

OpenShift Virtualization Roadshow

Welcome to Red Hat Tech Update

09:00 - 09:25	Overview of OpenShift Virtualization
09:30 - 11:45	Virtualization lab
11:45 - 12:15	Recap, QA, discussion
12:15 - 13:00	Lunch break
13:00 - 13:30	How Event-Driven Automation with Ansible helps with ITSM
13:30 - 14:00	Ansible Roadmap - the latest news from the Ansible Fest 2024
14:00 - 14:15	How to get started with Openshift Virtualization & Automation

Who's who from Red Hat



Michael Bang
Sr. solution architect



Martin Skøtt
Sr. solution architect



Luka Bac
Sr. architect

The **WORLD** is changing



2005



2015

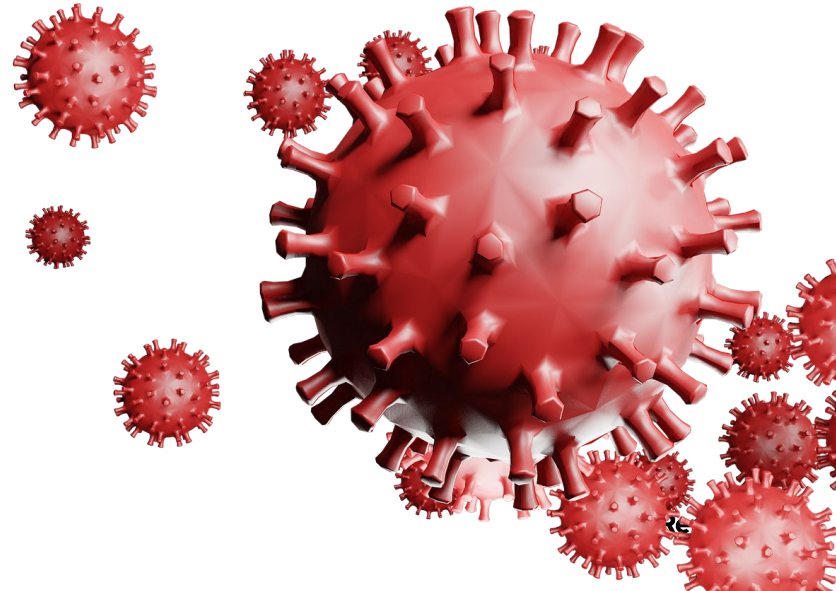


The image features a background of a wall covered in graffiti. The graffiti includes various tags, symbols, and stylized letters in colors like pink, blue, and yellow. A large, irregular black splatter shape is centered on the wall. Inside this splatter, the words "DIGITAL" and "DISRUPTION" are written in a bold, white, distressed, blocky font, stacked vertically. The overall aesthetic is gritty and urban.

**DIGITAL
DISRUPTION**

We are living in one of the
BIGGEST SHIFTS in human
history

And then COVID happened













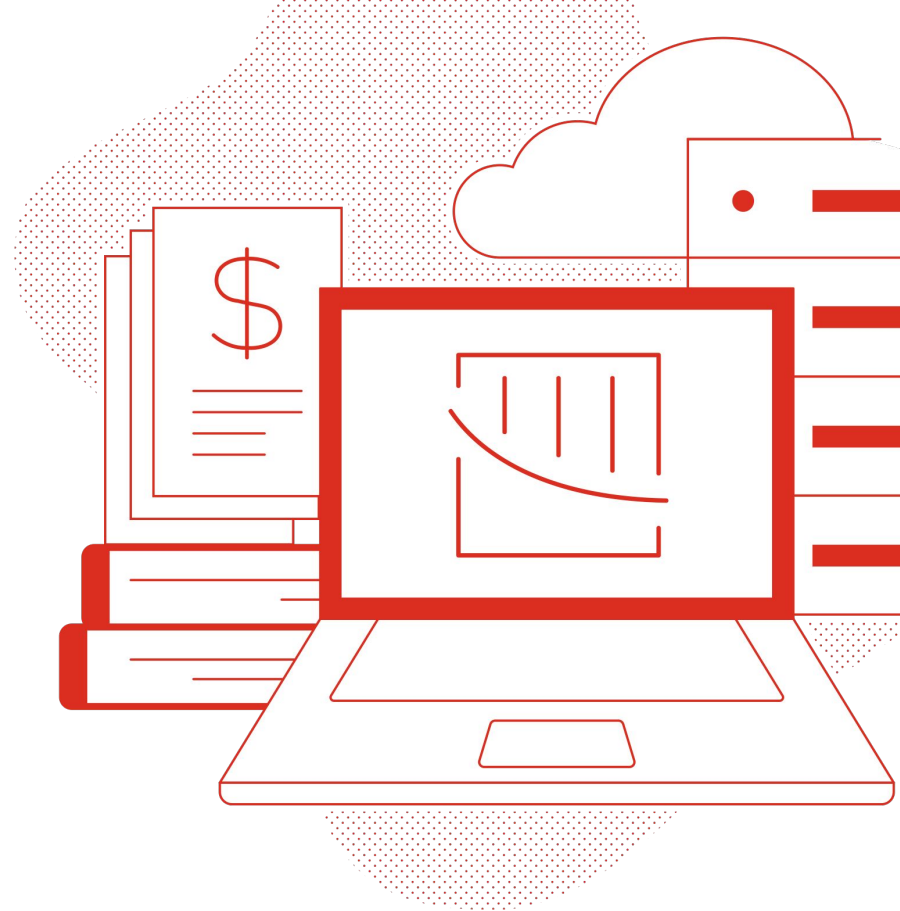
한진 보스톤
HANJIN BOSTON
MAJURO

OpenShift as an Application Platform should bring **developers** and **operations** teams **together** for both **Containers** and **Virtualization**.

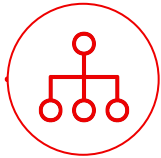


Why are you here today?
Server Virtualization industry is
changing dramatically

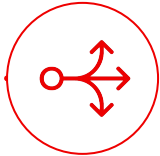
Consider your options.



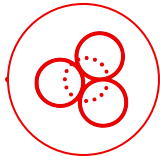
By the end of of the day...



Consider an alternative solution for your virtual infrastructure



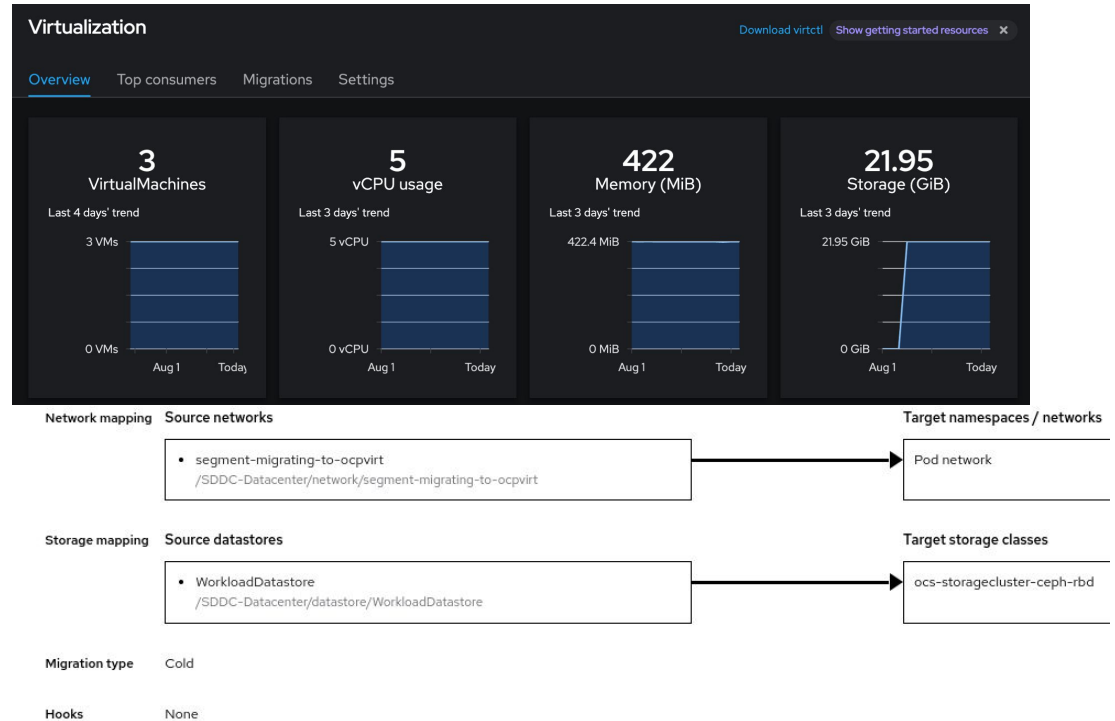
Become familiar with Red Hat OpenShift Virtualization



Understand that your journey to infrastructure modernization starts here

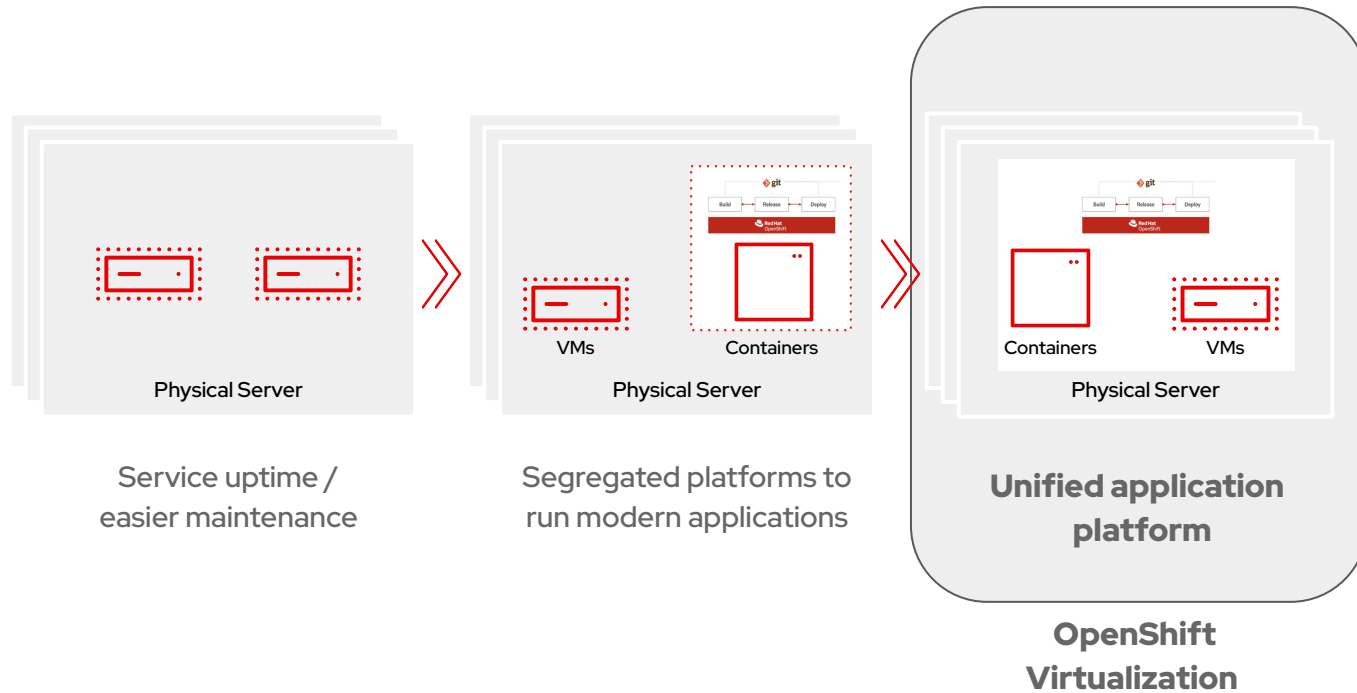
What we will cover in the hands-on workshop

- Virtual machine
 - Provisioning
 - Management
 - Live migration
- Platform
 - Storage
 - Network
 - Load balancing
- Migration
 - vSphere -> OpenShift
- Backup and restore



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

The benefits of k8s without containerizing



A single open platform for application innovation

A complete application platform that integrates with existing infrastructure, tools, and services



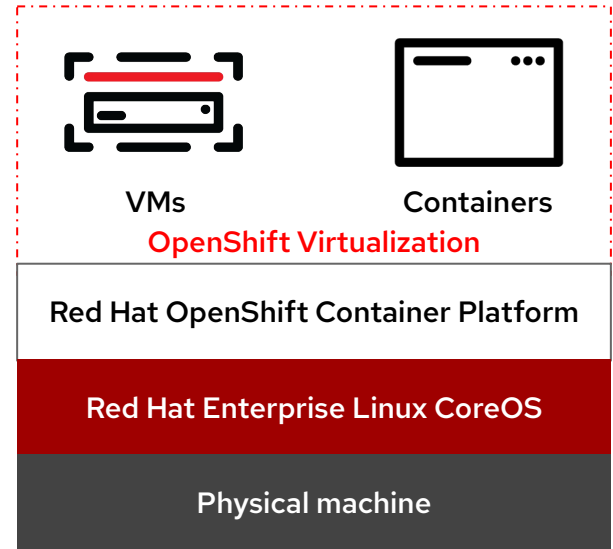
Empowering operations teams to innovate

A cloud-like experience, everywhere

Trusted enterprise open source platform

What is OpenShift Virtualization?

- Included feature of the OpenShift application platform
- Run VMs in OpenShift
- Performance, stability, scalability, and reliability of KVM, the Linux kernel-based hypervisor
- RHEL guest entitlements are included
- Supports Microsoft Windows guests - Microsoft Server Virtualization Validation Program (SVVP)
- Manageability and ecosystem of OpenShift
- Unified platform for running VMs and Containers



Bring traditional VMs into OpenShift

Traditional VM behavior in a modern platform

- ▶ Administrator concepts and actions
- ▶ Network connectivity
- ▶ Live migration

Leverage existing VM roles and responsibilities

- ▶ Maintain business critical application components
- ▶ Modernize skill sets over time

Migration Tooling

- ▶ **Migration Toolkit for Virtualization** (MTV)
- ▶ Warm migration of VMs at scale

Create Migration Plan

Select VMs

Select VMs for migration. The Migration analysis column shows the risk associated with migrating a VM as determined by Red Hat's Migration Analytics service. The Flags indicate the reason for that risk assessment.

<input type="checkbox"/>	Migration analysis	VM name	Datacenter	Cluster	Host	Folder path
<input type="checkbox"/>	⚠	VM1	datacenter1	cluster1	host1	folder1/folder2
<input type="checkbox"/>	✅	VM2	datacenter1	cluster1	host1	folder1/folder2
<input type="checkbox"/>	ℹ	VM3	datacenter1	cluster1	host1	folder1/folder2
<input type="checkbox"/>	✅	VM4	datacenter1	cluster1	host1	folder1/folder2
<input type="checkbox"/>	⚠	VM5	datacenter1	cluster1	host1	folder1/folder2

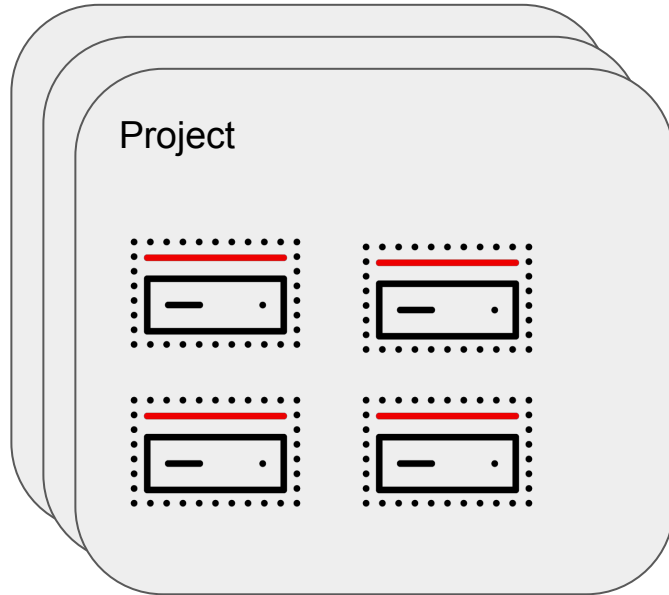
This VM is a high risk for migration because it violates the following rules:

- VM shares a disk with other VMs
- VM uses remote device management
- VM was harvested during a month without an "*" in it

Creating a migration plan with MTV

Self-service VM by Project

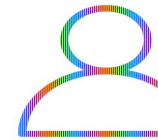
Assign roles and collaborate around Projects as you would in the cloud



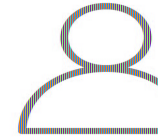
Add users / groups
Set roles

Create / Delete
Start / Stop / Restart
Clone
Migrate

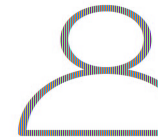
View status
Copy ssh command



Project owner



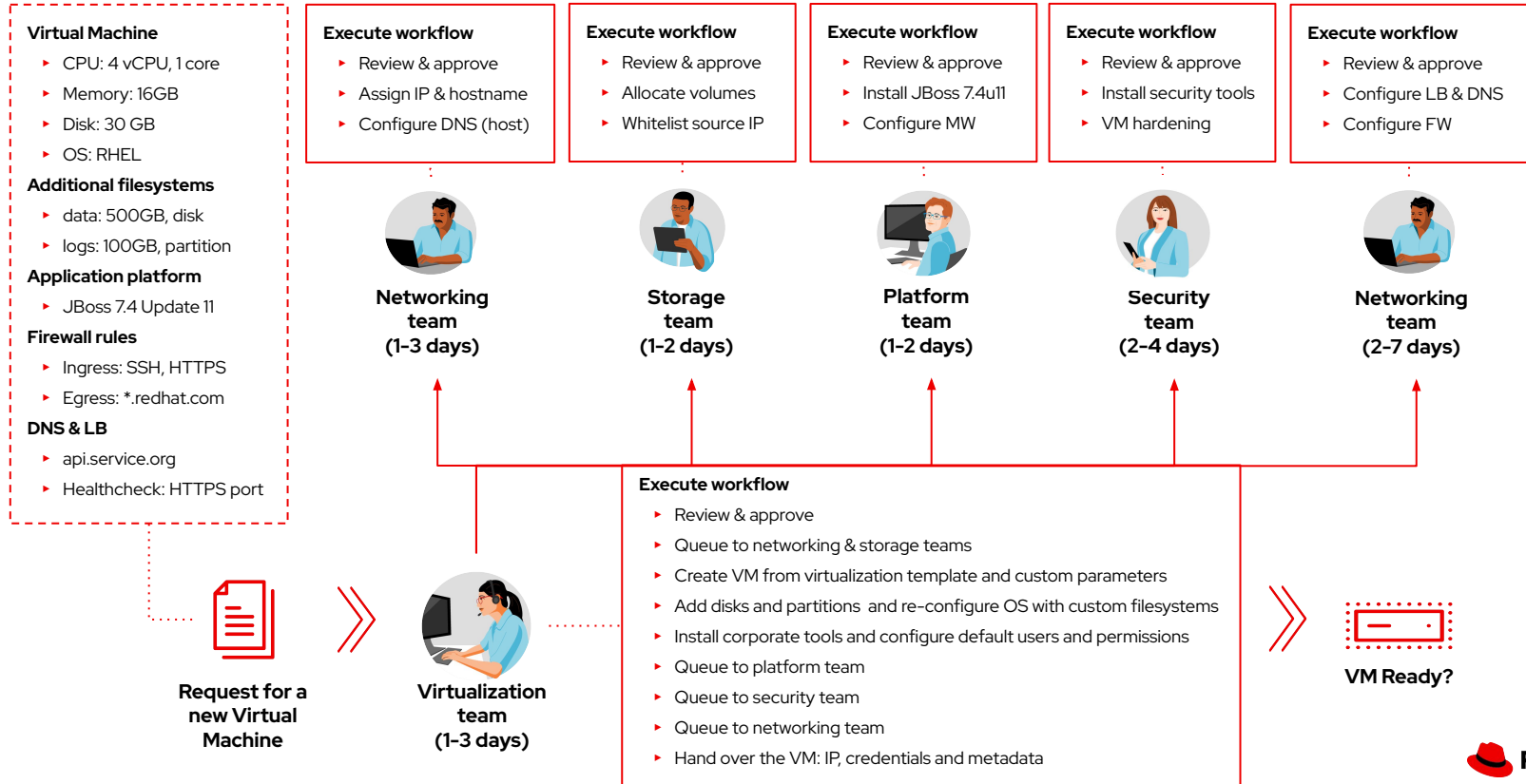
Project editor



Project viewer

Fragmented 'approach' to VM provisioning

A process that can take weeks trapped in queues and iterations



Next Gen approach to VM provisioning

Automated VM provisioning in minutes

Virtual Machine

- ▶ CPU: 4 vCPU, 1 core
- ▶ Memory: 16GB
- ▶ Disk: 30 GB
- ▶ OS: RHEL

Additional filesystems

- ▶ data: 500GB, disk
- ▶ logs: 100GB, partition

Application platform

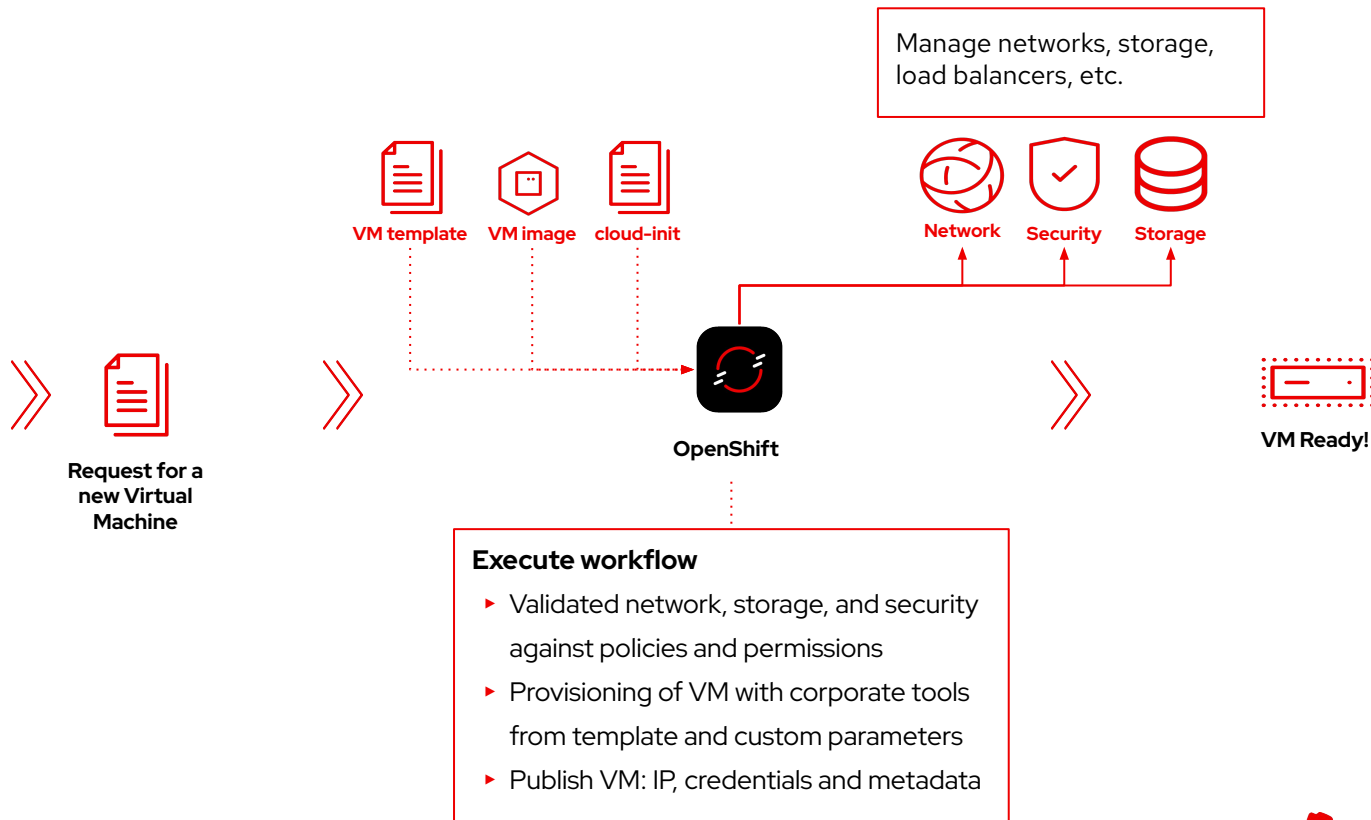
- ▶ JBoss 7.4 Update 11

Firewall rules

- ▶ Ingress: SSH, HTTPS
- ▶ Egress: *.redhat.com

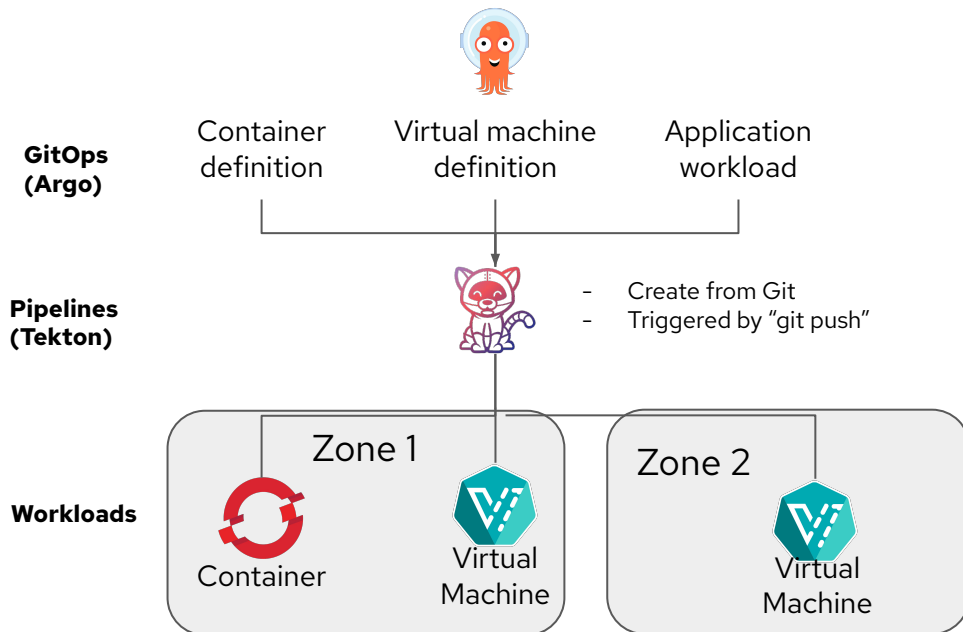
DNS & LB

- ▶ api.service.org
- ▶ Healthcheck: HTTPS port



OpenShift Virtualization: Build Cloud-native VMs

Deploy VMs as Code with CI/CD

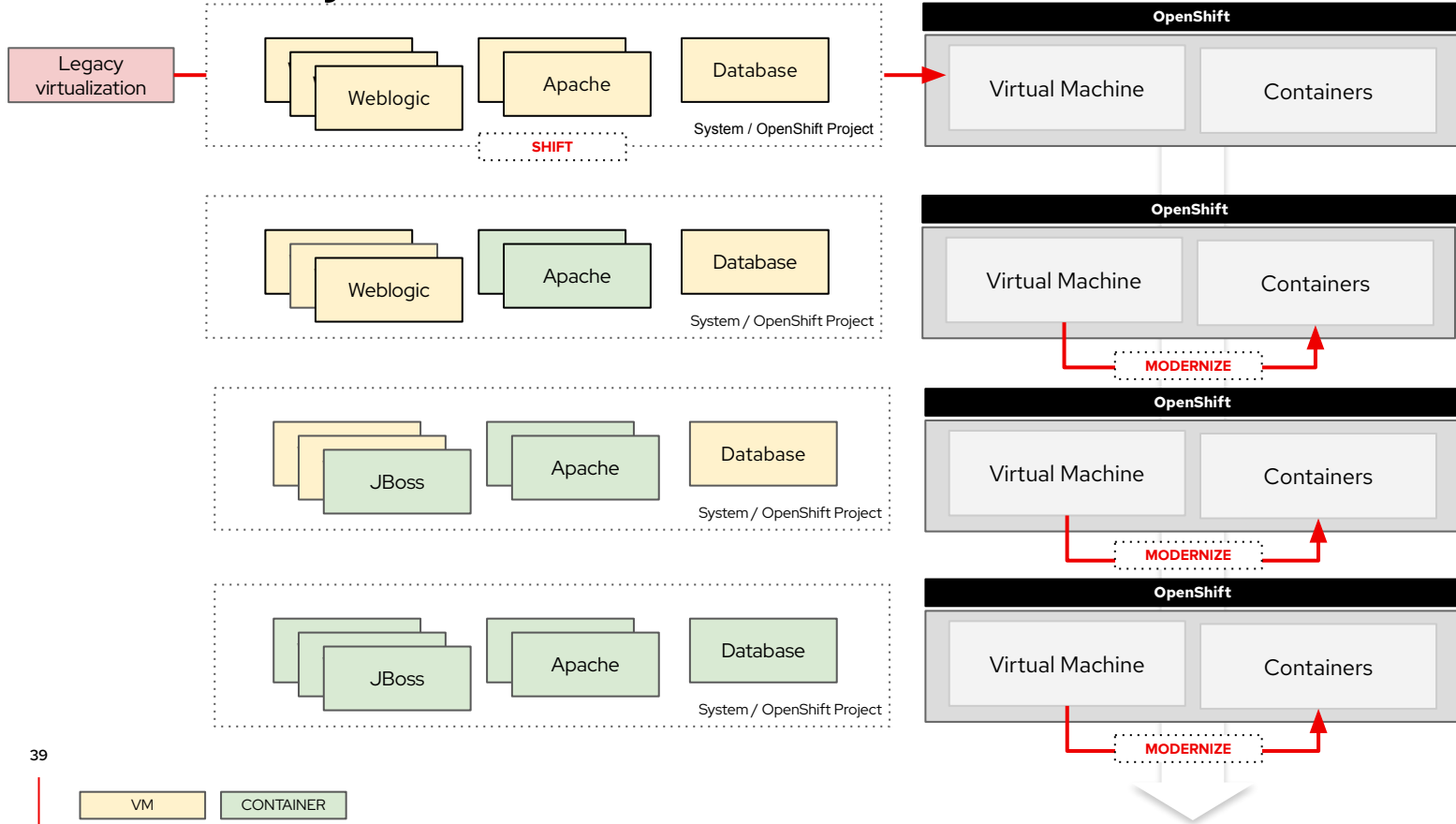


Integrate legacy VMs with a modern GitOps framework

- ▶ Deploy different security zones to run both composite applications of pods/VMs as well as traditional VM workloads
- ▶ Deploy and automate Virtual Machines as Code with GitOps

OpenShift Virtualization: Modernize Applications

Iteratively



Next Gen approach to VM orchestration & management

Automated VM provisioning in minutes

Virtual Machine

- ▶ CPU: 4 vCPU, 1 core
- ▶ Memory: 16GB
- ▶ Disk: 30 GB
- ▶ OS: RHEL

Additional filesystems

- ▶ data: 500GB, disk
- ▶ logs: 100GB, partition

Application platform

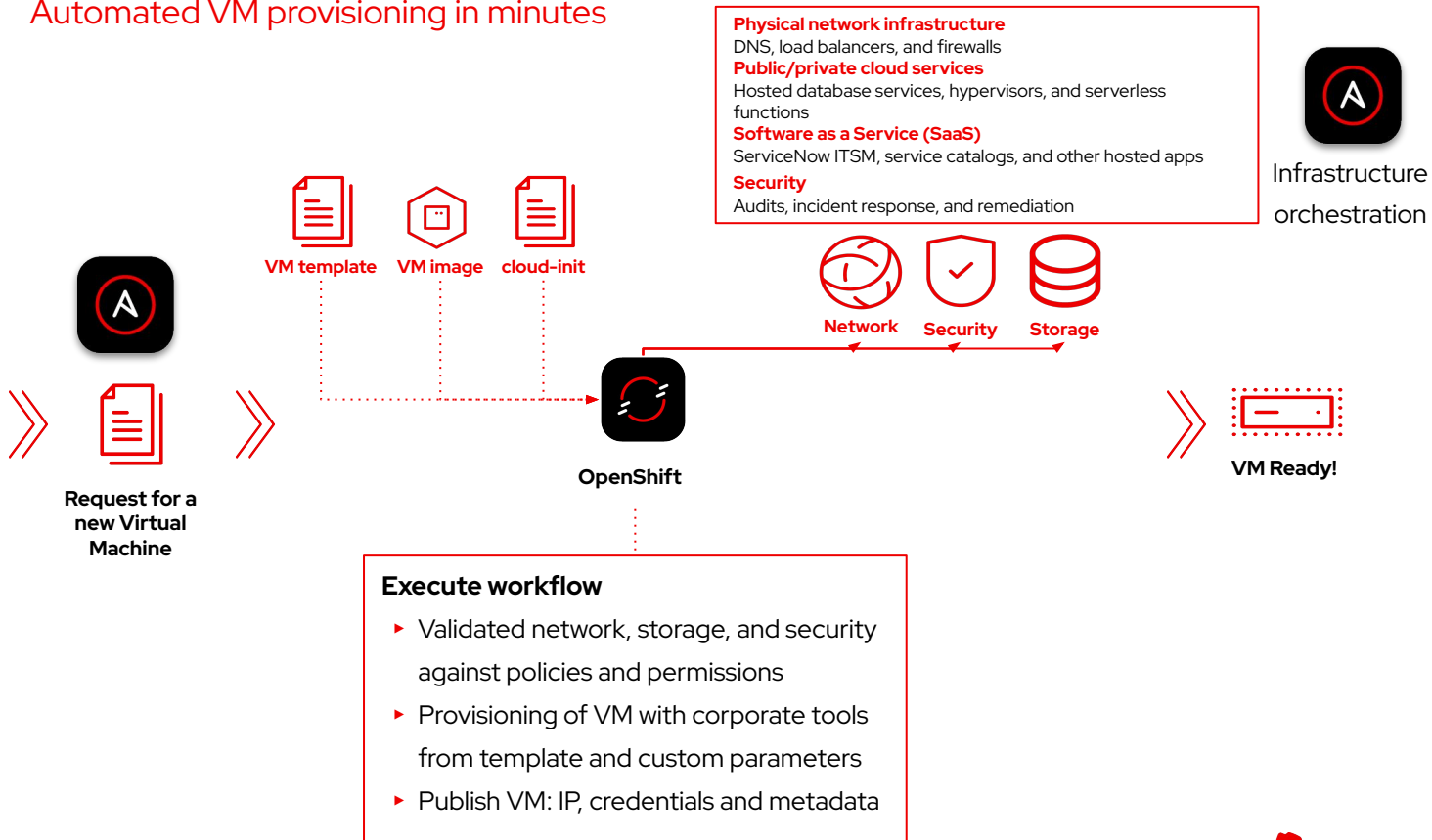
- ▶ JBoss 7.4 Update 11

Firewall rules

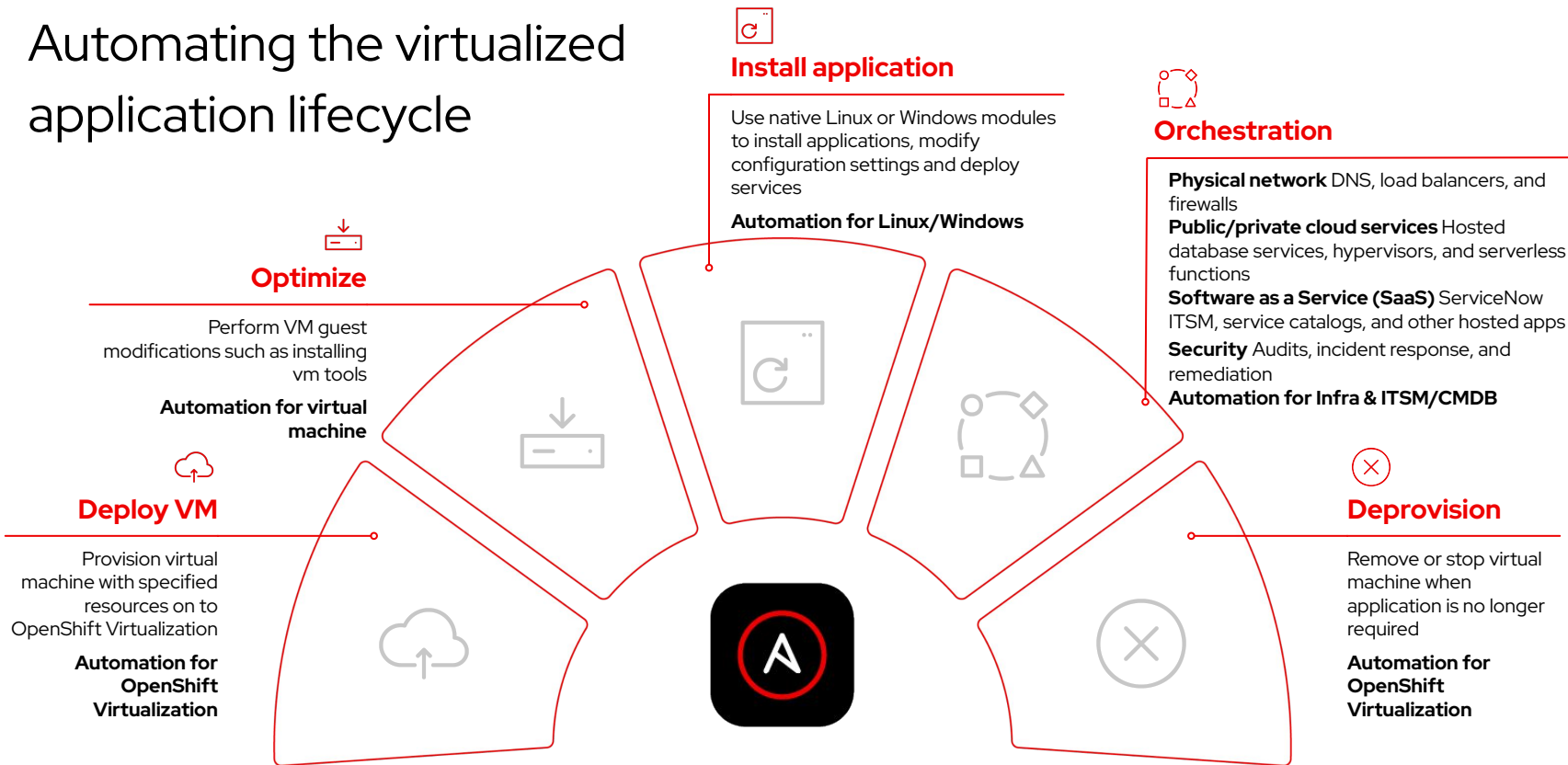
- ▶ Ingress: SSH, HTTPS
- ▶ Egress: *.redhat.com

DNS & LB

- ▶ api.service.org
- ▶ Healthcheck: HTTPS port



Automating the virtualized application lifecycle





Let's get familiar with the product



OpenShift Virtualization Roadshow

Hands-on workshop companion slides

Demo

Choose your own adventure: Modules for roles and interests

- Virtual machine administrators
 - Customize virtual machines
 - Windows virtual machines
- Virtual infrastructure administrator
 - Bare metal OpenShift
 - Network management; Storage management
 - Backup and restore
- Virtual machine users
 - Exposing apps using a Route; Exposing apps using MetalLB

Accessing your lab instance

WIFI

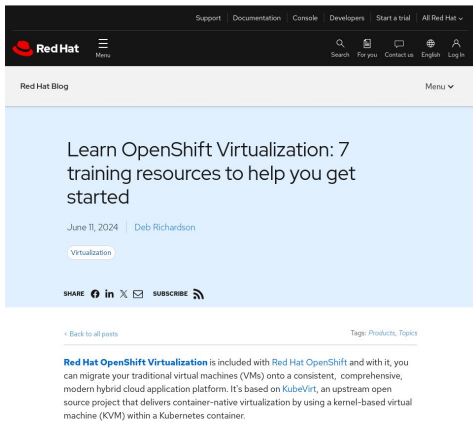
Name: scandic_easy

Browse to

<https://demo.redhat.com/workshop/jbet2p>

Password: FedorasAreCool

More learning resources



7 training resources to help get you started
- Red Hat Blog

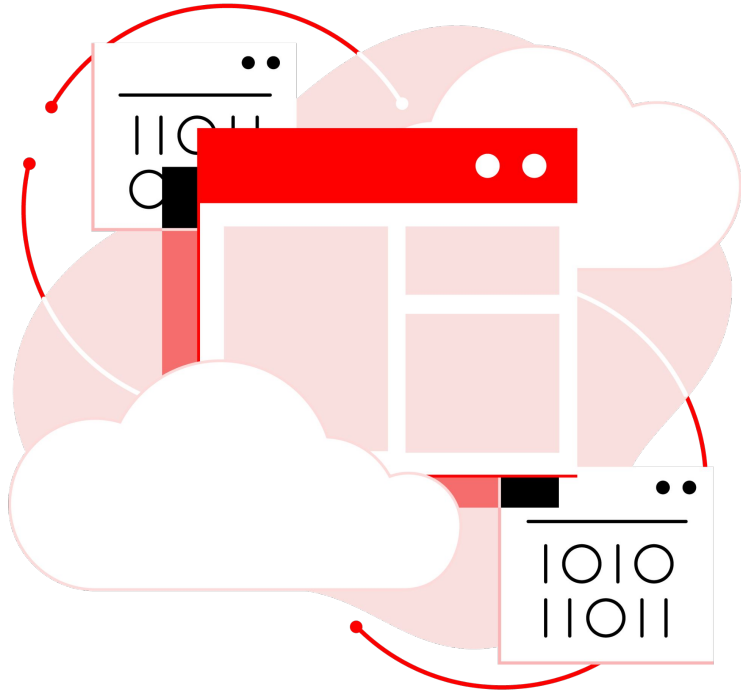
<https://www.redhat.com/en/blog/learn-openshift-virtualization>

OpenShift Virtualization

Reference Implementation Guide

Hybrid Platforms Business Unit

<https://red.ht/virtrefguide>



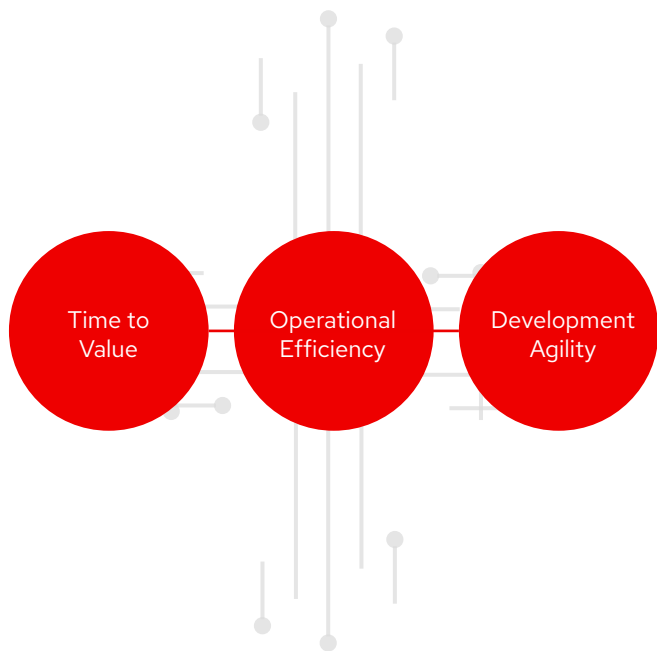
Your journey with OpenShift Virtualization



OpenShift Virtualization & Automation

Red Hat Services Organization

Luka Bac, Snr. Architect



ac • cel • er • a • tor

/ək'selə,rādər/

noun

a team that causes something to happen or develop more quickly

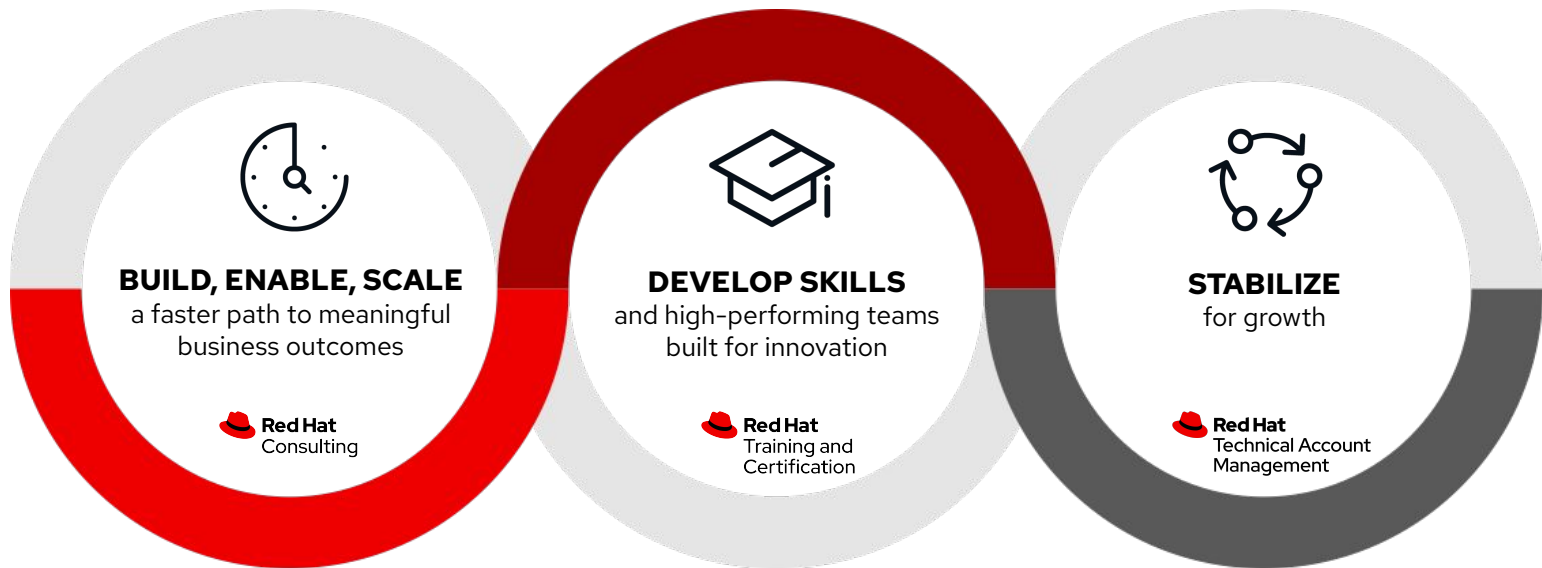
a process for accelerating change

a roadmap for maintaining acceleration



Red Hat Services

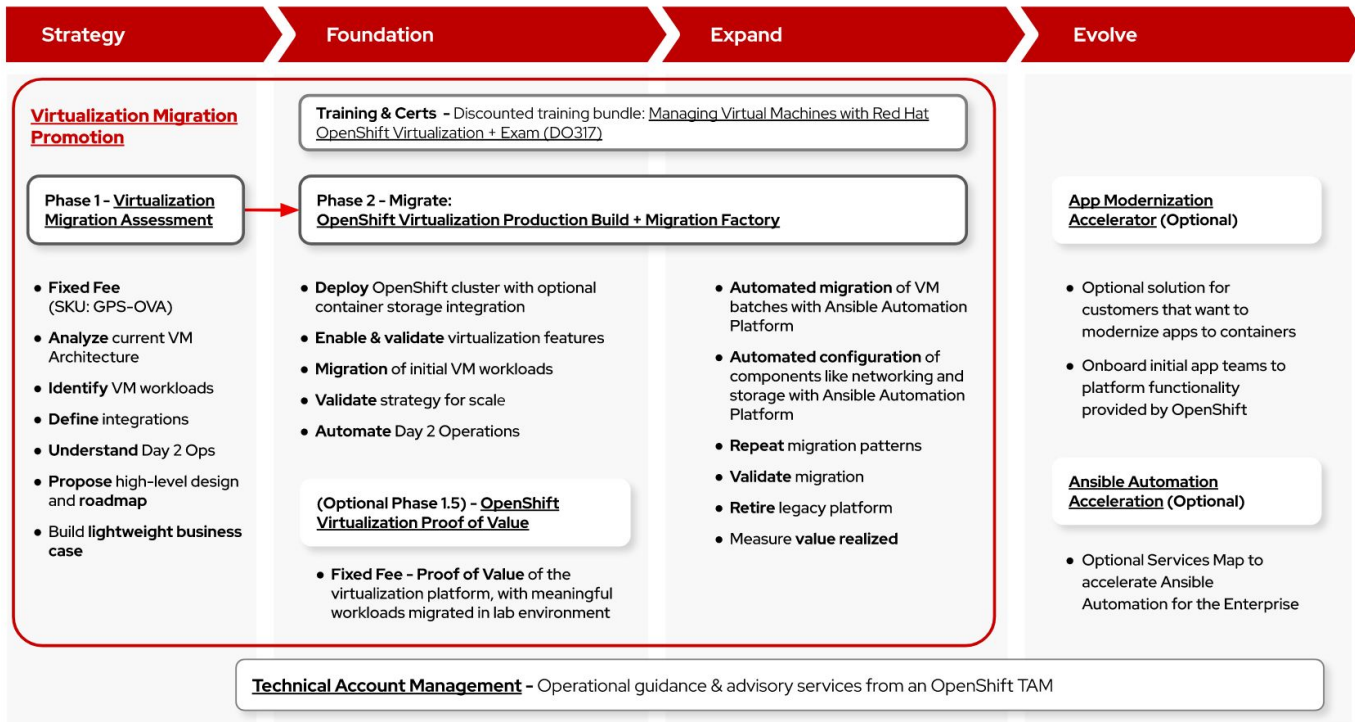
A combined life cycle



OPENSIFT VIRTUALIZATION

RH Services Map: OpenShift Virtualization

OpenShift Virtualization - Services Journey



Getting Started: OpenShift Virtualization Assessment



What We Cover

- Virtual environment current state - compute, network, storage
- Dive deep into virtualization use cases
- Hybrid cloud and edge strategy
- Platform management & security strategy
- Environment monitoring and observability
- Backup and disaster recovery
- Pilot scope and plan for scaled migration

Outcomes

- Smarter customer adoption through a clear path to pilot and business value realization
- Expertly-leveraged capabilities supported with high-level recommendations and design considerations
- Faster time-to-value by embarking on a customer journey with Red Hat Services

~2 Weeks

AUTOMATION

Automation adoption

Empower business transformation with highly scalable automation, orchestration of capabilities, and evolved ways of working in a culture of collaboration.

Strategy

Chart a journey map from foundational use case to target state with measurable business outcomes.

Foundation

Empower a cross-functional team to automate and operate an initial set of workflows in an initial automation framework.

Expand & Evolve

Expand skills, add use cases, and extend solutions to match business needs and opportunities



Technology

Establish automation framework, tooling, and techniques that empower process evolution and business-driven workflows.



Process

Adopt open practices to quickly develop, validate, and launch new services and workflows in response to changing demands.

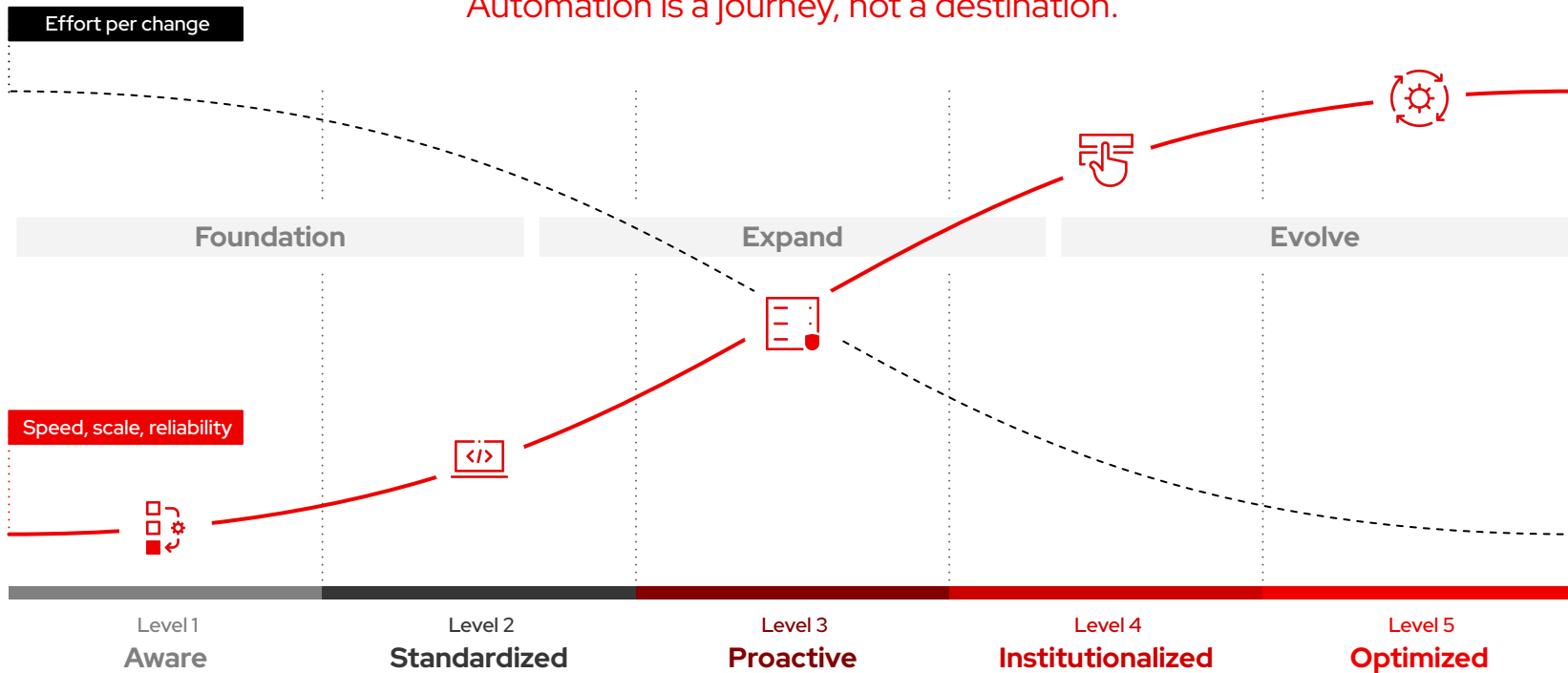


Culture

Spark innovation and agility with new approaches to increase collaboration, and communities that empower and inspire the organization.

Assessing organizational maturity

Automation is a journey, not a destination.

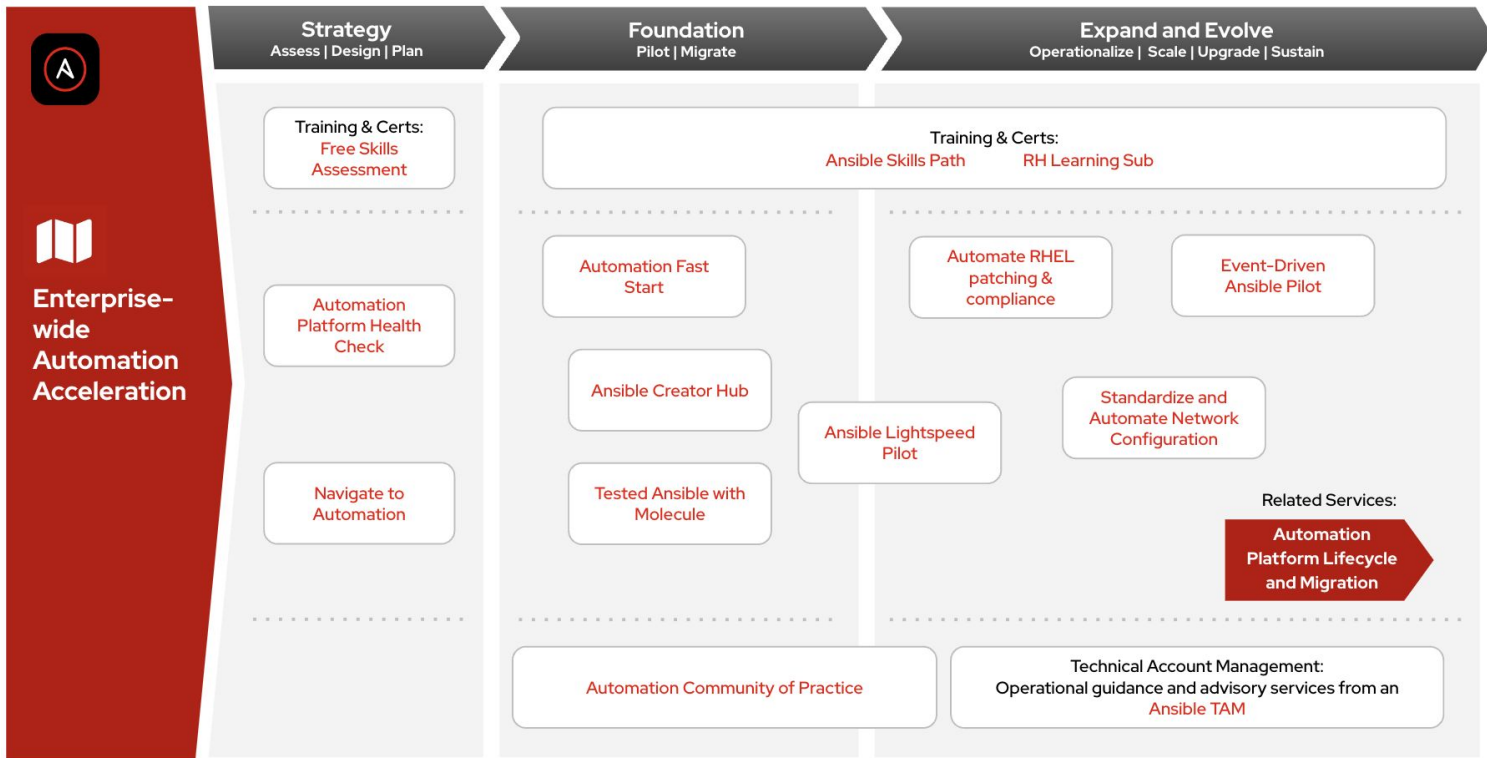


HOW LONG CAN YOU WORK ON MAKING A ROUTINE TASK MORE EFFICIENT BEFORE YOU'RE SPENDING MORE TIME THAN YOU SAVE?
(ACROSS FIVE YEARS)

		HOW OFTEN YOU DO THE TASK					
		50/DAY	5/DAY	DAILY	WEEKLY	MONTHLY	YEARLY
HOW MUCH TIME YOU SHAVE OFF	1 SECOND	1 DAY	2 HOURS	30 MINUTES	4 MINUTES	1 MINUTE	5 SECONDS
	5 SECONDS	5 DAYS	12 HOURS	2 HOURS	21 MINUTES	5 MINUTES	25 SECONDS
	30 SECONDS	4 WEEKS	3 DAYS	12 HOURS	2 HOURS	30 MINUTES	2 MINUTES
	1 MINUTE	8 WEEKS	6 DAYS	1 DAY	4 HOURS	1 HOUR	5 MINUTES
	5 MINUTES	9 MONTHS	4 WEEKS	6 DAYS	21 HOURS	5 HOURS	25 MINUTES
	30 MINUTES		6 MONTHS	5 WEEKS	5 DAYS	1 DAY	2 HOURS
	1 HOUR		10 MONTHS	2 MONTHS	10 DAYS	2 DAYS	5 HOURS
	6 HOURS				2 MONTHS	2 WEEKS	1 DAY
1 DAY					8 WEEKS	5 DAYS	


RH Services Map

Enterprise wide Automation Acceleration




Thank you

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

 [linkedin.com/company/red-hat](https://www.linkedin.com/company/red-hat)

 [facebook.com/redhatinc](https://www.facebook.com/redhatinc)

 [youtube.com/user/RedHatVideos](https://www.youtube.com/user/RedHatVideos)

 twitter.com/RedHat

