Red Hat Summit

Connect

OpenShift Virtualization Lab

Virtualisierung trifft Container

Janine Eichler
Senior Architect

Wolfgang Marx
Senior Specialist Adoption Architect

Joachim von Thadden
Senior Principal Specialist Solution Architect

Who’s who from Red Hat

Janine Eichler

Senior Architect

Wolfgang Marx

Senior Specialist
Adoption Architect

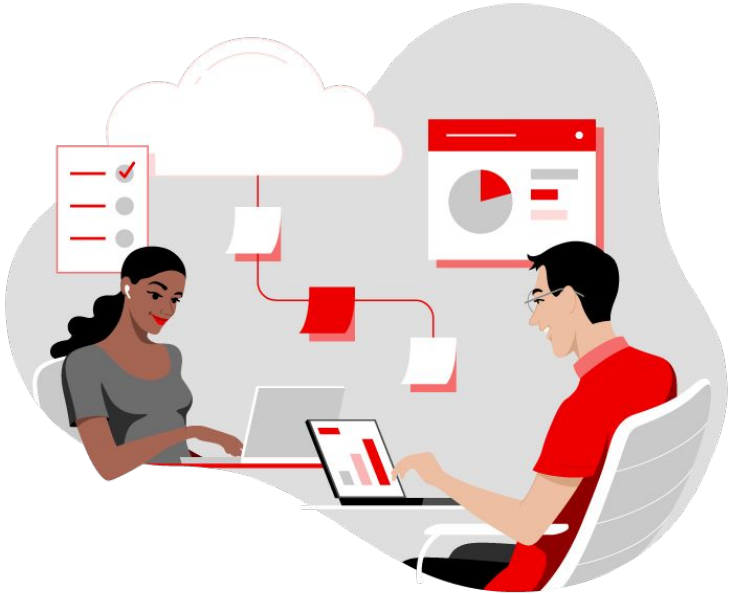
Joachim von Thadden

EMEA Senior
Principal
Specialist Solution
Architect

Red Hat

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 migration and infrastructure modernization journey starts here
- Familiarize yourself with resources to support you along your journey



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Knowledge Check:
Wer kennt OpenShift schon aus der Praxis?

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Knowledge Check:
Wer kennt OpenShift
Virtualisierung
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Red Hat OpenShift Virtualization

Overview

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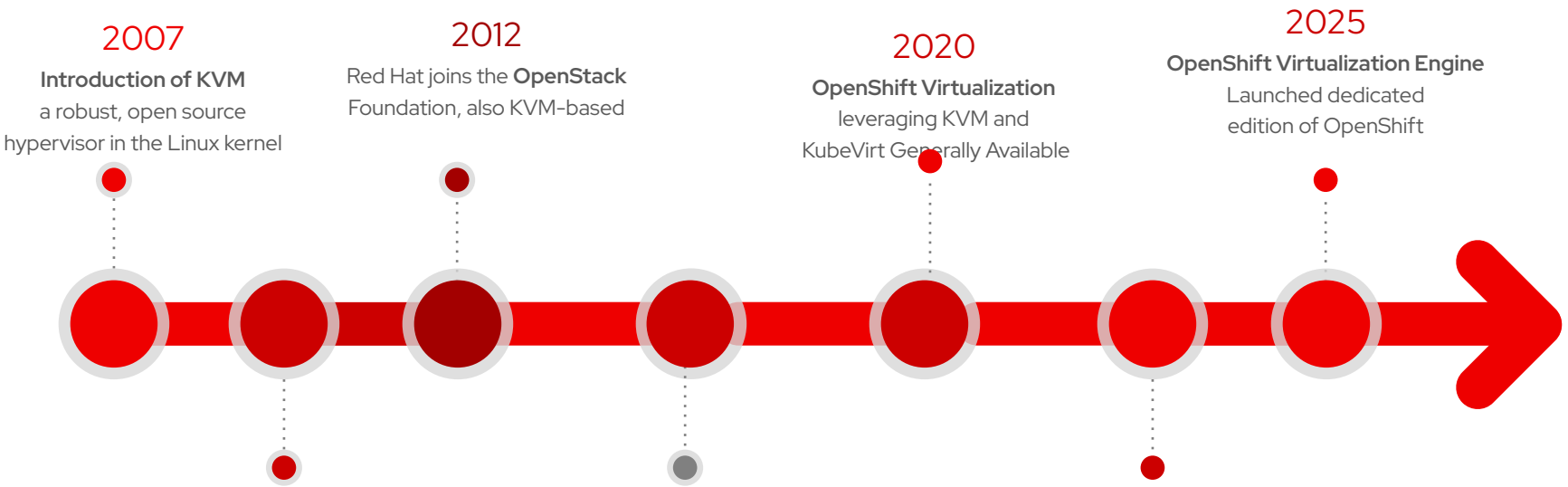
Virtualization @ Red Hat

Open Source driving KVM, RHEL, OpenStack and now OpenShift Virtualization



OpenShift virtualization

Modernize workloads and support mixed applications

Start bringing VMs to OpenShift now

Support Linux and Windows apps and services in OpenShift as virtual machines with native Kubernetes tools and the security of the Red Hat platform

Deliver mixed applications on one platform

Add VM-based services such as databases to new and existing applications consisting of VMs, containers, and serverless

Modernize VMs to containers over time, or not

Refactor VMs to containerized services, or maintain as VMs. Your choice.

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Featuritis: 15+ years of enterprise virtualization experience

Enterprise virtualization capabilities

- **Live migration**
- Infrastructure fencing
- Application fencing
- **Hot pluggable disks**
- Non-disruptive upgrades
- Deduplicating memory with freePageReporting and KSM support
- **Performance, Scale, Stability of KVM**
- **CPU/MEM overcommit**
- VM disk resize
- **GPU passthrough, vGPU**
- UI for VM admins
- **VM export**
- **Microsoft Windows,** UEFI and Secure boot, Persistent vTPM
- Microsoft Windows Server Failover Cluster (WSFC)

Networking

- DPDK, **SRI-IOV,** IPv6
- Flat L2 Overlay network without the need to configure host networking
- **OVN Kubernetes** localnet as an alternative to the Bridge CNI
- Secondary network ipBlock policies and **micro segmentation**

Hybrid Cloud and managed services

- x86 based systems
- Single Node OpenShift
- 3- node compact cluster
- **ROSA, AWS Public Cloud**
- IBM Cloud (Tech Preview)

Storage, backups, and DR

- **Storage profiles for all major storage providers - ODF, Netapp, Pure/Portworx, Dell, Hitachi, HPE, IBM**
- **Backup / restore** with OADP
- **Portworx support for Metro-DR and Async-DR**
- GitOps-based VMs disaster recovery in **ODF Metro-DR**
- Kasten K10 by Veeam
- Trilio TVK
- Storware vProtect

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Terminology comparison

Feature	RHV	OpenShift Virtualization	vSphere
Where VM disks are stored	Storage Domain	PVC / PV	Datastore
Policy based storage	None	StorageClass	Storage Policy Based Management (SPBM)
Non-disruptive VM migration	Live migration	Live migration	vMotion
Non-disruptive VM storage migration	Storage live migration	Storage class migration	Storage vMotion
Active resource balancing	Cluster scheduling policy	Pod eviction policy, descheduler	Dynamic Resource Scheduling (DRS)
Physical network configuration	Host network config (via nmstate w/4.4)	NMState Operator, Multus	vSwitch / DvSwitch
Overlay network configuration	OVN	OCP SDN (OpenShift-SDN, OVN-Kubernetes, CNI partners), Multus	NSX-T
Host / VM metrics	Data warehouse + Grafana (RHV 4.4)	OpenShift Metrics and Monitoring	vCenter, vRealize Operations

Additional Benefits

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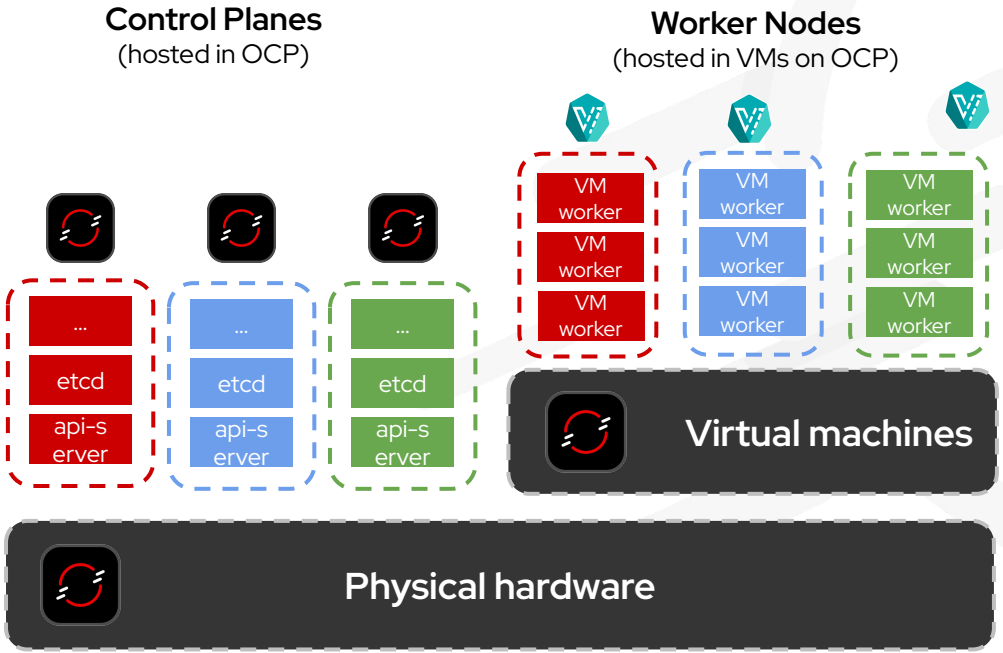
Utilizing OpenShift Virtualization to consolidate OpenShift clusters

Increase utilization of infrastructure

Reduce dependency on legacy virtualization



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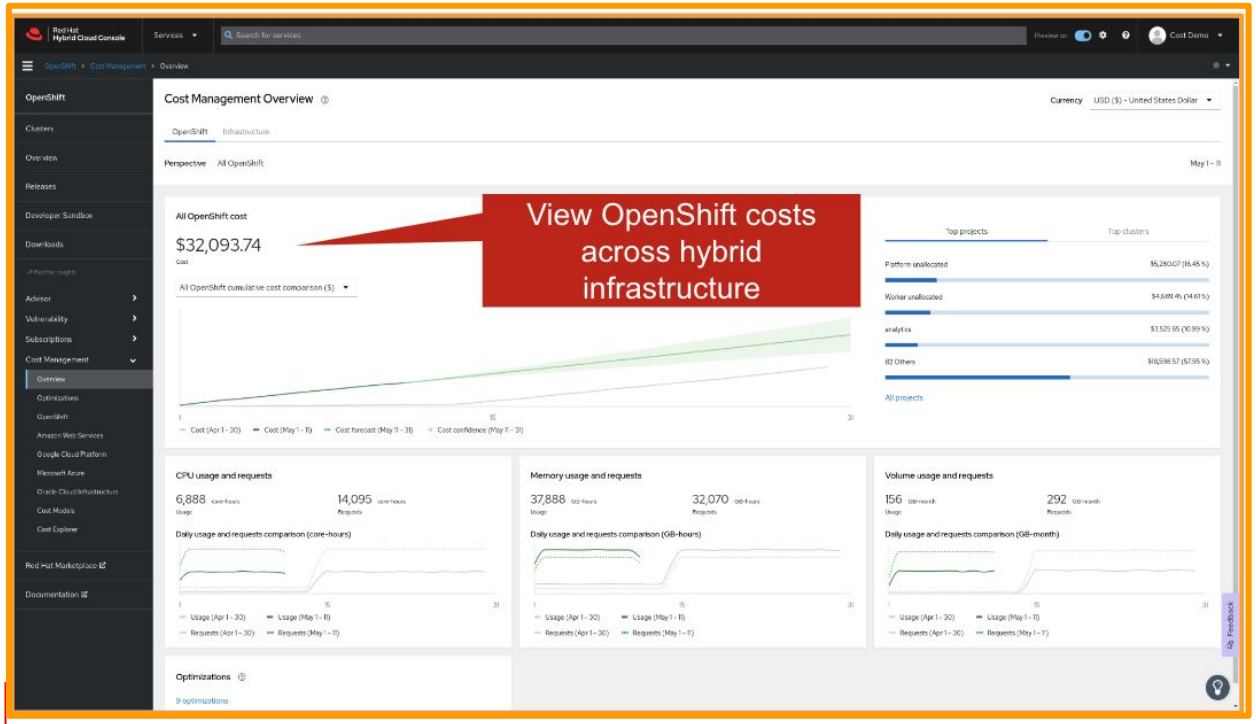
Red Hat Cost Management

Red Hat Cost Management's SaaS offering allows customers to have visibility into the costs of OCP clusters on-premises and in the cloud.



- Visualize hybrid cloud infrastructure costs
- Track cost trends
- Associate fees with projects, labels and organizations. Slice the data using filters
- Generate showback exports to build your chargeback reports.

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OpenShift Virtualization is available across major cloud providers.

Migrate VMs to the cloud

Modernize and build new apps with cloud-native tech

Generally Available on Red Hat OpenShift Service on AWS and self-managed OpenShift on AWS

Public Preview of Azure Red Hat OpenShift

Technical Preview on OpenShift Dedicated and self-managed OpenShift on Google Cloud Platform

Generally Available on Red Hat OpenShift on IBM Cloud

Technical Preview on OpenShift on OCI

Red Hat Advanced Cluster Management for Kubernetes

Simplified operation and maintenance

View, manage, operate and solve issues all through a single console.

Runs on OpenShift

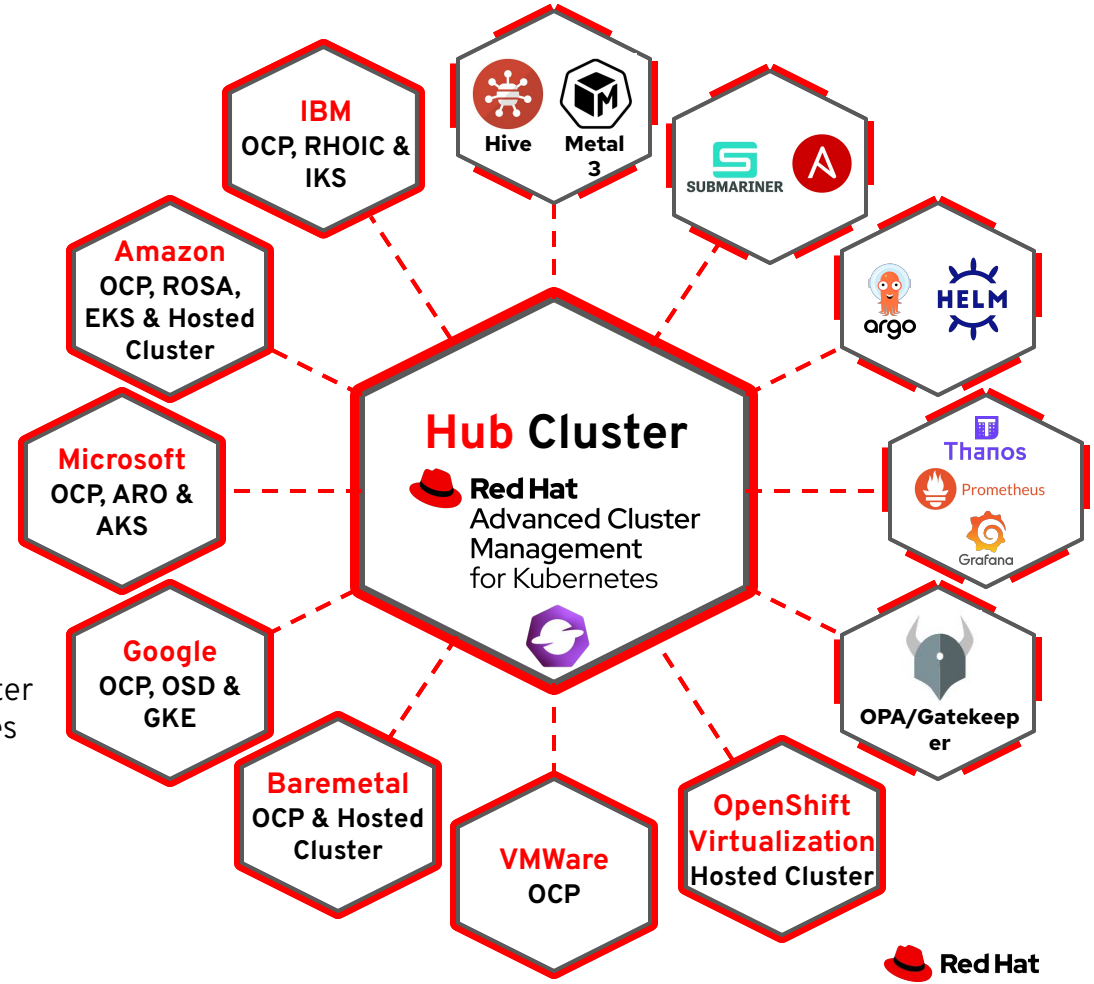
Like any other Kubernetes app, easily run and manage it on top of a OpenShift cluster.

Hub-Spoke architecture

Have all configurations managed by the Hub cluster component and seamlessly add Spoke Kubernetes clusters to the central hub.

Tight Integration

RHACM comes with a rich API, add-ons and it can integrate with some key other enterprise tools.



Next Steps

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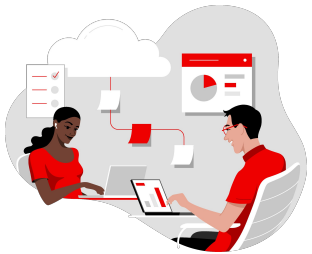
OpenShift Virtualization, Automation and MultiCluster Learning

Target Outcome:

- Day 2 Operation of OpenShift Virtualization
- MultiClustering Management and Security

Note:
Ansible integration with Openshift Virtualization, in Managing and Migrating your VM Pools, is a key variable in your Virtualization Strategy



DO180	Red Hat OpenShift Administration I: Operating a Production Cluster (suggested pre-requisite to DO316)	OCP Virt
DO316	Managing Virtual Machines with Red Hat OpenShift Virtualization	
DO336	Automate and Manage Red Hat OpenShift Virtualization with Ansible (In Dev - Early Access)	AAP for OCP Virt
DO346	Migrating Virtual Machines to Red Hat OpenShift Virtualization with Ansible Automation Platform (In Planning)	
EX316	Red Hat Certified Specialist in OpenShift Virtualization	
DO480	Multicluster Management with Red Hat OpenShift Platform Plus	
DO432	Red Hat Advanced Cluster Management for Kubernetes (Note: in Development - 02/2025)	Multi Cluster MGMT & Security
DO430	Red Hat Advanced Cluster Security for Kubernetes (Note: in Development - 02/2025)	

Foundational | Core Learning | Corresponding Certification | Extended Learning

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eBooks & White Papers

- Business value overview – Gain business value with Red Hat OpenShift Virtualization
- 101 ebook – 15 reasons to adopt Red Hat OpenShift Virtualization
- Virt on ROSA ebook – 15 reasons to adopt Red Hat OpenShift Virtualization on ROSA
- 201 eBook – Get started with Red Hat OpenShift Virtualization (Day 2 Operations)
- 201 eBook – Migrate your virtual machines

Demo

→ OpenShift Virtualization

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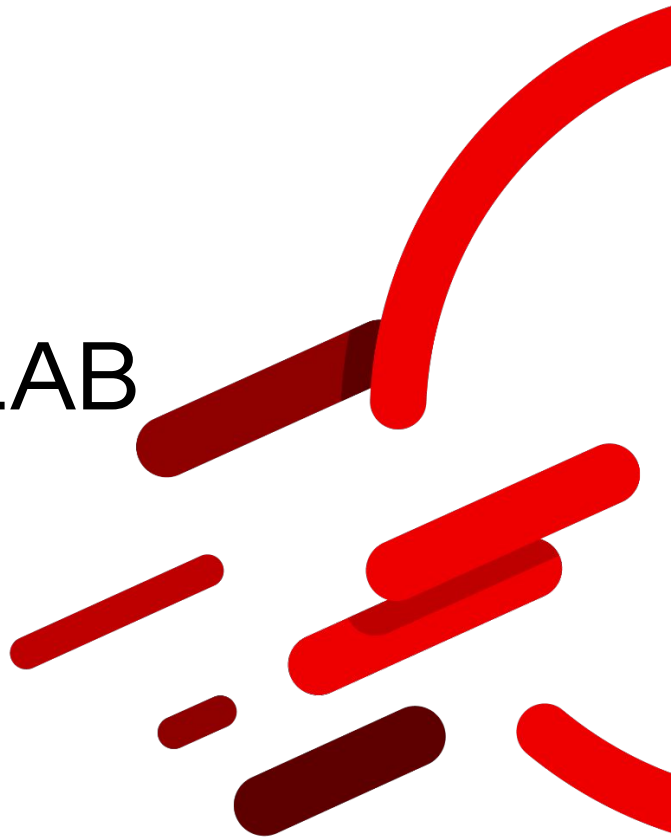
OpenShift Virtualization LAB



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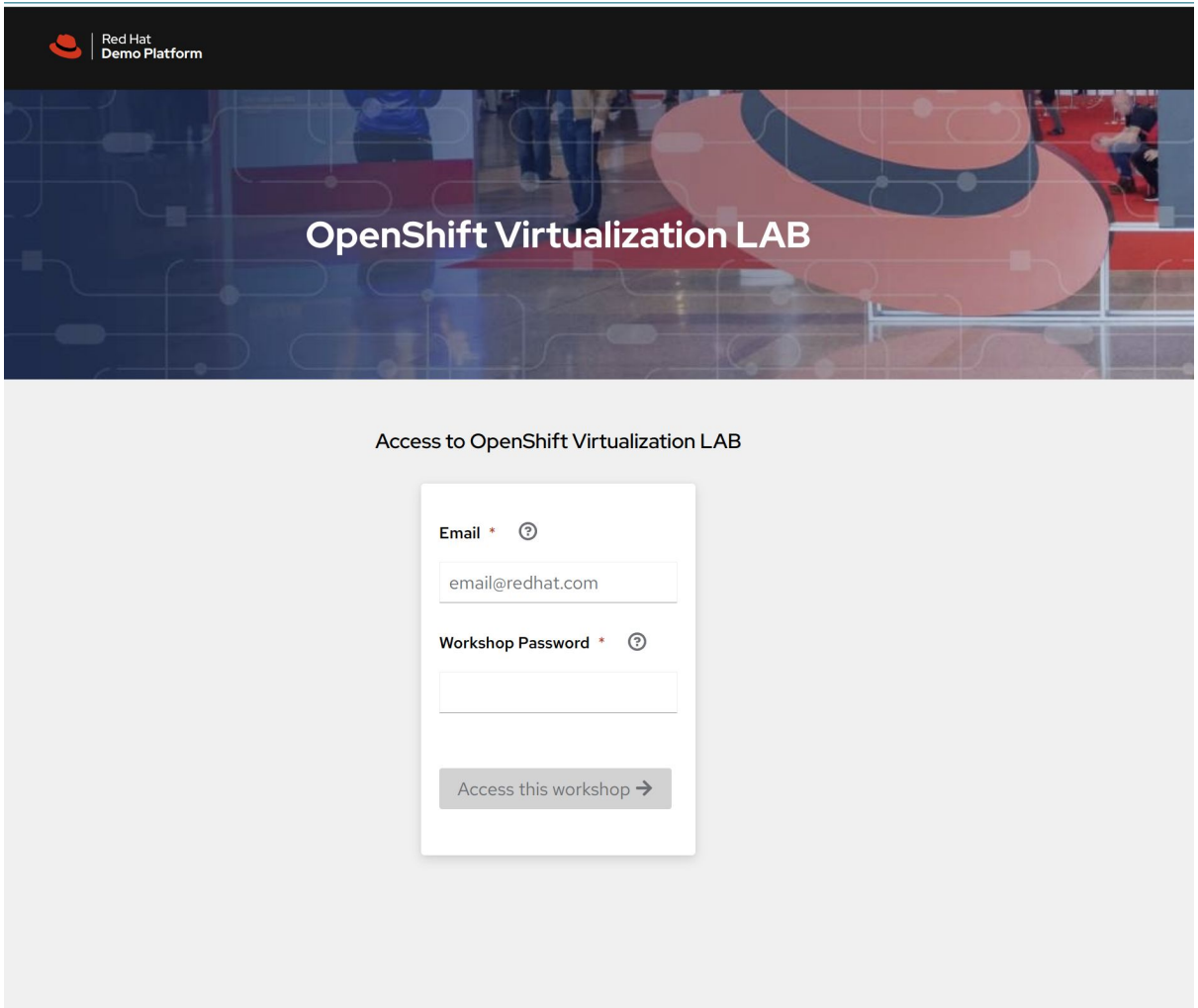
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Demo Platform
OpenShift Virtualization LAB
Access to OpenShift Virtualization LAB
Email *
email@redhat.com
Workshop Password *
Access this workshop

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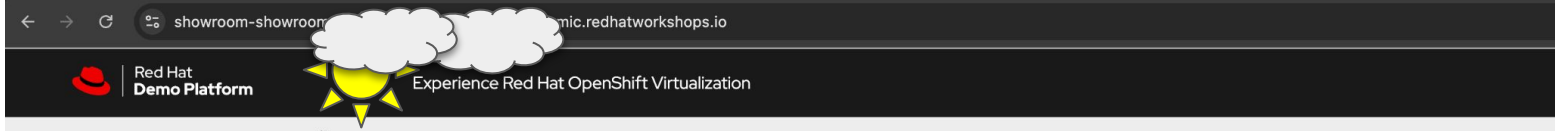

Welcome to Experience OpenShift Virtualization!

Introduction

OpenShift Virtualization enables you to bring virtual machines onto a modern, Kubernetes-based infrastructure. It enables the development and delivery of new applications as well as the modernization of existing ones and can create applications that consist of virtual machines, containers, and serverless functions - all managed together using Kubernetes-native tools and paradigms.

This roadshow event is organized to allow you to have a hands-on experience with Red Hat OpenShift Virtualization.

In this event we will explore many common management activities that virtualization administrators often encounter in their day to day workflows.

Who Will Benefit Most from attending a Roadshow?

Virtual Machine Administrators – Those responsible for day to day management of virtual guests in OpenShift Virtualization. These users will often find themselves responsible for provisioning virtual guests, and day to day management of the guests, and the applications running within.

Virtual Infrastructure Administrators – Those responsible for the physical infrastructure hosting the OpenShift Virtualization solution. These users will be responsible for physical hardware, storage, and networking changes to the environment, that will affect the day to day operations of the running virtual machines.

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Credentials for the OpenShift Console

Your OpenShift cluster console is available here.

Your login is available with:

- **User:** use
- **Password:** Q

vCenter Access

In the migration chapter of the lab, you will be asked to login and examine a VMware vSphere environment.

For access, please use the following credentials:

- **vcenter_user:** ocpvi
- **vcenter_password:** e9RiSa

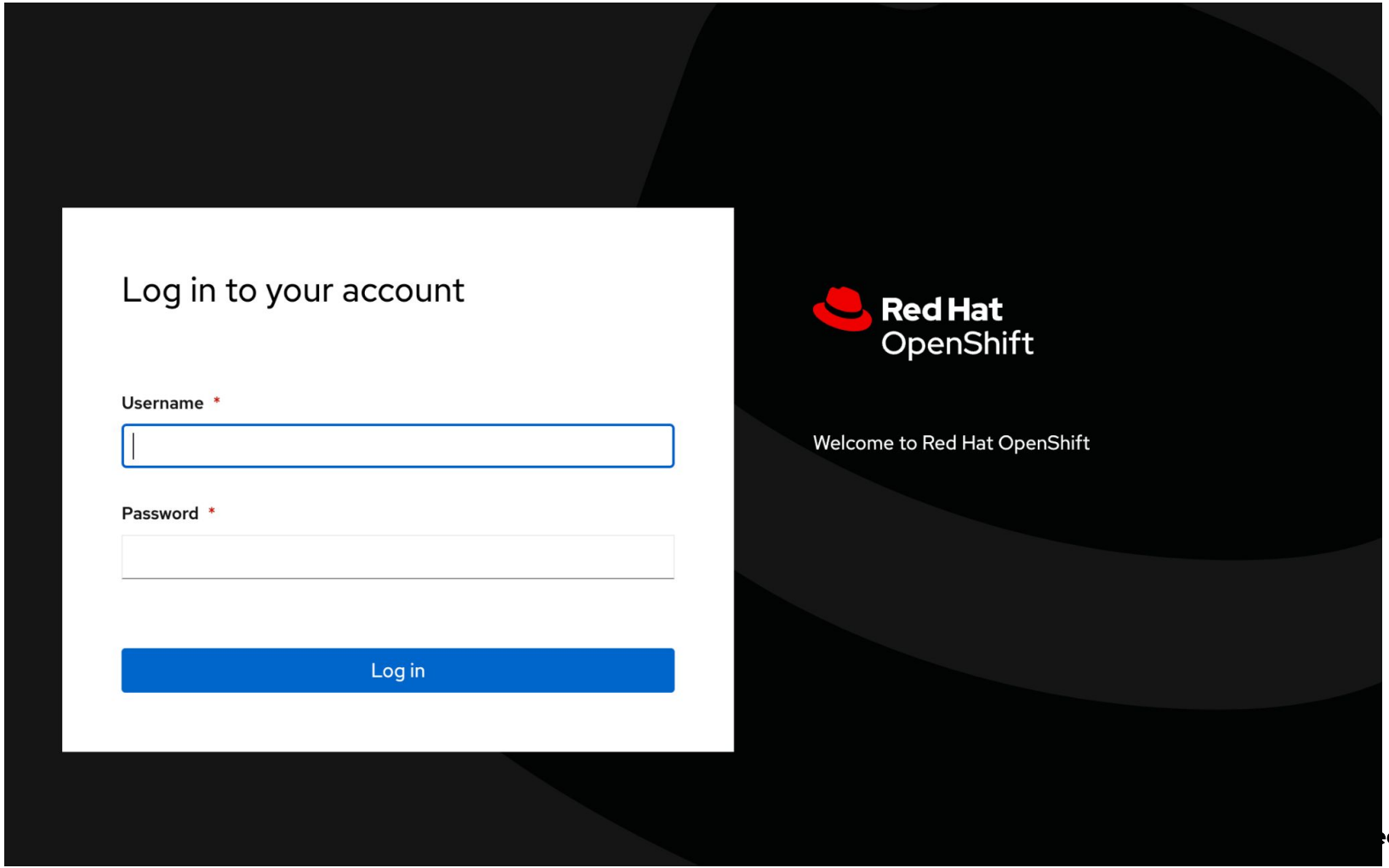
Version Information

This edition of the OpenShift Virtualization Roadshow has been developed using the following software versions:

- Red Hat OpenShift 4.18.3
- Red Hat OpenShift Virtualization 4.18.0
- Red Hat OpenShift Data Foundation 4.18.1
- Red Hat OADP 1.4.4
- Red Hat Migration Toolkit for Virtual Machines 2.7.2

(Accurate as of March 24, 2025)

Next
Virtual Machine Management >


Log in to your account
Username *
Password *
Log in
Red Hat
OpenShift
Welcome to Red Hat OpenShift

IMPORTANT

Having many participants performing the same task in parallel in a simulated lab environment can cause this task to perform much slower than in a real environment. For this lab instance we have limited the number of in-flight VMs to 1 at a time. Please be patient with this process as it completes. You may continue with other sections in the roadshow as the migrations complete.

Accessing your lab instance

Browse to

https://red.ht/rhsc-de-25

Password: **Darmstadt25**

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Thank you

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