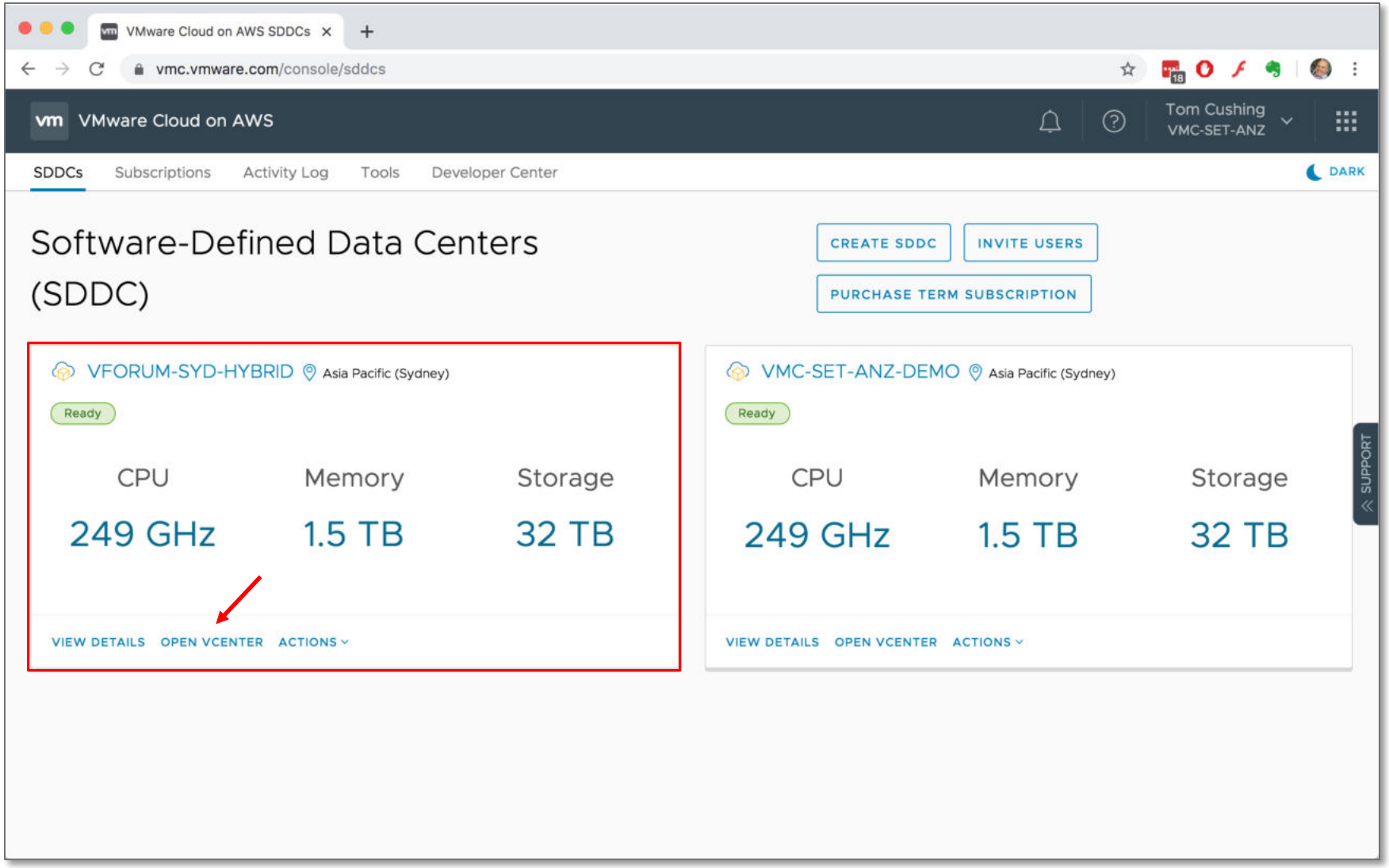
VMware Cloud on AWS Standup

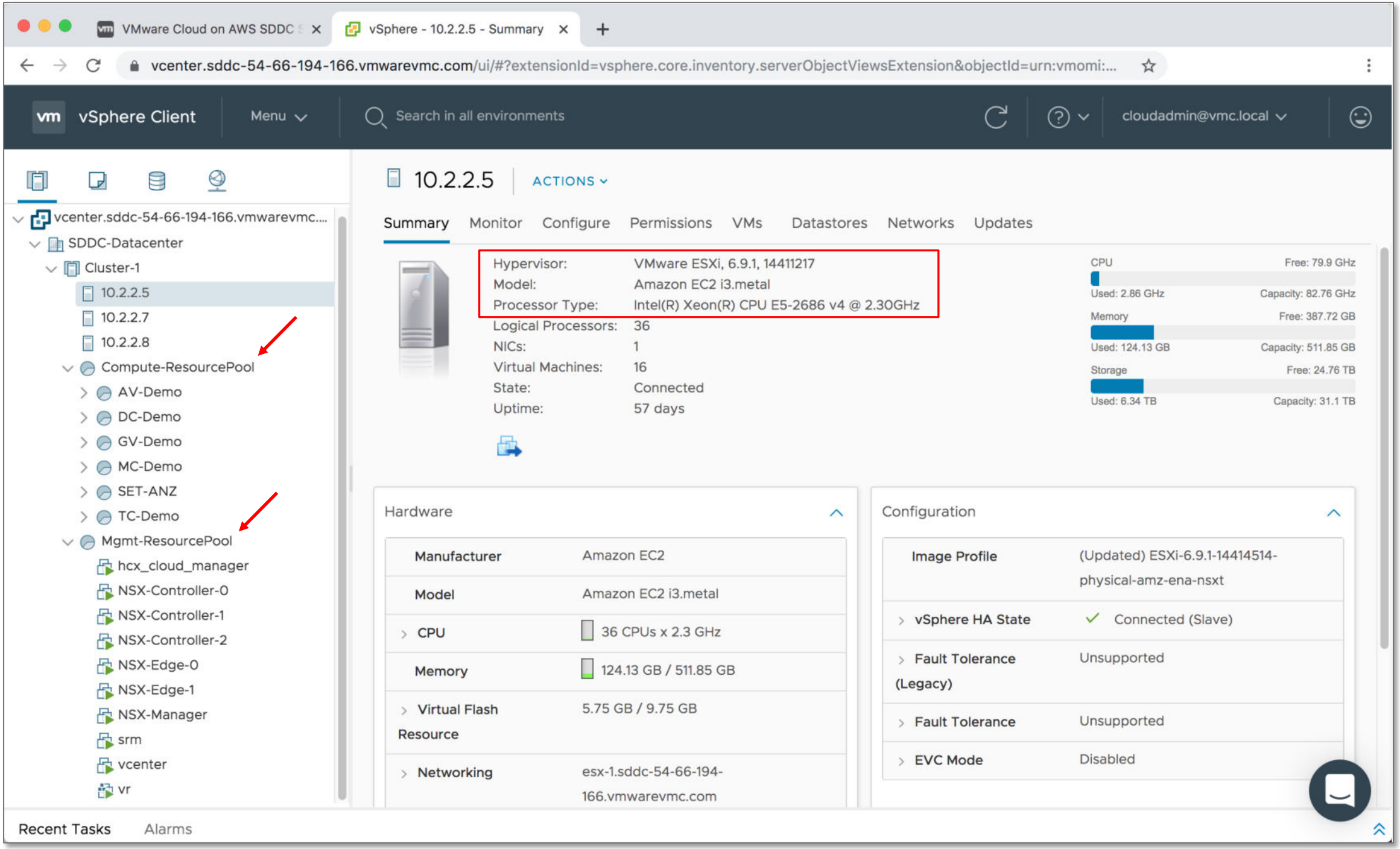
Accept & deploy



VMware Cloud on AWS Standup

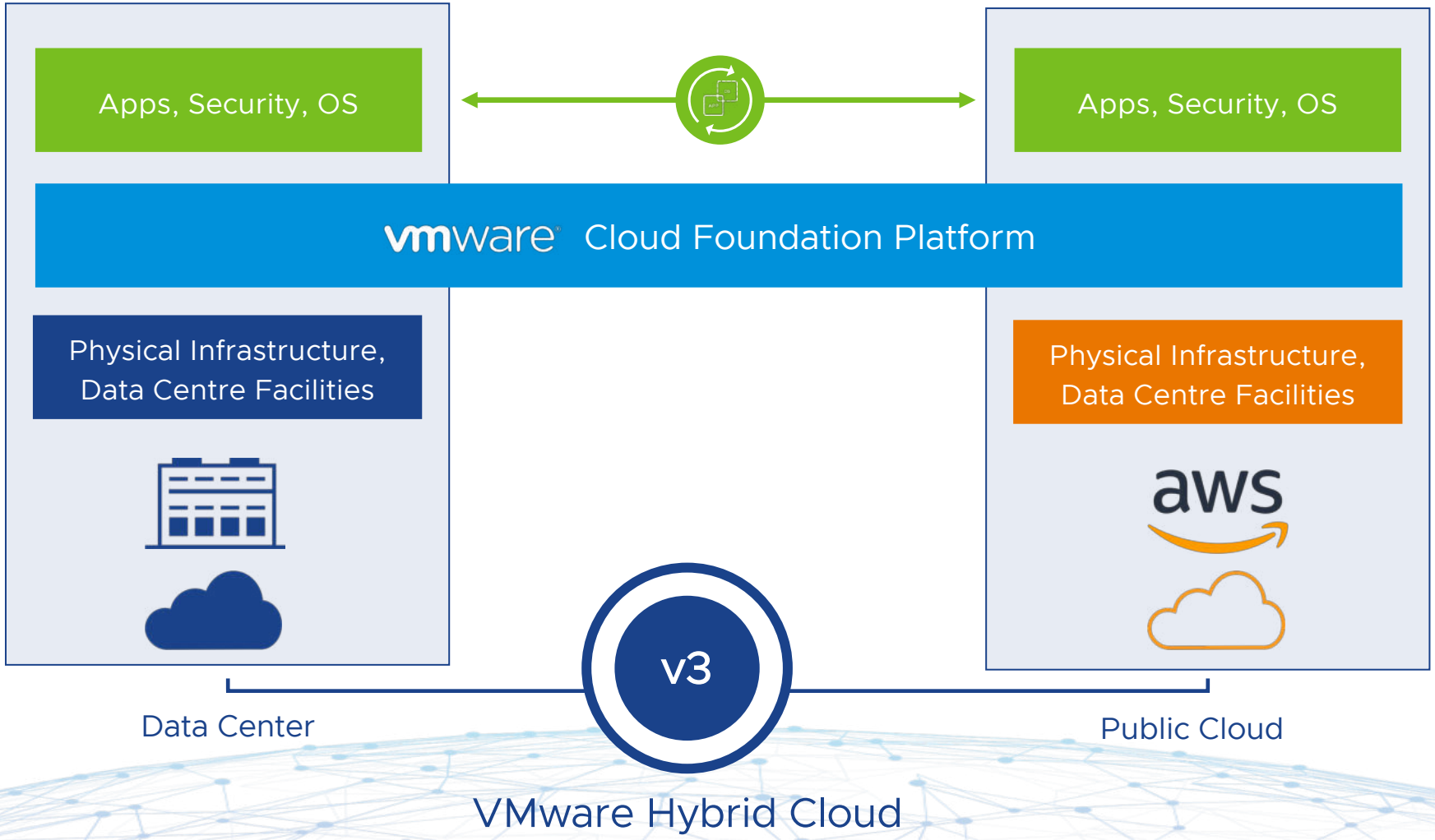
New SDDC available ~2 hours




VMware Cloud on AWS SDDC
vSphere - 10.2.2.5 - Summary
vcenter.sddc-54-66-194-166.vmwarevmc.com/ui/#?extensionId=vsphere.core.inventory.serverObjectViewsExtension&objectId=urn:vmomi:...
vSphere Client
Menu
Search in all environments
cloudadmin@vmc.local
vcenter.sddc-54-66-194-166.vmwarevmc....
SDDC-Datacenter
Cluster-1
10.2.2.5
10.2.2.7
10.2.2.8
Compute-ResourcePool
AV-Demo
DC-Demo
GV-Demo
MC-Demo
SET-ANZ
TC-Demo
Mgmt-ResourcePool
hcx_cloud_manager
NSX-Controller-0
NSX-Controller-1
NSX-Controller-2
NSX-Edge-0
NSX-Edge-1
NSX-Manager
srm
vcenter
vr
10.2.2.5
ACTIONS
Summary
Monitor
Configure
Permissions
VMs
Datastores
Networks
Updates
Hypervisor: VMware ESXi, 6.9.1, 14411217
Model: Amazon EC2 i3.metal
Processor Type: Intel(R) Xeon(R) CPU E5-2686 v4 @ 2.30GHz
Logical Processors: 36
NICs: 1
Virtual Machines: 16
State: Connected
Uptime: 57 days
CPU Free: 79.9 GHz
Used: 2.86 GHz Capacity: 82.76 GHz
Memory Free: 387.72 GB
Used: 124.13 GB Capacity: 511.85 GB
Storage Free: 24.76 TB
Used: 6.34 TB Capacity: 31.1 TB
Hardware
Manufacturer Amazon EC2
Model Amazon EC2 i3.metal
CPU 36 CPUs x 2.3 GHz
Memory 124.13 GB / 511.85 GB
Virtual Flash Resource 5.75 GB / 9.75 GB
Networking esx-1.sddc-54-66-194-166.vmwarevmc.com
Configuration
Image Profile (Updated) ESXi-6.9.1-14414514-physical-amz-ena-nsxt
vSphere HA State Connected (Slave)
Fault Tolerance (Legacy) Unsupported
Fault Tolerance Unsupported
EVC Mode Disabled
Recent Tasks
Alarms

Consistent Hybrid Infrastructure

Built on VMware Cloud Foundation



Consistent Operations

VMware Hybrid Cloud

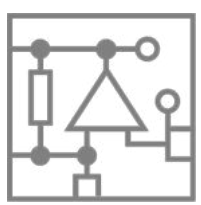
Common Cloud Challenges Revisited

Factors affecting hybrid cloud deployments

Consumer

Developer

Re-Architecture | Scaling



Operations | Lifecycle

Consolidation | Migration

Governance | Security

Consistent Tools & Processes

Hybrid cloud operations

vCenter Cloud Gateway

vCenter proxy appliance deployed on-prem and linked to VMware Cloud on AWS

Familiar vSphere UI to manage and operate across the VMware Hybrid Cloud

vRealize Management

Native VMware management tools extend on-prem services across VMware Hybrid Cloud

vRealize adapters allow “first class citizen” status for VMware Cloud on AWS

3rd Party / Bespoke

Leverage same in-house VMware tools and processes across VMware Hybrid Cloud

Support the cloud agility strategy of the organisation without disruption

Hybrid Operations

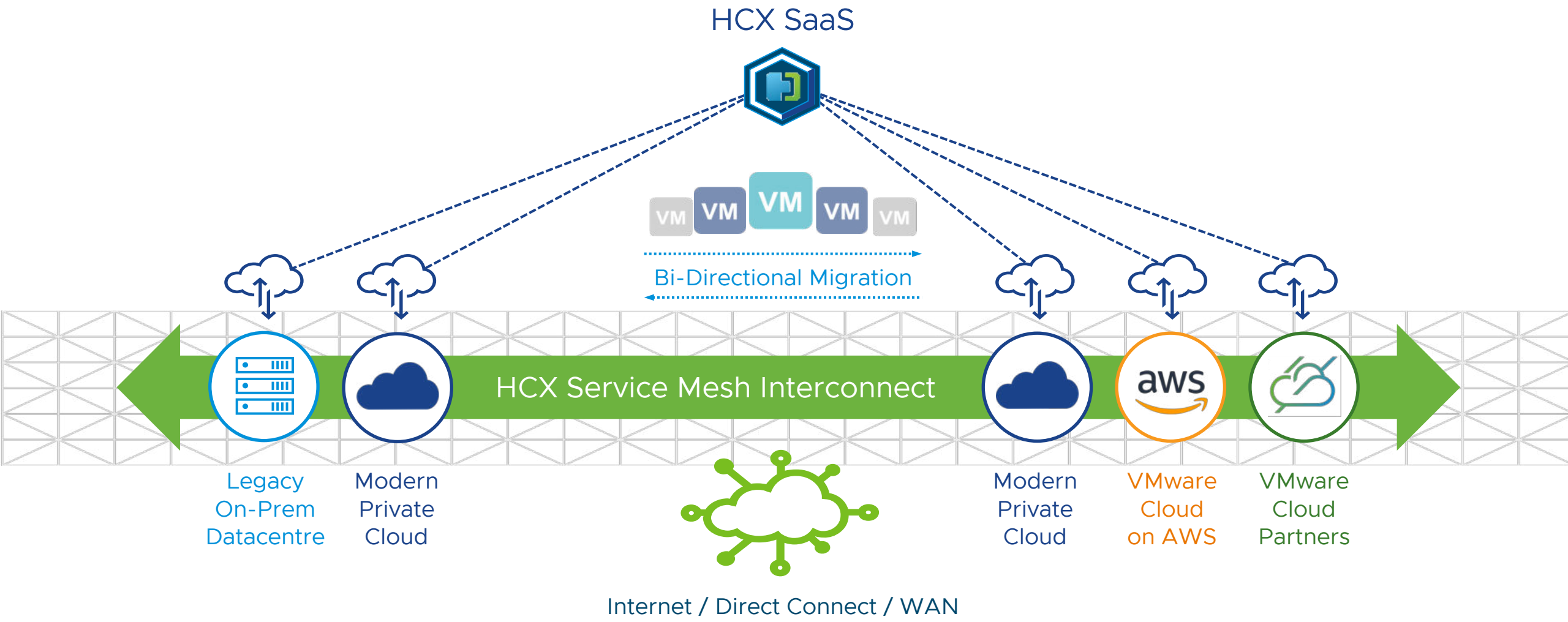
vCenter Cloud Gateway Demo

Hybrid Operations

vRealize Operations Demo

VMware Hybrid Cloud Extension (HCX)

Enabling true application portability

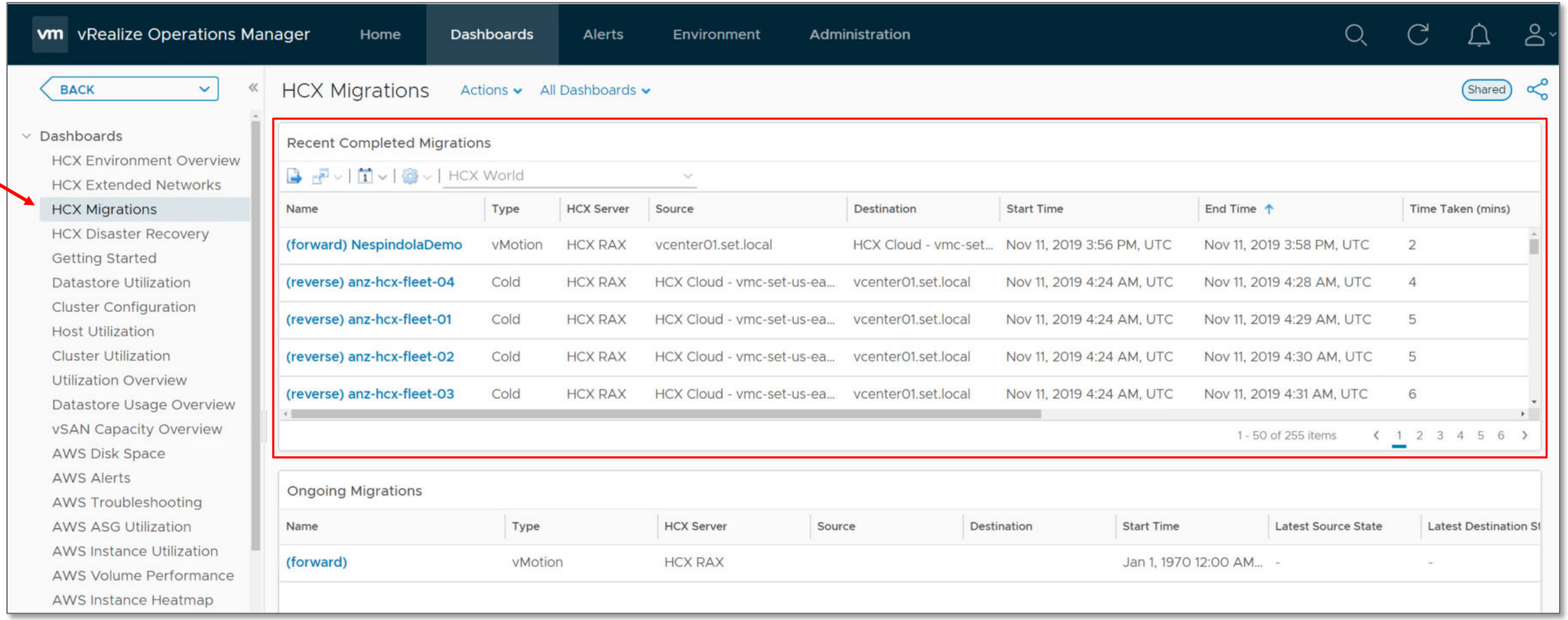


Hybrid Operations

HCX Application Portability Demo

HCX Adapter for vROPs

Environment and migration metrics



Consistent Application Governance

Hybrid cloud operations

Cost Controls

Extend policy based controls established on-premises to include public cloud resources

Evaluate cost impact to operate applications across the VMware Hybrid Cloud

Resource Management

Consistent policy controls for application placement across the VMware Hybrid Cloud

Standardize new application onboarding, drift analysis, and capacity planning

Security Enforcement

Enforce consistent security policies for applications regardless of location

Leverage unique VMware network capabilities such as HCX L2 extension to contain application traffic

True Hybrid Cloud

VMware Hybrid Cloud Platform

The faster path to hybrid cloud

Consistent Infrastructure

Deploy and manage applications freely across on-premises and cloud

Consistent Operations

Leverage existing skills, tools, and processes to operate the hybrid cloud

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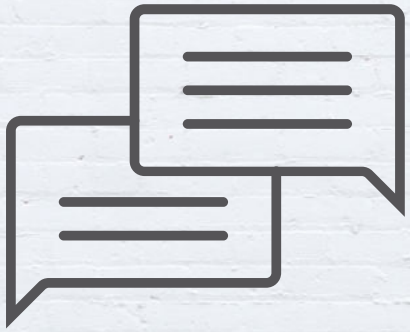
Thank You!



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