



INAF

ISTITUTO NAZIONALE
DI ASTROFISICA
NATIONAL INSTITUTE
FOR ASTROPHYSICS



CRUI

Conferenza dei Rettori
delle Università Italiane

Panoramica VMware per INAF

Luca Codispoti
Solution Engineer | VMware Italy

18 Novembre 2020

Agenda

Strategia VMware

vSphere 7

vRealize Operations

Horizon Universal

Q&A

VMware Delivers the Digital Foundation

Build, Run, Manage, Connect and Protect Any App on Any Cloud on Any Device

Any Device



Any Application



Traditional

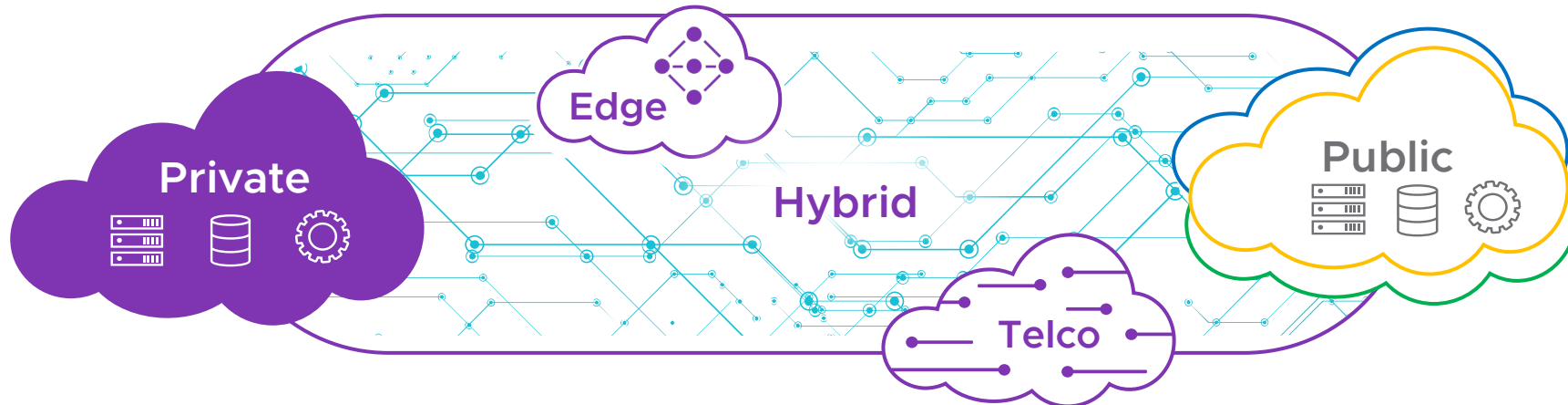


Cloud Native



SaaS

Any Cloud



Intrinsic Security

Any App

Build, run and manage existing traditional apps and new cloud-native apps



Traditional



Cloud Native

Simplify multi-cloud operations

Get your infrastructure ready for modern apps, and centrally manage your clouds and clusters.

Ship great software faster

Increase developer velocity with a modern software supply chain.

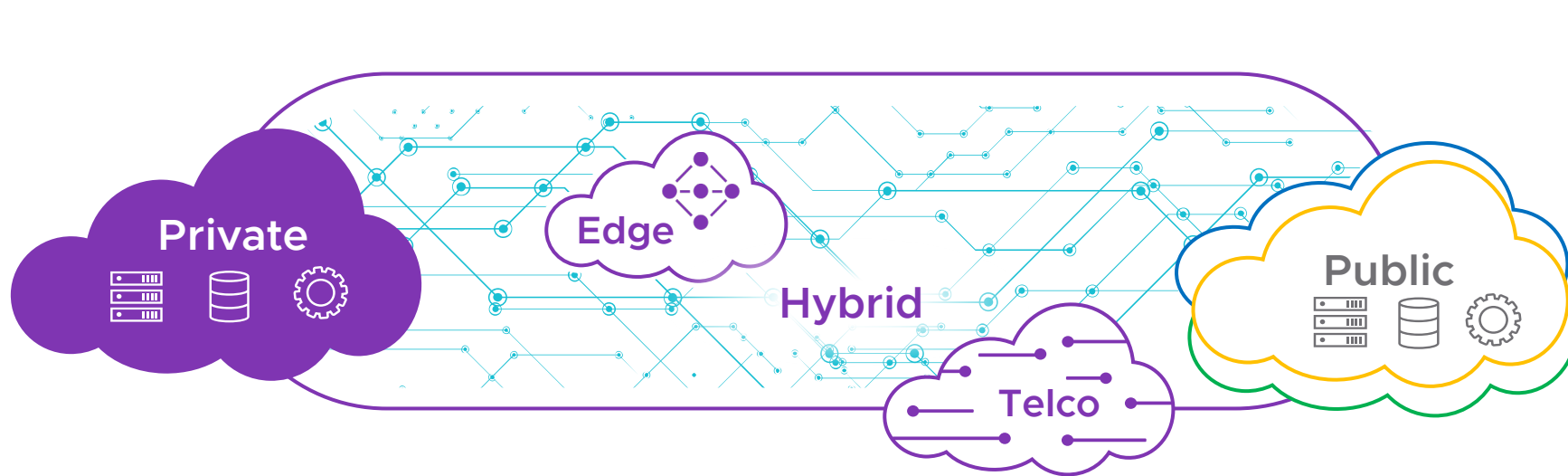
Transform Dev and Ops together

Unify application developers and operations teams around the shared goal of fast release cycles.

Consistent Developer Experience

Any Cloud

The only complete portfolio for the multi-cloud journey



Alibaba Cloud

aws

Google

IBM

Microsoft Azure

ORACLE

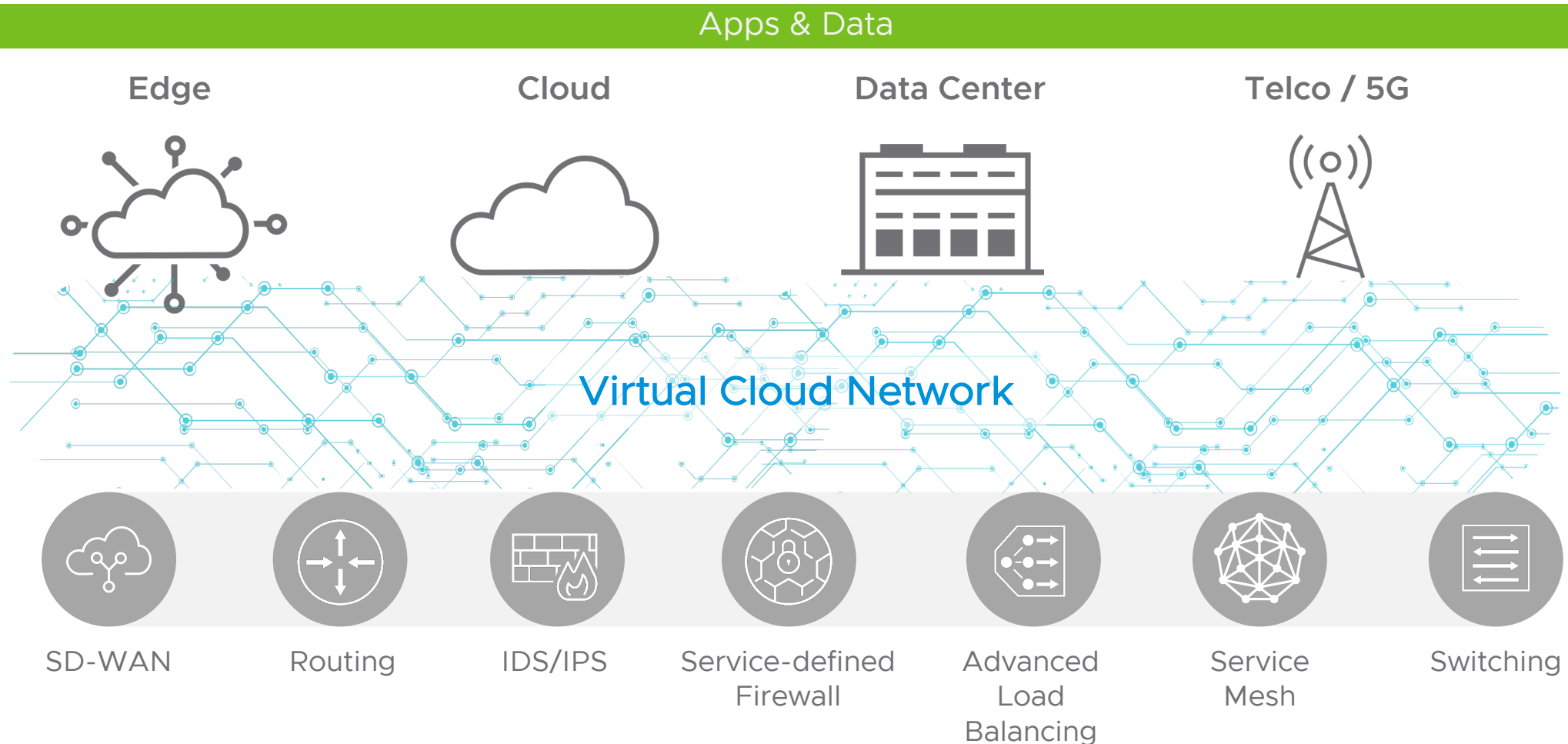
vmware CLOUD VERIFIED

VMware Cloud → Deploy on premises or consume as a service

Same cloud stack runs in every major hyperscale cloud + >120 verified service partners

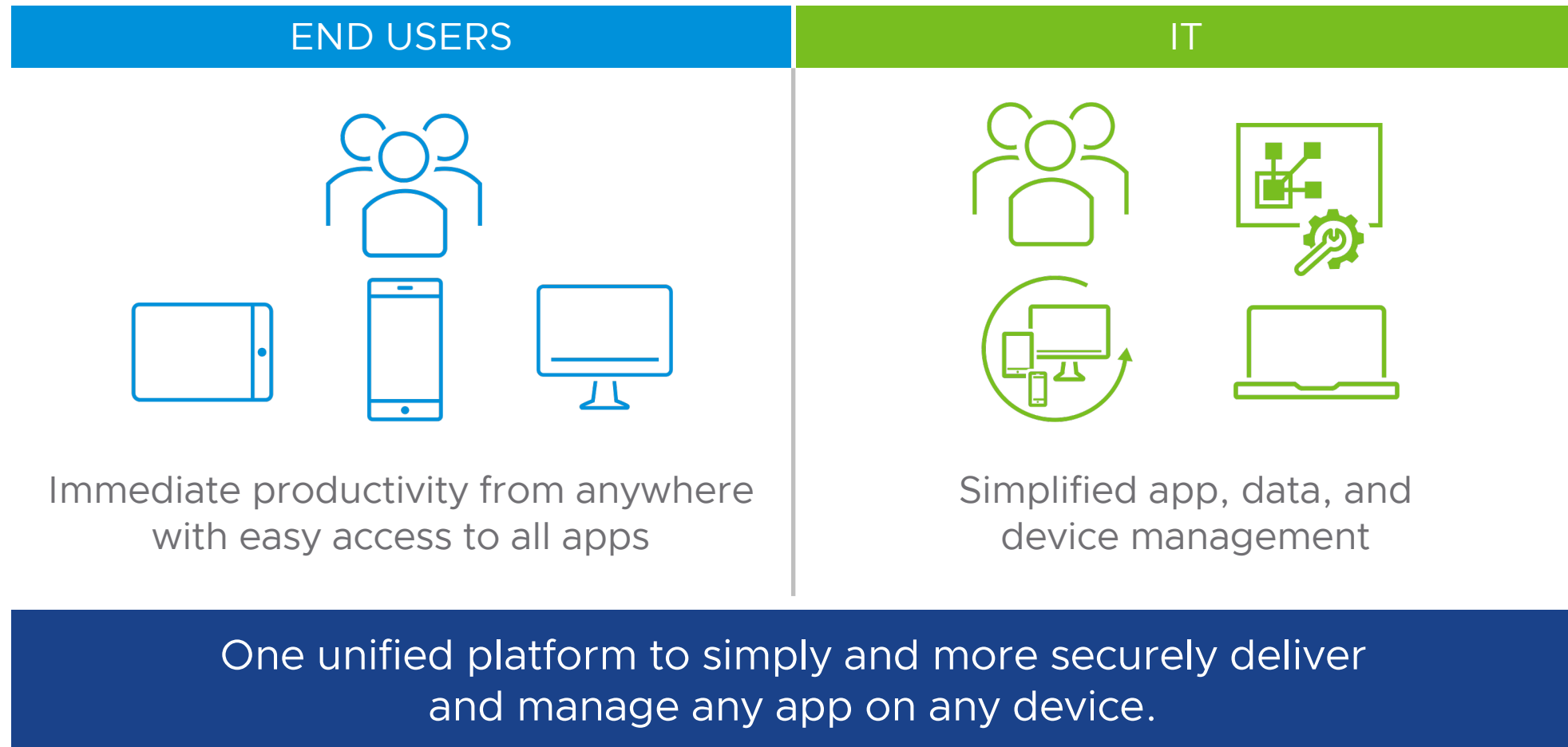
Connect Apps & Data Everywhere

We enable a flexible, more secure network from core to cloud to edge



Any Device

Empower your employees anywhere with a digital workspace



Intrinsic Security

Leverage all your touchpoints to better secure your business

ANALYTICS

Endpoint



Devices

Identity



Users



Workload



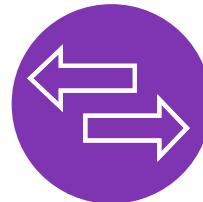
Apps

Cloud



IaaS

Network



Infrastructure

- Build **security** into the infrastructure
- Understand **context** to protect devices, servers, and cloud workloads
- Protect all **endpoints** that access organizational assets remotely
- Unify operational silos by centralizing the **analytics**

How VMware Helps

Achieve your business and technology objectives

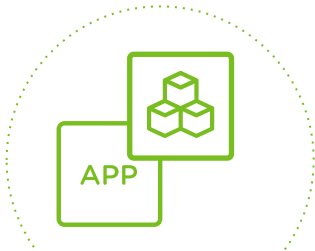
Meet changing needs of
customers and employees



Optimize operations
and GTM speed



Strengthen security
and business resilience



App Modernization



Multi-Cloud



Virtual Cloud Network



Digital Workspace

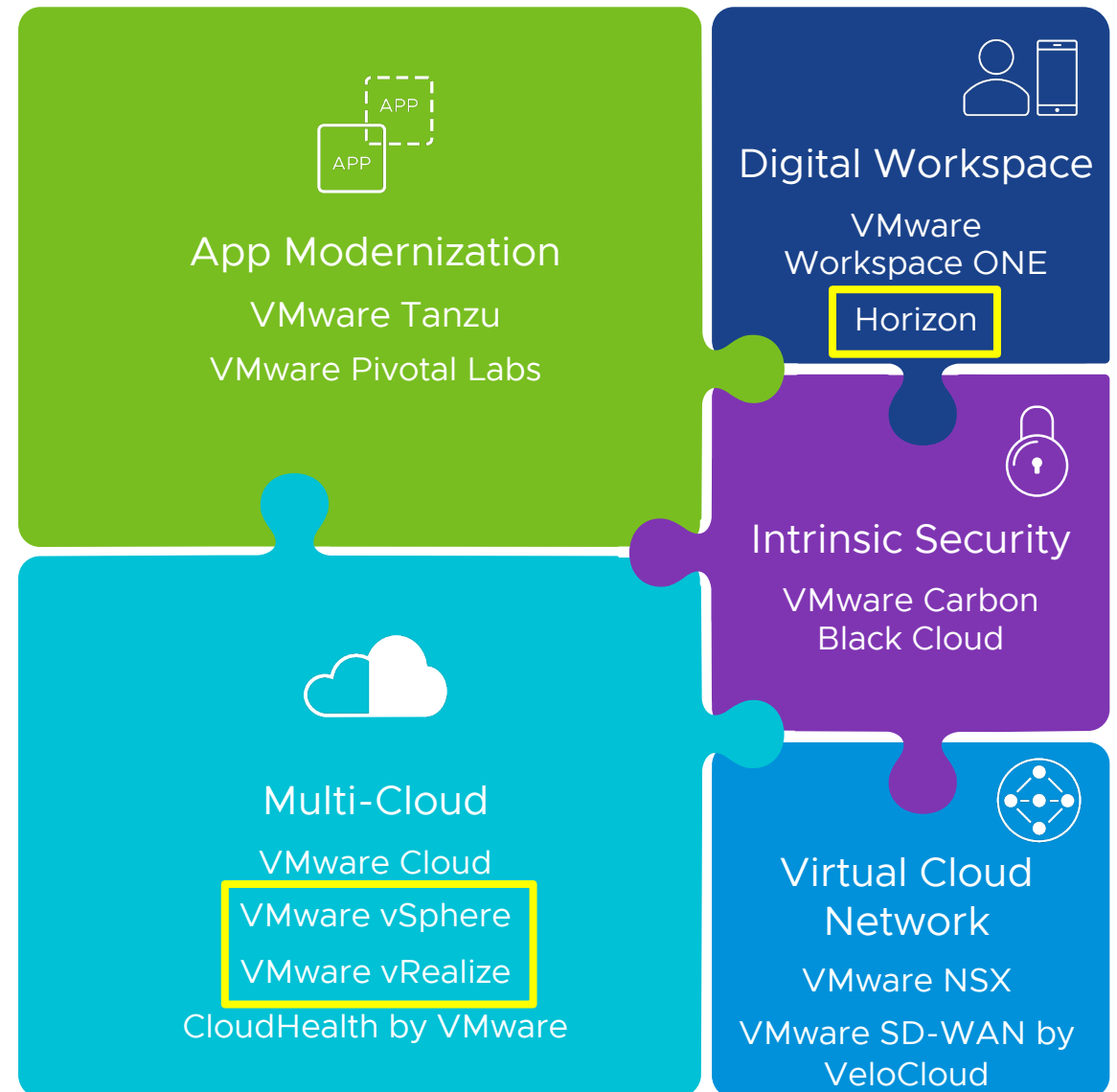


Intrinsic Security

The Digital Foundation for Successful Digital Business

VMware Portfolio at-a-Glance

Organized to Meet Customer Objectives



vSphere 7

Quick Overview

Software Defined Data Center (SDDC)

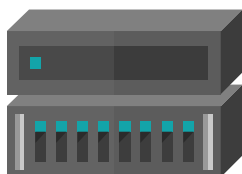
Software



- Intelligence in Software
- Operational Model of VM for Data Center
- Automated Configuration and Management

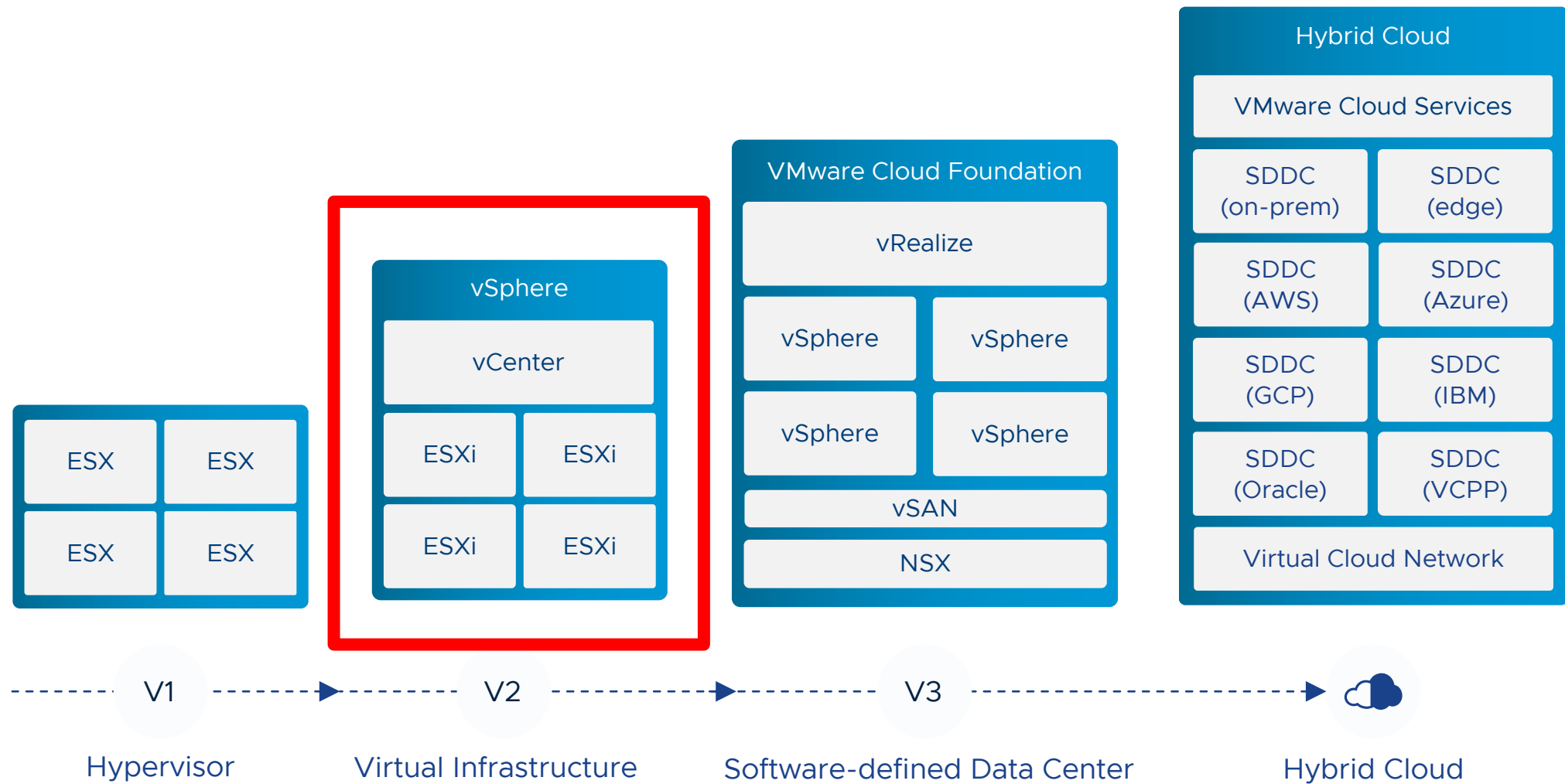


Hardware



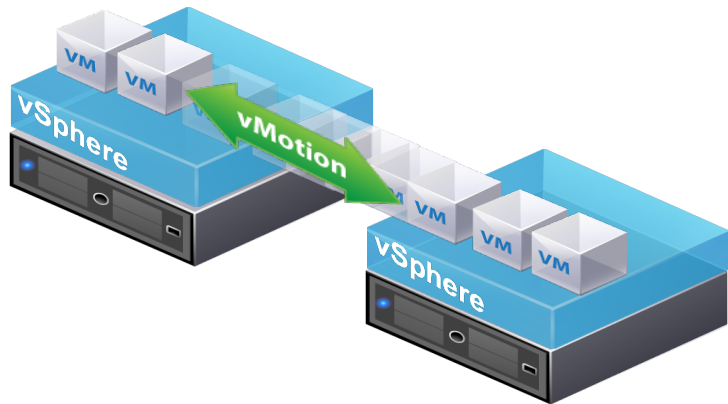
- Compute, Network, and Storage Capacity
- Pooled, Vendor Agnostic, Best Price/Performance Hardware
- Simplified Configuration and Management

Virtual Datacenter Evolution

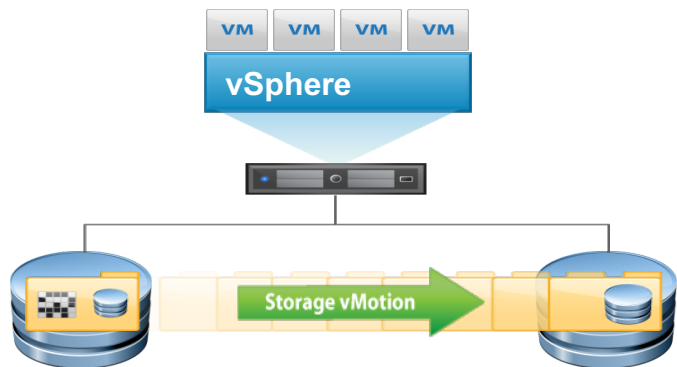


Minimize Planned and Unplanned Downtime

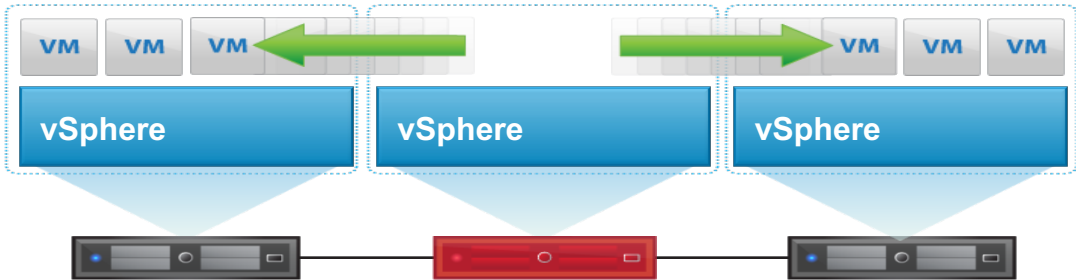
vSphere vMotion



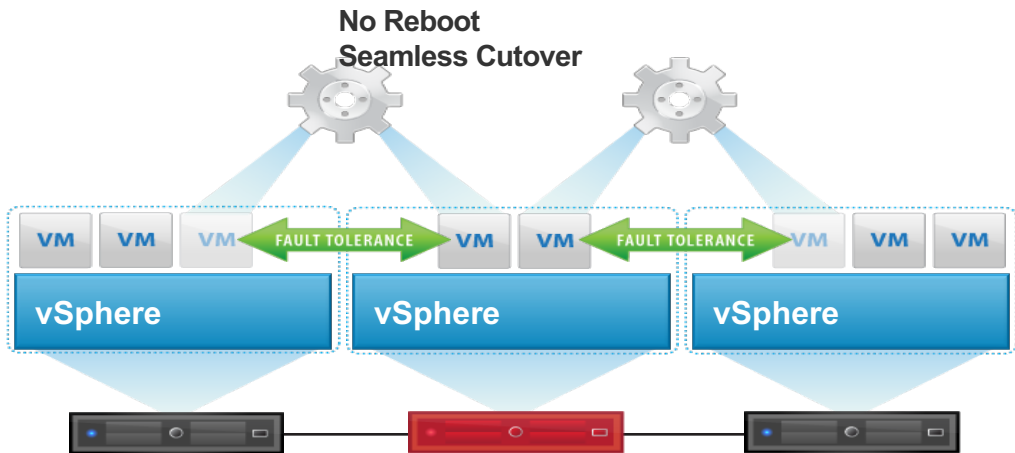
vSphere Storage vMotion



vSphere High Availability



vSphere Fault Tolerance



The New vSphere

The Biggest
Innovation
Since the
Launch of ESXi



vSphere 7

The new generation of vSphere
for traditional apps

Available in two editions.

Data Center | Edge | Service Provider | Public Cloud

vSphere 7: The next generation of vSphere

vSphere 7: Major capabilities and enhancements



Simplified Lifecycle Management

- vSphere Lifecycle Manager for simplified upgrades
- Update planner to discover, manage and upgrade
- Upgrade using Restful APIs



Intrinsic Security

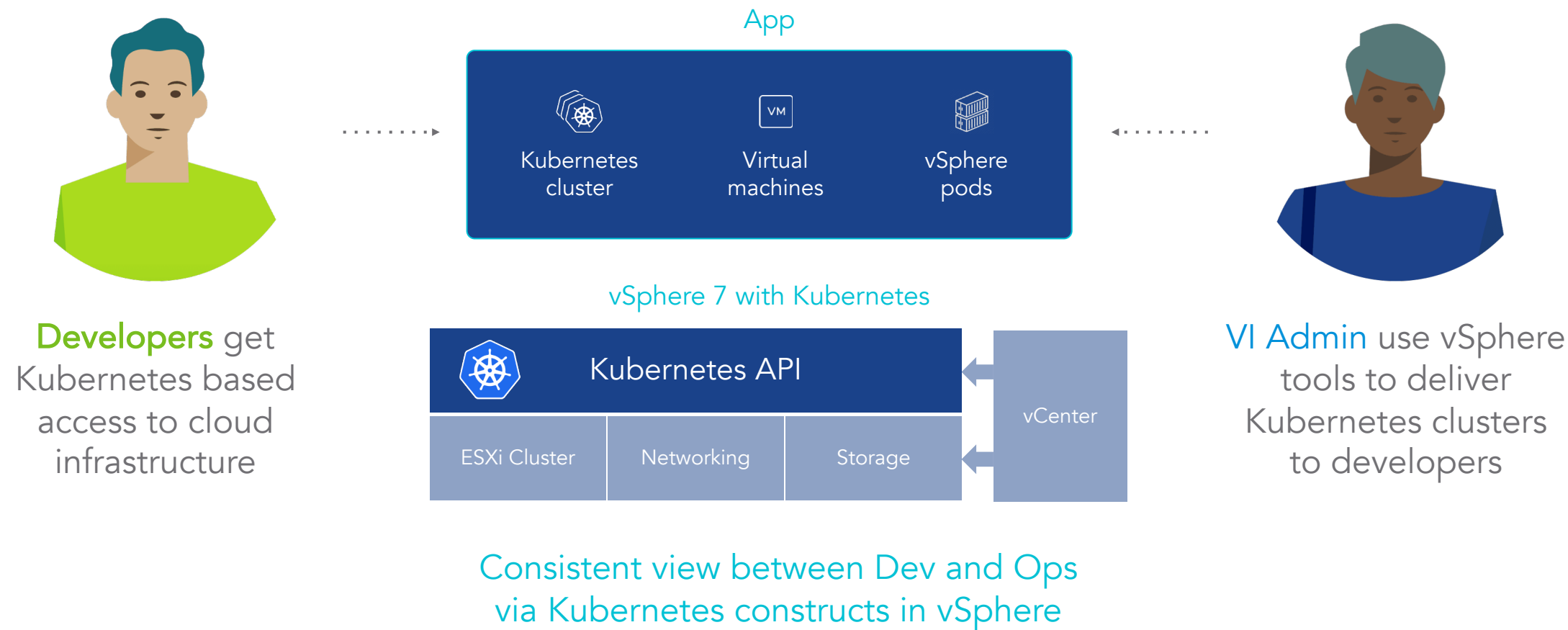
- Remote attestation with vSphere Trust Authority
- Identity federation with ADFS
- Simplified software patching



Application Acceleration

- Cost efficient AI/ML hardware pools
- Performance & resiliency (improved vSphere DRS)
- Predictable quality of service

Developer & IT Operator Productivity



vSphere 7.0 – Feature to Editions mapping - Summary

	vSphere					ROBO Kits			Scale-Out
	Free	ESS	ESS+	STD	ENT+	STD	ADV	ENT	Scale-Out
Hypervisor	✓	✓	✓	✓	✓	✓	✓	✓	✓
vMotion			✓	✓	✓	✓	✓	✓	✓
High Availability			✓	✓	✓	✓	✓	✓	
Data Protection & Replication			✓	✓	✓	✓	✓	✓	
vShield Endpoint			✓	✓	✓	✓	✓	✓	
Fault Tolerance				2-vCPU	8-vCPU	2-vCPU	4-vCPU	4-vCPU	
Storage vMotion				✓	✓	✓	✓	✓	✓
DRS and DPM					✓				
Storage APIs				✓	✓				✓
Persistent Memory					✓				
Distributed Switch					✓		✓	✓	✓
Storage DRS (Profile-Driven Storage)					✓				
I/O Controls & SR-IOV					✓				✓
Host Profiles & Auto Deploy					✓		✓	✓	✓
VM Encryption					✓			✓	
Federated Identity				✓	✓	✓	✓	✓	✓
Trust Authority					✓				
Image Management and Firmware		✓	✓	✓	✓	✓	✓	✓	✓
vCenter Server Profile					✓				
vCenter Server update planner					✓				

vSphere End of General Support

vSphere 6.0

March 12, 2020, with technical guidance available until 2022

vSphere 6.5

November 15, 2021, with technical guidance until 2023

vSphere 6.7

Extended to October 15, 2022, with technical guidance until 2023

Upgrading to vSphere 7 is smooth. Please visit the vSphere Upgrade Center!
<https://www.vmware.com/products/vsphere/upgrade-center.html>

core.vmware.com

vSphere, vSAN, and VCF Technical Marketing's New Home

VMware | The Core Tech Zone

https://core.vmware.com

vmware® THE CORE TECH ZONE

Cloud Foundation vSAN vSphere Products Solutions Log in

Advanced Search

VMware Core Tech Zone

The Core is the repository for technical information, reference architectures, and guidance on Cloud Foundation and everything that forms the core of the software-defined data center.

Messages Recently Viewed

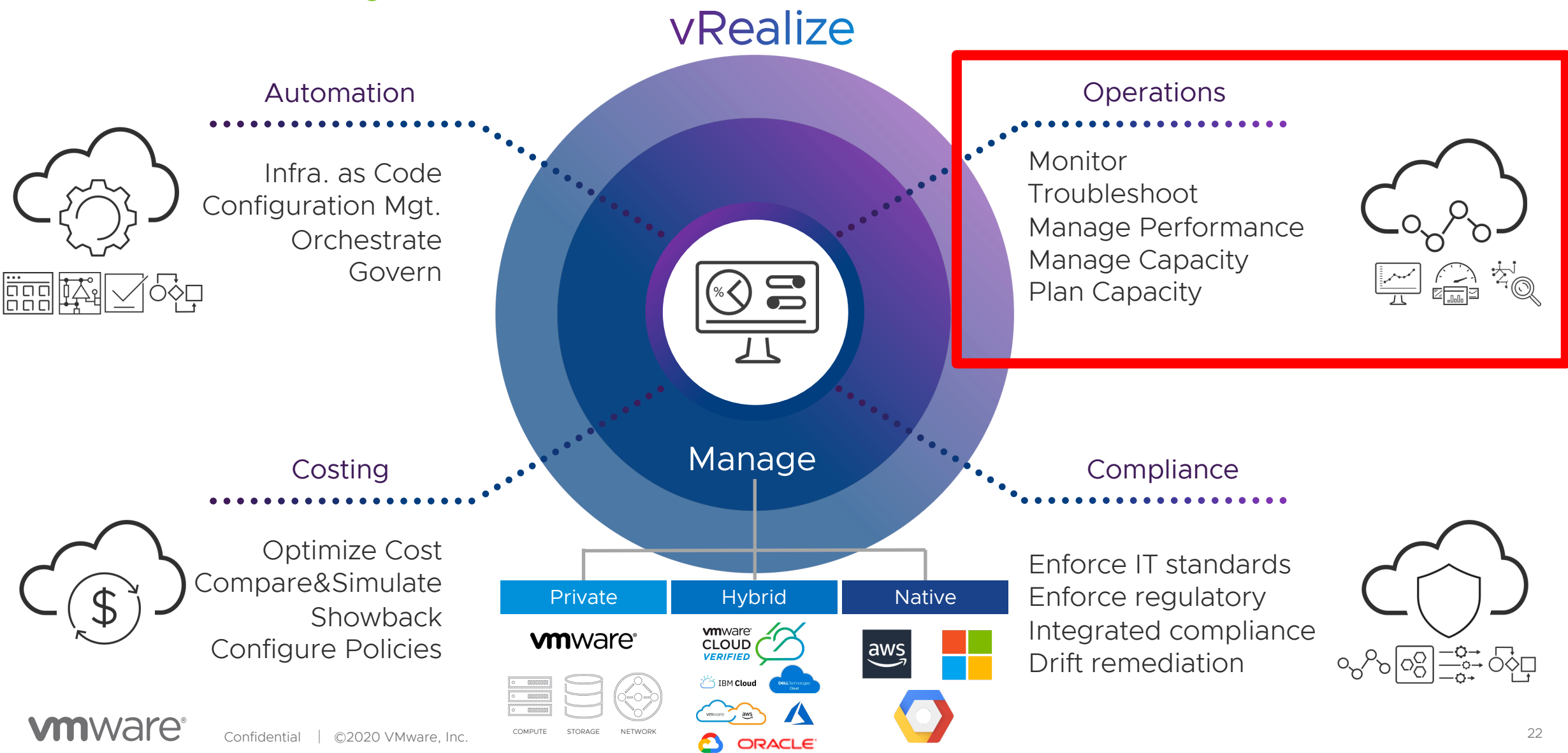
- AI & ML
- Application Acceleration
- BC & DR
- Compliance
- Lifecycle Management
- Modern Applications
- Security
- Storage
- VMware vSphere with Tanzu

vRealize Operations

Quick Overview

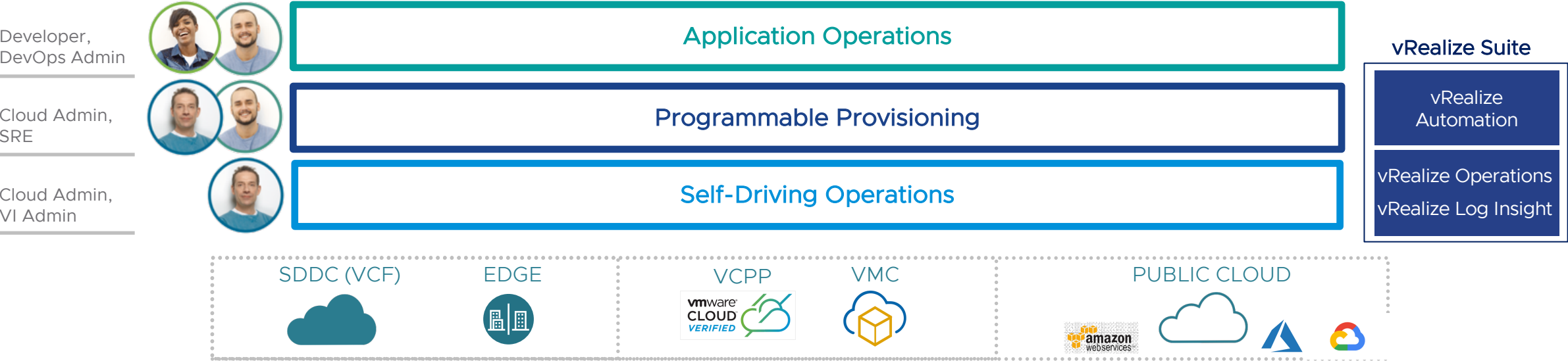
Delivering Consistent Operations across Clouds

VMware Cloud Management



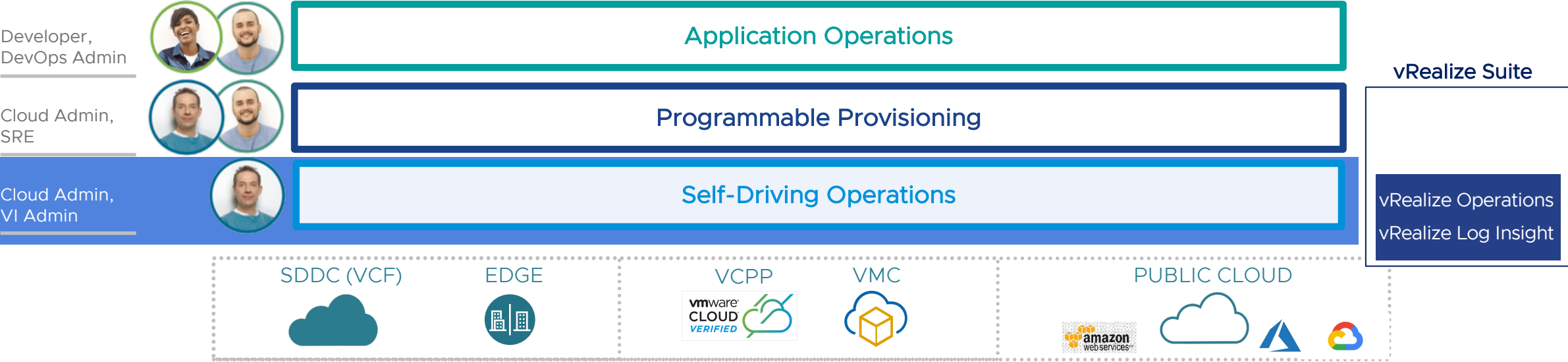
Cloud Management Platform

Programmable Provisioning and Self-Driving Operations



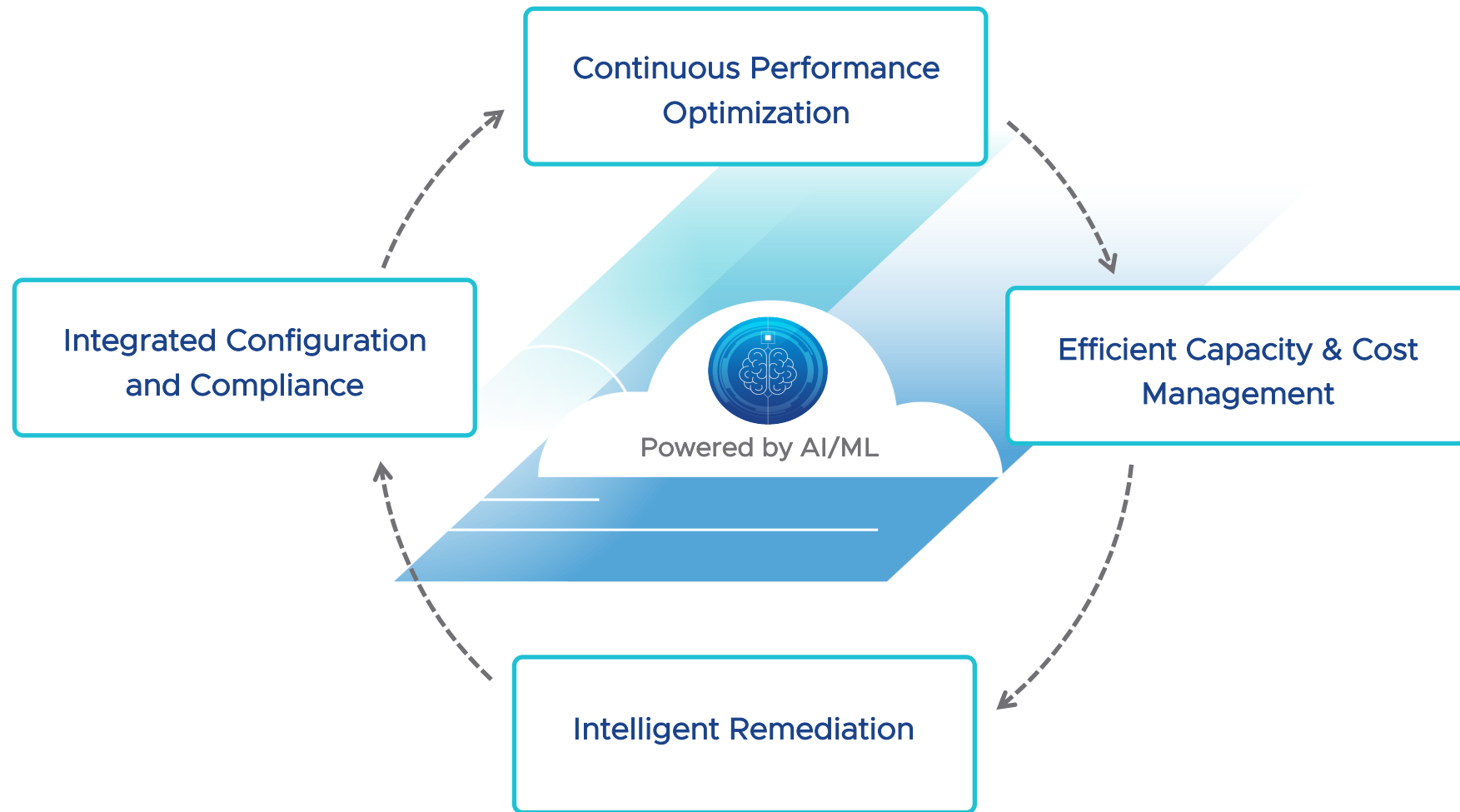
Self-Driving Operations

vRealize Operations | vRealize Log Insight



Self-Driving Operations powered by AI/ML

Run production operations hands-off and hassle-free – from apps to infra, across hybrid and multiclouds



Getting Started – Persona-based Dashboards


Ease of Use and Quick Time to Value


- **Simplified Usability** – New HTML5 UI has easier and consistent experience
- **Quicker Navigation** – New **“Getting Started”** dashboard points you to the right place
- **Accelerated Remediation** – Persona-based dashboards provide the answers in one place
 - ❖ Operations, Troubleshooting, Cloud Capacity, Compliance and Config
- **Quicker TTV** – OOTB integrations
 - ❖ Storage (vSAN), Logs (vRLI), Business (vRBC) and Automation (vRA)


Getting Started Actions ▾ All Dashboards ▾


Welcome to Dashboards!


This getting started page steps you through some useful categories of dashboards and pages to help you start off.

Operations


Capacity and Utilization


Performance Troubleshooting


Workload Balance


Configuration and Compliance


Identify which VMs have the highest storage IOPs and latency.
[DATASTORE USAGE OVERVIEW](#)

Identify which hosts have the highest CPU demand and active and consumed memory.
[HOST USAGE OVERVIEW](#)

Get an overview of my entire environment and understand which VMs in each datacenter may have performance issues.
[OPERATIONS OVERVIEW](#)

Compare the performance of my vSAN and non-vSAN environments and look for opportunities to migrate VMs over to the vSAN datastores.
[OPTIMIZE VSAN DEPLOYMENTS](#)

Get an overview of my entire vSAN environment and understand which vSAN clusters may have performance issues.
[VSAN OPERATIONS OVERVIEW](#)


Automated, Proactive Performance Management

Fully Automated Workload Balancing

- **Ensure performance** across the datacenters with fully automated workload balancing
 - ❖ Across clusters
 - ❖ Across data stores (w/ storage vMotion)
 - ❖ Easily automatable
 - ❖ Schedulable at a convenient maintenance window
- **Ensure DRS Configurations** – View and set DRS settings to drive better balance
- **Avoid contention** – Predictive DRS takes action before the contention occurs
- **Proper Initial Placement** - Utilize Operations analytics to optimize placement of workloads through vRA

▼ Datacenter (3)	
lab-dc	✓
msbu-east	⚠
msbu-west	⚠

Are clusters balanced?



Unbalanced

[REBALANCE](#) [SCHEDULE](#) [SETTINGS](#)

DRS Settings & Current Workload			
SET DRS AUTOMATION			
Name	CPU Workload %		Memory Workload %
east-mgmt	<div><div></div></div>	67%	<div><div></div></div> 91%
east-comp	<div><div></div></div>	25%	<div><div></div></div> 53%

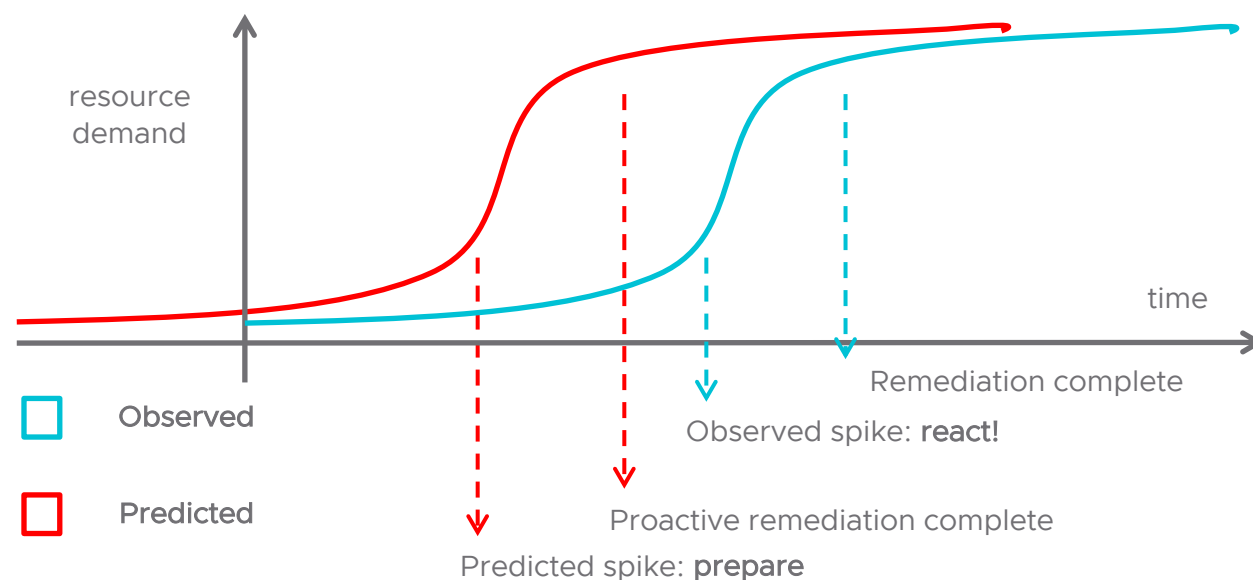
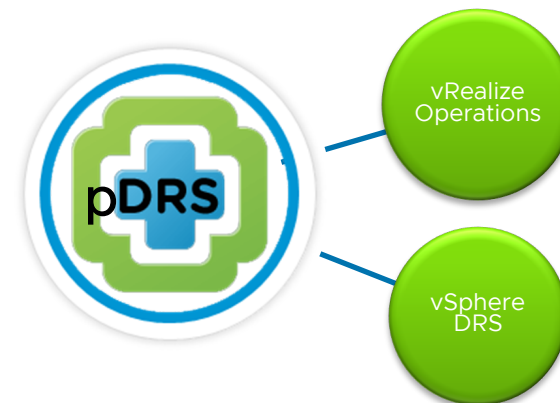
Predictive DRS

Tight integration between DRS and vRealize Operations Manager

Resource utilization trends are observed by vR Ops and sent to DRS

Predicted demand of workloads is incorporated into DRS algorithms

- DRS Moves, Initial Placement and Load Balancing
- Current VM demands are honored before future demands are satisfied



Reclaim and Right-Size

Capacity Reclaimable [Actions](#) [Dashboard List](#)

Select an Environment

Page Size: 50

Name	Object Type
ESO-VC5	vCenter Server
WDC_ESO_VC05_VCOPSQE2	Datacenter
WDC_ESO_VC05_VCOPSQE	Datacenter
WDC_ESO_VC05_Haas	Datacenter
WDC_ESO_VC05_VCOPSQE3	Datacenter
TestCDC	Custom Datacenter

1 - 33 of 33 items

Reclaim Capacity


Reclaimable Capacity

Displays the percentage of consumed resources that you can reclaim from oversized, idle, and powered off objects.

973 vCPUs CPU

3.24 TB Memory

6.74 TB Disk Space Reclaimable



79 % / 1,039 Powered Off
19 % / 256 Oversized
2 % / 7 Idle
0 % / 0 Old Data

Reclaim Disk Space from these VMs

Name	Reclaimable Filesystem	Snapshots
eso-vrb.eng.vmware.com	19.65 GB	173.32 GB
vROps621_Reduced_Metrics_T...	34.78 GB	34.78 GB
ST_Large_1_Slice_10.143.120.1...	32.24 GB	32.24 GB
eso-cafe.eng.vmware.com	1.72 GB	25.06 GB
ST-Portal-new	23.81 GB	23.81 GB
esx60P02-uwSim1-1	3.14 GB	8.71 GB

1 - 50 of 1052 items

About Effective Capacity Reclamation

Reclaim vCPUs from these Large VMs

Name	Configured	Last 30 Days Max	Aggressive
1node_vRNI_platform...	12	28.72 %	9 vCPUs
4-Node-AIM-Large-10...	16	47.75 %	5 vCPUs
4-Node-AIM-Large-10...	16	47.98 %	5 vCPUs
4-Node-AIM-Large-10...	16	46.73 %	6 vCPUs
AZ_1_10.139.24.79	16	37.9 %	4 vCPUs

Reclaim Memory from these Large VMs

Name	Configured	Last 30 Days Max	Aggressive
1node_vRNI_platform...	48 GB	18.59 %	27.82 GB
3node_arkin_platform1...	48 GB	39.26 %	7.44 GB
3node_arkin_platform2...	48 GB	36.59 %	14.1 GB
3node_arkin_platform3...	48 GB	42.06 %	12.51 GB
4-Node-AIM-Large-10.1...	48 GB	29.72 %	7.98 GB

Reclaim from VMs Idle for > 30 Days

Name	vCPUs	Memory	Disk
ST-Portal-new	4	8 GB	200 GB
ST_4nodes_xLarge...	24	128 GB	1,374 GB
ST_4nodes_xLarge...	24	128 GB	1,374 GB
li-eso-gerrit	16	32 GB	500 GB
li-wdc-eso-gerrit	16	32 GB	500 GB

Action Button

Take Immediate Action to Reclaim Resources

- Delete Unused Snapshots for VM
- Move VM
- Power Off VM
- Set CPU Count and Memory for VM
- Set CPU Count for VM
- Set CPU Resources for VM
- Set Memory Resources for VM
- Set Memory for VM
- Shut Down Guest OS for VM

Procurement Planning

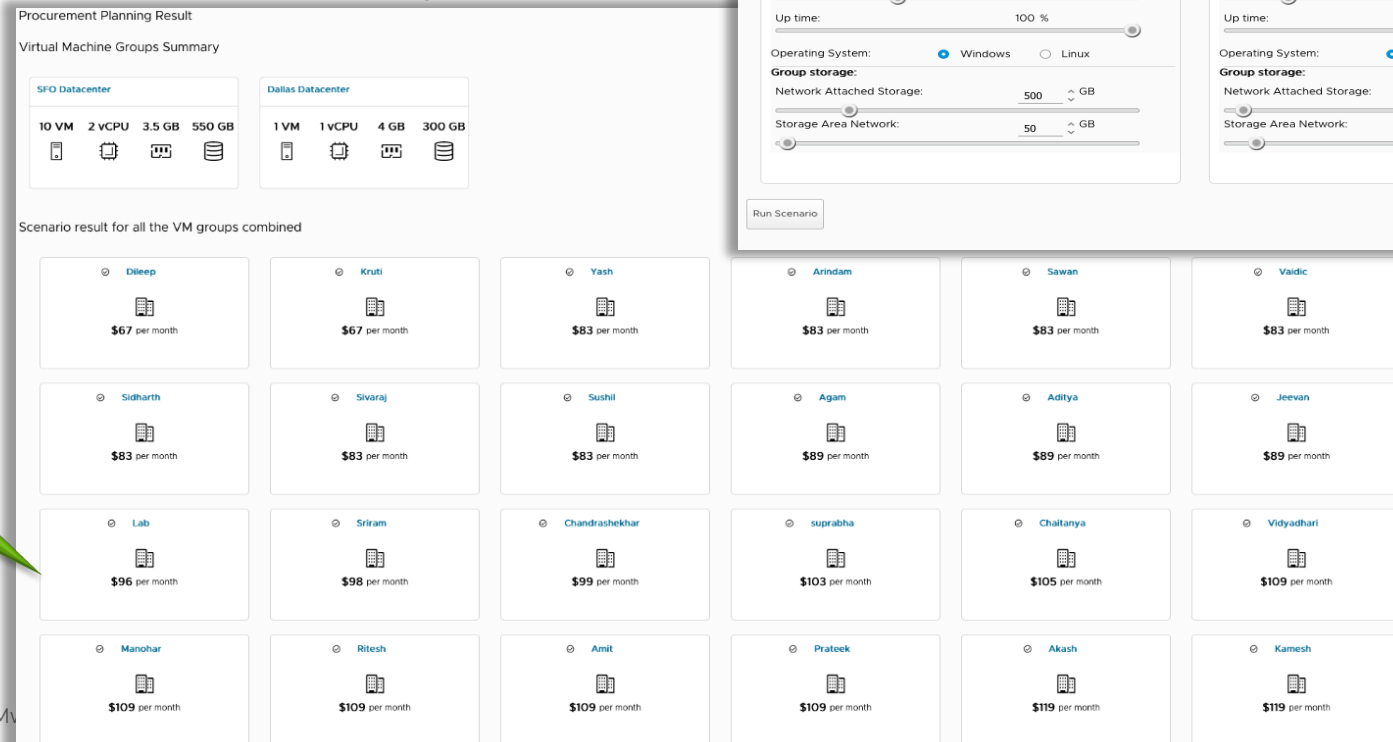
Simulate specific VM configuration and run a scenario to view capacity and plan procurement

Compare single or multiple datacenters

Configurable resources from CPU to Memory to Storage

Scenario breakdown by VM. What DC's will they fit in, and what's the cost?

Scenario definitions



Horizon Universal

Quick Overview

VMware Empowers the Digital Workspace

CONSUMER
SIMPLE

You can't transform
business without a
great user
experience



ENTERPRISE
SECURE

You don't need to
compromise
security to get
there



Workspace ONE UEM



Unified Endpoint
Management

Workspace ONE Access



App Access
Control and
Security

Horizon



Desktop & App
Virtualization

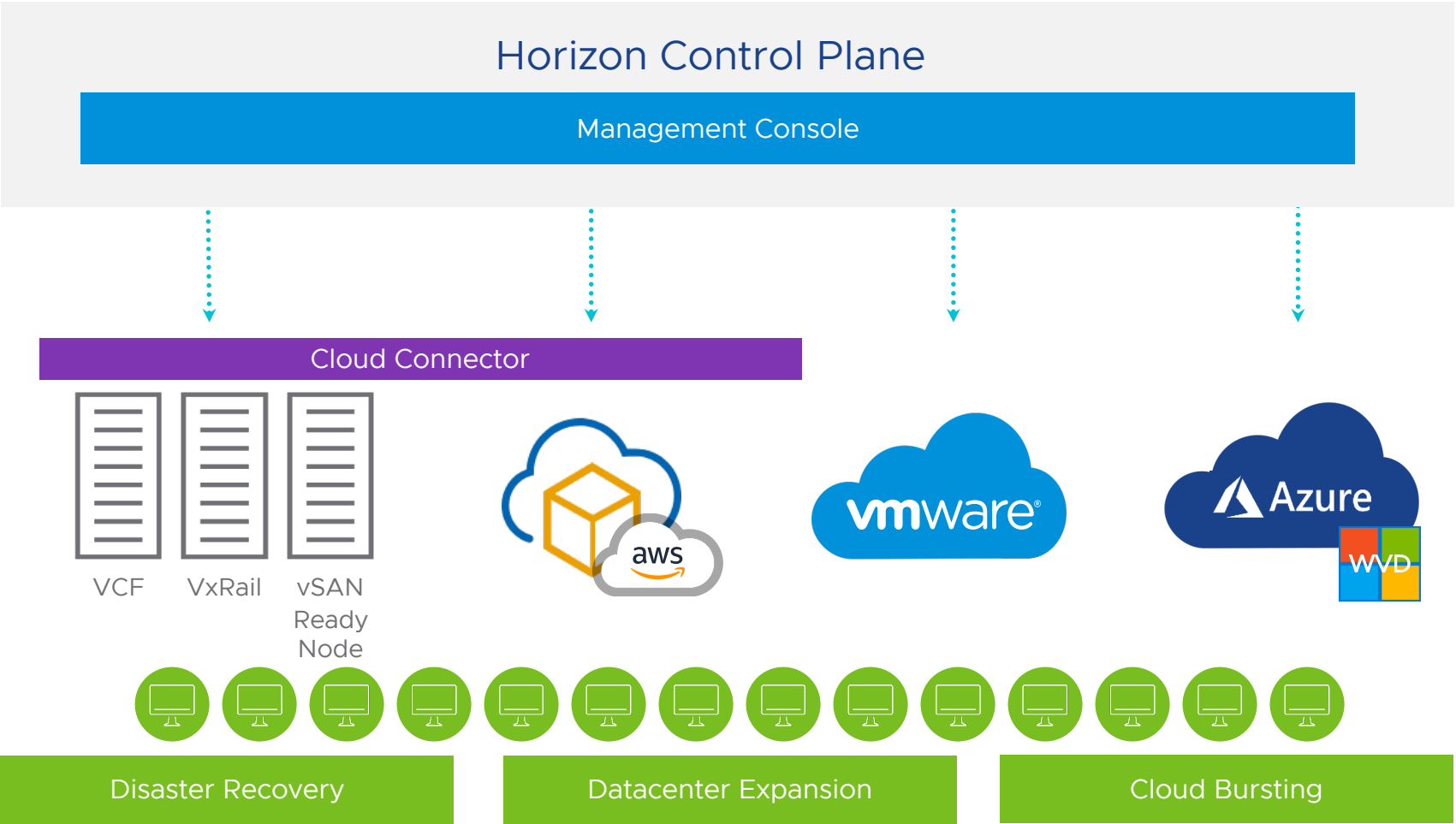
Multi-Cloud Virtual Desktop and App Support

Automated brokering to multi-site environments enables complete hybridity

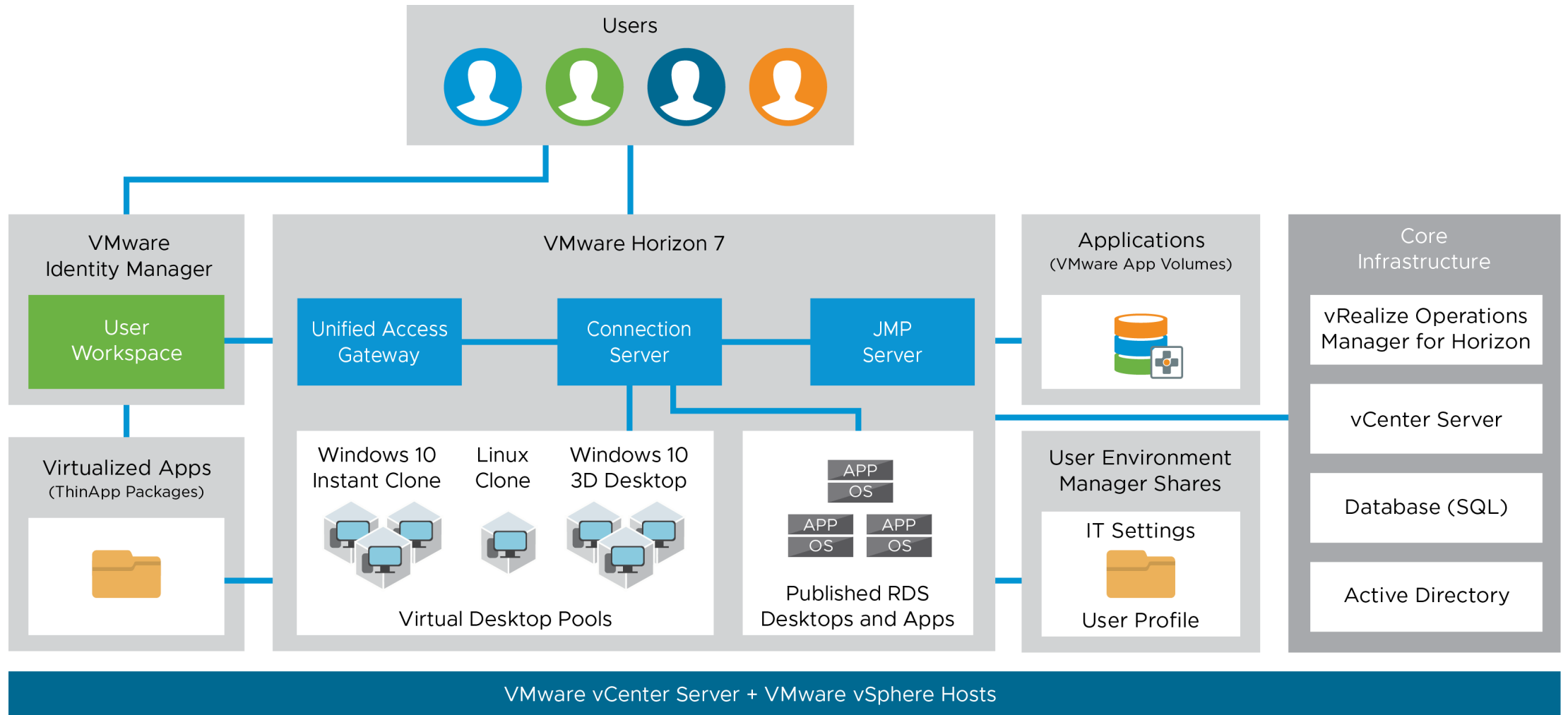
Optimize cost of delivering desktops and apps according to business needs

Login based on proximity improves user performance

Full Multi-Cloud support with Horizon Universal License



Architettura funzionale completa Horizon 7



The Horizon Difference: Every Kind of Desktop



Persistent Desktop

Custom experience for knowledge workers

- Get the same desktop every time you login
- Customize to meet your unique needs
- Install specialized applications



Non-persistent Desktop

Infrastructure cost savings

- Re-usable storage infrastructure
- Most cost effective implementation for task workers



Hosted Desktop

Workspace can be accessed from anywhere

- Reduce costs with session-based desktop
- Use less infrastructure and reduce management overhead



Just-in-time Desktop

On-demand creation of live virtual desktops

- Fully personalized desktops and apps
- Scalable to thousands of desktops
- Optimized infrastructure usage

Create Stateless Desktops in Seconds



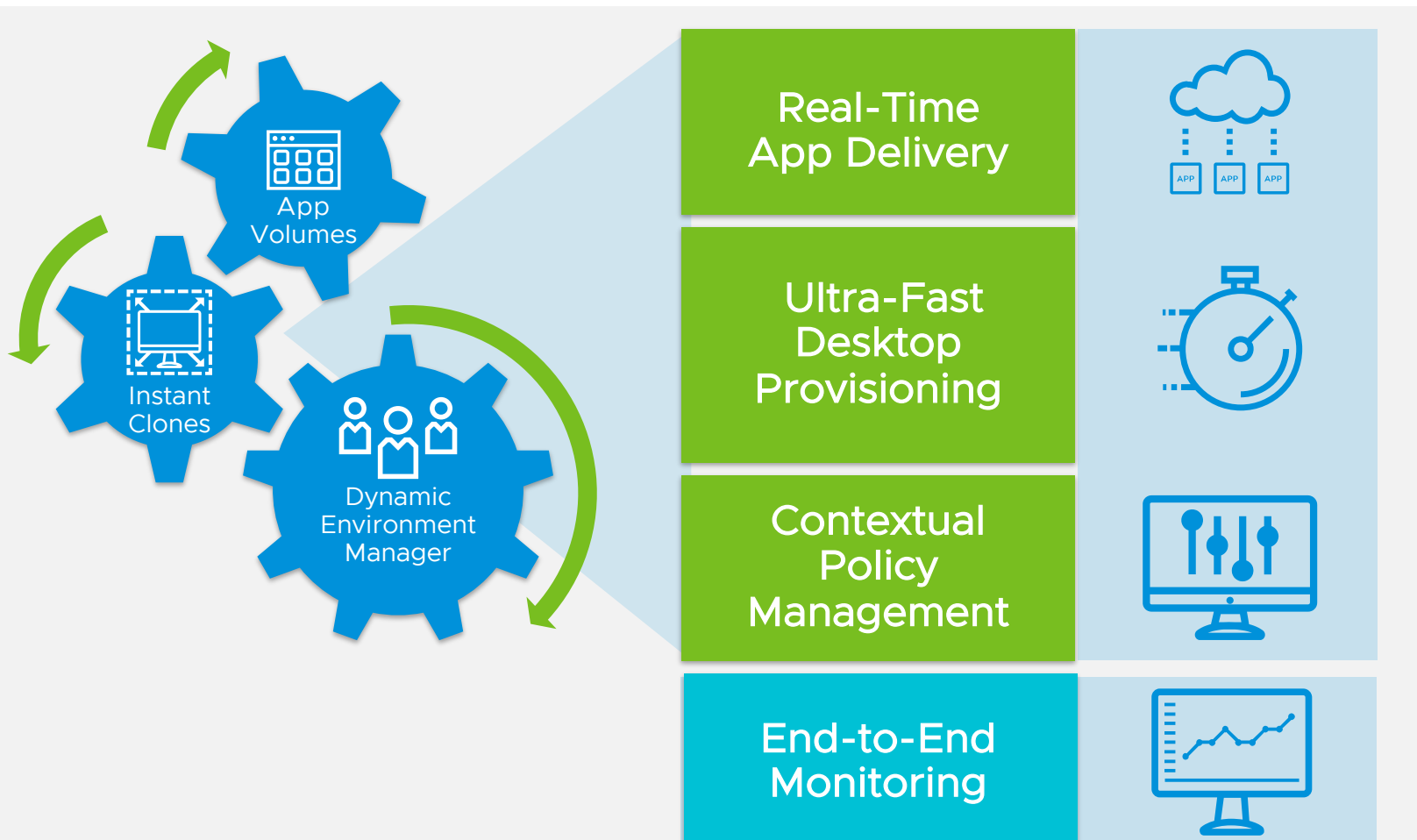
Great for IT

- Update and deliver apps in seconds
- Secure data in datacenter
- Enjoy the economics of non-persistent virtual desktops

Great for End Users

- Customizable desktops and apps
- Consistent user experience across sessions

vmware JMP Technologies Reduces Cost and Complexity



Just-in-Time Management Platform (JMP), is the next-generation **desktop** and **application delivery platform**. It includes **Instant Clone** Technology for rapid desktop provisioning, **App Volumes** for application delivery, and **User Environment Manager** technology to manage and persist user settings.

End-to-End visibility (health, performance and efficiency) from the data center through to devices.

Enables desktop administrators to proactively optimize end-user experience, avert incidents and eliminate bottlenecks

TechZone - EUC Resources Portal

[Start ▾](#)[Workspace ONE](#)[Horizon](#)[Tools](#)[Blog](#)

Unleash Your IT Superpowers

Go from zero to hero with the latest technical resources on the VMware Digital Workspace Tech Zone

Content Spotlight



November 06, 2018

VMware Workspace ONE Cloud-Based Reference Architecture

[Read More](#)

Latest Content

[Subscribe to feed](#)



March 20, 2019

Configuring Edge Services in VMware Unified Access Gateway: VMware Workspace ONE Operational Tutorial

[Read More](#)



Welcome to Tech Zone

Please let us guide your journey with this instructional page.

[Get Started](#)



Tech Zone Activity Paths

<https://techzone.vmware.com>



Confidential | ©2020 VMware, Inc.

Hands-on Labs

- Full Catalog
<http://labs.hol.vmware.com/HOL/catalogs/catalog/all>
- vSphere Introduction
<http://labs.hol.vmware.com/HOL/catalogs/lab/5858>
- vSphere BitFusion
<http://labs.hol.vmware.com/HOL/catalogs/lab/8742>
- Horizon Apps & Desktop Virtualization
<http://labs.hol.vmware.com/HOL/catalogs/lab/8129>





Thank You