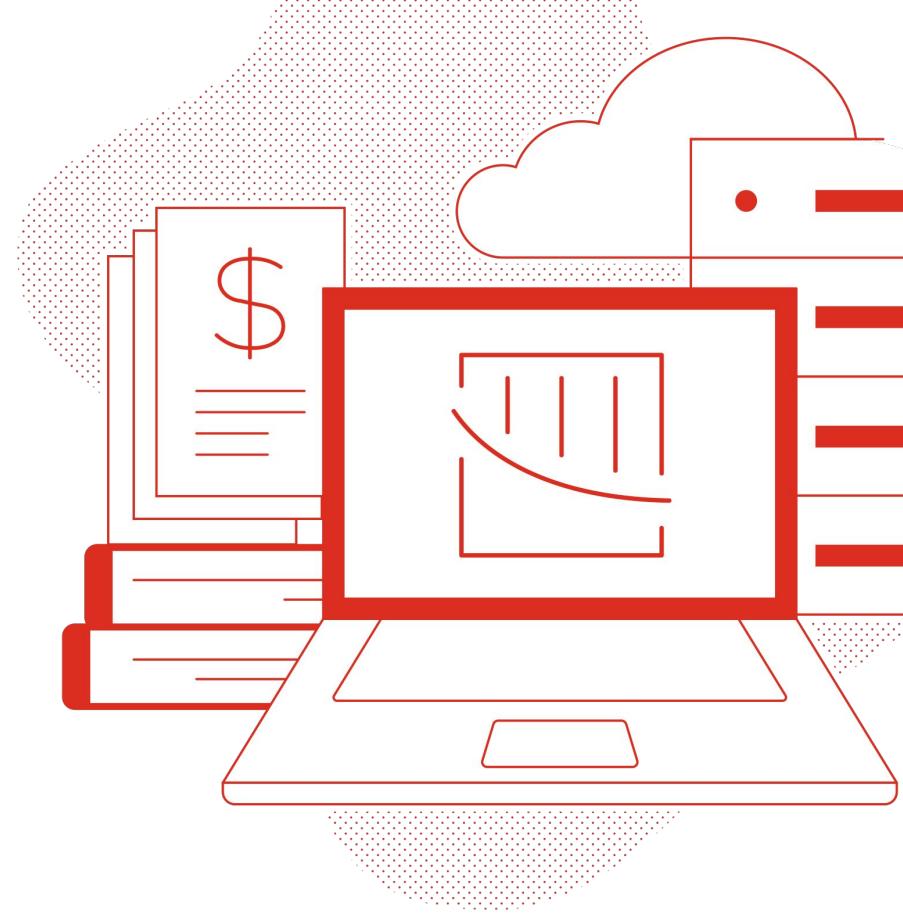


# The OCP-V Opportunity

Using OCP-V in EMEA to expand OpenShift

Why are you here today?  
Server Virtualization industry is  
changing dramatically

Consider your options.



# What to Know



FEATURE

## Broadcom's VMware acquisition explained: The impact on your IT strategy

In this guide, we look at Broadcom's acquisition of VMware and how it influences your IT desktop, server, cloud and supplier management strategies



By Cliff Saran, Managing Editor

Published: 22 Jan 2024

In November 2023, [Broadcom completed its \\$69bn acquisition of VMware](#), in a move to build out what the company sees as a multicloud strategy.

VMware has had a number of owners. It was previously owned by Dell, which took over the virtualisation company following its \$67bn purchase of EMC in 2016. EMC had purchased VMware in 2004. In 2021, Dell spun out its share of VMware, paving the way to the Broadcom acquisition.

[When it began trading in 1998](#), VMware launched into a world where datacentres were being refreshed with x86 servers. Proprietary Unix hardware was being replaced by x86-powered Linux servers from Red Hat and SUSE and Microsoft was pushing hard in the datacentre space with Windows NT Server, designed to run server software like its Exchange email server and SQL Server database.

VMware enabled x86 servers to run multiple [virtual machines \(VMs\)](#) on each physical server and

VMware's software-defined datacentre (SDDC) architecture allows IT managers to manage multiple cloud environments from a single interface.

### Latest News

[Microsoft: Nation-state hackers are exploiting ChatGPT](#)

[Dutch Supreme Court approves use of EncroChat evidence](#)

[Nokia, A1, Microsoft claim first for enterprise 5G edge cloud network slicing](#)



# VMware/Broadcom Announcement

**\$69 Billion**

Broadcom paying for VMware

**500,000+**

VMware customers

**\$13.5 Billion**

VMware Revenue

**38k**

VMware Employees

**\$350k**

VMware Revenue per employee

# What to Know



Many VMware customers are looking for ways to reduce (or totally remove) their dependency on VMware vSphere as a result of Broadcom's intent to acquire VMware.



Wait a second, isn't this a change from before?

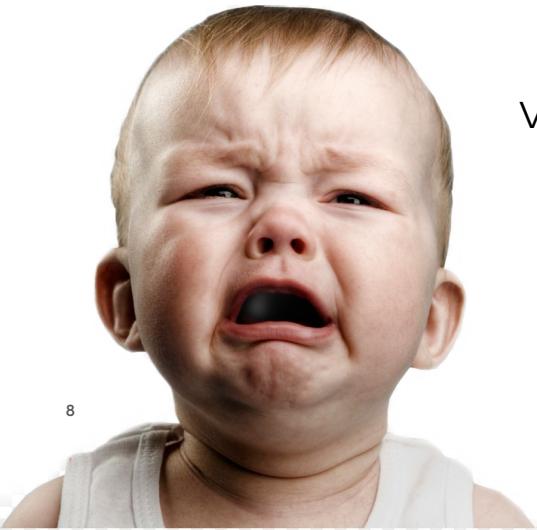
Yes, yes it is. Let me explain why.

## How are we positioning OpenShift Virtualization?

- Included feature of OpenShift, brings modern virtualization infrastructure to OpenShift to support existing virtual machines.
- Organizations can utilize a single unified application platform for both virtual workloads and containerized workloads as they begin their modernization journey
- OpenShift Virtualization is a highly reliable, stable, and performant KVM hypervisor with API and automation capabilities

# Customers have a history with Broadcom ...

The history is repeating itself even before acquisition closing



VMware Customers are coming to Red Hat for an option

“My subscription cost is going through the roof”



“Get me off of my current Virtualization platform now”

Red Hat can help



We can help VMware customers modernize their application portfolio to reduce or remove dependency on vSphere

# Virtualization Modernization



**Sales Play Overview**

2

Use Cases

3

Business Value

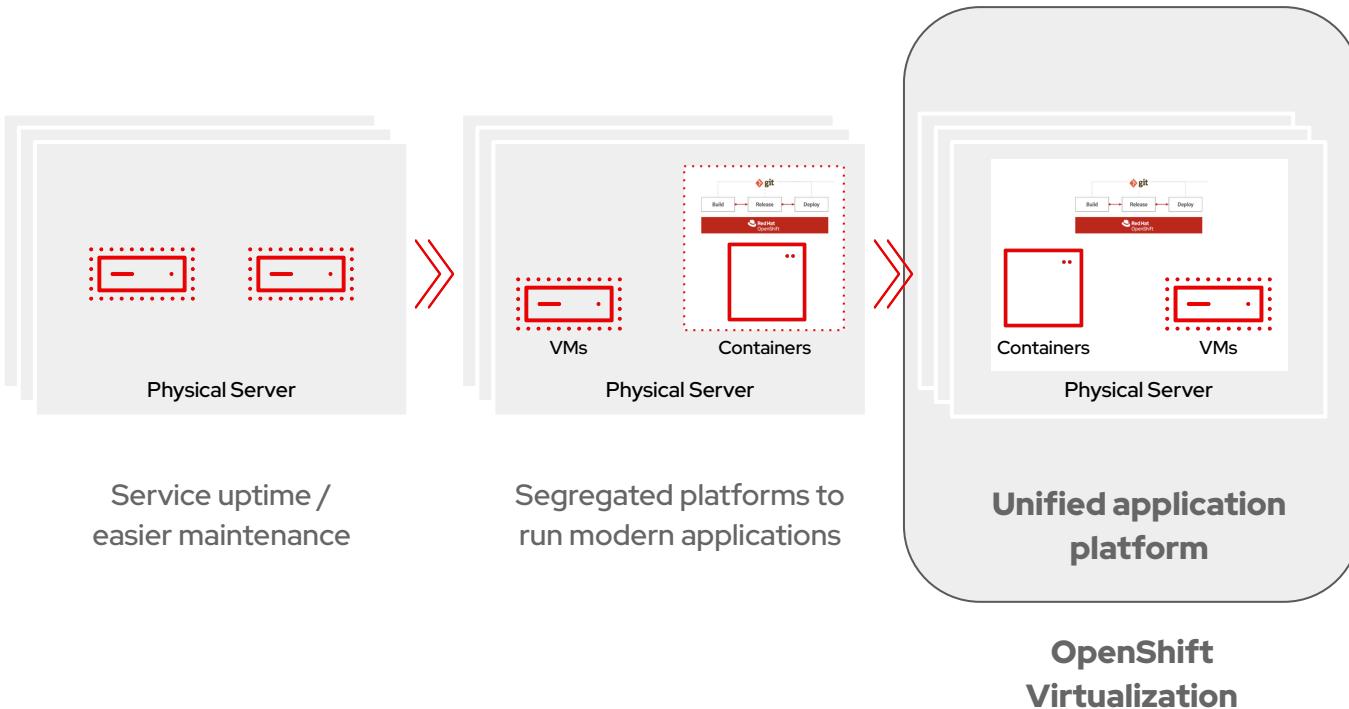
4

Customer Wins

5

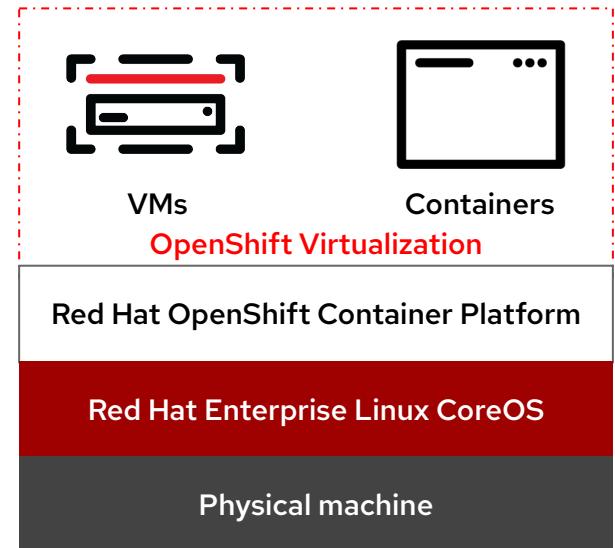
Call to Action

# Bring cloud-native functionality to virtual machines with Red Hat innovation



# What is OpenShift Virtualization?

- Unified platform for running VMs and Containers
  - Included feature of the OpenShift application platform
- Performance, stability, scalability, and reliability of KVM
  - mature Linux virtualization
  - RHEL guest entitlements included
  - Supports Microsoft Windows guests
    - Microsoft Server Virtualization Validation Program (SVVP)
- Leverage existing VM roles and responsibilities, while modernizing skill sets over time
  - Traditional administration, familiar ecosystem partners
- Migration Tooling
  - Migration Toolkit for Virtualization (MTV)
  - Warm migration of VMs at scale



# Modernize at your own pace

## Legacy Virtualization

Apps in VMs

Slow evolution  


Increasing costs  


Developer productivity  


## Infrastructure Modernization

Apps in VMs



Cloud Elasticity + Scalability



Reduce Operating Cost



Increase IT efficiency +  
reliability



Speed of Infrastructure Deployment  
Speed of Application Development

# Modernize at your own pace

## Legacy Virtualization

Apps in VMs

Slow evolution  
⌚

Increasing costs  
💲



Developer productivity

MTV

## Infrastructure Modernization

Apps in VMs

Cloud Elasticity + Scalability  
☁️

Reduce Operating Cost  
₩



Increase IT efficiency +  
reliability

Cloud native

## DevOps and Infrastructure Modernization

Apps in VMs or Containers



Innovate at speed



Higher Annual Revenue  
₪

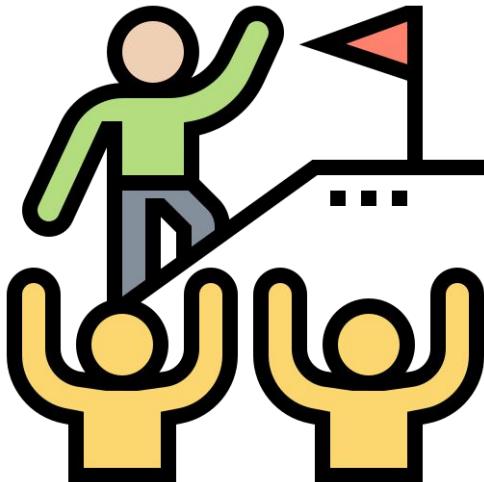


Increased Developer Output

Direct path to cloud native

Speed of Infrastructure Deployment  
Speed of Application Development

# Competitive Edge



VMWare is reaching a tipping point to where even analysts are questioning the complexity of their story.

"Tanzu is really confusing in its own right, as to who this is targeting, and what is the problem they're trying to solve," Crawford said. "It seems like a collection of different services that they're trying to pull together, but they've had a lot of time to do that and it's still confusing."

"If I were a betting man in Vegas, Tanzu would be on the chopping block after the acquisition closes with Broadcom in October," said Rob Strehay, lead analyst at TheCube

# Competitive Edge



28 Million users  
1500+ Games  
100+ Countries  
30+ Data Centers

Presented at  
OpenShift Commons

# KubeVirt Maturity



# KubeVirt

v1.0.0

50% increase in Contributing companies in CY23

**190**  
Contributing  
Companies

**428**  
Contributors

**60**  
Releases

**Top 10**  
CNCF active  
Project

**Incubating**  
CNCF Project  
status

# Competitive Edge

CNCF Ecosystem Projects

157 projects with over 178,000 contributors representing 189 countries



# Obstacles



# Competitive Summary Talk Track

## What you should say to **any customer** concerned about their dependency on VMware.

"Yes, we can definitely help you begin your movement away from VMware. Red Hat is leading the charge helping 1000s of organizations globally ([with over 200 as public references](#)) accelerate their application modernization initiatives with Red Hat OpenShift, [industry leading](#) Hybrid Cloud Application Platform powered by containers, virtualization, Kubernetes, and DevSecOps capabilities, along with the broader Red Hat portfolio of application and data services.

Along with our partners, we have proven and have mature capabilities to help modernize virtualized workloads running on VMware vSphere to containers, serverless, or even VMs running on Red Hat Infrastructure. Our customers such as [Sahibinden](#) have been leveraging the VM capabilities in OpenShift for use cases where containers and/or serverless may not be a great fit. Some examples include traditional relational databases such as Microsoft SQL Server, monolithic home grown applications, legacy [Microsoft .NET](#) based apps, and containerized versions of ISV apps that are not yet available (e.g. vendor virtual appliances or management applications).

Finally, we have been helping customers migrate from competing Platform-as-a-Service solutions such as Pivotal Cloud Foundry (part of VMware portfolio now) to Red Hat OpenShift as these customers wanted to build their future on industry leading app dev platform powered by containers, Kubernetes, and DevSecOps."

# Virtualization Modernization

- 
- 1 Sales Play Overview
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  - 5 Call to Action

# Use Case and Product Journey

					
<b>Financial Services</b>	<b>E-commerce</b>	<b>Telco</b>	<b>Manufacturing / Energy</b>	<b>Government / Military</b>	<b>Media / Technology</b>
Adopt internal private cloud	Modernize 3-tier applications	Rollout new back office applications	Manufacturing floor automation	Adopt internal private cloud	Technical Workstations
Host multiple OpenShift Clusters	Adopt Kubernetes to adopt rapid lifecycle for .Net, Java, Linux applications	VNF & CNF consolidation at the edge	Data visualization	Host multiple OpenShift Clusters	Adopt internal private cloud
Persistent desktops				Tactical Edge with mix of Container / VM applications	

# Success with OpenShift Virtualization

Workload	Details	Target Customer
Technical workstations	Have an easy and consistent way to deploy and manage Professional Desktops at scale.	Technical workstations, 3D rendering and remote visualization
Java Modernization, Windows and Linux apps	Customer is modernizing 3-tier legacy applications External Collateral:	Initiative to modernize 3-tier applications e.g. .Net or Java Application
AI/ML data science platform with CI/CD pipelines	Leveraging GPU compute acceleration, Adopt automated pipelines with GitOps External Collateral: Lockheed Summit Session 2021	Adopting GitOps and DevOps
Multi-tenant OpenShift Clusters	Running multiple fully isolated OpenShift clusters at different OCP versions. Fault zone reduction of a very large environment.	Looking for multi-tenancy
Cloud native architecture, but some services still run in VMs	Wanted to deploy a new app, but specific functionality (database, load balancer, management app) is not yet containerized. Running the specific services as VMs allowed for faster time to market.	Greenfield applications with mixed VMs and Container components
IaaS/PaaS Implementation	Moving to OpenShift to create a private cloud hosting thousands of VMs and Containers	Need for a private cloud with a mix of containers and VMs

# Virtualization Key Capability Improvements\*

CONFIDENTIAL NDA required

Category	RHV	OCP Virt EOY 2022	Actual OCP Virt EOY 2023	Planned OCP Virt EOY 2024
Workload scalability and limits	90	80	90	90
<b>Density</b>	80	50	60	80
Single Cluster Virtualization infrastructure management	60	80	75	95
Mixed VM and Container environment	50	100	100	100
Multi-tenant capabilities for resources assigned to tenant	10	90	95	90
Scale Out Multi-tenant clusters	20	50	80	100
<b>Infrastructure HA</b>	90	70	90	100
<b>Hotplug</b>	90	20	70	90
<b>Backup integrations</b>	50	40	60	90
<b>Disaster Recovery integrations</b>	50	20	50	80
Software Defined Storage	0	90	100	100
Storage integrations / acceleration	20	70	80	90
Software defined networking	60	70	75	90
Public Cloud integrations	0	50	60	65
Observability	70	70	90	95

# Red Hat Strategy Alignment

## FY24\_Product Strategy\_OpenShift

**OpenShift Virtualization** - With the continued evolution of our Kubernetes native virtualization capabilities, **we now have a strong value position for customers to manage VM workloads on a cloud native platform in OpenShift**. We've continued to see interest as customers seek potential alternatives to vSphere, in light of the pending Broadcom acquisition. We are planning to test OpenShift Virtualization with vSphere Admins through our planned roadshow in 2H CY23 & CY24 and continuing to enhance our virtualization capabilities, as well as integrations with partners.

# OpenShift Virtualization Coming to Red Hat OpenShift Service on AWS (ROSA) and AWS Bare Metal Offering in 4.14

New!

- Faster adoption of OpenShift and public clouds
  - Rehost and then refactor
  - Data Center Exit
  - Windows modernization
- Consistent VM deployment and management, on-prem and in the cloud
  - Consistent management
  - VM portability between cloud providers & on-prem
  - Disaster Recovery and bursting



# New Exciting Partnership with Dell!

You are logged in as a temporary administrative user. Update the cluster OAuth configuration to allow others to log in.

**Dell APEX Cloud Platform**

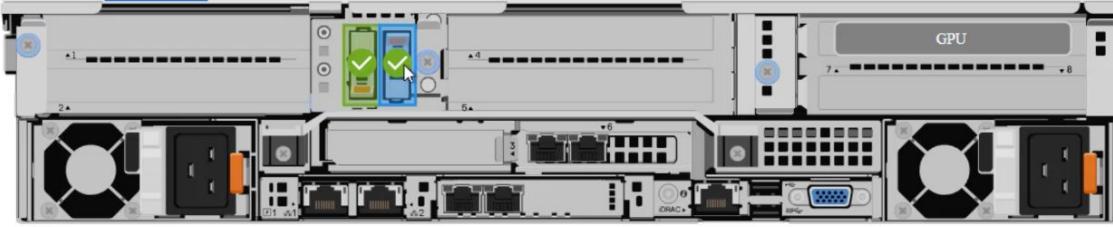
Overview Inventory Updates Security Settings Support

u23-appl-cl-raven.ravencse.local > 35RLCX3

**Physical View**

Actions ▾

Front View Back View



**BOSS Information**

Overview Alerts

**Boss Controller**

Device model	Status	Firmware version
BOSS-N1 Monolithic	HEALTHY	2.1.13.2021

**Active Boot Device**

Slot	Device model	Protocol	Capacity
0	Dell NVMe PE8010 R1 M.2 960GB	PCIe	894.25GB

Overview Boot Devices Alerts

Server health	Warning
System LED	Healthy
Power state	On
Service tag	35RLCX3
Role node	Control plane, Master, Worker
Manufacturer	Dell Inc.
Server slot	1
Server model	APEX MC-760
Management IP address	172.18.30.52
iDRAC IP address	192.168.10.19
Location	
Rack name	U23
Activate Windows	
Go to Settings to activate Windows.	
Rack position	2
Firmware versions	

# OpenShift Virtualization

## Near Term

(Q2 2024)

- | Core Platform   |
|---|
| <ul style="list-style-type: none"><li>Backup and Restore with OADP<ul style="list-style-type: none"><li>Datamover, DM for block volumes, non-admin backup (Block Mode)</li></ul></li><li>OVN Kubernetes secondary networks (GA)<ul style="list-style-type: none"><li>Microsegmentation (IP block policies)</li></ul></li><li>Cloud-like VM provisioning through Instance Types (GA)</li></ul> |

- | Scale/HA   |
|--|
| <ul style="list-style-type: none"><li>Tech Preview: Memory Overcommit</li><li>Tech Preview: CPU and Memory Hotplug</li><li>Hotplug Bridge and SR-IOV network interfaces (GA)</li></ul> |

- | Ecosystem   |
|---|
| <ul style="list-style-type: none"><li>Data protection from additional storage vendors</li></ul> |

## Mid Term

(Mid 2024)

- | Core Platform  |
|--|
| <ul style="list-style-type: none"><li>OVN Kubernetes secondary networks - IPAM</li><li>DPDK support (GA)</li><li>Host IP pooling</li><li>Windows VM's RDP to external clients</li><li>Configuration and usage of secondary (Multus) networks</li></ul> |

- | Scale/HA   |
|--|
| <ul style="list-style-type: none"><li>CPU and Memory Hotplug</li></ul> |

- | Ecosystem  |
|--|
| <ul style="list-style-type: none"><li>Oracle Cloud Infrastructure</li><li>Additional Legacy Backup Vendors</li></ul> |

## Long Term

H2CY2024+

- | Core Platform   |
|---|
| <ul style="list-style-type: none"><li>Realtime Support (GA)</li><li>OVN Kubernetes: Port mirroring, QinQ, Services and ingress</li><li>VM Disaster recovery with Regional-DR with additional storage partners</li></ul> |

- | Scale/HA   |
|--|
| <ul style="list-style-type: none"><li>Memory Overcommit (GA)</li><li>Workload aware-scheduler</li><li>Sustainability with Project Kepler</li></ul> |

- | Ecosystem   |
|---|
| <ul style="list-style-type: none"><li>Arm support</li><li>ROSA/AWS Secondary Networks, ODF support</li><li>Azure Bare Metal</li></ul> |



# A Growing Infrastructure Ecosystem



# Target Personas



## **Virtualization Admins and Infrastructure Architects (Champions, secondary)**

### Value Drivers

**Diversify Virtualization platform:** Reduce dependency on a single vendor. Mitigate risks such as falling behind on technical capabilities, limiting portability options, and offering only one cost profile to calculate project ROI against.

**A simplified modernization strategy:** Jumpstart the modernization of VM workloads while simplifying the datacenter.

**Simplification:** Power business transformation and unite your teams on a cost-effective, single platform to quickly deliver the exceptional experiences your customers expect.

**Skill Development:** Keep your IT staff up to date on technologies being rapidly adopted within the organization and in the industry

### Common problems to solve

<sup>30</sup> Manage & monitor systems to keep them running while still ensuring infrastructure technology is up to date.  
Ensure infrastructure alternative has critical feature parity



## **CIO and VP/Director of IT (Decision makers, primary)**

### Value Drivers

**Optimize Cost:** Optimize IT infrastructure vendor spend to reflect current needs for innovation. Reconsider spending priorities among vendors.

**Speed of Innovation:** Address competitive pressures to innovate and improve application development productivity and speed time to market for production systems that operate reliably and securely at scale.

**Speed of Delivery:** Slow application deployment not only delays business value, but also creates frustration among teams. Adopting common tools and processes break down organizational silos.

### Common problems to solve

Organization and efficiency issues resulting from siloes of infrastructure, tools and operations.

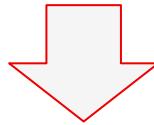
Talent retention for current technology coupled with ongoing skill development to adopt new technologies at a pace of change that avoids destabilization

# Virtualization Modernization

- 
- 1 Sales Play Overview
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  - 5 Call to Action

# NextGen Virtualization Leveraging OpenShift

## COST EFFECTIVENESS

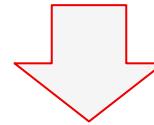


Lower TCO



Cloud-native approach to VM manageability minus the cost of proprietary SW

## ITERATIVE MODERNIZATION

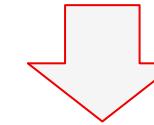


Flexibility of approach



Traditional VM behavior while VMs participate in modern DevSecOps and GitOps pipelines via Infrastructure as Code

## RISK MANAGEMENT



Highly resilient and scalable



Manage VM fleet with single-pane of glass with modern dashboard technology



**Up to 21% Higher**  
Operational  
Infrastructure Efficiency



**Consistency** of management



**Up to 42% reduction** of Unplanned Outages

# Next Gen Virtualization with Red Hat OpenShift



## BUSINESS OBJECTIVES



### Cost Efficiency



## RED HAT SOLUTION ENABLERS



- VMware cost avoidance
- Consistent experience for VM Admins and developers (across VMs, containers, serverless)
- Unified tools, process and pipelines for all apps
- Consistency of management for system admins: one simpler architecture to manage
- OpenShift app platform efficiencies

## BUSINESS IMPACT



- CapEx and OpEx (VMware)  
Effort spent on managing IT infrastructure



## Iterative Modernization



- Refactor VMs on your schedule
- Migration toolkit for virtualization (MTV): analytics enable migrations at scale
- VMs as code - CI/CD use case
- Windows VMs can be brought into containers during OS changeover/migration
- Leverage OpenShift functionality and modalities: Advanced Cluster Management for hybrid and multicloud, IT Operators, APIs

↑ Development velocity

↑ Developer satisfaction

↑ Modernized revenue generating applications

## Risk Mitigation



- Maintaining traditional VM behavior to mitigate developer disruption
- Manage VM fleet with single-pane of glass with modern dashboard technology
- Security is intrinsic and inherited from KVM
- Portability of containerized workloads

- ↑ Observability and control  
↑ Flexibility  
↓ Unplanned downtime

# Virtualization Modernization

1  
Sales Play Overview

2  
Use Cases

3  
Business Value



5  
Call to Action

# Key OpenShift Virtualization Customers

(Internal Version)

Production (or moving in)

Morgan  
Stanley



sahibinden.com

Goldman  
Sachs



verizon

evogene  
DECODING BIOLOGY

LOCKHEED MARTIN

meijer

f5



Emirates NBD

Henkel

orange™



ally



SKUPINA ČEZ

POC / Evaluation

BBVA



STATE STREET



SIEMENS

Crabel  
CAPITAL MANAGEMENT

VISA

citi

TENAGA  
NASIONAL



Cellcom



DBS

Telefónica

NetApp®

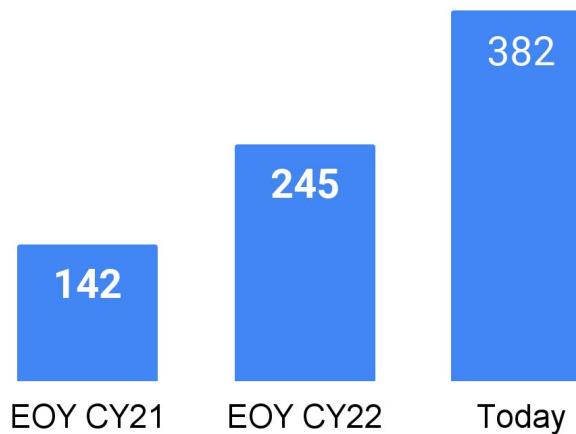
Red Hat  
intel®



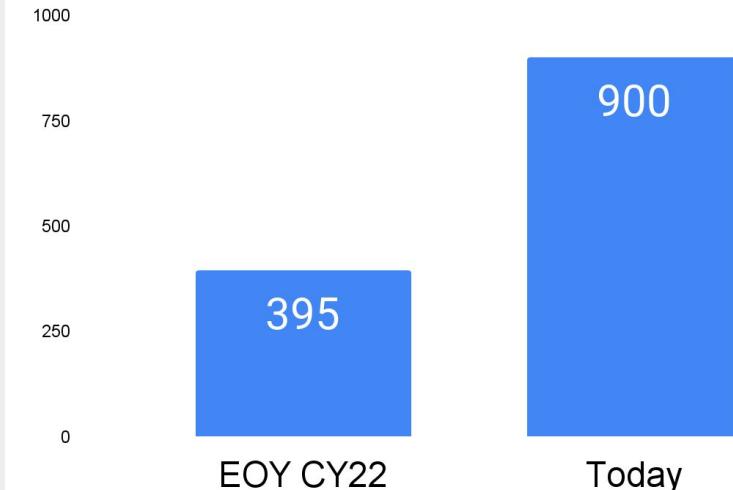
DOLLAR GENERAL

ZITiS

# OpenShift Virtualization Adoption\*



Unique Accounts

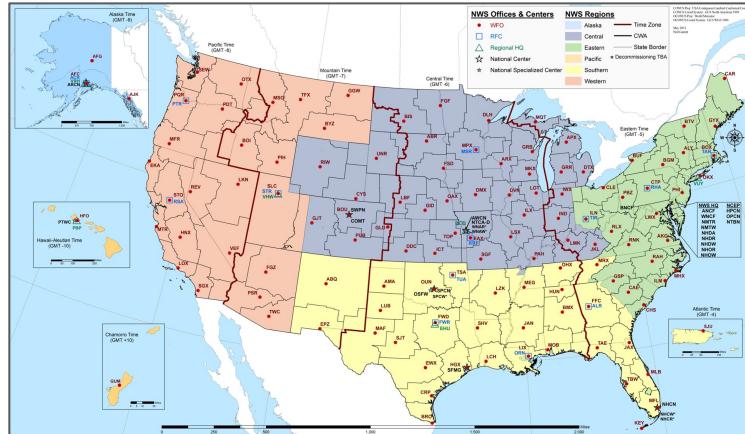


Total Operator Count

\*connected customers only  
as of September 21, 2023

# NOAA AWIPS is deploying 150+ OpenShift clusters

## 122 Weather Forecast Offices, 13 River Forecast Centers, etc..



- ▶ I love talking about OCP-Virt! (it's on premise, I'm weird)
- ▶ It's more user-friendly than Red Hat Virtualization (RHV)
- ▶ Also much more admin-friendly than RHV
- ▶ Has more features than RHV (it's OpenShift!)
- ▶ Minor gaps related to niche features (USB passthrough)
- ▶ VM backup/restore via partners
  - Kasten by Veeam, Trilio and others at [red.ht/openshift-backup](https://red.ht/openshift-backup)
- ▶ Provides RHEL VM subscriptions
  - (once the OCP baremetal subs gets fixed...)
- ▶ I'm looking forward to the GUI-based network configuration in OCP 4.14

## Global Investment Bank

"During Red Hat Summit, in 2018, we talked about KubeVirt and we could see KubeVirt would slot very well into their [customer's] existing environment. It could replace the hypervisor control, and also, since we could do this in a very controllable API and CLI controllable method, it would fit with the existing home-built selection infrastructure that was already in place."

Principal Solution Architect, Red Hat

"It allowed folks who spent the last decade or so on existing technologies to get up to speed with a newer subset of technologies to really help drive to create a single solution where we deploy one set of capacity and then burn down that capacity whether it becomes a VM or it becomes a container."

"A big thanks to Red Hat team that's stuck with the project, worked with us day in day out, and really helped enable a solution to help modernize our underlying compute platform."

VP Tech Fellow, Global Investment Bank

One of the largest investment banks in the world, is migrating their applications from traditional virtualization to Red Hat OpenShift Container Platform with container-native OpenShift Virtualization. Many of these applications are crucial, with expectations of long life cycles and minimal downtime

## Highlights

- 40k servers supporting over 250k VMs
- 70 / 30 Linux / Windows split
- 60k stateless virtual Windows desktops
- OpenShift Data Foundation allows live OpenShift upgrades with low impact to application availability
- Over 1,000 servers across multiple geos running containerized applications
- Improved operational life cycle provides "pet" levels of application availability with the benefits of a cloud-native environment

## Products and services

Red Hat® OpenShift® Container Platform

Red Hat® OpenShift® Virtualization

Red Hat® OpenShift® Data Foundation



# Virtualization Modernization

1  
Sales Play Overview

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Customer Wins

5  
**Call to Action**

# Our target customers are:

**Looking for an alternative  
Virtualization Solution**



**Uses RHV as their  
Virtualization solution**

**Customers ready for a  
modernization message**

# OpenShift Virtualisation Opportunities for Partners

## Workshop Series



### Sales & Technical Training -

Skill up on OpenShift  
Virtualization

[https://docs.google.com/document/d/1SPKbwkwRh5uUP\\_NFlpOLTN8fM27k5KbTUpXlu2cMb0/edit?usp=sharing](https://docs.google.com/document/d/1SPKbwkwRh5uUP_NFlpOLTN8fM27k5KbTUpXlu2cMb0/edit?usp=sharing)

<https://connect.redhat.com/en/training/emea/technical-training-skill-openshift-security>



### Architecture Workshop -

OpenShift Virtualization

<https://docs.google.com/document/d/1ii0sbWxskgJdoGTM-Oal8vCdnsKOxYavbwSK6fklt-k/edit?usp=sharing>

<https://connect.redhat.com/en/training/emea/architecture-workshop-openshift-infrastructure>



### DL 316 -

Managing Virtual Machines  
with Red Hat OpenShift  
Virtualization

<https://training-lms.redhat.com/sso/saml/auth/rhopen?RelayState=deeplinkoffering%3D45162822>



# Thank you

Red Hat is the world's leading provider of enterprise open source software solutions. Award-winning support, training, and consulting services make Red Hat a trusted adviser to the Fortune 500.



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[twitter.com/RedHat](https://twitter.com/RedHat)