VMA Partner Pre Sales Workshop

Alfred Bach

Red Hat
Learning

Welcome

15 Minutes

Red Hat Learning

State of the Union / 2025 Strategy

30 Minutes

Red Hat Learning

We had a great 2024

Q1-24

Market Disruption
Broadcom disruption takes shape with license and partner changes now in effect

Q2-24

RH Response
Red Hat develops and launches VMW takeout solution led by the VMA

Q3-24

Execution Begins
Engagements grounded in VMW takeout solution. Continued integration with Partners to improve total solution.

Q4-24

Execution Ramps
Customer demand increases. VMA instilling confidence in Red Hat's migration approach.

2025

Execution Scales
OVE launched in Jan to simplify offering. Virt SSAs established and top customer targets identified.

We had a great 2024

192%

YoY growth of running VMs

123%

YoY growth of clusters with VMs

216%

YoY growth of accounts with VMs

Rapid product advancement in 2024

Simplified Virtualization Management Experience

- A 3-click public cloud experience for VM creation using Instance Types (4.15)
- Keep critical workloads segregated through live migration affinity (4.16)
- Virtualization admin focused view (4.17)
- Multicluster Virtual Machine Observability with RHACM (4.17)
- Expanded OS catalog - SUSE, Ubuntu, CentOS, Fedora along with RHEL and Windows (4.17)

Hosted Control Planes

- OpenShift on OpenShift VMs through Hosted Control Planes (4.15)
- Hosted Control Planes in ROSA support for OpenShift Virtualization (4.16)

Improved Density, Performance and Scale

- Microsegmentation through OVN-Kubernetes and ipBlock filtering policies on secondary networks (4.15)
- Realtime VM workloads (4.16)
- Bridged and SRIOV NIC hotplug (4.15), CPU hotplug (4.16), memory hotplug (4.17)
- Memory overcommit (4.17)
- Automatic VM workload balancing with descheduler (4.17)
- Live migration optimizations for busy workloads (4.17)

MTV improvements

- Maintain drive letters for Windows migrations
- Preserve IP setting for Windows and Linux migrations
- Warm migration hardening and performance improvements
- Verify migration of Ubuntu 18, U22, CentOS 7, and Rocky 8 to OpenShift Virtualization

Infrastructure enhancements and partner build out Enhancements

- VM storage live migration between storage classes (Tech Preview) (4.17)
- Disaster Recovery with OpenShift Data Foundation - Metro-DR for all VM configurations (4.16), Regional-DR support recovery of declarative GitOps VMs (Tech Preview) (4.17)
- Delivered integration with Veritas,, Infinidat, F5, Cisco UCS and Flexpod Validated Design. Partner team launched a separate external catalog for OpenShift Virtualization
- Several vendors on track for 1H 2025 delivery - Citrix, GCP, Cohesity, Rubrik, Commvault and strategic discussions on supporting Azure

CY24 Retrospective (from Feb BU/Sales) Interlock

Highlights:

- **192% YoY growth** of VMs, **123% YoY growth** of clusters, and **216% YoY growth** of active accounts
- OVE SKU well received by field and customers (selling the roadmap)
- Services partnership in Virt space especially around POVs and POCs healthy and fruitful
- Large references out of North America, solidified sales closure in other geos
- VMA a great vehicle to qualify customers that are really serious

Lowlights:

- Storage compatibility is not clear even with the Eco Catalog of certified storage partners
- Deals can be complex with long sales cycle. More than contracts, technical components of swap outs are complex
- Lack of hard bundle still creates friction to the sale
- VMware offers a 7 year support lifecycle, OVE/RH offers 3 years. Mismatch creating apprehension and doubt in customers minds affecting progression of deals. Customers asking for 7 years to progress

Going into 2025

CY24 Sales Plays and Sales Tactics

Sales Plays	OpenShift Sales Play BV Framework	RHEL Sales Play BV Framework	Ansible Sales Play BV Framework
	Application Platform / *Cloud Native Infrastructure*	*Server Operating System*	*Mission Critical IT Automation*
Sales Tactics	OCP to OPP Upsell OpenShift Virt Cloud Services Dell APEX Appliance EAP & App Services Container Mgmt Developer Services OpenShift AI Edge	CentOS to RHEL RHEL in the Cloud RHEL 7 EOM RHEL Renewals SAP on RHEL SQL on RHEL	Free to Enterprise Event Driven Ansible Accelerate AAP w/Lightspeed Infrastructure Network & Edge Cloud Security Disti-led Sales Plays RHEL cross-sell; OpenShift for Automation Developers

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CY25 Sales Plays and Sales Tactics

	RHEL	Virtualization	Container Management*	App Platform	Automation	Adopt & Scale AI
Customer Pain	"Complexity in our infrastructure makes it difficult to manage and costly to maintain. It becomes difficult to automate existing processes and deployments across multiple operating systems, platforms and footprints. This impacts our agility, and makes it difficult for us to maintain systems in critical areas, such as security vulnerabilities and performance."	"My VMware costs are going through the roof and I want to reduce my dependency on VMware."	"I need consistent, portable and scalable infrastructure for my containerized workloads and applications across any environment."	My developers spend too much time being distracted by infrastructure and security issues, and not focused on building applications. I need a platform that provides on-demand services, abstracts away operational considerations, speeds time to production, and makes my developers more productive.	"Managing my IT environment is more complex than ever and I don't have enough skills or budget to bring on more resources. I need automated, resilient infrastructure that frees time to innovate by maximizing existing investments and integrating AI tools into operations."	"It's difficult to get started with and scale up AI to meet the needs of my business. There are too many models to choose from and it is very expensive to train and build them into applications. There are also a number of data and security considerations that we are not equipped to handle."
Marketing Campaigns	RHEL	Virtualization	Container Management*	App Platform	Automation	Adopt & Scale AI
Sales Play/ TDP	Server/Cloud Operating System	Virtualization	Container Management	Application Platform	Mission Critical Automation	AI Platform
	Edge & Cloud Offerings					
Sales Tactics-	1. Adopt a standardized operating environment 2. Optimize and secure my operating system 3. Innovate across the hybrid cloud with RHEL 4. Maximize portability in the Cloud	1. VM Migration 2. VM Modernization	1. Kubernetes for general containerized application workloads (non-AI) 2. Kubernetes for third party AI workloads 3. Multicluster management and security at scale for Kubernetes.	1. Modernize legacy apps & develop net-new cloud-native apps 2. Increase developer productivity for kubernetes and hybrid cloud 3. Secure the software supply chain and platform operation	1. Enterprise-wide automation (expanding AAP in the enterprise) 2. Standardize on AAP (converting free to enterprise) 3. Maximize technology investments (AAP + AI/RHEL/Virt/ISV) 4. Network automation	1. Private AI 2. Operationalize AI 3. Multi-architecture AI Deployment
Products	RHEL, Satellite	**OpenShift Virtualization** OpenShift Virtualization Engine, OpenShift Kubernetes Engine, Ansible, ACM, Partner Products	OpenShift Kubernetes Engine, OpenShift Container Platform, ACM, ACS	OpenShift Cloud Services, OpenShift Platform Plus Developer Productivity, Runtimes & Integration	Ansible	RHEL AI, OpenShift AI

Choosing the right tactic is becoming more nuanced

We are hearing from two types of customers

"I want to modernize"

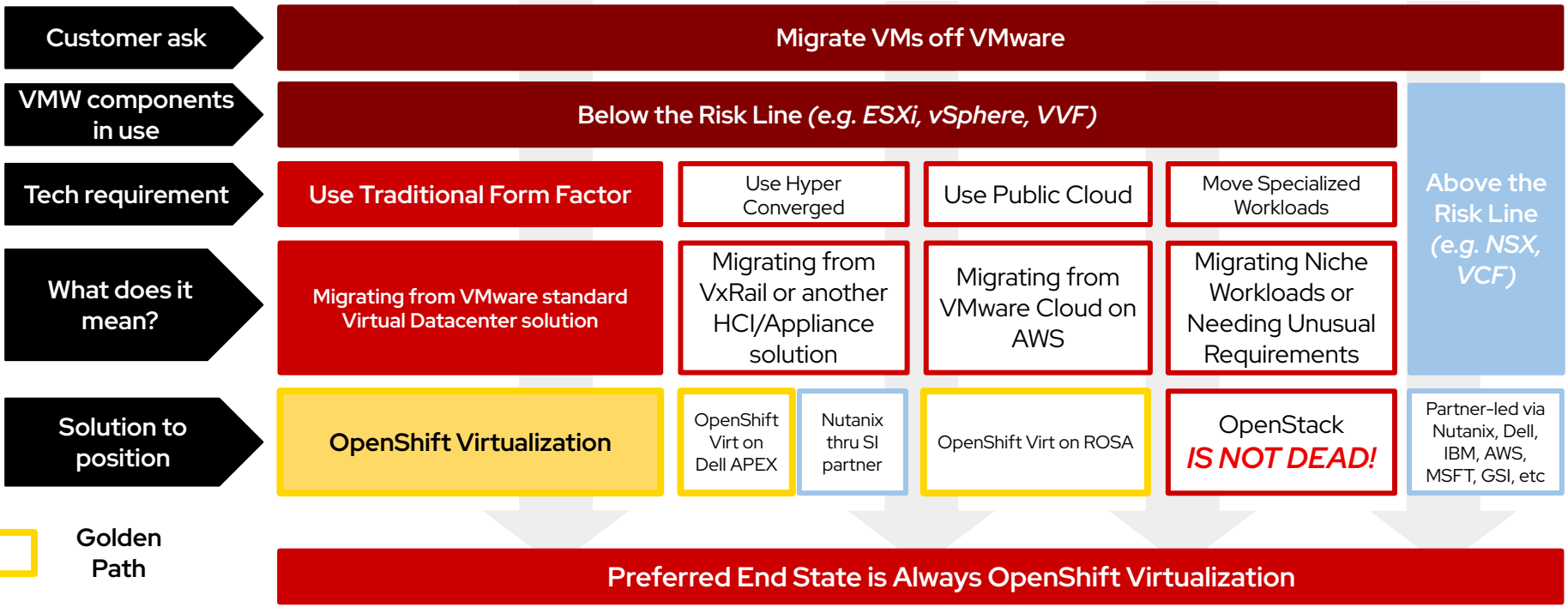
- **Wants to modernize** to containers, but also **run VMs in a more modern way**
- Stand up a secondary virtualization platform, select LOBs will deploy new workloads to or migrate to OpenShift Virt
- VMWare and OpenShift Virt will co-exist, with potential to exit VMWare long term

"I need to migrate ASAP"

- **Turn off the tap or Migrate off VMWare completely**
- **Modernization is subordinate to migration**; containers, Kubernetes, and even OpenShift are implementation details
- Willing to take some calculated risk with their production workloads

Both are turning into Container Management and Application Platforming Modernization Discussions

Paths of Red Hat's Open Virtualization Infrastructure



Full Decision Tree

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Know what OpenShift to Position

	Virtualization	Container Management	Application Platform
Core OpenShift Product	OVE	OKE	OPP/Cloud Svcs
Competing Products	vSphere, Hyper-v, Nutanix AHV, Rancher Harvester	VMware VVF/TKG, Nutanix NKP, SUSE/Rancher RKE, Spectro Cloud, Canonical, Mirantis, FOSS (DIY upstream), EKS, AKS, GKE	VMware Tanzu Platform, Heroku, AWS AppRunner, Azure AS, Google App Engine
Pricing Pressure (Need to discount)	Medium	High	Low

2025 strategic roadmap

- **Simplify the user experience for VM admins**
  - Dedicated views
  - Integrate with OpenShift Lightspeed
- **Multi-cluster VM management for large scale implementations**
  - Observability
  - Lifecycle operations
- **Workload mobility across infrastructure**
  - Enhanced metrics for VM resource balancing across nodes
  - VMs and storage moved across clusters without disruption to workload availability
- **Broaden Platform and Cloud support**
  - Support for additional public clouds with bare metal installation
  - Support for ARM and s390 platforms
- **Multi-tenant networks for VMs**
  - Overlay tenant networks, with overlapping subnets, LB ingress, microsegmentation, IPAM, and static IPs and additional improvements, e.g localnet and self-service overlay networks
- **Migration Tooling**
  - Expand 3rd party guest OS migration list

Virtualization Networking, Mobility and Storage Enhancements

4.18	4.19	4.20+
Multi-tenant Networks		
Primary UDN with layer 2 overlay	BGP and EVPN - OCP feature Secondary UDN with localnet IPv6 [Tech Preview] Improved UI for host network configuration PVLAN vNIC state configuration [TP]	Secondary UDN localnet: IPAM, MAC spoof, promisc control, trunk, Secondary UDN with layer 2 overlay topology
Mobility and Storage Enhancements		
Storage migration additional enhancements (TP)	Load aware balancing (TP) Live (hot) cross cluster migration (Demo/POC) Legacy SAN CSI (TP) Storage migration (GA)	Live (hot) cross cluster migration (TP) Assisted migration

Published Jan 2025

Hybrid Cloud and Simplified Experience for Virtualization

4.18 time frame	4.19	4.20+
Simplified Virtualization Management Experience		
VM grouping and VM Navigation in a tree view (TP) Enhanced per VM utilization dashboard covering CPU, Memory, Storage and Network Enhanced NNS Topology view covering NICs, bridges, bonds, connectivity and search functionality HCP - kubevirt-csi ephemeral volume support HCP - kubevirt-csi volume expansion support	VM navigation using a Tree View (GA) Advanced search for VMs Reduce alert noise using alert aggregation	Support and default to OpenShift SWAP Openshift Lightspeed integration for VMs
Cloud, Platforms and Operating System Support		
VM-friendly networks on AWS and ROSA (bare metal) OpenShift Virtualization on Oracle cloud (OCI) Bare-Metal nodes (TP) OpenShift Virtualization on GCP bare metal (TP) Windows vTPM Block device support IBM Z and s390x support (TP)	OpenShift Virtualization on GCP bare metal (GA) OpenShift Virtualization on Oracle cloud (OCI) Bare-Metal nodes (GA) IBM Z and s390x support (GA) Support OpenShift Virtualization on AARCH64 (ARM) Windows vTPM GA	Additional Cloud integrations

Ecosystem Overview and Discussion

15 Minutes

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Red Hat OpenShift

The platform for all your workloads

Trusted

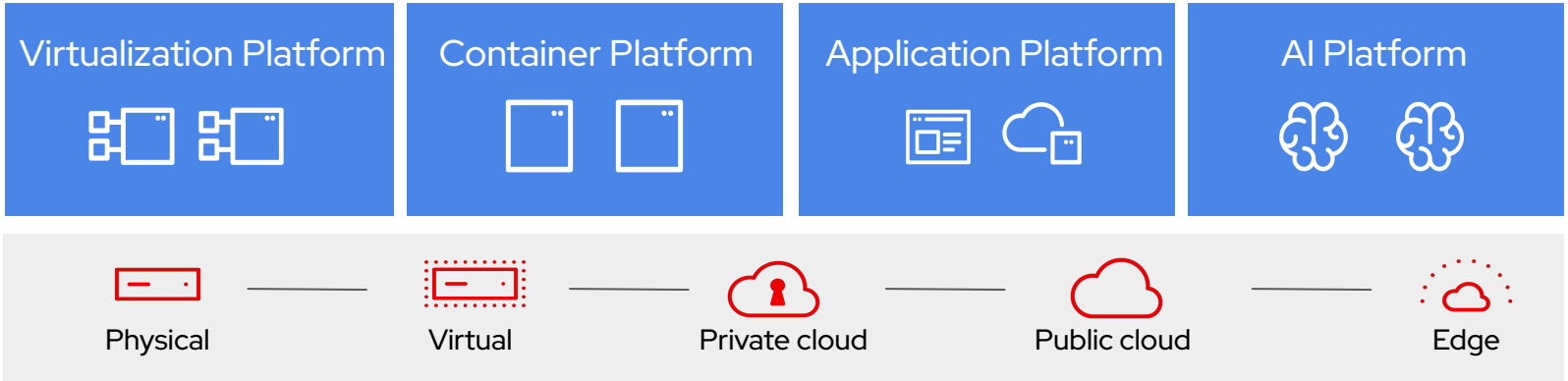
to reduce risk

Comprehensive

to improve productivity

Consistent

to increase flexibility



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The 2025 Ecosystem Focus

Principles that simplify customer transition to Red Hat

Minimize the disruption to existing customer investments in Hardware, Software and Professional Services that surround VMware data centers, cloud and edge and use of vmware.

Offer a flexible set of upgrade options HW, SW, and Pro Services provided by 3rd parties

Leverage the massive number of 3rd party ISV applications that are certified to run on RHEL

Unlock Future potential with Red Hat AI

OpenShift Virtualization Customer References

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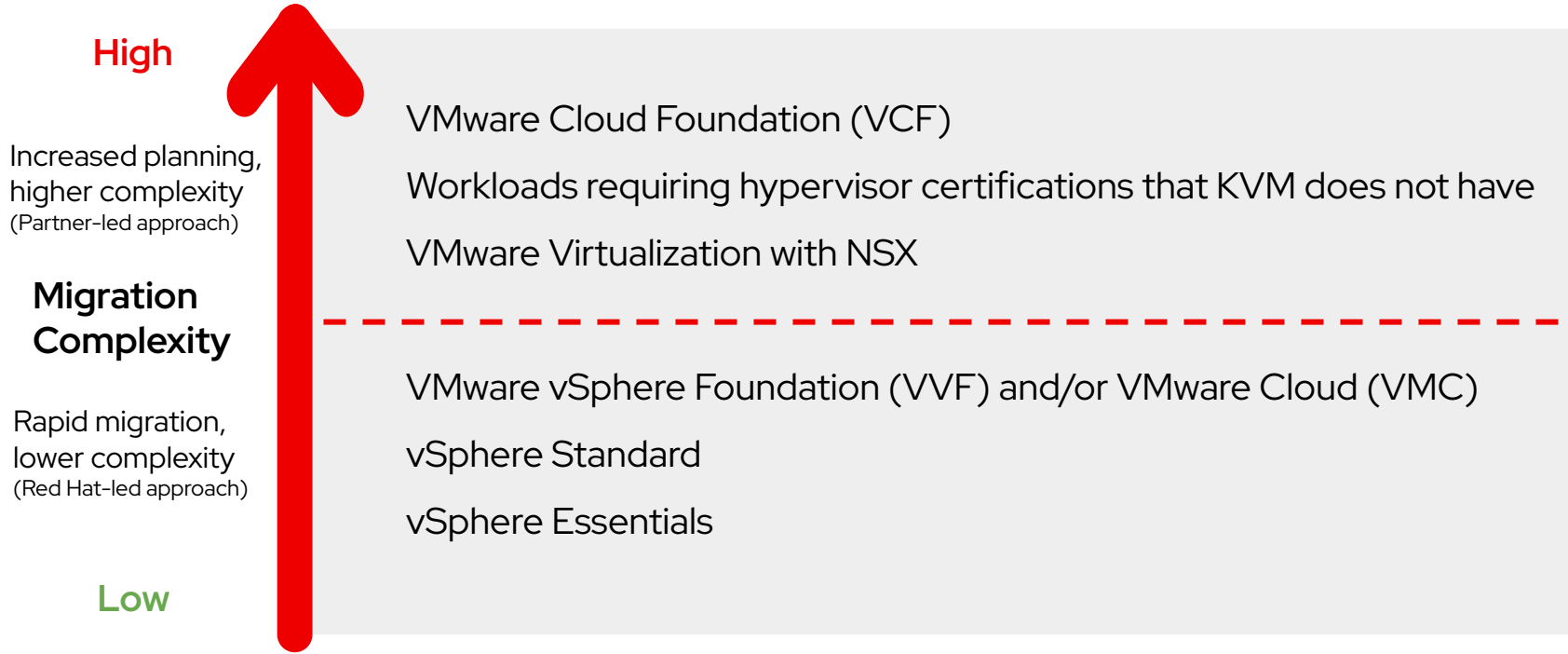
Customers have varying levels of investment in VMware



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Partners of all types are critical to migration success

Technology

Independent software vendors (ISVs)

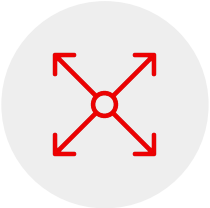
Hardware

Cloud providers

People process

Advisory/SI

Managed service providers



Channel

Complete the platform with your existing technology partners

Storage

Products for OpenShift Virt using CSI (container storage interface)

- HITACHI Inspire the Next
- portworx by Pure Storage
- DELL Technologies
- Red Hat OpenShift Data Foundation
- Hewlett Packard Enterprise
- NetApp
- IBM

Backup / DR

Products for OpenShift

- storware BACKUP AND RECOVERY
- veeam
- portworx by Pure Storage
- TRILIOVAULT
- IBM
- VERITAS
- rubrik
- NetApp

Networking

Products for OpenShift Virt using CNI (container networking interface)

- ISOVALENT
- TIGERA
- cisco
- f5

Cloud Services

Current public cloud providers offering OpenShift virtualization

- aws

Compute

Products for OpenShift

- IBM
- Hewlett Packard Enterprise
- DELL Technologies
- Lenovo
- cisco
- Red Hat

* This is not an exhaustive list of ISV partners, with new partners being added all the time.

Recent Virtualization Partnership Expansion

Deeper collaborations with storage, data protection, network, and security partners

rubrik

Security Cloud now GA with OpenShift Virtualization and published to RH Catalog. For more information see Rubrik's Landing Page - Secure your OpenShift journey

COHESITY

Blog on how Data Cloud now protects OpenShift Virtualization workloads coming in Q1

Agent-based solution available today

Hewlett Packard Enterprise

HPE Container Storage Interface (CSI) Operator for Kubernetes added to catalog with support for OpenShift Virtualization

INFINIDAT

Infinidat released a Solution Brief with White Paper in progress reporting on results of Storage Benchmarking

DELL Technologies

Dell updated their Container Storage Module (CSM) with OpenShift Virtualization support.
Dell also released a demo of PowerStore support of VMs in OpenShift Virtualization

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Workload Validations

Outreach initiative to drive vendor validation on OpenShift Virtualization in support of customer demand.

Storage Validation

Deepening our partnership and engineering collaboration with storage partners

Technical Validation Lab for Partners

OpenShift Partner Lab

Red Hat

NA PPA Partners GTM for OpenShift Virtualization Migrations

Current State

Independent Approach

PPA Partner builds their own offering for customers and independently position the offering and deliver associated services.

- Li9 Technology Solutions
- Mainline Information Systems
- crossvale
- TEKsystems Own change
- Stone Door Group

Accelerate with Red Hat

PPA Partner positions a Red Hat Virtualization Migration Assessment and embeds an architect to help drive the assessment and shape the migration proposal. PPA Partner leads the migration.

- Converge Technology Solutions
- TEKsystems Own change
- ShadowSoft
- Presidio
- Mobia

PPA partners that have the OpenShift specializations are the only ones featured on this page. For more about PPA partners please see red.ht/PPA-NA

Interested in learning more…

Red Hat Content Center: https://www.redhat.com/en/resources/openshift-virtualization-partner-ecosystem-ebook

NetApp
TRILIOVAULT
portworx by Pure Storage
f5
veeam
TIGERA
COHESITY
VERITAS
rubrik
IBM Spectrum Fusion

NetApp
- Joint assessments

citrix
- VDI, June GTA

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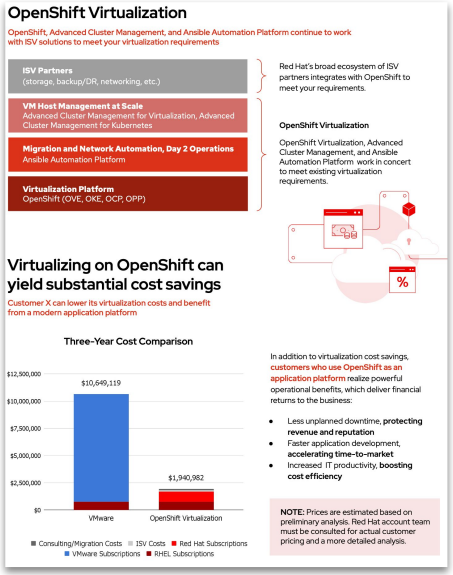
Red Hat OpenShift Virtualization vs VMware TCO Estimator

This TCO estimator is an easy-to-use tool to give account teams high-level guidance about positioning OpenShift Virt. with their customers.

- Available to all Red Hatters and select partners at launch
  - Contact Ben Cohen and Josh Monks to request additional partners to be added
- Partner view does not include ability to see/change discounts
- Outputs are delivered via email
  - Red Hatters receive PDF, editable slides, spreadsheet
  - Partners receive PDF



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Virtualization Customer Journey

Virtualization Migration Assessment, Virtualization Migration Factory, and beyond

30 Minutes

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A Complete Solution for Virtualization

OpenShift Virtualization + ACM Virt + AAP + Red Hat Services

Red Hat Advanced Cluster Management for Virtualization

Multicluster management for virtualization

+

Red Hat OpenShift Virtualization Engine

Virtual machines in your datacenter on purpose-build virtualization platform

+

Red Hat Ansible Automation Platform

Automated migration at scale including infrastructure, Day 2 operational management

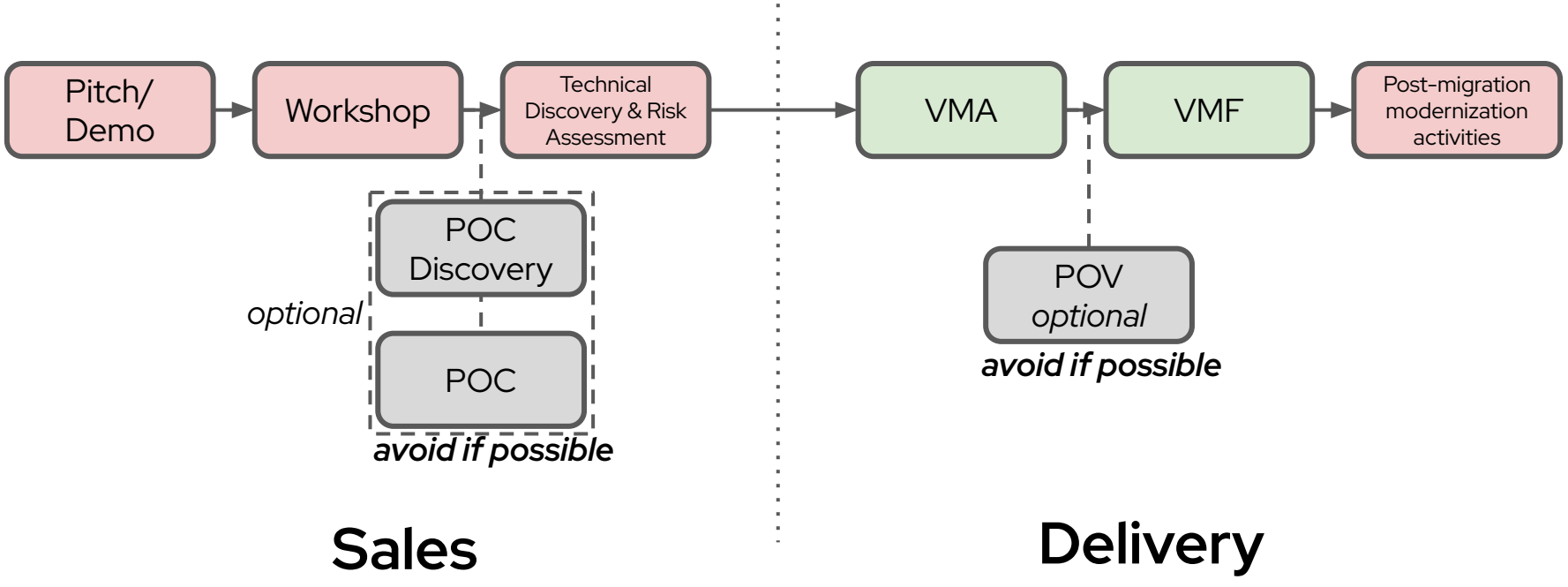
Soft Bundle VMP-BNDL

+

Red Hat Services

VMA & Migration Consulting
Training for VMware Admins
TAMs for Migration Support

Optimal Virt sales and delivery path



Migration Services Journey

Virtualization Migration Assessment (VMA)

Plan to quickly and safely migrate from legacy virtualization platform

- Capture current VM architecture, analyze workload complexity, propose a high-level design and roadmap

Virtualization Migration Factory (VMF)

Deploy virtualization migration technology. Prepare to operate at scale

- Deploy OpenShift cluster, enable virtualization features, validate integrations, migrate first workloads and prepare for production

Achieve steady state migration - Reduce legacy footprint

- Migrate workloads, validate and automate migration pattern, scale and complete migration

Virtualization Migration Assessment

Strategize and plan for migration

Strategy | Foundation | Expand | Evolve

- **Analyze current VM architecture**, existing investments and gather requirements for your future state
- **Identify VM workloads** and define integrations such as storage, networking and clustering requirements
- **Understand day-2 operations** including automation, configure management., monitoring, backups, etc
- **Propose a high-level solution design** for your custom OpenShift Virtualization based on your business needs
- **Generate a roadmap** for adoption of OpenShift Virtualization and determine next steps

Datasheet: Red Hat Consulting: Virtualization Migration Assessment

Sample Migration Schedule

Size: 50,000 VMs

Strategy | **Foundation** | **Expand**

MONTH 0 | MONTH 1 | MONTH 2 | MONTH 3 | MONTH 4 | MONTH 5 | MONTHS 6 - 20

Virtualization Migration Assessment
2 weeks

Virtualization Migration Proof of Value
12 weeks

Virtualization Migration Factory Build
8 weeks

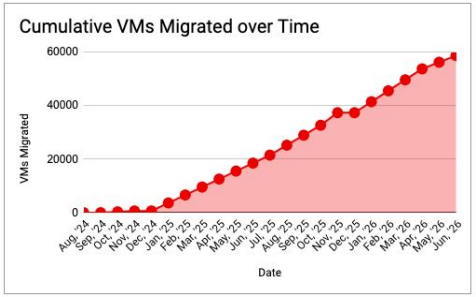
Migration Waves
Squad Model
~12 months

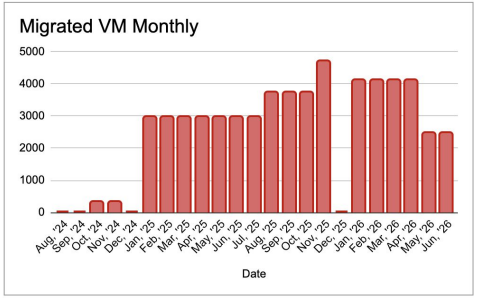
Red Hat Software Engineering and Customer Experience Engineering resource investment
Ongoing dedicated experts from Red Hat's PGE and CEE organizations

Red Hat Consulting Migration Program Management,
Red Hat Technical Account Management

Customer

Application Testing of Migrated VMs
Customer led / Red Hat support





Red Hat Learning

Virtualization Migration Assessment

Prep Session
1.5 hours

Assessment Workshops
1-2 weeks

Executive Presentation
1 hour

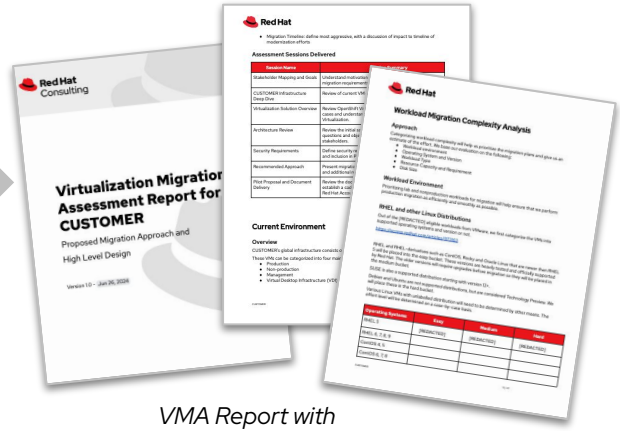
Optional PoV & Migration Factory

What We Cover

- OpenShift Virtualization features
- Virtual environment deep dive: networking, storage, security, backup, and disaster recovery
- High level solution design
- Workload migration analysis and recommended migration approach
- Cost and duration estimates for full migration with Red Hat Services

Customer Outcomes

- Understand the **solution, the path to adoption, the timeline, and the cost**
- Understand **workload and migration complexity**
- Leverage **OpenShift, Ansible, and ACM product capabilities** to meet requirements
- Achieve faster time-to-value with **Red Hat Consulting, Training, and TAM**



VMA Report with proposed solution design and approach

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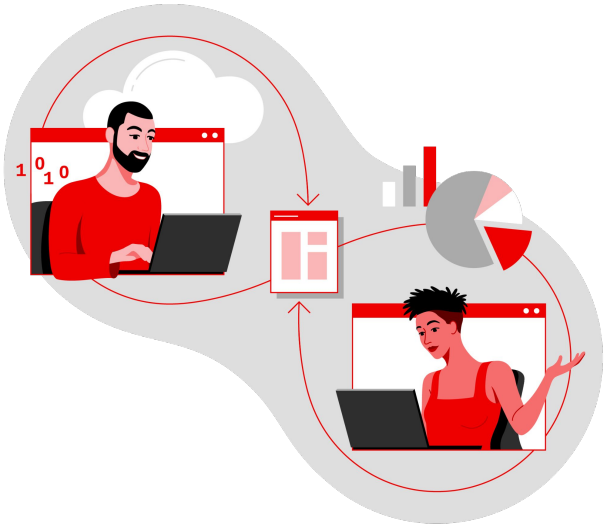
Virtualization Migration Proof of Value

Establish your virtualization platform foundation

Strategy | **Foundation** | Expand | Evolve



Proof of Value

- **Deploy your OpenShift cluster** within your **non-production** environment
- **Operationalize** platform virtualization features
- **Validate** real virtualized workloads on OpenShift in your environment

Production Readiness

- **Operationalize** platform storage and networking integrations
- **Complete production readiness,** performance testing / tuning, and migrate your first VMs

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PoC vs PoV

Proof of Concept (PoC)

- **Free, Pre-Sales activity performed by tiger teams, at no cost to the customer**
- **Disposable lab environment** that's likely destroyed after the POC
- **Shorter duration,** typically **2 Weeks**
- **Hands on experience** during demos and workshops
- **Standard, pre-canned environment** with few integrations
- **Use case validation** demonstrates OpenShift Virtualization is a feasible customer solution that meets scoped requirements

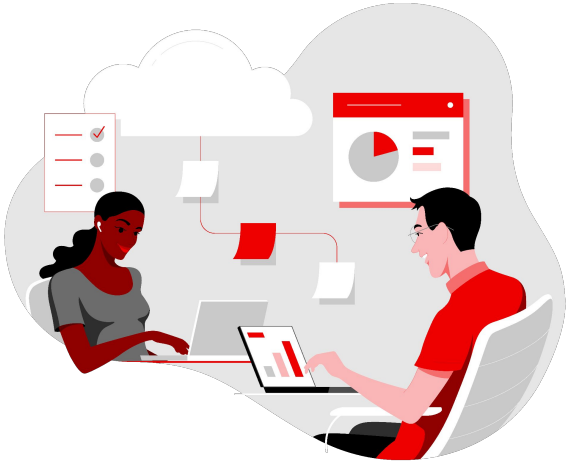
Proof of Value (PoV)

- **Billable Services** running the project with a scope, objectives, and production-level PS support
- **Persistent environment** that expands and evolves with the customer's needs
- **Longer duration,** typically **6 - 12 Weeks**
- **Hands on experience** during platform deployment and production readiness
- **Customized environment** to meet customer needs
- **Infrastructure and software validation** proves that OpenShift Virtualization can meet the requirements and provides the business value

Virtualization Migration Factory

Migrate virtual machines at scale

Strategy | Foundation | **Expand** | Evolve



- **Evaluate** your workload portfolio, **plan and prioritize** to **migrate and modernize at scale**
- **Create** iterative migration of batches of workloads
- **Reduce** IT management effort to increase productivity
- **Prepare teams** for scaled app operations and production readiness

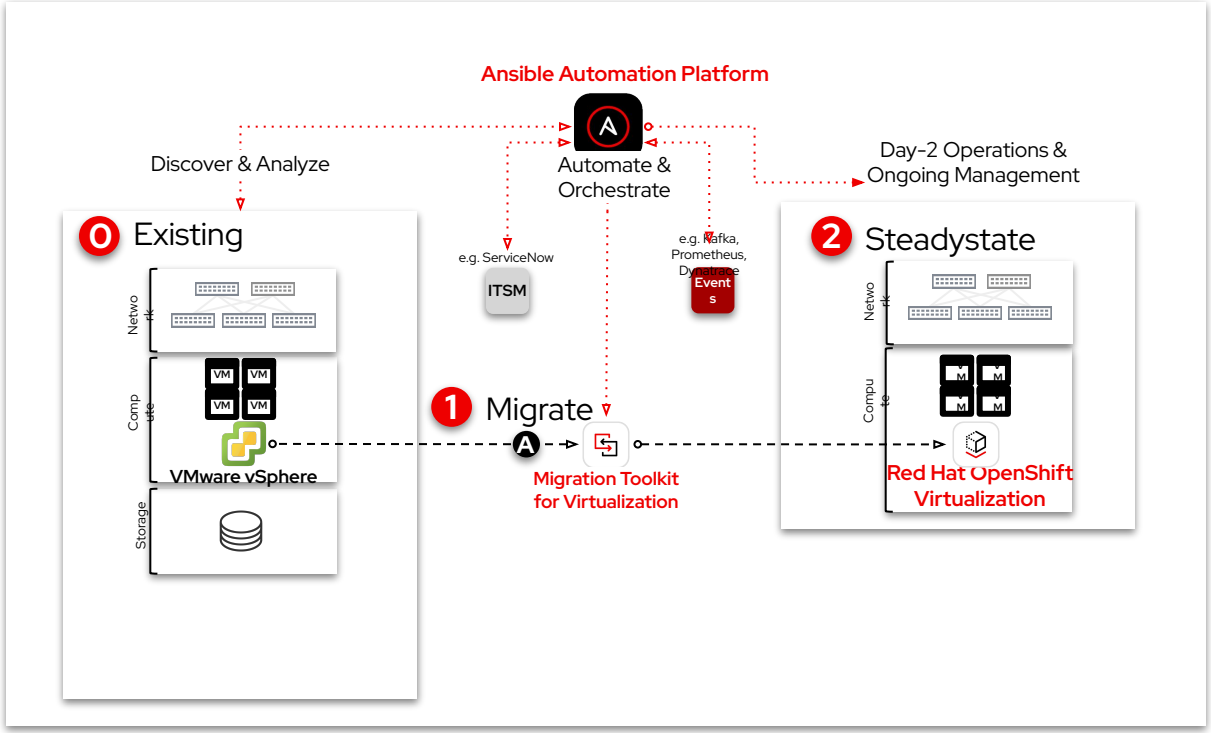
Accelerating Migrations at Scale with AAP

A Migration factory from Day-0 to Day-2 with Ansible automation

0 Evaluate and scope
Evaluate the existing data center setup

1 Migrate
Use MTV to migrate virtual machines to Openshift VIrtualization. Ansible helps automate orchestrate as needed.

Red Hat Steadystate
2 VMs are now hosted on OpenShift Virtualization alongside container workloads. Ansible Automation Platform handle day two operations.



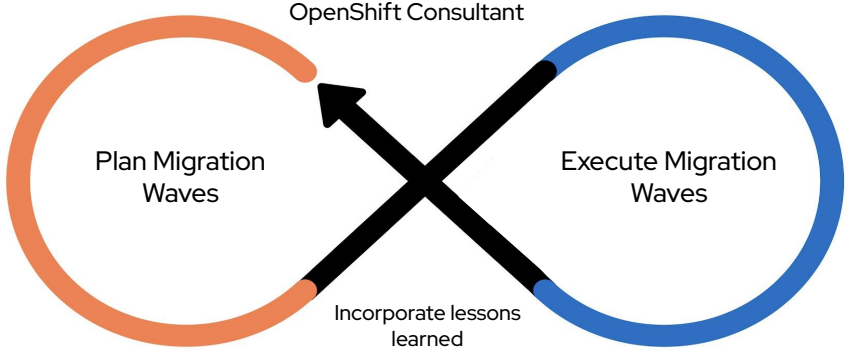
Squad Model

Red Hat Consulting, Training, and TAM
Advise on patterns, architecture, and enablement

- Design reference architectures
- Enable teams with OpenShift Virtualization
- Deploy automation
- Evolve process

Migration Squad

VM Batch Customer Stakeholders + OpenShift Consultant



Customer Infrastructure teams and VM owners
Advise on requirements, processes, and challenges

- Define requirements
- Support migration wave
- Navigate internal processes
- Validate migration

Build the knowledge base
Minimize downtime and failover

Evolve a repeatable approach to migration waves

Accelerate migration rate
Complete migration

Core Migration Team

Customer Infrastructure Lead +
TAM, Architect, and Automation Consultant

A tailored learning path for your VM migration

Build the skills, processes and culture needed to optimize and modernize your IT infrastructure with Red Hat Training and Certification.

Essentials

- Red Hat OpenShift Virtualization Technical Overview | DO016
- Containers, Kubernetes and Red Hat OpenShift Technical Overview | DO080
- Ansible Basics: Automation Technical Overview | DO080

Prerequisites for Day 1

- Red Hat OpenShift Administration I: Operating a Production Cluster | DO180
- Red Hat OpenShift Administration II: Configuring a Production Cluster | DO280
- Red Hat Certified OpenShift Administrator exam | EX280

Day 1

- Migrating Virtual Machines to Red Hat OpenShift Virtualization with Ansible Automation Platform | DO346
- Managing Virtual Machines with Red Hat OpenShift Virtualization | DO316
- Red Hat Certified Specialist in OpenShift Virtualization | EX316

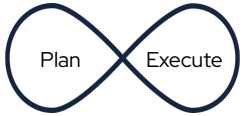
Day 2

- Automate and Manage Red Hat OpenShift Virtualization with Ansible | DO336 (coming Q2 2025)
- Red Hat Certified Specialist in Automating OpenShift Virtual Machine Migration Exam | EX336 (coming Q2 2025)
- Red Hat Advanced Cluster Management for Kubernetes | DO432 (coming Q3 2025)
- Red Hat Certified Specialist in OpenShift Advanced Cluster Management Exam | EX432 (coming Q3 2025)

Certification | Course

Virt Migration with TAMs

Expert support for customer teams navigating complex migrations



Who are Technical Account Managers?

- TAMs provide **expertise and guidance** to operate a **highly resilient and secure** virtualization environment
- TAMs support **PoV deployments** and the ramp up to steady state migration during the **Migration Factory**

TAM Expertise

- Define and plan for **long-term customer success**
- Navigate complex infrastructures, **avoiding potential issues, and minimize downtime**
- **Build in-house skills** via guidance, tutorials & workshops

How do TAMs support migrations?

- **Implement best practices** and known solutions
- Rapidly **engage support and engineering teams**
- Advocate for customer and **drive support escalations**

Continue your journey with Red Hat Services

Evolve with optional App Modernization & Automation Accelerators

Strategy | Foundation | Expand | **Evolve**

App Modernization Accelerator: Create OpenShift champions with patterns and practices for teams to quickly modernize

Achieve Faster Time to Market with Developer Experience, modernized software delivery etc.

Automate the Enterprise: Meet the scaling demands of your business to bolster reliability and security, and drive efficiencies across teams and departments.

Accelerate building & modernizing intelligent apps: Leverage AI/ML to solve business problems from data science experimentation to production ready models

Red Hat Learning

Ask Me Anything Part 1

Establishing Credibility and Positioning a Workshop

60 Minutes

Red Hat Learning

The negative things we hear

No one is doing virt with Red Hat; I don't want to be first

Red Hat is not a virtualization company

OpenShift is too expensive

Containers and Kubernetes is too complex

Red Hat Virtualization cannot replace VMware

Only RHEL VMs are supported

Red Hat has no experience doing VMs

VMware admins cannot learn Red Hat's platform

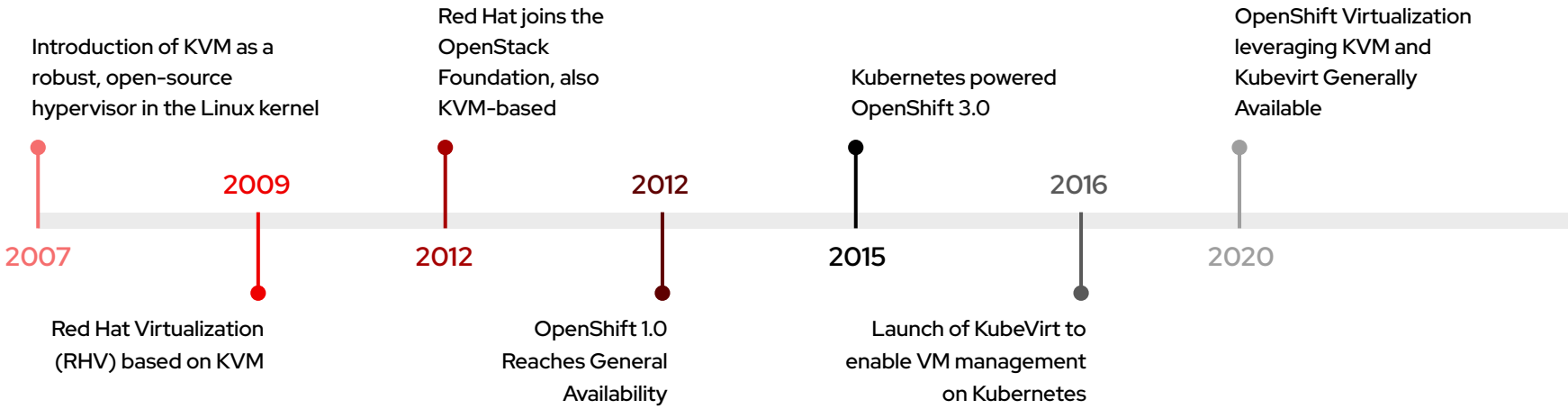
Red Hat's Virtualization is proprietary

Summing up what we've got to fix

1 Fear, Uncertainty, and Doubt (FUD)

2 Lack of Customer References

Red Hat has a long history with Virtualization



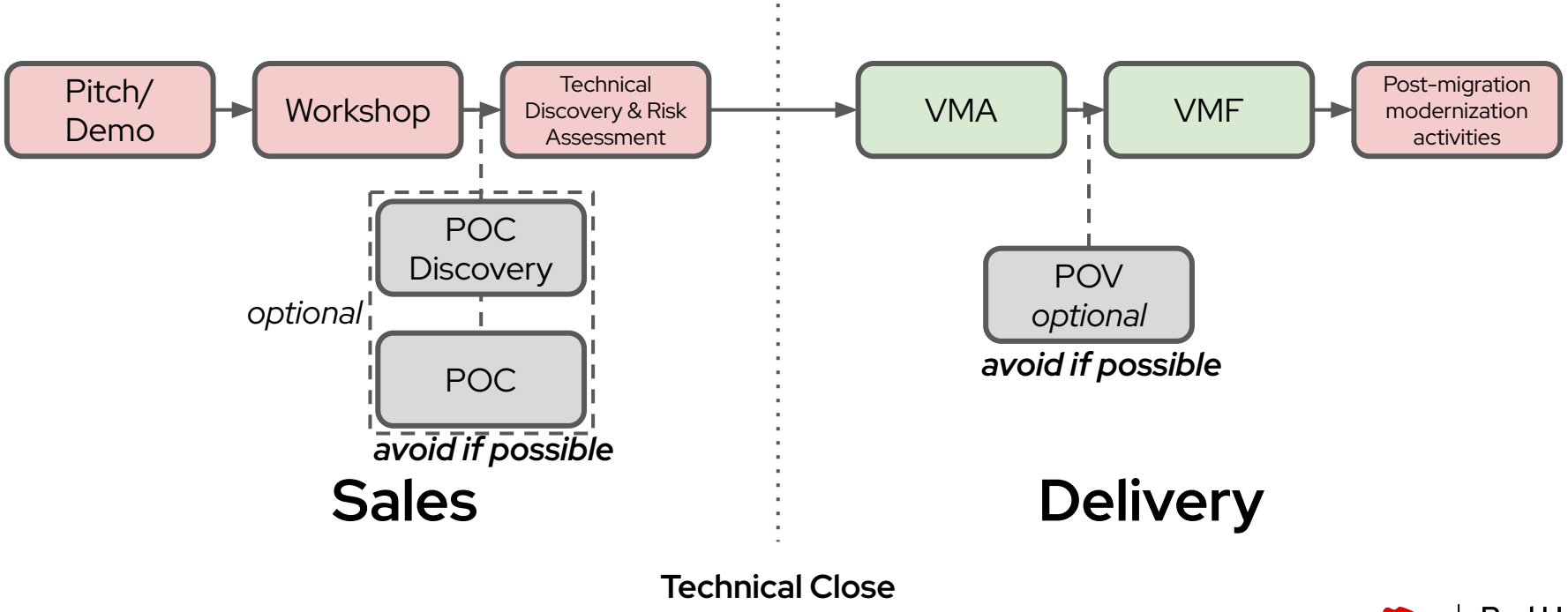
We've come a long way since RHV

Category/Feature (versus best-in-class)	RHV		OpenShift Virtualization	
			EOY 2024	Target 2025
vAdmin friendly user interface	90		50	70-80**
VM density	90		90	90
Single cluster virtualization infrastructure management	80		95	95
Mixed VM and container environment	60		100	100
Infrastructure HA	50		95	95
Hotplug (storage, memory, compute)	10		90	90
ISV backup integrations	20		70	80
Disaster recovery integrations	90		55	80
Storage integrations / acceleration	90		85	90
Software defined networking	50		80	90

*Feature comparison summary sheet **For single cluster management this will be higher

Proving our credibility through getting hands on

Optimal Virt sales and delivery path



Options for proving our solution

Demo

- Demonstrates features
- Takes place on Red Hat hardware, including Red Hat Interactive Experiences (RHIE)
- Pre-canned workflow determined by what the customer wants to see
- Duration is less than an hour
- Executed by SSAs **pre-VMA**

Workshop

- Gets customer hands on with features
- Takes place on Red Hat hardware
- Pre-canned workflow determined by workshop modules
- Duration is hours in length
- Executed by SSAs **pre-VMA**

Proof of Concept (POC)

- Proves the feasibility of our solution
- Takes place on customer hardware in lab environment
- Scope set by well-defined entrance, success, and evaluation criteria
- Duration is days in length
- Executed by SSAs **pre-VMA**

Proof of Value (POV)

- Proves the value of our solution through a production-ready migration
- Takes place on customer hardware
- Scope set by number of production-ready VMs to be migrated
- Duration is weeks in length
- Executed by RH Consulting or partners **post-VMA**

LOW → HIGH

Time & Cost

Sometimes we have to go bit for bit

Provided Comments/Assessment - June, 2024					Red Hat Response - Current Updates	
Required Features	**Broadcom VCF**	**IBM OpenShift**	**Additional Details**		**Red Hat Current State (All features GA in OpenShift Virtualization 4.17 and ACM 2.12 unless noted)**	**Red Hat Roadmap (OpenShift Virtualization 4.18+)**
Virtual Machine Management	Yes	Limited (CLI w/ basic UI)	Critical to private cloud management at scale		OpenShift Virtualization provides a robust suite of tools for virtual machine management, including: • VM Lifecycle Management via Web Console, API, and CLI tools (virtctl, SSH, VNC, Desktop Viewer for Windows) • GitOps workflows for VMs using OpenShift GitOps for automated VM deployment and updates • Red Hat Advanced Cluster Management (ACM) for multi-cluster VM management. • Migration Toolkit for Virtualization (MTV) to streamline migrating VMs from VMware and other platforms to OpenShift • Backup & DR with OpenShift OADP Velero, Red Hat ACM, and third party integrations (e.g. Rubrik, Veritas, and others) Note: Additional IBM offerings available separately - Instana (Observability & APM), Apptio (FinOps), Turbonomic (AI-driven Resource Optimization)	• Adding in tree-view navigation, logical grouping of VMs (Technical Preview), and ablilty to perform buik VM actions (GA 4.18) • Open discussion on integration
Distributed Resource Scheduler (DRS)	Yes	No	Most critical VCF feature that, without a comparable offering, would require ~700K additional physical CPU cores to offset oversubscription 2		OpenShift Virtualization delivers dynamic resource balancing like results through a combination of advanced scheduling, workload distribution, and automated scaling features, including: • Scheduler profiles to control how VMs are placed on nodes • Descheduler to trigger Live Migration for workload redistribution • Affinity/Anti-Affinity rules to enforce placement constraints • Resource limits to prevent individual VMs from consuming excessive resources • Kernel Same-Page Merging (KSM) to optimize memory usage through deduplication • CPU and Memory Overcommit to increase workload density • Cluster Autoscaler to dynamically adjust node capacity • Currently Load Aware balancing manual steps available, automating these in the upcoming release • Red Hat ACM for workload distribution and load balancing across clusters Together, these features help optimize VM placement, prevent resource contention, and rebalance workloads dynamically across nodes and clusters Note: Additional offering available separately for vROps like functionality via IBM Turbonomic (AI-driven Resource Optimization)	• Automated Load-aware balancing steps (GA 4.19)
Storage DRS	Yes	No	Highly critical for seamless operation during storage outages and management		Storage DRS capabilities in OpenShift Virtualization • StorageClasses combined Storage Live Migration (Tech Preview 4.17) provides a mechanism for optimal storage placement Note: Deprecation of VMware Storage DRS Load Balancer and Storage I/O Control (SIOC)	• Storage Live Migration to enable VM disk movement between storage classes, improving flexibility and resource utilization (moves to Early adopter program in 4.18)
Guest OS Support	Yes	Limited (Only RHEL and Windows per published docs)	Need support for our full catalog of various Linux distributions & Windows versions		OpenShift Virtualization supports a variety of guest operating systems with different levels of certification and support: • Tested & Certified by Red Hat: Red Hat Enterprise Linux (RHEL), Microsoft Windows (fully validated and supported) • Commercial Vendor Supported: Ubuntu, SUSE (supported by respective vendors, tested for compatibility) • Community Supported: Fedora, CentOS (best-effort support, no formal certification) If an operating system is not listed, then support for that guest operating system will be provided in accordance with Red Hat's Third-Party Software Support Policy.	Red Hat PM will work directly with Adobe for guest OSes requiring commercial vendor and community support not listed today
High Availability (HA)	Yes	No	Crucial service quality feature that migrates VMs in < 60 sec if underlying		High Availability in OpenShift Virtualization • Live Migration (vMotion equivalent) enables non-disruptive movement of running VMs between nodes to prevent downtime during maintenance or load balancing (requires shared storage) • Automated Node Health Checks & Remediation detect failures and ensure workload continuity • Red Hat ACM facilitates VM failover across clusters for disaster recovery and multi-cluster HA	• VM & Storage cluster-to-cluster Live Migration (Tech Preview 4.20)

OpenShift Virtualization Roadshow
*aka **THE workshop***

- The premier hands-on experience for VMW admins and Infrastructure architects to learn about OpenShift Virtualization.
- Start the day with an overview of OpenShift Virtualization and then dive into a 4-hour lab with modules that cover: environment review, VM creation and use, customization, management, live migration, networking, storage, migration tool kit, external load balancer, and backup and restore.
- End the day with a closing presentation that includes OpenShift capabilities and our partner ecosystem.

Experience OpenShift Virtualization Hands-on

Current OpenShift Virtualization Roadshow

- An introduction to OpenShift Virtualization. Aimed at VM admins early in the sales cycle, dive into a hands-on lab with modules that cover: **environment review, VM creation and use, customization, management, live migration, storage, deploying MTV, networking and backup and restore.**
- **Updates are being made for networking module and updates to 4.18 by mid-April.**
- Watch for Train the Trainer update invite.
- Content Kit

NEW: Day 2 Operations and Automation with OpenShift Virtualization Workshop

- This workshop covers essential practices required for ongoing administration and optimization with OpenShift Virtualization and Ansible Automation Platform. Modules covered will include: **automation of VM management, capacity management, performance monitoring, workload scaling, security and compliance and cost management.**
- This workshop is aimed at VMadmins later in the sales cycle who already have experience with OpenShift/OpenShift Virtualization through the current OpenShift Virtualization Roadshow.
- New workshop should be available for pilots at customer locations in mid-late April. Fill out form if interested. Lab will be available after Summit.
- Watch for Train the Trainer update.

*Jump Back to SSA Tack

OpenShift Virtualization Roadshow

Goals

- Showcases the overall ease of use and capabilities of OpenShift Virtualization
- Offers a technical workshop for VMadmins and Infrastructure architects who are interested in OpenShift Virtualization

Who are we targeting?

- vSphere/Virtualization Admins, Infrastructure architects who are looking for an alternative to their current virt. Platform.
- Other considerations: VMware customers that may dislike Broadcom or are in competitive industries to Broadcom

Topics/Content

- How can customers use OpenShift Virtualization, how do they migrate their current VMs and what does everyday management look like
- Who does our partner ecosystem consist of?
- What does onboarding look like and what resources are there?
- Primary CTAs/next steps: Depends if these are sales led or multi-customer marketing events.

OpenShift Virtualization Roadshow Topics

Topic	Description
Virtual Machine Management	Basics of creating and managing VMs in OpenShift Virtualization. Basic customizations and live migration
Migrating Existing Virtual Machines	Migration Toolkit for Virtualization (MTV) to import virtual machines from VMware vSphere to OpenShift
Storage Management	Persistent Volume Claims (PVCs), which are used to request storage from the provider and store a VM disk
Backup and Recovery for Virtual Machines	Data protection for backup and recovery for VMs. OADP Operator, backup and restore
Template and Instance Type Management	Review preconfigured templates for creating VMs, VM cloning and customization
Working with Virtual Machines and Applications	Common day 2 operations, exposing applications

Success from the Customer Perspective

Understanding that **THERE IS** a viable alternative to VMW

Become familiar with Red Hat OpenShift Virtualization

Understand that your journey to infrastructure modernization starts here

How Red Hat OpenShift provides an effective destination for VMs today, but also provides an application platform for the future

"I didn't realize how mature the OpenShift Virtualization product was." - Customer

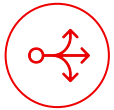
"I really liked the UI and how easy it was to use." - Customer

"It was invaluable for them to hear your perspective/roadmap on this technology, as well as getting hands-on with the product." - Account team

"These sorts of high-touch, product management/development engagements are essential to building trust and comfort with our products and between our companies." - Account team

Success from Red Hat Perspective

Show the capabilities of OpenShift Virt are a viable alternative to VMware



Create and help close sales opportunities, *getting them to the VMA!*

"The workshop solidified our decision to remove VMware and repla with OpenShift Virt." - Attendee at Customer Event

Discussion

- What are the most common credibility challenges you expect to see in your opportunities?
- What proof points could you use? What proof points are missing?
- Are there specific techniques that have worked in the past for resolving credibility challenges?

10 Minutes

Positioning the Virtual Migration Assessment (VMA)

45 Minutes

Red Hat Learning

Migration Services Journey

Virtualization Migration Assessment (VMA)

Plan to quickly and safely migrate from legacy virtualization platform

- Capture current VM architecture, analyze workload complexity, propose a high-level design and roadmap

Virtualization Migration Factory (VMF)

Deploy virtualization migration technology. Prepare to operate at scale

- Deploy OpenShift cluster, enable virtualization features, validate integrations, migrate first workloads and prepare for production

Achieve steady state migration - Reduce legacy footprint

- Migrate workloads, validate and automate migration pattern, scale and complete migration

Explaining what the VMA is (and isn't)

The VMA is:

- A paid in depth assessment of the customer's current VM estate
- Answers 1) where the customer is going 2) how they're going to get there 3) how long it will take and 4) how much it will cost
- Requires about a week of customer pre-work followed by a week of onsite time with the customer

The VMA unlocks:

- The Virtualization Migration Promotion (VMP) and firm fixed-price (FFP) consulting from Red Hat

The VMA is not:

- A discovery session and must never be positioned as so; discovery takes place prior to the VMA

Virtualization Migration Assessment

Our Approach

Planning Activities

- Identify stakeholders
- Send pre-work including RVTools export needed

Onsite Activities

- Whiteboarding
- Requirements gathering
- Decision making
- Removing blockers

Post Work Activities

- Crunch the RVTools data to build migration estimate
- Complete HLD
- Present Exec Summary and Next Steps

Red Hat

VMA Customer and Red Hat Roles

Customer Attendee	Role
Project Sponsor(s)	Responsible for setting goals and determining the measures of success for open-source adoption.
Business and IT decision-makers	Key Decision-makers from Business and IT Operations.
Enterprise Architect	The architect is responsible for data and systems interactions across the organization.
Virtualization Product Owner	The product owner for the current virtualization platform.
Infrastructure Teams representatives	Representatives for the infrastructure team: computing, storage, and network.
Director and/or Manager of Application Development	Oversees Software Development Technologies and Processes
Director and/or Manager of IT Operations	Oversees Infrastructure Platform and Operations
Relevant leads and members of Developer teams	Architects, Leaders, and Managers for internal projects and initiatives
Relevant leads and members of the IT Operations team	Infrastructure, Platform, or Software Owner(s)
Various	Other interested parties within the organization

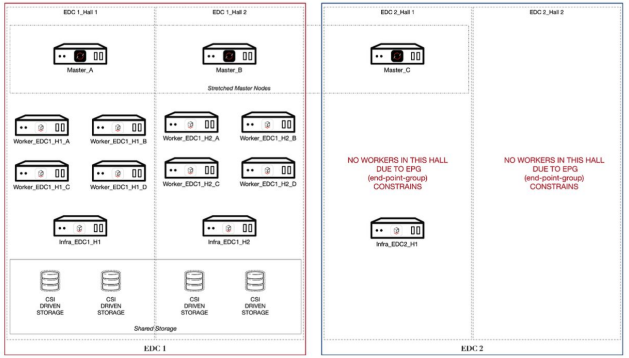
Red Hat Attendees
Sr. Architect
Engagement Lead
Strategic Account Executive
Sales Specialists
Senior Account Solution Architect
Customer Success Executive

Walkthrough of Sample VMA

Sample Masked VMA Output

Target Architecture and Infrastructure Considerations

- [Redacted] Company's existing physical server, networking, and storage architecture is an ideal model and landing zone for OpenShift Virtualization, and has been used as the starting point for the infrastructure design. No red flags have been identified with the existing infrastructure
- The architectural layout will consist of four (4) deployment architectures each dedicated to a specific use case:
  1) EDC, 2) "Stretched" EDC, 3) Plant/Distributed, and 4) Standalone. The topology will be laid out to take advantage of multiple failure domains where available.
- The "Stretched" EDC is architecture that is designed specifically for VM workloads that currently use the VMWare NSX feature today. This would be an OpenShift Virtualization cluster where storage (using ODF) is stretched across both data centers.



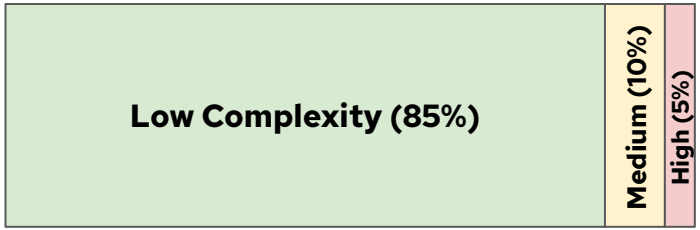
EDC Architecture

"Stretched" EDC Architecture

VM Workload Breakdown and Planning

Complexity Analysis

- The workload analysis shows a 85/10/5 easy/medium/hard distribution of workloads
  - 97% of VMs are sized as easy to migrate
  - A small number of VMs (1%) are very large and may need to be V2P migrations
  - 2% of VMs are running Ubuntu and non-RHEL distros and will need to be further evaluated during Phase 1
  - During Phase 1, we will build patterns for the appliances and COTS migrations, determining what can be moved to a native container.

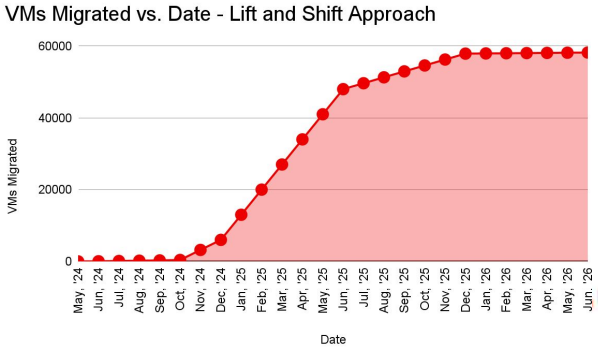


Factor	Easy	Medium	Hard
Storage Size	64087	2167	153
Workload Type	53128	11497	0
Operating System	51336	6736	1237

[Redacted] VM Migration Velocity Projection

1. [Redacted] global infrastructure consists of more than 71,000 virtual machines (VMs) distributed across data centers in six countries.
2. These VMs can be categorized into four main types:
   - Production: 26,000 VMs
   - Non-production: 33,000 VMs
   - Management: 7,000 VMs
   - Virtual Desktop Infrastructure (VDI): 5,000 VMs
3. The VDI VMs are based on Citrix/Hyper-V technology, while the other three categories (production, non-production, and management) are VMware-based. This means that out of 71,000 VMs, 66,000 are potentially migratable to a new platform.
4. Approximately 17,000 VMs are under the responsibility of the Operations and Infrastructure (O&I) team while the remaining VMs are owned by various product teams within the Visa organization.

Date	VMs Migrated (V2V)	VMs Retired (V2C, V2P, Decomm)	vSphere VMs Remaining
PHASE 1 BEGINS			
June 2024	0	0	66,000
October 2024	400	100	65,500
PHASE 1 ENDS / MIGRATION FACTORY BEGINS			
December 2024	6,000	500	59,500
June 2025	48,000	2,500	18,500
December 2025	57,900	6,600	1,500
MIGRATION FACTORY ENDS / ONGOING SUPPORT BEGINS			
June 2026	58,200	7,800	0



** Velocity is based on optimal rate, without resource or process constraints.*
*** Assumes production workloads can be migrated on weekdays*
**** Assumes migration windows of 4 hours per day, 5 days per week*
***** Full assumptions in Appendix*

Virtualization Migration Assessment

Example Migration Schedule: 50,000 VMs

Strategy | **Foundation** | **Expand**

MONTH 0 | MONTH 1 | MONTH 2 | MONTH 3 | MONTH 4 | MONTH 5 | MONTHS 6 - 20

Virt. Migration Assessment
2 weeks

Virtualization Phase 1
12 weeks

Prod. Readiness & Migration Factory Build
8 weeks

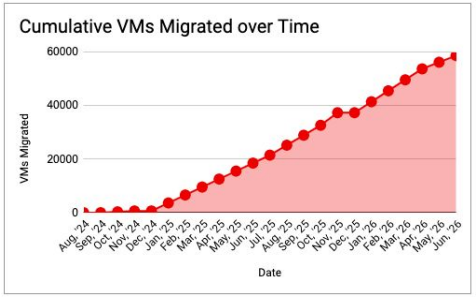
Migration Waves
Squad Model
~12 months

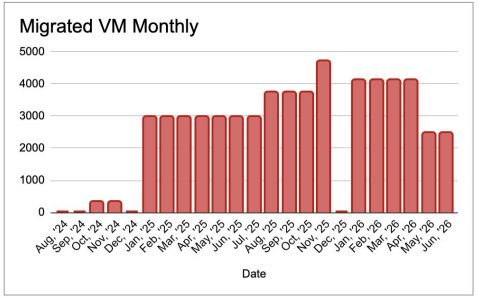
Red Hat Software Engineering and Customer Experience Engineering resource investment
Ongoing dedicated experts from Red Hat's PGE and CEE organizations

Red Hat Consulting Migration Program Management, Red Hat Technical Account Management

Customer

Application Testing of Migrated VMs
Customer led / Red Hat support





Red Hat

[Redacted]

Mapping the Solution with Ecosystem Partners

VMware Portfolio

VMware Subscription Level	Select	Subscription / Core Count
VMware Cloud Foundation (VCF)		
VMware vSphere Foundation (VVF)	X	
VMware vSphere Standard (VVS)		
VMware vSphere Essentials Plus Kit (VVEP)		

VMware Product	Feature	Used (Y/N)
vSphere		[Redacted]
vSAN	Supported Storage Protocol	
	Dynamic Volume Provisioning	
	RWX for Live Migration	
	Snapshot Support	
	Clone Support	
NSX (small set of clusters)	Microsegmentation	
	Multi-Cloud Networking	
	Tunnels (IPSec, VPN)	
	Dynamic Routing (Distributed / Logical)	
	Central Network Management	
	MPLS	
	QoS	
Aria Operations (vROP)	Performance Analytics (vSphere VMs)	
	Health Score	
	Alerting	

VMware Product	Feature	Used (Y/N)
BMC (today)	ITOM/ITSM integration (ServiceNow)	[Redacted]
	Recommendation Engine (e.g. rightsizing)	
	Automated Optimization	
	True Visibility Suite	
Aria Automation (vRA)/vRo	Infrastructure provisioning (LCM)	
	Application Blueprints/workflows	
(Chef/Habitat)	Configuration Management	
	Service Catalog	
	Cloud Assembly	
Aria Log Insights		
HCX (Hybrid Cloud Extensions)		
DSM (Data Services Manager)		
DRS (Distributed Resource Scheduler)		
Storage DRS	use when needed	
VDS (vSphere Distributed Switch)		
VMware Site Recovery Manager		
VMware Tanzu Kubernetes Service		
VMware Tanzu Application Service (TAS, PCF)		

3rd Party ISV Portfolio

Component	Existing Vendor
Backup & Recovery	[Redacted]
DR	
Monitoring	
Logging	
Metrics Collection & Alerts	
Secrets Management	
Certificate Management	
Security in VM/Container	
Day 1 Operations	
Automation and Configuration Management	

Red Hat

Note: Analysis of the Red Hat Services Accelerated Migration Approach, not an analysis of Red Hat OpenShift Virtualization

Accelerated Migration Approach: Key Considerations

[Redacted]

	Considerations	Impacts
STRENGTHS The unique capabilities the [Redacted]+ Red Hat partnership creates	• **Red Hat's Solid Foundation of Knowledge** of [Redacted] environment & organization • Leverage Foundation that define the lifecycle of the migration effort for **early identification of opportunities for efficiencies & scale** • **Deliberate Planning Efforts :** vis-à-vis infrastructure requirements, risk factors, & critical assumptions defined in the **Preliminary High-Level Design** • Strategically **repurpose current investments** for cost avoidance (i.e., Dell hardware)	+ **Clarity** on critical assumptions & risks + **Defined** roadmaps & identified **synergies** + Familiarity of teams & environment will **accelerate collaboration** + Prior **investments get reutilized**/ **optimized**
WEAKNESSES The internal obstacles that may be present, but can be mitigated with planning & commitment of time & resources	• **Dedicated time & resources** (i.e., FTEs, access to systems) for the additional upfront discovery & detailed planning the Accelerated migration approach requires • **Higher number of dependencies, complexity & risks** associated with the accelerated & parallel migration approach • Anticipating GA **release of critical technical features** (Memory Overcommit & Storage vMotion) by EOY 2024	– Lack of resources will impede ability to complete **thorough planning** – Dependencies during parallel phases could create **'domino effect'** – **Technical features** for GA release are needed to make progress on approach
OPPORTUNITIES The external opportunities we can capitalize on that create long-term benefits	• Migration from a singularly focused virtualization platform (VMware) to a standardized container platform that offers an **effective path to modernize** (OpenShift Virtualization) • OpenShift Virtualization capabilities & Red Hat's support model **meets [Redacted]'s strategic goals** • Operationalize **[Redacted]**'s **multi-hybrid cloud strategy** & accelerate **[Redacted]'s AI strategy**	+ Modern platform enables **[Redacted]** to unlock **accretive value over time** + Alignment with [redacted] goals that **shape long-term success**
THREATS Factors external to the joint migration team that will shape the ability to fully execute	• **Operational & Resource Dependencies:** 1) Maintenance/ planned downtime , 2) Timelines of security approvals, 3) [Redacted] resource availability • **Demands on Manufacturing:** 1) Adjustments to high availability requirements of plants, 2) Limitations of physical space & assets for side-by-side migration • **Landscape Complexities:** 1) Unsupported Operating Systems (ie. Ubuntu, etc.), 2) 2TB+ and 10TB+ disks, 3) Configuration Management Database (CMDB) accuracy • **Contingency:** Post-[Redacted] with aggressive timelines & approach	– **Delays in execution,** compounded by the **'domino effect'** – **Negative OpEx** impact in [redacted] & beyond

Red Hat

Note: Analysis of the Red Hat Services Accelerated Migration Approach, not an analysis of Red Hat OpenShift Virtualization

Positioning the Virtualization Migration Factory (VMF)

45 Minutes

Red Hat Learning

Migration Services Journey

Virtualization Migration Assessment (VMA)

Plan to quickly and safely migrate from legacy virtualization platform

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Achieve steady state migration - Reduce legacy footprint

- Migrate workloads, validate and automate migration pattern, scale and complete migration

Training Journey: Virtualization Ops/Engineer

Start here

Inception

1. OpenShift Intro Workshop
Hands-on workshop introducing Red Hat's learning platform and lab environments

2. Enroll into Red Hat Learning Subscription
Register your Red Hat ID and request platform access

Foundation

2. Managing Virtual Machines (DO316)
Learn the core skills to create, access, and manage VMs on OpenShift

3. Office Hour & Ask the Expert Sessions
[Redacted]-exclusive support sessions, providing platform and content guidance

Earn Red Hat rewards for course completion

Foundation

4. Operating a Kubernetes Cluster (DO180)
Deploy, manage, and troubleshoot containerized applications

5. Configuring a Production Cluster (DO280)
Configure and manage OpenShift cluster to maintain security and reliability

6. Red Hat Certified OpenShift Administrator (EX280)
Performance-based evaluation of skills and knowledge required to configure and manage a cloud application platform

Expand and Evolve

7. Linux Automation with Ansible (RH294)
Bring operational efficiency by removing manual processes through automation

8. Red Hat Certified Engineer (EX294)
Performance-based evaluation of skills and knowledge required to understand and operate the Ansible Automation Platform

Exclusive rewards for obtaining Certifications

Ask the Expert sessions

Developer Days & In-person Events

Community-driven Continuous nurture

Red Hat Learning

Technical Account Management Solutions

Recommendations for successful migrations

- **Dedicated OpenShift TAM ~$463K/yr (Recommended for migrations >500 VMs)**
  Dedicated to one account only. Covers OpenShift only. Delivered remotely.
- **Enterprise TAM ~$512K/yr (Recommended for migrations of >5000 VMs)**
  Dedicated to one account only. Covers multiple products (e.g. RHEL, OpenShift and Ansible). Delivered remotely.
- **Shared Openshift TAM ~$129K/yr (Recommended for migrations <500 VMs)**
  Covers 4 accounts or more and only OpenShift. Delivered remotely.
- **Technical Relationship Manager ~$60K/yr (not recommended for migrations)**

Customer Example 1: [Redacted]

Red Hat Alignment with [Redacted]

"[Redacted]"

Migrating **10,000 VM's**, leveraging technology to scale, at the Speed of Light

Consider the Fastest Means to an Outcome

- Realize licensing cost savings sooner, with less risk to timelines
- Red Hat expertise, tooling, and manpower to drive fastest migration
- Continue to have a direct line of communication with Red Hat engineering to iterate as quickly as possible
- Leverage industry proven frameworks and methodologies
- Alleviate your teams to focus on other critical business initiatives

Think In Innovative Ways

- Scale with technology, not people
- Think big, achieve big
- Combine [Redacted] team expertise, with world class technical guidance
- Leverage knowledge from previous successful engagements to contemplate the unknown

Red Hat VM Migration Challenges at Scale

Red Hat Services is the partner of choice to perform mass migrations from VMware to OpenShift Virtualization platform.

Anatomy of a Migration Stall

- Resource constraints while supporting multiple platforms
- Migration planning often underestimated
- Process and practices are not aligned with new platform
- Unforeseen, undocumented technical details

Solution

- Implement Red Hat Ansible for automating VM migration waves
- Red Hat Migration Factory encompassing automating processes and practices
- Day 2 platform automation

Common Migration Challenges

- Automation for pre and post-migration tasks
- Gaps in Day 2 platform operations
- Downtime coordination and scheduling with application owners
- Resource constraints

Benefits

- Accelerated path to migration and modernization
- Automated migration plan execution
- Reduced time and resources spent on manual testing and validation
- Reduce platform operations

[Redacted] VM Migration Journey

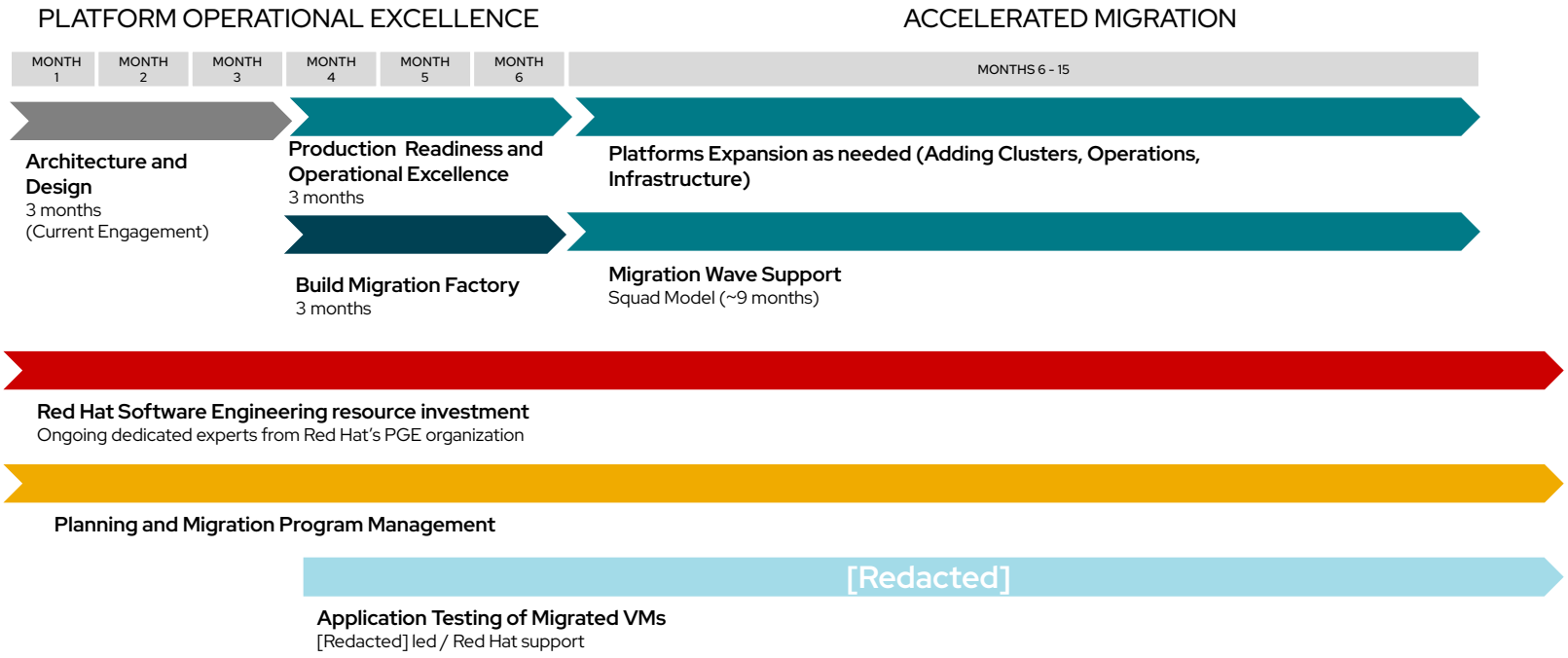
What, how, and why

Challenge	Approach	Benefits
Operational Excellence Reliability and scalability is a priority. The platform should support migrations as well as future growth.	**Enhance Platform Capabilities** • Invest in Day 2 automation • Build capacity management practices • Consistency in cluster deployments	**Platform Reliability** ↓ Operational Cost ↓ Downtime
Balancing Speed and Reliability Gaps in platform automation will slow down migration activities and come at the cost of stability	**Integrate Platform Capabilities with Migration Tooling** • Demand and capacity based scaling • Benchmarking migration activities	**Predictably Scale with Demand** ↓ Deployment Time ↑ Customer Experience
Resource Constraints Supporting two platforms with a lean team is costly and time consuming	**Scale with Process and Technology** • Automation-first approach • Upskill teams with embedded resources	**Upskilling Teams** ↑ Platform Reliability ↓ Time to Migrate
Visibility and Metrics Define and collecting metrics for dashboards, insights, and migration tooling	**Effectively Utilize Metrics and Insights** • Metrics to inform downstream tooling • Continuous improvement • Executive visibility	**Enterprise Agility** ↑ Actionable Insights ↑ Operational efficiency

Red Hat

[Redacted] "[Redacted]" Migration

Phase 2: Platform Operational Excellence + Migration Factory



Red Hat

[Redacted] VM Migration Acceleration

Scope Overview

Operational Excellence

- Expand GitOps capabilities and single source of truth for cluster configs
- ACM policy generation and management for consistent governance and security
- ACM High Availability and DR
- Day 2 Operations:
  - Certificate management
  - Capacity management
  - Patch and upgrade management
  - Backup and restore
- Workload management and deployment strategies
- Additional operator configuration and optimizations
  - Node Tuning
  - Compliance
  - NMstate
  - Proactive Node Scaling
- Operational health, capacity, actionable insights, and dashboards

Migration Factory

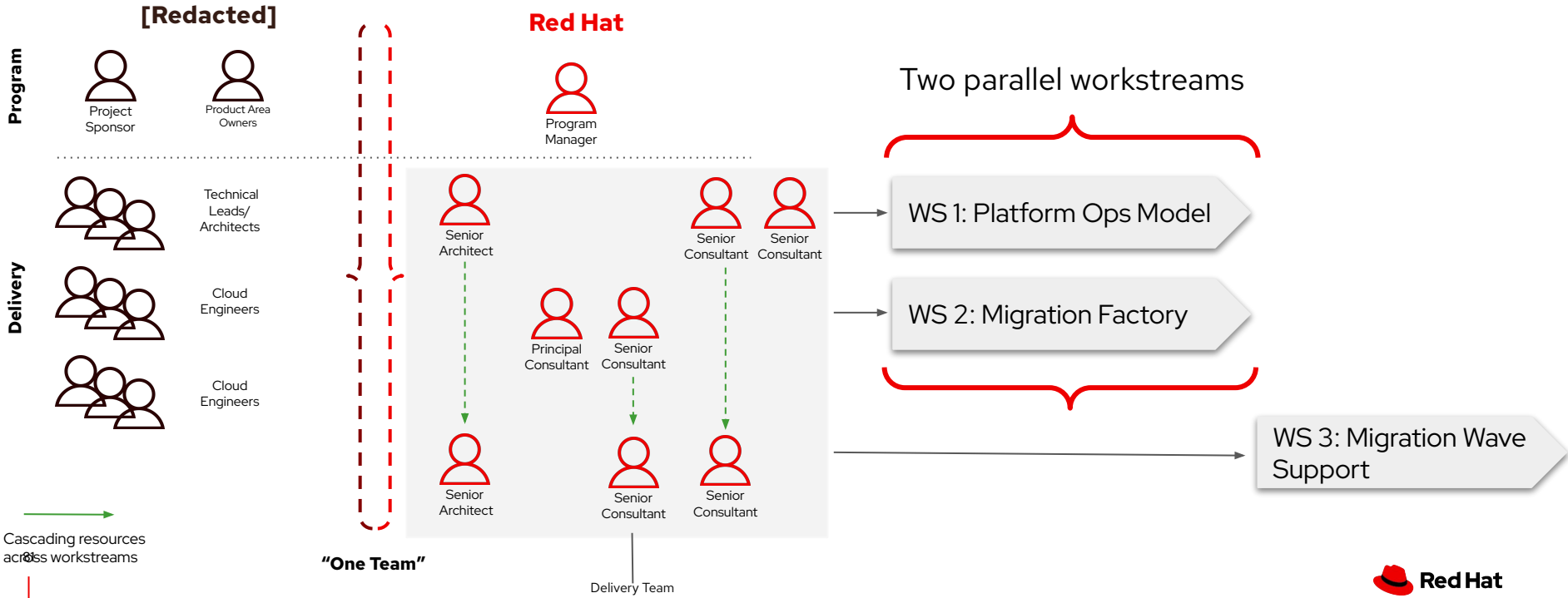
- Define and codify VM governance rules and migration policies
- Ansible Automation Platform
  - Private automation hub
  - GitOps platform configuration
  - Platform integration with existing tooling
  - Identify, authentication, authorization
  - Identify and create migration workflows
  - Initial wave automation
  - Secrets and key management
  - Execution environments
- Phase 1 initial migration wave
- Event-driven alerts and automation
- Capacity awareness in migration tooling
- Day 2 Operations
  - Testing and validation strategy and automation
  - Dynamic cluster scaling

Migration Wave Support

- Iterative augmentation of tooling development
- Migration wave planning and use case mapping
- Migration wave queuing and batching
- Pre-migration VM state inventory
  - Virtual hardware (disk, network, GPU, etc)
  - Critical services/agents
  - Access (service account, admin)
- Pre-migration validation
  - Target capacity
  - Storage Availability
  - Tier/Use Case features
  - Decision/risk engine
- Post-migration test and validation
  - Test and validate against defined attributes from pre-migration
  - User/key injection
  - Tagging
  - Agent/virtual hardware config
  - Resource reservation

Teaming Model

[Redacted]– Red Hat Collaboration for Success



Teaming Model

[Redacted]– Red Hat Collaboration for Success

WS 1: Platform Operating Model

Senior Architect

Platform Architecture

- Technical guidance and leadership of consultant deliverables across work streams
- Provides architectural for managing Openshift clusters
- Design and configure GitOps for source controlled configurations
- Cluster testing and validation strategy
- Design and document ACM availability and operational procedures
- Develop capacity and scaling plans
- Develop observability and exposing to downstream tools

Senior Consultant

Platform Operations

- Assess gaps in out-of-box policy vs requirements
- ACM policy configuration and management
  - Governance policy for ingress and certificates
  - Compliance operator
  - Custom policy development
- ACM multi-cluster observability and health
- Cluster Health - monitoring, alerting, remediation
- Assist with benchmarking migrations

Senior Consultant

Platform Operations

- Cluster provisioning and deprovisioning
- GitOps process engineering
  - Branching strategy
  - Repo design
  - Applying initial cluster configurations
  - Testing and validating
- Workload management and deployment strategies
- Automate operational procedures
  - Cluster back and restore procedures
  - Patch and upgrade management
  - Certificate management
  - Cluster testing and validation

Red Hat

Teaming Model

[Redacted]– Red Hat Collaboration for Success

WS 2: Migration Factory

Principal Consultant

Automation Platform

- Design and implementation of Ansible Automation Platform
  - GitOps approach to platform configuration
  - Integration with existing migration tooling
  - Execution environments
- Identify initial automation workflows
- Identify, design, and document API interfaces with custom written and existing tooling
- Pre and post migration workflow design
- VM migration governance and migration policies
- Pre and post VM migration automation

Senior Consultant

Migration Automation

- Ansible platform configuration
  - Baseline automation collections and job templates
  - Credentials
  - Organizations, users, teams
  - Inventory management
- Create initial automation playbooks for VM migration
- Document migration wave automation and design
- Day 2 platform automation
  - Testing and validation strategy
  - Dynamic cluster scaling

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Teaming Model

[Redacted]– Red Hat Collaboration for Success

WS 3: Migration Wave Support

Senior Consultant

Migration Support

- Ongoing migration wave planning
- Ongoing migration wave execution and tooling support
- Migration wave batching
- Technical liaison for product and feature support
- Ongoing knowledge transfer and upskilling teams
- Post-migration VM automation
  - Test and validation of migrated VMs
  - Post migration configuration
  - User/key injection
- Day 2 platform support and automation

Senior Consultant

Migration Automation

- Ongoing migration wave execution and tooling support
- Pre-migration automation
  - Target cluster capacity
  - Storage availability and capacity
  - Tiering/Use case specific automation
- Develop decision and risk evaluation workflow automation
- Develop event-drive automation workflow from platform triggers
- Iterative automation development

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Customer Example 2: Redacted

Certification Environment for Phase 1

Phase 1 Outcome:
Prove the functionality, performance and reliability of the proposed cluster architecture as it would be implemented inside of [Redacted] Company's network and data center constraints.

Objectives:
Evaluate the functionality, performance, and reliability of the proposed cluster architecture within [Redacted] Company's network and data center constraints.

Lays the foundation for migration by preparing OpenShift infrastructure and related automation, defining and validating a strategy for migration, and developing procedures and providing training.

Work Streams	Purpose
EDC Virtualization	Focus on the use-cases identified for the EDC deployment and VMs
Plant / Distributed Virtualization	Focus on the use cases and unique scenarios specific to the plant/distributed scenarios
Platform Automation	Enable the OpenShift Virtualization infrastructure deployment and the related automation (including reuse of existing assets at [Redacted])

Non-production environment. Initial VM migrations and initial use-cases tested with Phase 1 workloads

EDC and Plant /Distributed Virtualization

GOAL: Focus on the use-cases identified for the EDC deployment and VMs

OVERVIEW:

- Deploy and validate Openshift virtualization environments
- Migrate representative test VM workloads to the Openshift virtualization certification environments
- Complete a suite of functional, performance and resilience tests to certify the environments
- Initial VM Migrations (with MTV)
- Platform Operationalization (observability)
- Testing and Validation
- Develop a process for migrations of upper environments

OUTCOMES:

- Validation of the proposed OpenShift Virtualization architectures' functionality, performance, and reliability within [Redacted]'s network and data center constraints
- Successful testing of initial VM migrations and use-cases with initial workloads
- Have a tested process for migrations for upper environments

DEFINITION OF SUCCESS: Validated the agreed upon use cases for the four architectural migration models

Platform Automation

GOAL: Enable the OpenShift Virtualization infrastructure deployment and the related automation

OVERVIEW:

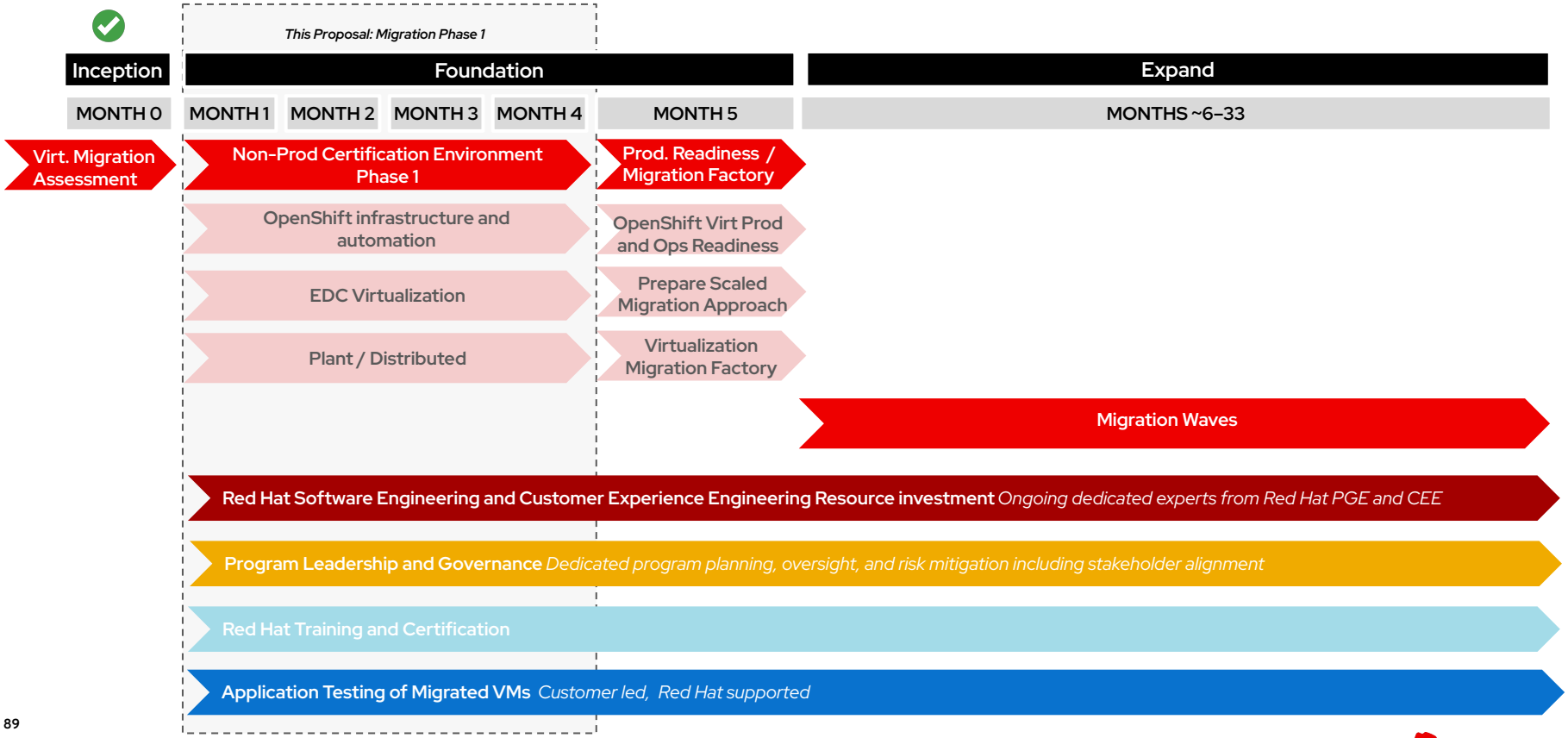
- Identify capabilities to assist with[Redacted]'s goal of establishing consistent Deployment and Day-2 operational automation practices for EDCs and plants
- Reuse existing automation and other platform artifacts (e.g., the GitOps based IaC) developed for the current OpenShift CaaS implementation
- Infrastructure low-level design
- IaC / GitOps and AAP automation for infrastructure
- OpenShift deployments
- Process and automation for host recommissioning

OUTCOMES:

- Automation-first approach with consistency of implementation
- Successful implementation of platform best practices and automation ensuring adherence to best practices and “doing it right the first time”

DEFINITION OF SUCCESS: Validate scaled migration and the critical Day-2 operations (3-5 use cases) using AAP automation; Review existing automation at [Redacted] for reuse assessment and integration

[Redacted] Migration Program Timeline



*[Redacted]s outage and release schedules have not been provided to Red Hat for this estimate. This timeline is based on standard industry holiday and quarter schedules.
For a more accurate timeline, [Redacted] will need to provide actual release and outage planning details.

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Phase 1 Teaming Model

[Redacted] **Red Hat**

Program Governance & Technical Leadership

Technical Stakeholders | Project Sponsor | Product Area Owners | Managing Director | Program Manager | Enterprise Architect

Workstreams

Delivery

Project Manager | Architect | Tech Lead / Engineer | Architect | Tech Lead / Engineer

Delivery Lead	Sr. Consultant	Sr. Consultant	→ EDC Virtualization
Sr. Architect	Sr. Consultant	Sr. Consultant	→ Plant / Distributed
Sr. Architect	Sr. Consultant	Sr. Consultant	→ OpenShift infrastructure and automation

Resource Key

- *Part-time resources*
- *Shared amongst workstreams*
- *Full-time dedicated*

Red Hat

Phase 2: Migration

Deploy production infrastructure and migrate at scale

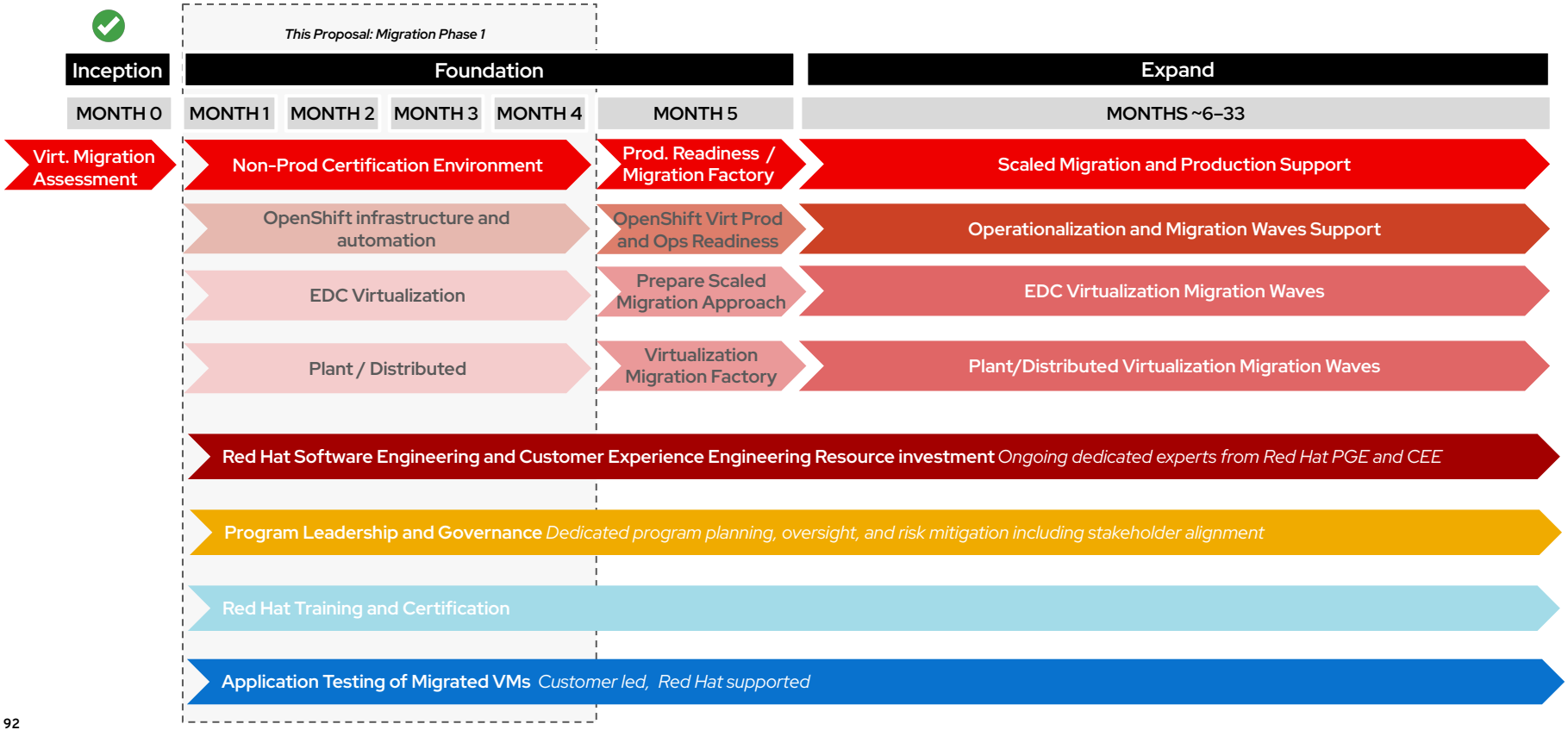
Migration Outcome:
Successfully transitioning thousands of virtual machines to OpenShift Virtualization clusters while ensuring the new platform meets [Redacted]'s production system requirements. The goal is to achieve an efficient, automated, and scalable virtualization platform that integrates seamlessly with the company's existing infrastructure and operational practices.

Objectives:

- Deploy, manage, and monitor OpenShift Virtualization clusters
- Develop automation solutions for VM migration
- Leverage existing automation and GitOps practices
- Prepare a scaled migration approach
- Ensure operational readiness

Work Streams	Purpose
Virtualization Migration Factory	Design and deploy Ansible Automation Platform and validate Ansible playbooks for batch VM migration, configurations, rollback and recovery, and VM validation
Scaled Migration Approach	Develop a seamless VM migration process with infrastructure-led and self-service options, workload planning, outage windows, preflight checks and exception handling
Platform Operations & Support	Ensure seamless deployment, management, and integration of OpenShift Virtualization clusters with company systems and support day-2 operations through ACM

[Redacted] Migration Program Timeline



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Migration Factory Teaming Model

[Redacted] **Red Hat**

Program Governance & Technical Leadership

Technical Stakeholders | Project Sponsor | Product Area Owners | Managing Director | Program Manager | Principal Architect | Project Coordinator

Workstreams

Project Manager | Architect | Architect | Tech Lead / Engineer | Tech Lead / Engineer

		Wave 1			Wave 2		
Senior Architect	Delivery Lead	Sr. Consultant	Consultant	Consultant	Sr. Consultant	Consultant	Consultant
Senior Architect	Delivery Lead	Squad 1 Sr. Consultant	Consultant		Squad 2 Sr. Consultant	Consultant	
Senior Architect	Delivery Lead	Sr. Consultant					

→ Virtualization Migration Factory

→ Scaled Migration Approach

→ Platform Operations & Support

Resource Key

- *Part-time resources*
- *Shared amongst workstreams*
- *Full-time dedicated*

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Proposal for the Complete Migration

Bill of Materials

Recommended Red Hat Environment

Red Hat Portfolio

Product	Quantity
OpenShift Kubernetes Engine (Bare Metal Node) (1-2 sockets) For VM Migration	1,700 Nodes
Advanced Cluster Management (1-2 sockets)	TBD
Ansible Automation Platform (100 Managed Nodes)	5,000 Nodes
OpenShift Platform Plus (Bare Metal Node) (1-2 sockets) For App Platform	TBD

Host Count per Category

Product	Quantity
# of hosts for Virtualization use case	
# of hosts for Container Management use case	
# of hosts for Application Platform use case	

3rd Party ISV Portfolio

Component	Red Hat Recommended Vendor	Recommended Subscription
Backup & Recovery	Cohesity	TBD
DR	Cohesity	TBD
Monitoring	Current Solution: WhatsUP Gold,Cisco Workload monitoring, Dynatrace Add: ACM Observability, Alertmanager for Virt clusters	As-is + TBD
Logging	Current Solution: Splunk/Google Bucket/shell script/vRealize Log Insight Future: Logging 6.0 for OTEL	As-is + TBD
Metrics Collection & Alerts	Current Solution: WhatsUP Gold,Cisco Workload monitoring, Add: ACM Observability, Alertmanager for Virt clusters	As-is + TBD
Secrets Management	Current Solution: HashiCorp Vault	As-is
Certificate Management	Current Solution: Globalsign	As-Is
Security in VM/Container	Current Solution: AV - ACS (Container Scanning) ,Cisco Traffic Watch and ACLs, vTPM, data encrypted at rest (SAN/NAS), compliance operator	As-is
Day 1 Operations	Habitat,chef,custom scripts	Ansible Automation Platform (AAP)
Automation and Configuration Management	Habitat,chef,custom scripts	Ansible Automation Platform (AAP)

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Customer Example Pricing #1

Red Hat and [Redacted] have successfully completed the assessment of [Redacted] VMware environment and have built a proposal to migrate the entirety of [Redacted] [Redacted]k VMs running on VMware, using a scaled migration factory over a period of two years. This deck highlights the key findings, recommendations, and migration approach.

Phase	Deliverables / Outcomes	Duration	Estimated Pricing
Lift and Shift Migration			
Foundation	OpenShift Virtualization and Migration Factory Build and Operationalization	7 Months	[Redacted]M
Accelerated Migration	Successful Migration of the existing 66k VMware Virtual Machines	18 Months	$[Redacted]M
Red Hat Subscriptions after migration	Subscription growth for: OpenShift Virtualization Engine (OVE) Advanced Cluster Management (ACM)	Annual Contract Value	$[Redacted]M
Recommended Modernization			
Containerization and Testing Squads	Teams focused on containerizing, testing and skills transfer to product teams *Best effort, replatform viable applications	24 Months	$[Redacted]M Testing $[Redacted]M Containerization

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Customer Example Pricing #2

Phase	Deliverables / Outcomes	Duration	MSRP	[Redacted]Price
Platform Operationalization	• GitOps Cluster Configuration • Day 2 Ops Automation • Hardware Commissioning • Automated wave cluster builds • Capacity Management • Observability	~3 Months		
Migration Factory	• VM Migration Wave Planning • Automation Platform Deployment • VM Testing and Validation Automation • Migration Plan Automation	~3 Months		
Migration Wave Support	• Execute Migration Waves • Iterative Workload Automation • Workload Validation and Testing • Workload Optimization	~9 Months	$[Redacted]	$[Redacted]
Software Licensing (assumes 10,000 VM's running on 330 physical servers)	• OpenShift Virtualization Licensing • Ansible Automation Platform Licensing ○ For migration purposes		$[Redacted] $[Redacted]	$[Redacted] $[Redacted]
		~~Total Project Cost:~~	**~~$[Redacted]~~**	[Redacted]

**final pricing will be delivered by reseller of choice*

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Discussion

- What did you learn?
- What do you plan to do differently with your customer?

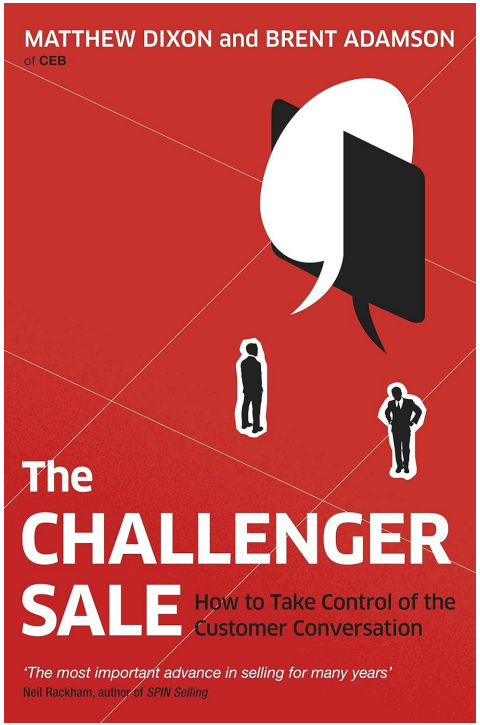
10 Minutes

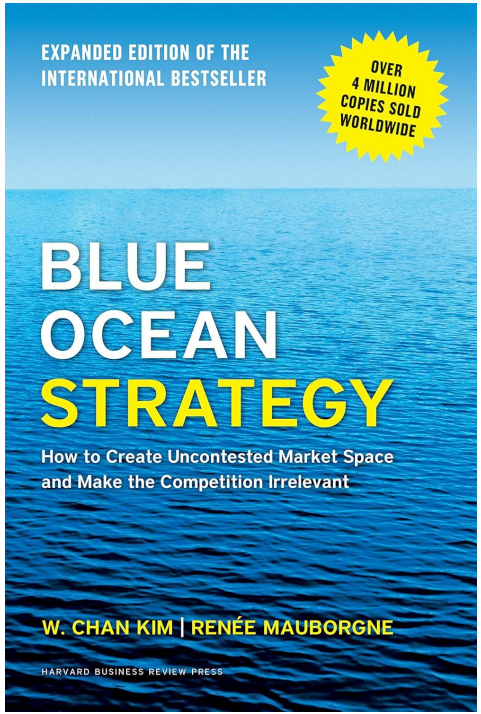
The Road to Customer Value through Virtualization

2 hours

Red Hat Learning

Enhance your approach by evolving your selling skills





VM migration or VM modernization

Option 0

Stay on VMware

Option 1

Move to OpenShift Virtualization Engine (OVE)

Option 2

Move to OpenShift Kubernetes Engine (OKE)

Option 3

Move to Openshift Platform Plus (OPP)

Challenges

Customer virtualization paths

$	$$	$$$
"Get me off this platform"	*"Get me to a better platform"*	*"I'm ready to do it all"*
Migrate	**Migrate to Modernize**	**Modernize**
VM → VM	VM → VM + Containers	VM → App platform

Most customers are here

OpenShift Virtualization Engine (OVE)	OpenShift Kubernetes Engine (OKE)	Openshift Platform Plus (OPP)
Virtualization TDP/Sales Play	*Container Management TDP/Sales Play*	*Application Platform TDP/Sales Play*

Challenges — Personas — Messaging — Approach

Catch the cues: migrate

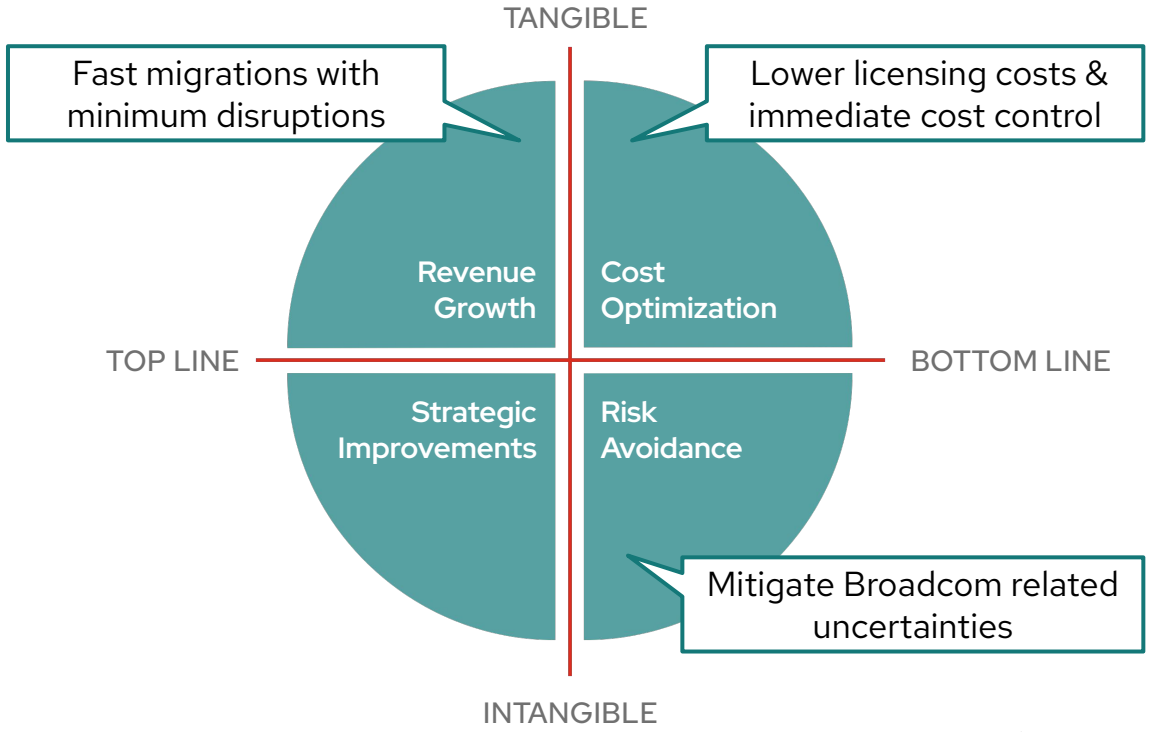
Openshift Virtualization Engine

"I have all my VMs in VMWare. Should I have multiple virtualization platforms ...?"

"I'm worried about what they'll do in the future ..."

"There's nothing technically wrong with VMWare ..."

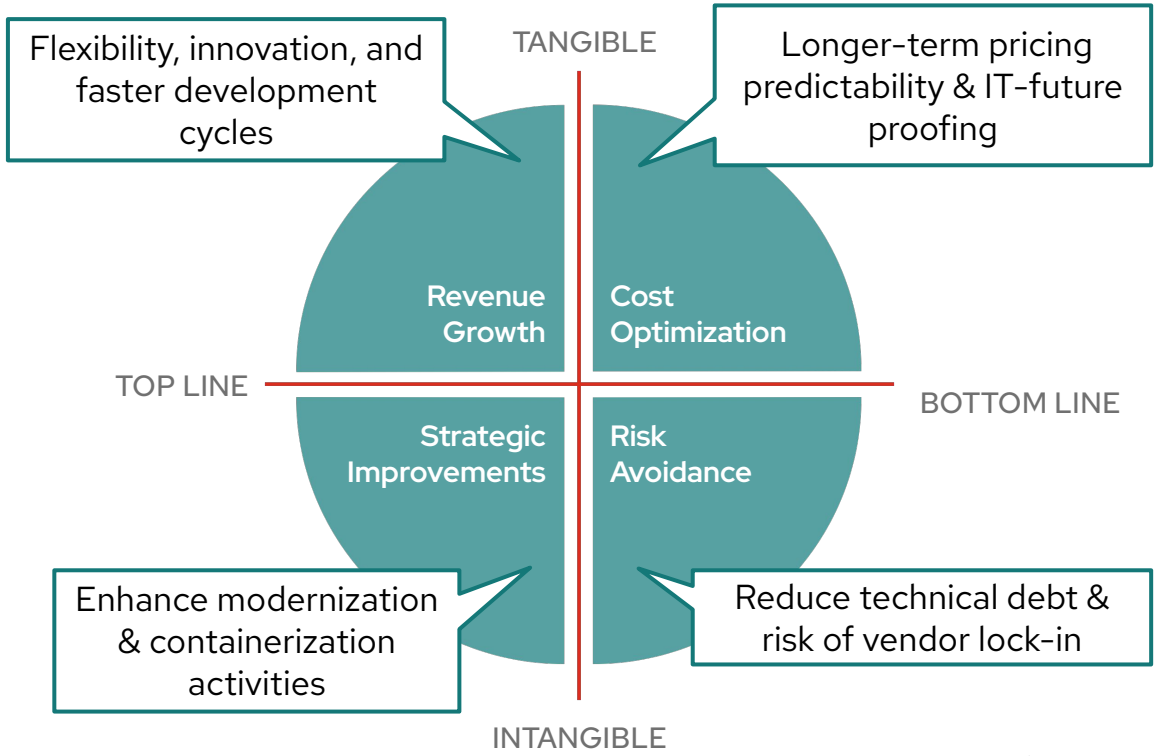
"I need something that won't hold me ransom on cost ..."



Catch the cues: migrate to modernize

"The Broadcom disruption is making me think about accelerating my modernization via containers ..."

"I would need something that provides more efficiency to make a significant change ..."

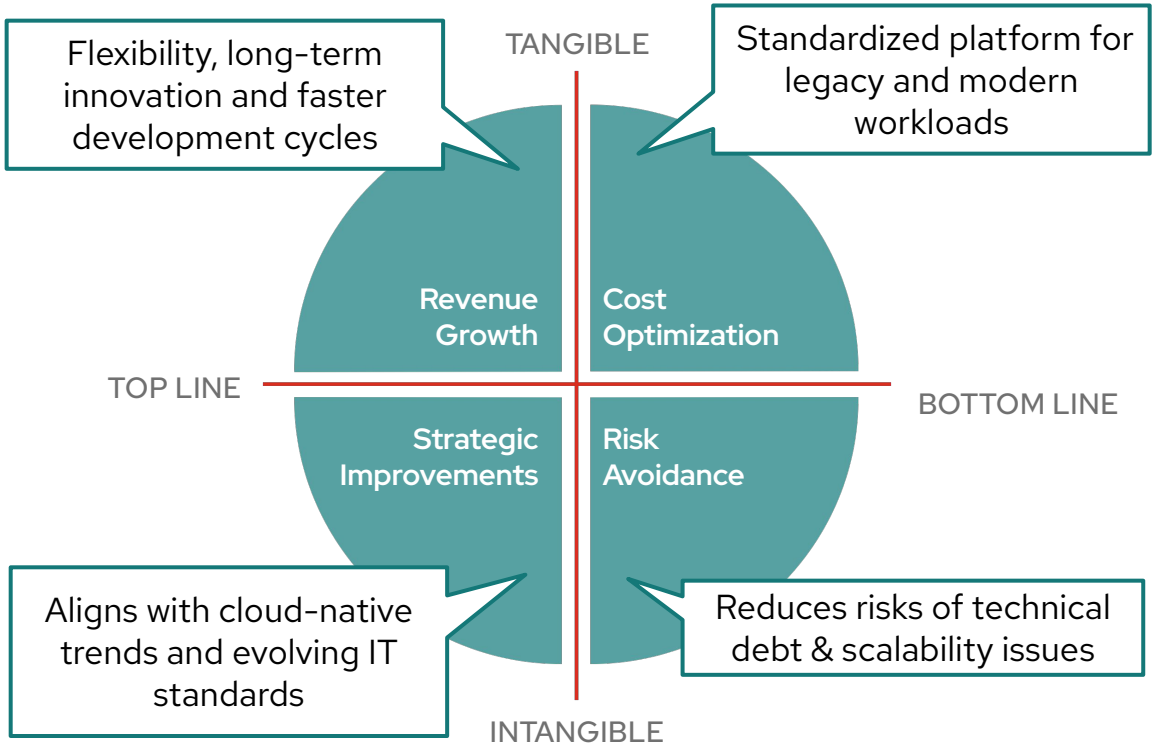


Catch the cues: modernize

OpenShift Platform Plus

"My VMware stuff has forced me to accelerate my app mod strategy to move towards modern architectures via cloud native apps..."

"I want to make sure my Infra Platform is set up to improve our customer / employee experience ..."



Positioning the correct OpenShift edition

Red Hat OpenShift

The platform for all your workloads

Trusted

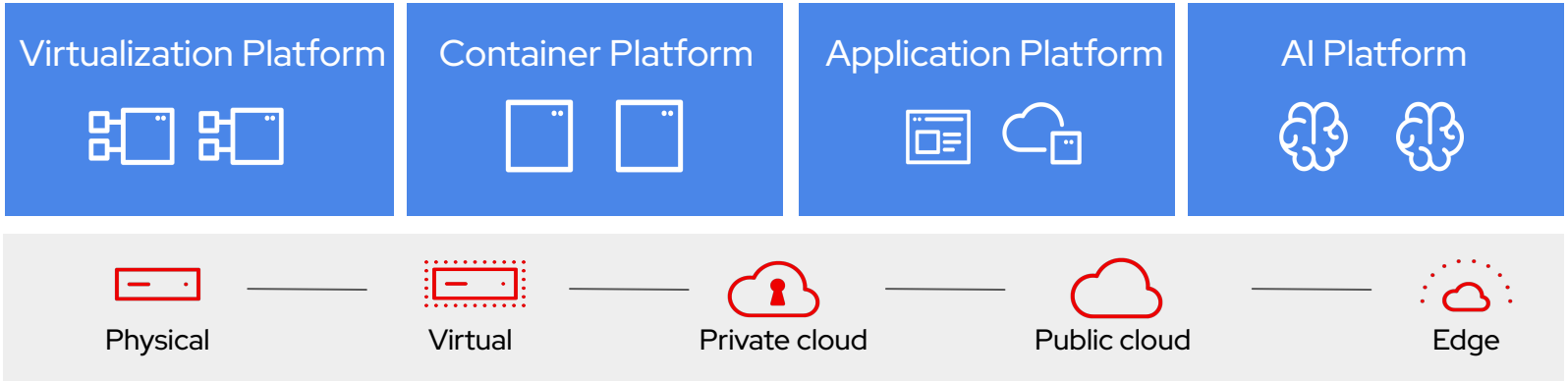
to reduce risk

Comprehensive

to improve productivity

Consistent

to increase flexibility



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Super-sizing deals from virt to modernization

Customer Pain	"Complexity in our infrastructure makes it difficult to manage and costly to maintain. It becomes difficult to automate existing processes and deployments across multiple operating systems, platforms and footprints. This impacts our agility, and makes it difficult for us to maintain systems in critical areas, such as security vulnerabilities and performance."	"My VMware costs are going through the roof and I want to reduce my dependency on VMware."	"I need consistent, portable and scalable infrastructure for my containerized workloads and applications across any environment."	My developers spend too much time being distracted by infrastructure and security issues, and not focused on building applications. I need a platform that provides on-demand services, abstracts away operational considerations, speeds time to production, and makes my developers more productive.	"Managing my IT environment is more complex than ever and I don't have enough skills or budget to bring on more resources. I need automated, resilient infrastructure that frees time to innovate by maximizing existing investments and integrating AI tools into operations."	"It's difficult to get started with and scale up AI to meet the needs of my business. There are too many models to choose from and it is very expensive to train and build them into applications. There are also a number of data and security considerations that we are not equipped to handle."
Marketing Campaigns	RHEL	Virtualization	Container Management*	App Platform	Automation	Adopt & Scale AI
Sales Play/ TDP	Server/Cloud Operating System	Virtualization	Container Management	Application Platform	Mission Critical Automation	AI Platform
	Edge & Cloud Offerings					
Sales Tactics-	1. Adopt a standardized operating environment 2. Optimize and secure my operating system 3. Innovate across the hybrid cloud with RHEL 4. Maximize portability in the Cloud	1. VM Migration 2. VM Modernization	1. Kubernetes for general containerized application workloads (non-AI) 2. Kubernetes for third party AI workloads 3. Multicluster management and security at scale for Kubernetes.	1. Modernize legacy apps & develop net-new cloud-native apps 2. Increase developer productivity for kubernetes and hybrid cloud 3. Secure the software supply chain and platform operation	1. Enterprise-wide automation (expanding AAP in the enterprise) 2. Standardize on AAP (converting free to enterprise) 3. Maximize technology investments (AAP + AI/RHEL/Virt/ISV) 4. Network automation	1. Private AI 2. Operationalize AI 3. Multi-architecture AI Deployment
Products	RHEL, Satellite	**OpenShift Virtualization** OpenShift Virtualization Engine, OpenShift Kubernetes Engine, Ansible, ACM, Partner Products	**OpenShift Kubernetes Engine, OpenShift Container Platform, ACM, ACS**	**OpenShift Cloud Services, OpenShift Platform Plus** Developer Productivity, Runtimes & Integration	Ansible	RHEL AI, OpenShift AI

Red Hat Provides Customers with Options

Paths to Virtualization, Containerization & Application Modernization

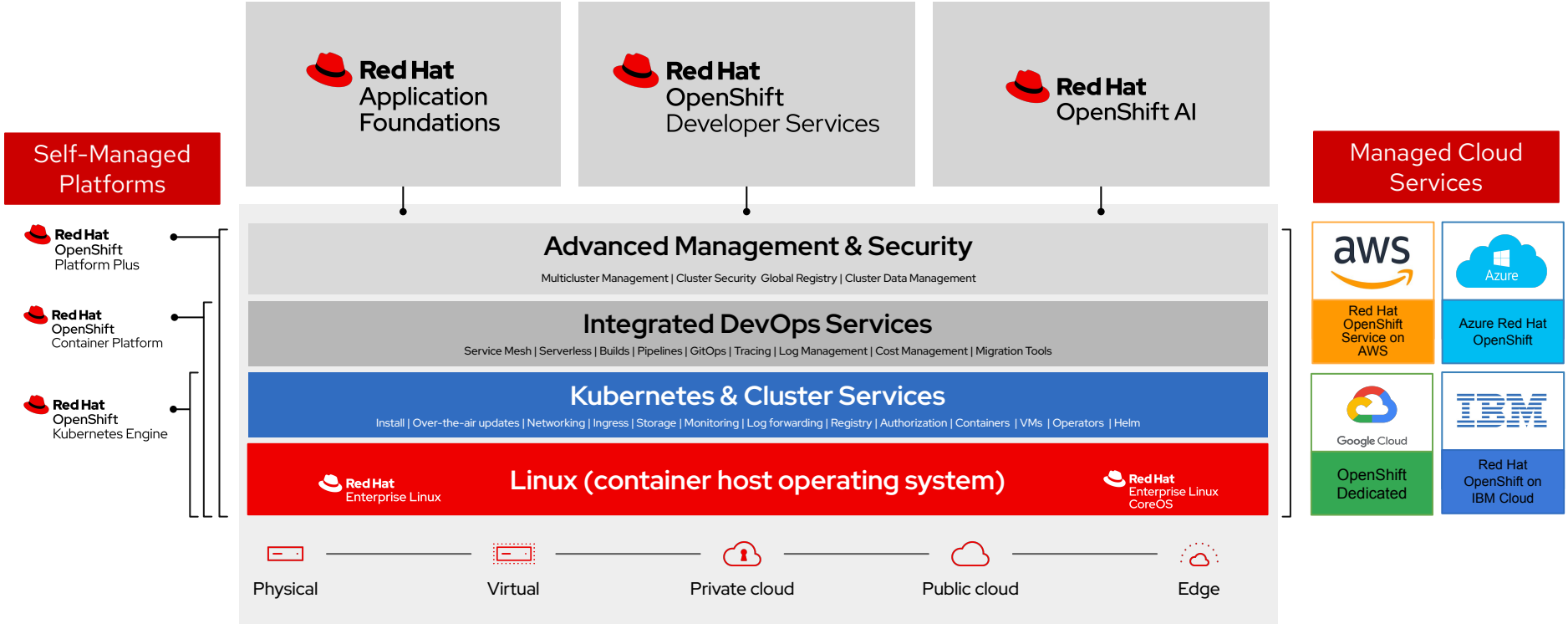
Example Client Mix of OpenShift Environments

~70%	~15%	~15%
$	$$	$$$
"Get me off this platform"	*"Get me to a better platform"*	*"I'm ready to do it all"*
Migrate	**Migrate to Modernize**	**Modernize**
VM → VM	VM → VM + Containers	VM → App platform

OpenShift Virtualization Engine (OVE)	OpenShift Kubernetes Engine (OKE)	Openshift Platform Plus (OPP)
Only	*Mixed*	*Cloud Native Build/Modernize*
Virtualization	*Container & VMs Management*	*Application Platform*

NOTE: Many Customers will simply want to rehost / migrate their existing VMs to a new trusted platform. For this use case, OVE + ACM-V + Ansible is the low cost approach. However, for customers that have already invested in containerized applications they can run a portion of their environment using OKE + ACM supporting a mixture of VMs and Containerized customer applications. Finally, customers who have a portion of their environment undergoing new development or that wish to modernize their existing legacy applications; then modernization with Red Hat using OpenShift Platform Plus is the ultimate in cloud-native application platforming option. This mix provides customers with choice to run the right openshift entitlement; for the right workloads; in the right location - Data Center, Cloud or Edge.

The consistent fabric of the hybrid cloud datacenter



"Once you're running OpenShift, just light up more features"

Hybrid cloud application platform

DRAFT

Red Hat OpenShift

Advanced Management & Security

Multicluster Management | Cluster Security | Global Registry | Cluster Data Management | Compliance & Policy Automation

Integrated DevOps Services

Service Mesh | Serverless | Builds | Pipelines | GitOps | Tracing | Log Management | Cost Management

Containers

Image Registry | Container Runtime | Pod Autoscaling | Resource Quotas & Limits | Namespace Isolation | Container Networking

VMs

Live migration | Auto-scaling | Windows & Linux | Migration toolkit

Kubernetes & Cluster Services

Install | Over-the-air updates | Networking | Ingress | Storage | Monitoring | Log forwarding | Registry | Authorization | Operators | Helm

Red Hat Enterprise Linux — Linux (host operating system)

- Red Hat OpenShift Platform Plus
- Red Hat OpenShift Container Platform
- Red Hat OpenShift Kubernetes Engine
- Red Hat OpenShift Virtualization Engine

Managed Cloud Services: aws, Azure, Google Cloud, IBM

Physical — Virtual — Private cloud — Public cloud — Edge

Red Hat

Red Hat

	Red Hat OpenShift Virtualization Engine	Red Hat OpenShift Kubernetes Engine	Red Hat OpenShift Container Platform	Red Hat OpenShift Platform Plus
Enterprise Secured Kubernetes	✓	✓	✓	✓
Hosted control planes	✓	✓	✓	✓
Operator Lifecycle Manager	✓	✓	✓	✓
Compliance & File Integrity Operators	✓	✓	✓	✓
Virtual machine-based workload hosting	✓	✓	✓	✓
Container-based infra workload hosting	✓	✓	✓	✓
User Workload Monitoring	✓	✓*	✓	✓
Platform Logging	✓	✓*	✓	✓
OpenShift GitOps	✓	✓*	✓	✓
Metering and Cost Management SaaS Service	✓	✓	✓	✓
Container-based user application hosting		✓	✓	✓
RHEL guest and hosted virtual OpenShift subscriptions included		✓	✓	✓
CI/CD Pipelines			✓	✓
Service Mesh			✓	✓
Serverless			✓	✓
Tracing			✓	✓
Runtimes & Webtools			✓	✓
Multi-cluster complete management with Red Hat Advanced Cluster Management				✓
Kubernetes-native security with Red Hat Advanced Cluster Security				✓
Scalable, central registry with Red Hat Quay				✓
Persistent software-defined storage & essential data services with OpenShift Data Foundation Essentials				✓

*VMs only. Learn more.

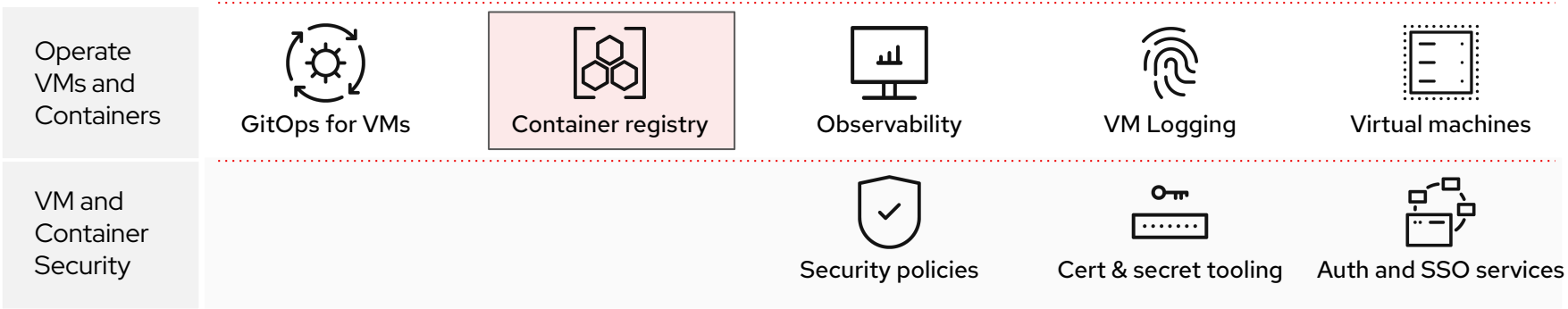
Virtualization Platform (OVE)

Trusted and consistent across hybrid cloud

Operate VMs	GitOps for VMs	Observability	VM Logging	Virtual machines
VM Security		Security policies	Cert & secret tooling	Auth and SSO services

Container Management Platform (OKE)

Trusted and consistent across hybrid cloud



Application Platform (OPP/Cloud Services)

Trusted, comprehensive, and consistent across hybrid cloud

Application Build	Runtimes & languages	Developer Tools	Serverless & functions	Cloud Services APIs	Migration tools
Application Delivery	CI/CD & GitOps	Container registry	Observability	Logging	Virtual machines
Application Security	Service mesh	Vulnerability scanning	Security policies	Cert & secret tooling	Auth and SSO services

Know what OpenShift to Position

	Virtualization	Container Management	Application Platform
Core OpenShift Product	OVE	OKE	OPP/Cloud Svcs
Competing Products	vSphere, Hyper-v, Nutanix AHV, Rancher Harvester	VMware VVF/TKG, Nutanix NKP, SUSE/Rancher RKE, Spectro Cloud, Canonical, Mirantis, FOSS (DIY upstream), EKS, AKS, GKE	VMware Tanzu Platform, Heroku, AWS AppRunner, Azure AS, Google App Engine
Pricing Pressure (Need to discount)	Medium	High	Low

Virtualization with Red Hat

Supporting your Virtualization journey

A customizable approach based on your business needs and your current readiness state

Learn

Virtualization Roadshows and Workshops

Workshops around the world with **virtualization admins** to show them how they would manage this **modern environment**

Strategy

Virtualization Migration Assessment

Identify current VM architecture, **analyze** workloads, and **propose a** high-level design and **roadmap** for a strategic critical **path forward**

Foundation

Virtualization Migration Proof of Value

Deploy OpenShift cluster, **enable and validate** virtualization features, **automate** Day 2 Operations

Expand

Virtualization Migration Factory

Address expenses by prioritizing and planning to **repeat** migration patterns, **validate** migration and **retire** your legacy platform

Evolve

Optional

App Modernization and Automation Accelerators

Maintain your existing VM investments and work towards modernizing applications **when you're ready**

Services + Training + Technical Account Management

Red Hat Learning

Red Hat Services

Red Hat Services for OpenShift

Services Solutions from Virtualization Migration to App Modernization

Virtualization Migration

Virtualization Migration Assessment (VMA)

Virtualization Proof of Value

Virtualization Migration Factory

Key Customer Outcomes

- Plan to quickly & safely migrate from legacy virtualization platform
- Prove virtualization technology. Prepare and operate at scale
- Production ready platform for VMs
- Achieve steady state migration and reduce legacy footprint

Application Modernization

App Modernization Accelerator

App Portfolio Assessment

Scaled App Modernization

Key Customer Outcomes

- Accelerated app onboarding
- App portfolio assessment & modernization
- Scaled app modernization patterns to reduce tech debt

Training and Certifications for Admins & Devs | Technical Account Management

Engage your Services Sellers for a Discovery Session today!

Red Hat Provides Customers with Options

Paths to Virtualization, Containerization & Application Modernization

Example Client Mix of OpenShift Environments

~70%	~15%	~15%
$	$$	$$$
"Get me off this platform"	*"Get me to a better platform"*	*"I'm ready to do it all"*
Migrate	**Migrate to Modernize**	**Modernize**
VM → VM	VM → VM + Containers	VM → App platform

OpenShift Virtualization Engine (OVE)	OpenShift Kubernetes Engine (OKE)	Openshift Platform Plus (OPP)
Only	*Mixed*	*Cloud Native Build/Modernize*
Virtualization	*Container & VMs Management*	*Application Platform*

NOTE: Many Customers will simply want to rehost / migrate their existing VMs to a new trusted platform. For this use case, OVE + ACM-V + Ansible is the low cost approach. However, for customers that have already invested in containerized applications they can run a portion of their environment using OKE + ACM supporting a mixture of VMs and Containerized customer applications. Finally, customers who have a portion of their environment undergoing new development or that wish to modernize their existing legacy applications; then modernization with Red Hat using OpenShift Platform Plus is the ultimate in cloud-native application platforming option. This mix provides customers with choice to run the right openshift entitlement; for the right workloads; in the right location - Data Center, Cloud or Edge.

The consistent fabric of the hybrid cloud datacenter

Always plant the Container Management and App Platform seeds for modernization during VM migration sales

"Once you're running OpenShift, just light up more features"

Get in the head of the decision maker

Decision Maker / Economic Buyer: CIO, CTO, CRO

Focus: Corporate goals, overall health of the organization
Strategic goals • Revenue growth • Innovation • Calculated risks

Pref. Language: $, ROI, EPS, Strategic Goals

Technical Proficiency: Low to Medium

Get in the head of the line of business owner

Line of Business - AKA: Application Owner, Department Head

Focus: Meet targets for their department or team
Speed to market • Cost (hard and soft) • Risks Minimization

Pref. Language: Business Impact, Scalability, Compliance

Technical Proficiency: Medium

Get in the head of the VMware admin

VMware Admin: Administrators, Infrastructure Architects

Focus: Simplify Migration & Reduce Operational Risk
Speed to Migration • Minimize Disruption • Flexibility & Scalability

Pref. Language: Consistency, Scalability, Efficiency, Security, VMware

Technical Proficiency: High

Present a compelling solution to the business buyer

BUSINESS OBJECTIVES  SOLUTION ENABLERS  BUSINESS IMPACT 

- Group business objectives into value categories relevant to your customer.
- Identify product-solution enablers that match the customer's key objectives.
- Identify the expected impact of the business capabilities that the solution enables.

Red Hat Virtualization enables business objective achievement

BUSINESS OBJECTIVES

Cost Optimization

SOLUTION ENABLERS

ECONOMIC BUYER:
Create a strategy to offset current inflationary VM pricing

APP OWNER:
Integrated platform includes VMs, Kubernetes, and Application Platform for application life-cycle management using any infrastructure.

VMWARE ADMIN:
Simplify the management of fleets of VMs under a single pane of glass with increased observability

BUSINESS IMPACT

ECONOMIC BUYER:
Reduce Software Costs

APP OWNER:
Increase developer productivity

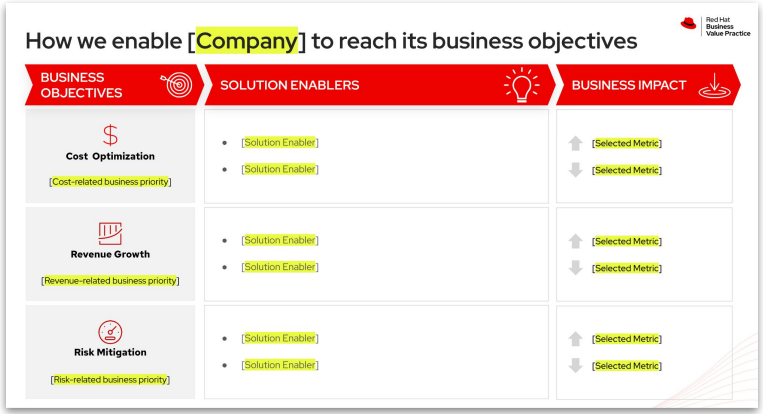
VMWARE ADMIN:
Reduce infrastructure management effort

Challenges — Personas — Messaging — Approach

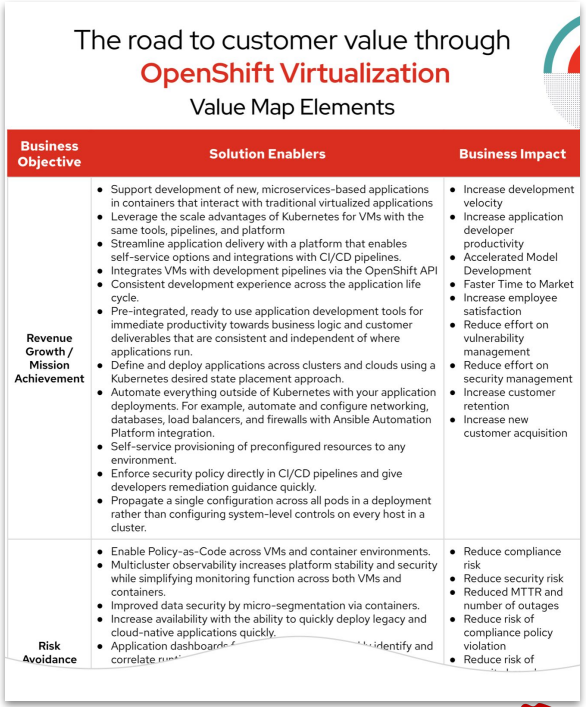
What to use in this exercise?

(Partners: you have hard copies)

Value map



Value map enablers handout



The road to customer value through
OpenShift Virtualization
Value Map Elements

Business Objective	Solution Enablers	Business Impact
Revenue Growth / Mission Achievement	• Support development of new, microservices-based applications in containers that interact with traditional virtualized applications • Leverage the scale advantages of Kubernetes for VMs with the same tools, pipelines, and platform • Streamline application delivery with a platform that enables self-service options and integrations with CI/CD pipelines. • Integrates VMs with development pipelines via the OpenShift API • Consistent development experience across the application life cycle. • Pre-integrated, ready to use application development tools for immediate productivity towards business logic and customer deliverables that are consistent and independent of where applications run. • Define and deploy applications across clusters and clouds using a Kubernetes desired state placement approach. • Automate everything outside of Kubernetes with your application deployments. For example, automate and configure networking, databases, load balancers, and firewalls with Ansible Automation Platform integration. • Self-service provisioning of preconfigured resources to any environment. • Enforce security policy directly in CI/CD pipelines and give developers remediation guidance quickly. • Propagate a single configuration across all pods in a deployment rather than configuring system-level controls on every host in a cluster.	• Increase development velocity • Increase application developer productivity • Accelerated Model Development • Faster Time to Market • Increase employee satisfaction • Reduce effort on vulnerability management • Reduce effort on security management • Increase customer retention • Increase new customer acquisition
Risk Avoidance	• Enable Policy-as-Code across VMs and container environments. • Multicluster observability increases platform stability and security while simplifying monitoring function across both VMs and containers. • Improved data security by micro-segmentation via containers. • Increase availability with the ability to quickly deploy legacy and cloud-native applications quickly. • Application dashboards f… identify and correlate …	• Reduce compliance risk • Reduce security risk • Reduced MTTR and number of outages • Reduce risk of compliance policy violation • Reduce risk of …

Your plan

What good looks like

1 Identify gaps

- What customer information do you need to learn more about?
- What tools can you leverage to help you do this?

2 Build your plan

- How will you use your value map?
- Keep in mind the components on the right

WHO: Contact

WHAT: Your Goals

WHEN: Timing & Preparation

RISK: Pre-empting risk

Discussion

- What did you learn? Where were your customers on their virtualization path?
- What were your common gaps, and how were you approaching them?
- What will you do differently with your opportunity and future opportunities?

Conducting Technical Risk Assessments (the risk line)

90 Minutes

Presales Tech Discovery

Section	Questions

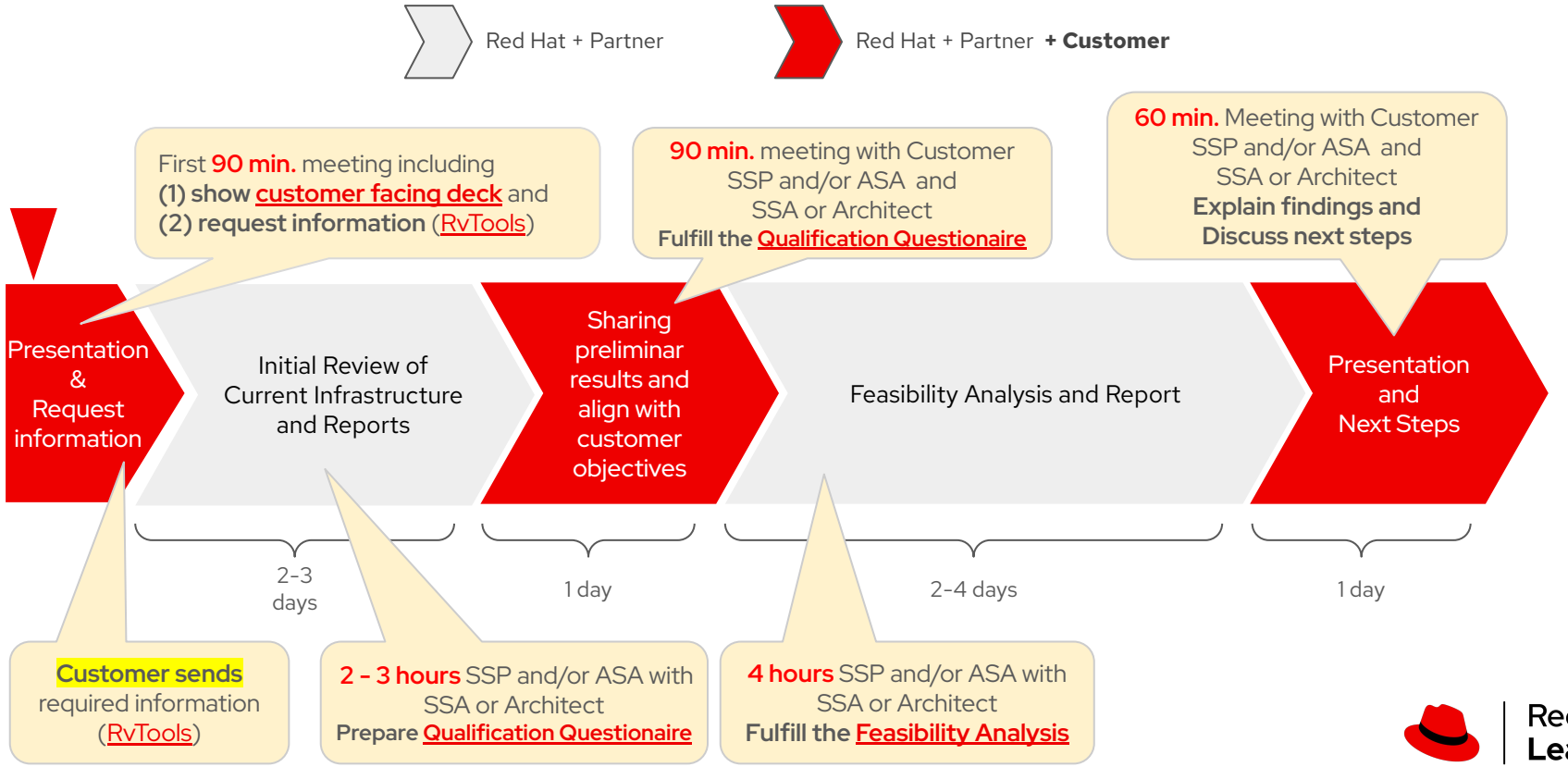
Current State Environment	• VMware **products** and **features** used?
	  ○ HA, DRS, VSAN, NSX, Distributed Switching, Snapshots, Aria/vRealize, SRM…
	• Incumbent **storage** vendor?
	  ○ Brand, product type, version, protocol, known storage array limitations – like number of LUNs
	• Incumbent **backup and disaster recovery** vendor?
	  ○ Brand, product type, version, do they support backup and DR of VMs specifically?
	• Incumbent **network** vendor?
	  ○ Routers, switches, load balancers, firewalls, DNS etc
	  ○ Configuration, security, monitoring, external connectivity requirements
	• Target **hardware** for installation?
	  ○ Make, model
	• Current **workloads**
	  ○ Some VM workloads dictate certain requirements, like SAP or Oracle
	• Compliance and governance

Presales Tech Discovery

Section	Questions

Customer's commitment level to migrate	• **Timeline** to deploy VMware alternative into production?
	  ○ Timeline, including number of VMs to be migrated.
	  ○ Assumption: Customer will run VMware alternative and VMware side by side for at least 12-months to de-risk
	• Financial **budget**? For things like:
	  ○ VMware alternative analysis
	  ○ Investing in a VMA
	  ○ Investing in a Proof of Value
	• Willingness to allocate **people resources** to work with Red Hat to advise on evaluation and implementation?
	  ○ Are those resources cross functional – networking, platform, etc
	• Openness to a solution that requires the addition of a **3rd party Storage** vendor?
	• Is the customer using **OpenShift** today?
	• Is the customer using **Ansible** today for datacenter automation?
	  ○ Windows/Linux configuration mgmt, network automation, capacity planning, SNOW integrations etc
	• Is the customer seeking to **modernize** (refactor) applications using customer internal resources?

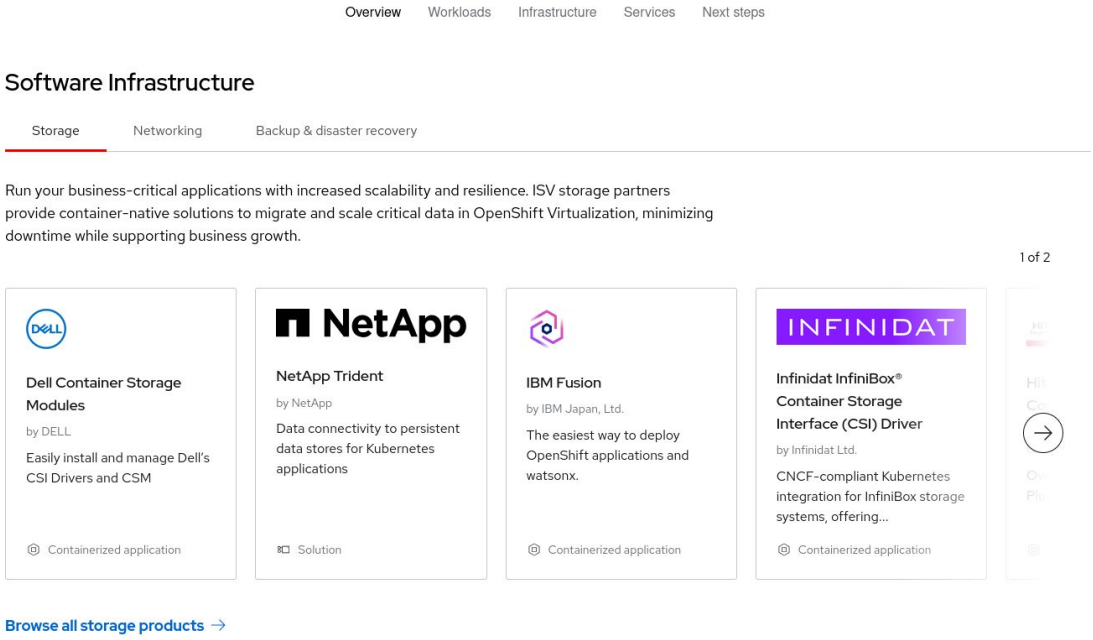
Feasibility Analysis Process



Red Hat Learning

Ecosystem enhancing Red Hat OpenShift Virtualization

A growing infrastructure ecosystem



red.ht/workswithvirt

Storage automation for virtual machines and containers

- Flexibility and Mobility
  - VM Live Migration, VM High Availability
  - Cold migration between clusters
  - Storage policy-like experience via StorageClass
- Day 2 Benefits
  - Automated capacity management via Autopilot (Filesystem extension handled externally)
- DR and Data Protection
  - Async DR with only two OpenShift clusters required
  - Sync DR with less complexity and more flexible failover options
  - VM auto-detection and simple backup and restore

Kubernetes Data Protection and Mobility

K10 5.5 launched in October 2022 with VM capabilities

- Discover VMs: snapshot VM configuration and VM storage
- Freeze a VM before snapshot (optional annotation) w/ timeouts and unfreeze
- Restore VM snapshots with resource transforms and automatic orchestration

K10 enterprise features apply to VM workloads for automated data protection

- Apply K10 policies to virtual machines
- Export and import virtual machines for disaster recovery and virtual machine mobility between clusters

TRILIO

Disaster and recovery

"Significantly accelerate time to market, while ensuring reliability and quality of the overall solution."

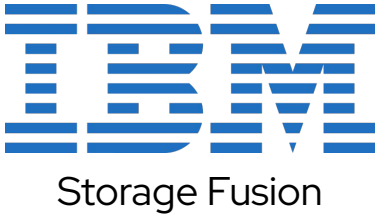
Rolled out a greenfield large scale application at the core where some components had to be in virtual machines. Architect, develop, test, and scale production-like deployments many months before a containerized version of applications being available.

- 100s of sites consolidated to run on minimum amount of hardware
- Accelerate solution by several years using non-containerized workloads

Storage Automation for virtual machines and containers

Discover enterprise-grade data protection for the Red Hat ecosystem- now with Red Hat OpenShift Virtualization support

- Automated and scheduled backups
- Policy-Driven backup and recovery
- Incremental backups and deduplication
- Backup catalog and metadata management
- Granular recovery options
- Recovery verification
- Encryption and data integrity
- Role-based access control
- Wide range of backup destination options including file system/object storage, tape pools and legacy backup systems (IBM/Dell/Micro Focus and others)



Pair IBM data services with Red Hat OpenShift Virtualization

Manage virtual machines with operators and CRDs

- Windows and Linux virtual machines
- Common GitOps management tools
- Common fusion container-native storage layer

Define application-aware backups with “recipes”

- A fusion recipe defines workflow to backup and restore application state
- Enforce consistency to ensure recoverability (e.g., database dump and restore)
- Orchestrate fusion backup policies from a central hub

Flexible deployment options

- Deploy fusion data services in any OpenShift cluster
- IBM Storage Fusion HCI System – an integrated system purpose built for Red Hat OpenShift applications
- Single point of contact for support

Orchestrating NVIDIA GPU accelerated virtual machines with Red Hat OpenShift

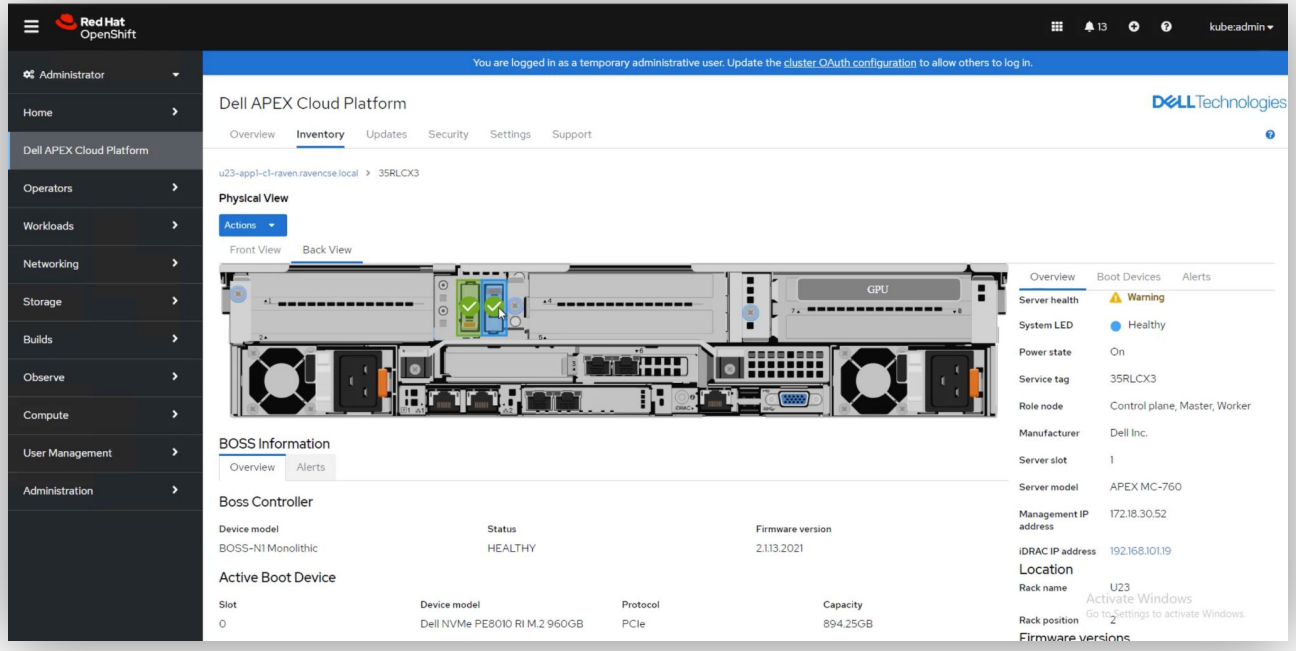
- GPU-accelerated applications running in virtual machines can be orchestrated by Red Hat OpenShift, just like ordinary enterprise applications, enabling unified management.
- In addition to AI, enabling Red Hat OpenShift graphics GPU use cases.
- The NVIDIA vGPU manager allows multiple virtual machines to share access to a single physical GPU, enabling simultaneous utilization with time-sliced vGPUs (no MIG support for now).
- The NVIDIA GPU Operator automates deployment, configuration, and lifecycle management of GPU-accelerated workloads.

Industry leading storage and data management functionality for modern workload deployments

- Support both virtualized and containerized apps in a single infrastructure
- Virtual machines live migration, CSI topology awareness and storage offload
- Fast and efficient, best-in-class snapshots and clones
- NetApp Astra provides functionality to protect, move, and store apps

Data protection for virtual machines is coming in Q4 2023

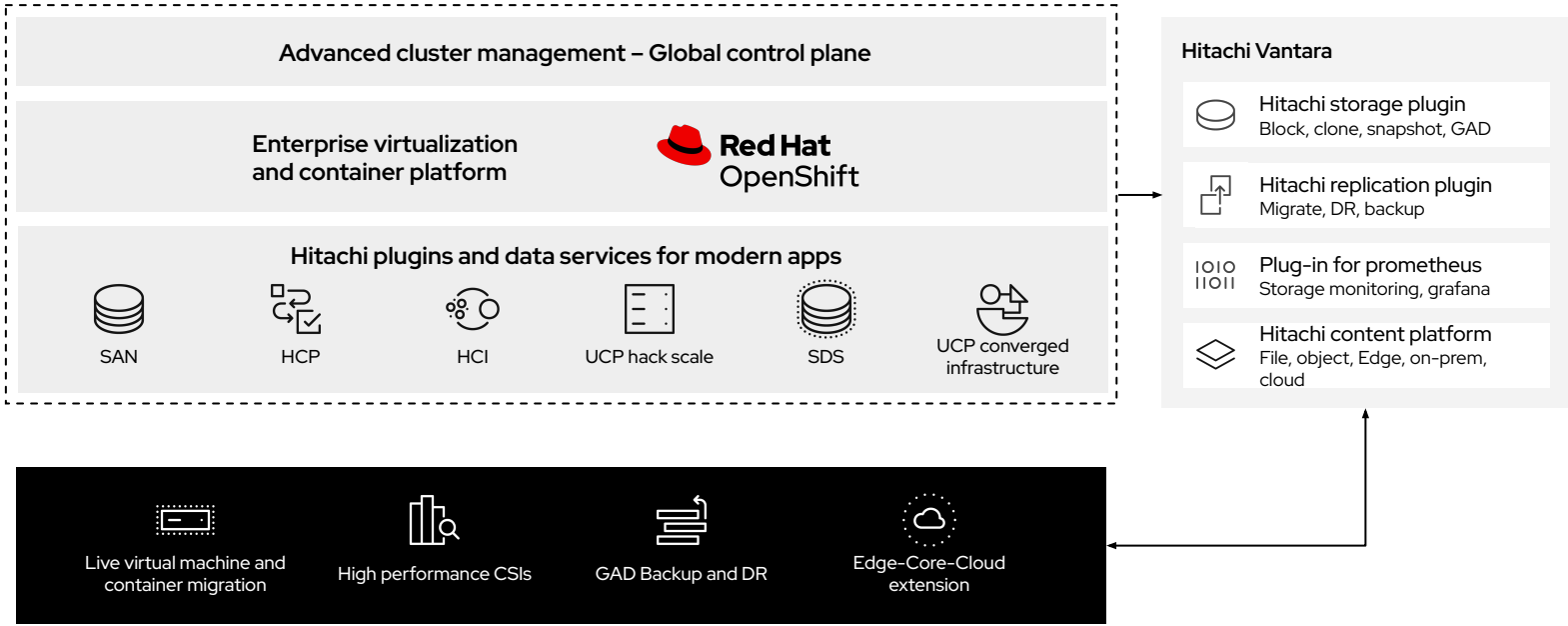
New exciting partnership with Dell



Red Hat OpenShift Virtualization

HITACHI
Inspire the Next

Hitachi Plugins and data services for modern apps, and containers



Ask Me Anything Part 2 and Discussion - Day 1

Wrap up: Day 1

15 Minutes

Red Hat Learning

That's a wrap for day 1!

- Real-time retro review
- Starting at 09:00 tomorrow - please be on time.
- Tonight's dinner (check cal invite):
  - **6:30pm**
  - **...**

ETX-Virtualization Presales

Emerging Tech Experience

Welcome back to Day 2

15 Minutes

Red Hat Learning

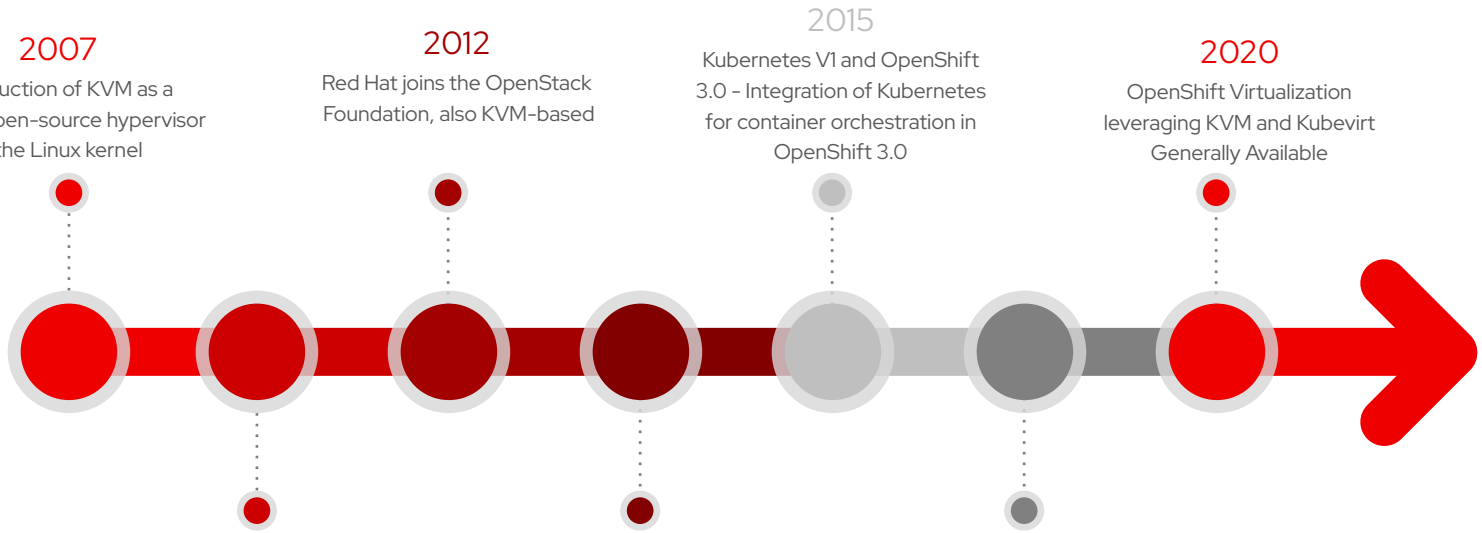
ETX-Virt-Presales Agenda (Day 2)

Time	Agenda Day 2
8:30 am - 8:45 am	Welcome Back - Day 1 review, Day 2 overview
8:45 am - 9:45 am	Competitive Landscape / Objections Discussion Primary competitors, key messaging, typical objections - what are you seeing in your accounts
9:45 am - 10:45 am	Competitive/Objection Handling Activity
10:45 - 11:00 am	**Break**
11:00am - 11:45am	Objection Showdown - Team Learner vs Team SME
11:45 am - 12:00 pm	Ask Me Anything and Discussion - Day 2
12:00pm - 1:00pm	**Lunch**

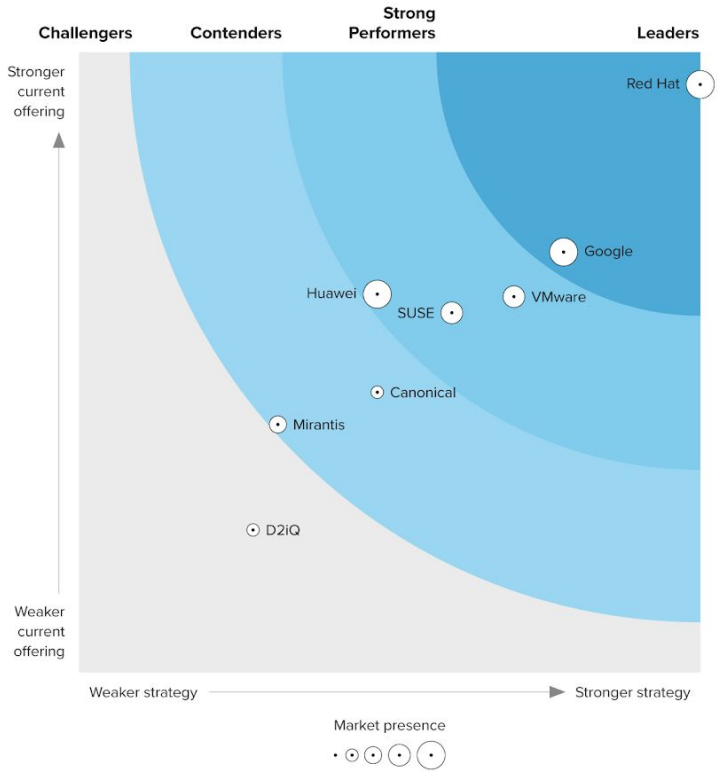
Competitive Landscape / Objections Discussion

60 Minutes

Red Hat has a long history with Virtualization



The Forrester Wave™: Multicloud Container Platforms, Q4 2023



"**Red Hat sets the pace with enterprise IT capabilities and massive market presence.** With OpenShift's systematic innovation and development on multiple fronts, Red Hat has helped transform the MCP market segment."

"The demand for OpenShift prompted AWS and Microsoft Azure to sell OpenShift as a managed service, despite having their own Kubernetes-based container services. Red Hat's differentiated strategic vision is to up the ante on enterprise-grade open source computing."

The Forrester Wave™: Multicloud Container Platforms, Q4 2023: The Eight Providers That Matter Most and How They Stack Up
Oct 2023

Red Hat is a recognized industry leader

2024 Gartner® Magic Quadrant™: Container Management

Source: Gartner, "Magic Quadrant for Container Management," Dennis Smith, Tony Iams, Wataru Katsurashima, Michael Warrilow, Richard Watson, 10 September 2024

2024 Gartner® Magic Quadrant™: Cloud Application Platforms

Source: Gartner, "Magic Quadrant for Cloud Application Platforms," By Tigran Egiazarov, Mukul Saha, Anne Thomas, Steve Schwent, 4 November 2024

Red Hat

	Red Hat OpenShift Virtualization Engine	Red Hat OpenShift Kubernetes Engine	Red Hat OpenShift Container Platform	Red Hat OpenShift Platform Plus
Enterprise Secured Kubernetes	✓	✓	✓	✓
Hosted control planes	✓	✓	✓	✓
Operator Lifecycle Manager	✓	✓	✓	✓
Compliance & File Integrity Operators	✓	✓	✓	✓
Virtual machine-based workload hosting	✓	✓	✓	✓
Container-based infra workload hosting	✓	✓	✓	✓
User Workload Monitoring	✓	✓*	✓	✓
Platform Logging	✓	✓*	✓	✓
OpenShift GitOps	✓	✓*	✓	✓
Metering and Cost Management SaaS Service	✓	✓	✓	✓
Container-based user application hosting		✓	✓	✓
RHEL guest and hosted virtual OpenShift subscriptions included		✓	✓	✓
CI/CD Pipelines			✓	✓
Service Mesh			✓	✓
Serverless			✓	✓
Tracing			✓	✓
Runtimes & Webtools			✓	✓
Multi-cluster complete management with Red Hat Advanced Cluster Management				✓
Kubernetes-native security with Red Hat Advanced Cluster Security				✓
Scalable, central registry with Red Hat Quay				✓
Persistent software-defined storage & essential data services with OpenShift Data Foundation Essentials				✓

*VMs only. Learn more.

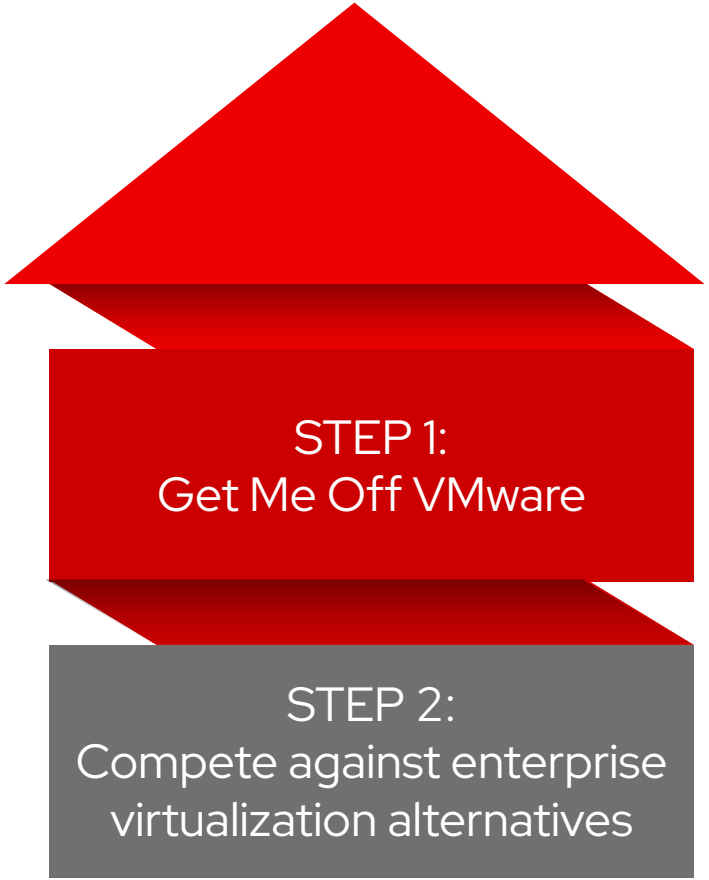
Customer virtualization paths

$	$$	$$$
"Get me off this platform"	*"Get me to a better platform"*	*"I'm ready to do it all"*
Migrate	**Migrate to Modernize**	**Modernize**
VM → VM	VM → VM + Containers	VM → App platform
OpenShift Virtualization Engine (OVE)	OpenShift Kubernetes Engine (OKE)	OpenShift Platform Plus (OCP/OPP/ROSA)
Virtualization Migration Tactic	*Virtualization Modernization Tactic →* *Container Management TDP/Sales Play*	*Virtualization Modernization Tactic →* *Application Platform TDP/Sales Play*

Know what OpenShift to position

	Virtualization	Container Management	Application Platform
Core OpenShift Product	OVE	OKE	OPP/Cloud Svcs
Competing Products	vSphere, Hyper-V, Nutanix AHV, Rancher Harvester	VMware VVF/TKG, Nutanix NKP, SUSE/Rancher RKE, Spectro Cloud, Canonical, Mirantis, FOSS (DIY upstream), EKS, AKS, GKE	VMware Tanzu Platform, Heroku, AWS AppRunner, Azure AS, Google App Engine
Pricing Pressure (Need to discount)	Medium	High	Low

Competing in VMware Migration Conversations



STEP 1: Get Me Off Of VMware

vSphere - "we can provide a comparable experience/feature set."

VVF - "Here's why you don't want to modernize with Tanzu and if you are going to upgrade, why not use one platform for everything?"

STEP 2: Enterprise virtualization alternatives

Defend against;

Microsoft

- Hyper-V
- Azure Stack

Nutanix

- AHV
- NKP

SUSE/Rancher

- SUSE Virtualization (formerly Harvester - HCI)
- Rancher Virt (Prime)

Hyperscalers

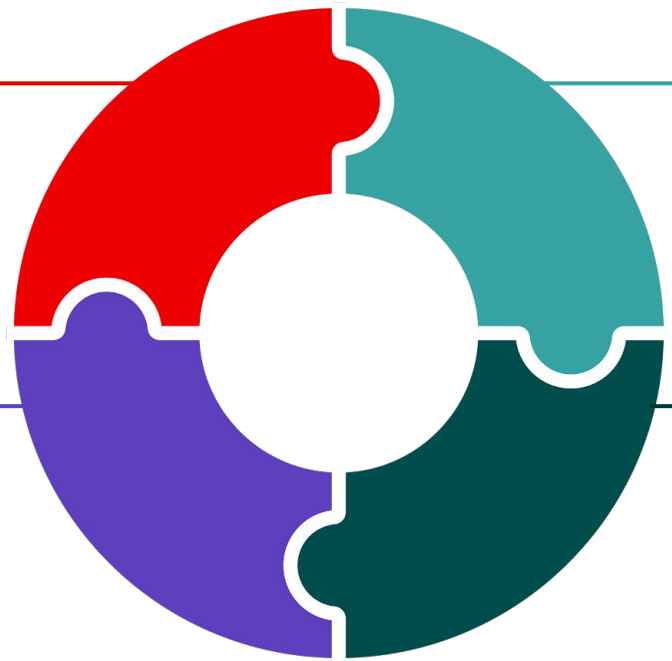
Virtualization Competitive Landscape

Others

SUSE/Rancher, Oracle, Proxmox, HPE, SpectroCloud - Assorted Lock-in, Maturity, enterprise readiness, modernization and ecosystem concerns.

Hypervisors

Nutanix/MSFT Hyper-V: Trade one lock-in for another - what happens in a few years if you want to modernize?



Status Quo: VMware

Stick with **VMW**: Comfortable but expensive and risky. Do you want to use Tanzu to modernize? Will Broadcom invest to keep up with tech innovations?

Hyperscalers

How about on-prem options? Lock-in concerns.

Features, features, features!

- Virtualization admins don't know OpenShift, they're going to ask about features
- They'll hit you with a long list of vSphere features and capabilities for OpenShift to match, including ones they *never* use.
- Don't fall into the trap!
- An opportunity to focus on customer workloads and operational workflows

We've come a long way since RHV

Category/Feature (versus best-in-class)	RHV		OpenShift Virtualization	
			EOY 2024	Target 2025
vAdmin friendly user interface	90		50	70-80**
VM density	90		90	90
Single cluster virtualization infrastructure management	80		95	95
Mixed VM and container environment	60		100	100
Infrastructure HA	50		95	95
Hotplug (storage, memory, compute)	10		90	90
ISV backup integrations	20		70	80
Disaster recovery integrations	90		55	80
Storage integrations / acceleration	90		85	90
Software defined networking	50		80	90

*Feature comparison summary sheet **For single cluster management this will be higher

Common Question: Is it fast enough?

- Many business critical application require serious performance, like databases and application servers.

- For similar configure workload on similar hardware,
  you can expect **performance parity, proven during customer PoCs**

- We have several proof points on RHCC
  - Scale to 6,000 VMs learning path
  - OpenShift Virtualization - Tuning & Scaling Guide
  - Storage partner CSI benchmarking

Common Question: Is my workload, O/S, appliance supported?

- VMware certification matrix has thousands of apps
- We've extended supported Operating Systems to other Linux

- Red Hat Catalog Infra feature = "OpenShift Virtualization"
- red.ht/workswithvirt

- Getting your workload certified
  - Validate your Red Hat OpenShift Virtualization workload
  - The OpenShift Partner Lab

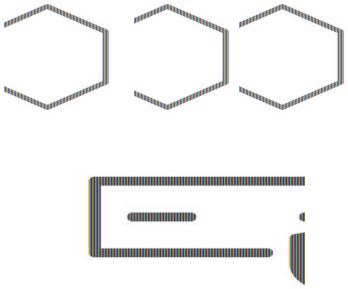
Common Question: Kubernetes is new / hard / scary !

- New web console UI and ACM dashboard make VMs more accessible.
- Inclusion of OpenShift Lighspeed assists in traditional vAdmin onboarding
- OpenShift Virtualization is OpenShift, we (Red Hat) have a massive catalog of learning courses to flatten the learning curve
  - So do our partners
- Dedicated/specific courses for OpenShift Virtualization
  - **D0316** - Managing VMs with OpenShift
- Virtualization Migration Assessment has prescriptive “Enablement and Training”

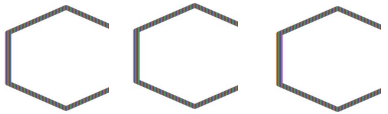
VMware

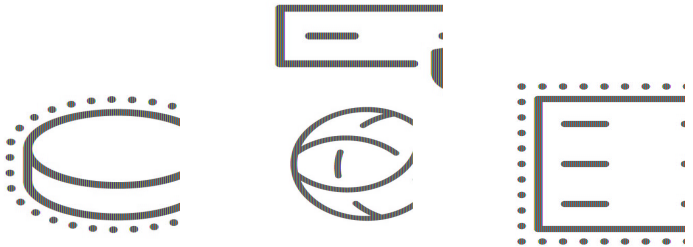
VMware only deploys to vSphere

Red Hat vs VMware for containerized applications on-prem or multi-cloud



Containerized applications





Red Hat enables containerized applications anywhere where Linux runs: Cloud, DataCenter, Edge

VMware VCF/VVF requires organizations to pay for vSAN, NSX (VVF only) before containers can be enabled.

Red Hat vs VMware

Market Leader vs. Market Follower

2011 to 2023
More than 3000 customers

Red Hat

Years of Cloud Native Leadership

OpenShift

Kubernetes, Developer Services, Operators, Serverless, ServiceMesh, Virtualization, Container optimized Linux Operating System

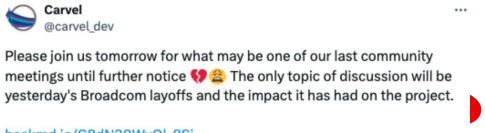
vmware

Disjointed Kubernetes offerings without migration path.

Multiple unintegrated products.

Tanzu Kubernetes Grid	~~Tanzu Kubernetes Basic~~	~~Tanzu Kubernetes Standard~~	~~Tanzu Kubernetes Advanced~~	~~Tanzu Kubernetes Enterprise~~	Tanzu Labs	Tanzu Kubernetes Operations
Tanzu Mission Control	Tanzu Service Mesh	Tanzu Application Service (was Pivotal)	Tanzu Observability(was WaveFront)	Tanzu Build Service (was Pivotal)	Tanzu Data Service (was Pivotal)	Tanzu Application Platform

https://blogs.vmware.com/partnernews/2022/10/tanzu-basic-advanced-end-availability.html
https://github.com/cncf/toc/issues/1314



Red Hat Learning

Objection Handling - VMware

"I've got 90K+ VMs across multiple continents, you certainly can't handle every workload"	Respond to customer's concern about handling a large-scale, geographically distributed VM infrastructure by emphasizing the scalability, flexibility and adaptability of Red Hat's Open Virtualization Infrastructure: • Scalable Architecture: OpenShift is built on a scalable and cloud-native architecture, designed to manage large numbers of containers and VMs efficiently. We have helped many other customers do so. It is designed to handle extensive workloads and can be scaled to meet the demands of even the most diverse VM environments. • Single platform consistency: OpenShift gives teams a single, consistent user experience and the freedom to quickly build and deploy apps anywhere using a comprehensive suite of tools and services. • Multi-Cloud Compatibility: With inherent support for hybrid/multi-cloud environments, OpenShift can manage VMs across different regions and cloud providers. This ensures flexibility in deploying and managing workloads globally catering to your distribution of VMs
"How do I do day 2 operations? For OpenShift? For VMs?"	Addressing the concern about Day 2 operations for both OpenShift and VMs within OpenShift Virtualization environment can be approached by highlighting the rich UI experience with CLI and APIs for common VM operations • OpenShift also has built-in capabilities for networking, storage, observability, and other IT operations. • RHEL and Windows guests are compatible with customer's in-guest automation • OpenShift also includes monitoring tools that provide real-time insights into both container and VM performance. This will aid in proactive management, ensuring issues are addressed quickly with minimal downtime. • Ansible Automation Platform to automate ongoing day 2 ops including related network storage and other infrastructure for accuracy and consistency of management– from provisioning to patching and compliance to sunsetting of unused VMs • Additionally Red Hat's extensive support structure offers guidance and assistance for Day 2 operations, ensuring you have the expertise needed at every step.
"Is the performance of VMs on OpenShift as good as what I'm using today? Is the platform capable of meeting my needs?"	Addressing the customer's concerns about VM performance on OpenShift involves focusing on the platforms capabilities and benefits that it offers in maintaining or enhancing the customer's current performance levels: • By using KVM to run in OpenShift, workload performance is equivalent across all Red Hat infrastructure platforms including RHEL, Red Hat Virtualization, Red Hat OpenStack and now OpenShift Virt. • Admins can import their business critical workloads into OpenShift, confident that they'll be able to serve users at the same SLAs as their existing virtualization implementation.

Microsoft

Red Hat

Nutanix

At a glance, Red Hat & Nutanix

	Red Hat OpenShift	Nutanix AHV
What is it?	Flexible open platform: cloud, on-prem Edge	Turnkey appliance: compute and storage tightly integrated
Offering	Application platform available as a managed service in the cloud, on-prem or at the Edge. AI offering and Automation with Ansible.	Hyperconverged appliance storage and compute with a Kubernetes add-on. Not a fully fledged application platform.
Scaling	Highly scalable across cloud or bare metal	Limited to capacity of each additional appliance.
Initial experience	More complex .	Quicker turnkey.
Market penetration	SMB, Commercial, Enterprise, Public Sector	Mostly SMB & commercial

For customers that strongly prefer an appliance:
OpenShift is available in appliance form factor from DELL APEX, IBM Fusion and HPE Greenlake

Objection Handling - Hypervisors

"We are a big MSFT shop - it just makes sense to jump to Hyper-V."	Red Hat offers flexible architectures based on modern open processes to solve customer problems. Hyper-V architectures are Microsoft centric with less flexibility and more lock-in. • Hyper-V is older technology compared to the newer cloud native KubeVirt that is included with Red Hat OpenShift. • Hyper-V requires Microsoft System Center which may be a larger add-on cost. • OpenShift offers customers choice of hardware, storage, networking and more from a partner ecosystem.
Why wouldn't I just move to Microsoft's Hyper-V or Nutanix?	• Microsoft's Hyper-V is a virtualization only platform on Windows Server on premise or as Azure VMs. OpenShift is a complete cloud-native application platform available on-prem, on ROSA (AWS) and at the Edge. • Nutanix does have a hypervisor and architecturally similar approach to VMware. Having said that, do you really want to exchange one proprietary, legacy technology for another? Red Hat's Open Virtualization infrastructure migrates you to a "future proof" platform with comparable virtualization functionality today AND the ability to modernize at your own pace going forward.
"Nutanix looks and feels like what I use now PLUS they have kubernetes as well!"	• Red Hat secures and makes Kubernetes Enterprise ready, whereas Nutanix offers 'pure' upstream Kubernetes with no backports, lifecycle or support. • OpenShift is built on Red Hat Enterprise Linux which has a 25+ year history as the most widely deployed commercial Linux offering, while Nutanix offers unsupported Rocky Linux or bring your own. • Let's compare solutions by looking at analyst report ratings and customer references.

SUSE/Rancher

Objection Handling - Others

"Oracle offered me a sweet deal."	Oracle Virtualization lacks the modernization options available with the OpenShift Platform. Moving to Oracle for virt would amount to a lift and shift with no other benefits. ● Oracle Virt is KVM virtualization only ● Low contributions to KubeVirt project - innovation? ● Kubernetes/containers available as a separate add-on.
"SUSE told me that along with Rancher they basically offer the same thing as you do?"	The SUSE Rancher solution provides more basic kubernetes functionality, in contrast with the complete application platform that is OpenShift. The SUSE Rancher solution has: ● A limited ecosystem compared with OpenShift ● No managed service options for virt in the cloud ● Limited support options and documentation
"Red Hat is becoming just like IBM - I am thinking about a small company solution like Proxmox."	Proxmox lacks the modernization options that OpenShift Virtualization offers. Customers adopting Proxmox would be doing a lift and shift with little gain other than a different Virtualization platform. ● Proxmox is a tiny company, per LinkedIn about 30 employees ● Product offering is KVM virtualization only, missing: AI, cloud service, developer platform, Linux, security, management ● No ratings by analyst firms (Gartner, Forrester, IDC etc) ● Small partner ecosystem, low if any CNCF contributions. ● Support limited to 8 hours a day EMEA timezone

OpenShift Virtualization Differentiators

Differentiator	Description
Simplifies the migration of VMs	Customers are able to easily migrate their existing virtual machine workloads with migration tooling that is already included with Red Hat OpenShift. For large-scale migrations, the Red Hat Ansible Automation Platform (AAP) adds further efficiency, ensuring a smooth and automated transition.
Offers a path to infrastructure and application modernization	Red Hat OpenShift Virtualization is part of a unified hybrid cloud platform that allows customers to build, modernize, and deploy applications at scale. Red Hat OpenShift Virtualization brings modern application development processes and tools to VMs that help expedite the modernization of VM-based applications including the integration of AI capabilities.
Provides a single modern cloud-native virtualization infrastructure for existing VMs	Red Hat OpenShift supports VMs, containers, and serverless, allowing customers to standardize infrastructure deployment and maintenance on a single platform. Teams can also use the same development pipelines for applications in VMs or containers, regardless of where they run – on-premises, or in hybrid, public, or private clouds, providing consistency and flexibility.
Supported by a healthy open source community and diverse partner ecosystem	Red Hat has been involved in the virtualization space since the inclusion of the Kernel-based Virtual Machine (KVM) hypervisor to the Linux Kernel in 2007. Paired with KubeVirt for VM management, a project that Red Hat engineers have been involved with since its inception, both KVM and KubeVirt are at the heart of OpenShift Virtualization, and leverage the strength of open source development and an extensive community of corporate and individual contributors. In addition, Red Hat works with our partner ecosystem to integrate storage and networking, backup and disaster recovery, and hardware infrastructure.

Additional Resources

- BU OpenShift Competitive Pages: Source, RHCC
- Summary of Competitive Features - Virt
- OCP Virt - VMware Alternatives deck
- RH1 Preso - How to handle objections and master virtualization conversation
- MS Azure or Red Hat
- Nutanix or Red Hat
- Rancher/SUSE or Red Hat
- Oracle Virt or OpenShift Virt
- ProxMox or OpenShift Virt
- Customer References Page
  - Virt References Deck
- Analyst Relations Page
- Virt Sales Play Page

Discussion

- What were your most common objections and competitive situations?
- What unique objections or competitive situations have you seen previously with your customers?

15 Minutes

Ask Me Anything and Discussion – Day 2

Wrap up and close Day 2

Presenter: Field & Partner Learning

15 Minutes

Red Hat Learning

Thank you for attending!

Red Hat
Learning