Red Hat Summit Connect

Beyond VMware: A Blueprint for OpenShift Virtualization and App Modernization

Martijn ten Heuvel
Principal Architect EMEA
STP

Red Hat

Agenda

- Virtualization
- OpenShift
- Cost
- Solutions
- Tools
- Modernization
- Automation



Companies are rethinking their current virtualization platforms

Common concerns include:[1]

- Rising licensing costs
- Management complexity
- Vendor lock-in
- Low confidence in long-term support and innovation

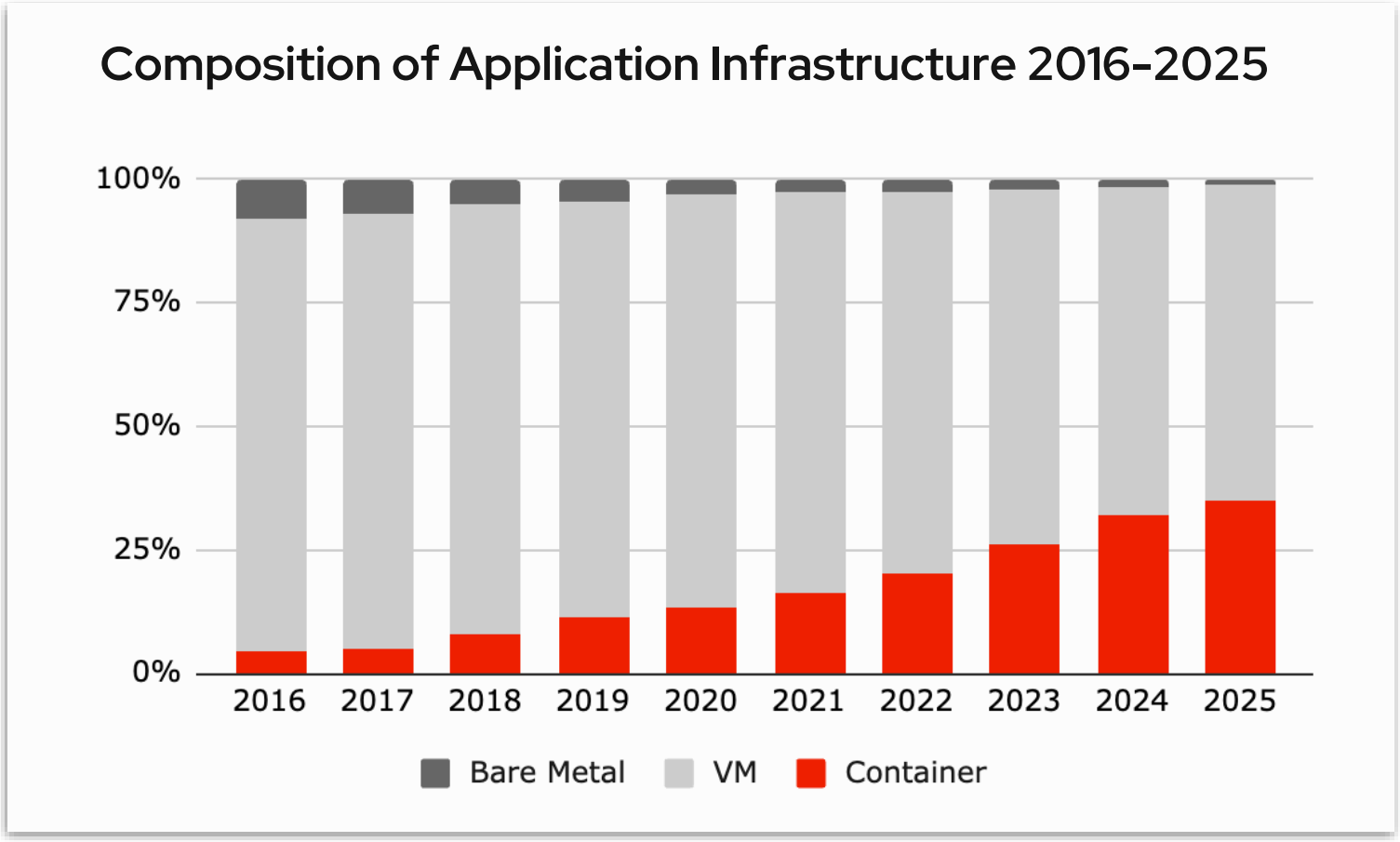
"70% of organizations have recently moved VM workloads to a different or additional hypervisor—or are in the process of making a switch."[1]

"More than 60% of private cloud users are pursuing alternatives to VMware"[2]

[1]Source: Red Hat State of Virtualization Report: May 2025
[2]Source: The migration catalyst: May 2026

Industry Context for Virtualization Migration

Companies need to preserve their existing VM workloads while preparing for the future



Organizations invested in VMware when most workloads were running on VMs. While VMs are still, and will continue to be, an important part of application infrastructure, the industry is moving towards containerization.

Market developments have created a compelling event for companies to get ahead of this trend and ***adopt a flexible, future-focused solution that solves their near-term virtualization requirements.***

IDC Container Infrastructure Software Market Assessment: Container Deployment Forecast (IDC #US4867072)

The page you requested couldn't be found

What Could Have Caused This?

There may have been a technical error on our site.

We might have removed the page during a website redesign.

The link you clicked could be old and no longer works.

Or, maybe you accidentally typed the wrong URL in the address bar.



What Can You Do ?

You might retype the URL and try again.

Or we could take you back to the Broadcom homepage. The site map and site search box, located in the top navigation header of this and every page, can also help you find what you're looking for.

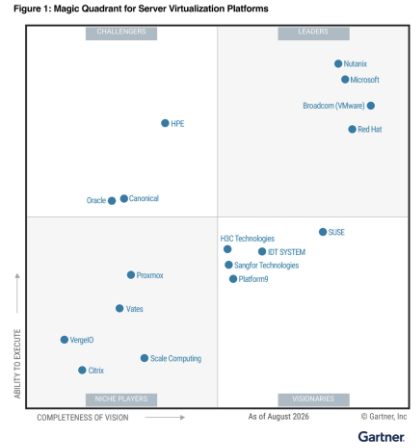
One more thing: If you want to help us fix this issue, please contact us and let us know what went wrong. Be sure to let us know what Web Browser and Operating System you were using when this occurred.

Thanks.



- It’s all about the money
- It’s gonna be about containers
- You current provider does not like it

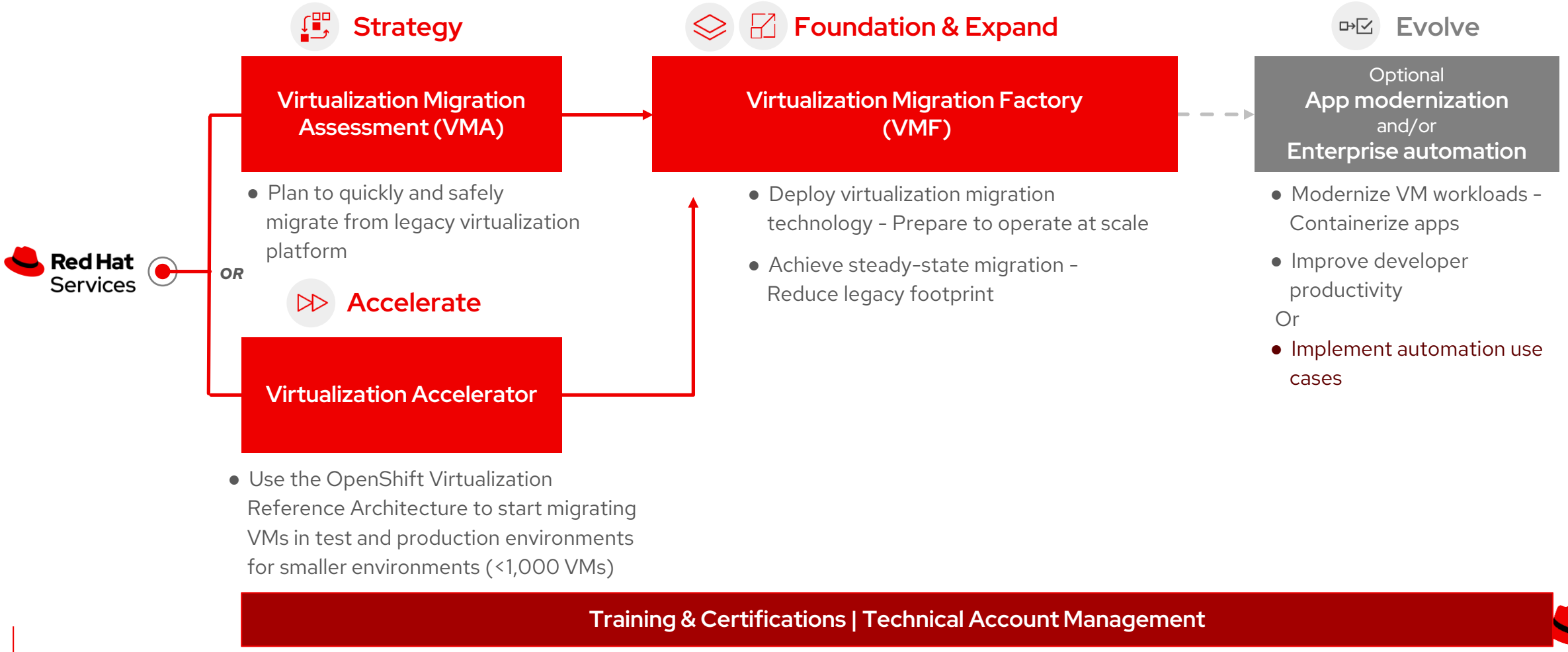
- The Red Hat technology is ready! Ask Gartner!



https://www.redhat.com/en/resources/gartner-magic-quadrant-server-virtualization-analyst-report

A bird's eye view into your Virtualization journey

A customizable approach based on your business needs and current environment



Migration toolkit for virtualization

A suite of tools for a low-risk path forward



Guided migration planning

Simple, intuitive interface lowering barrier to entry



Pre-migration validation

Run checks on VM configuration to avoid migration issues



Concurrent migrations

Easily migrate VMs concurrently to OpenShift and between OpenShift clusters



Storage offload

Accelerate migrations with underlying storage systems versus IP network



Cold and warm migration support

Controlled downtime depending on your needs

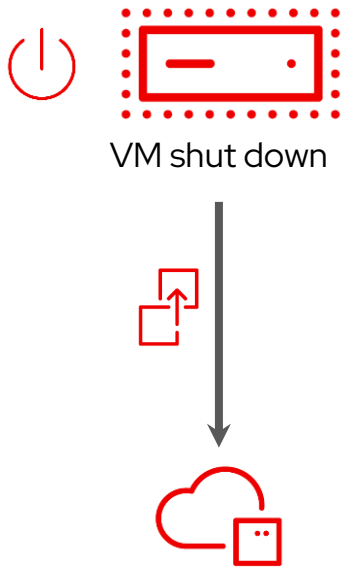


Migration network selection

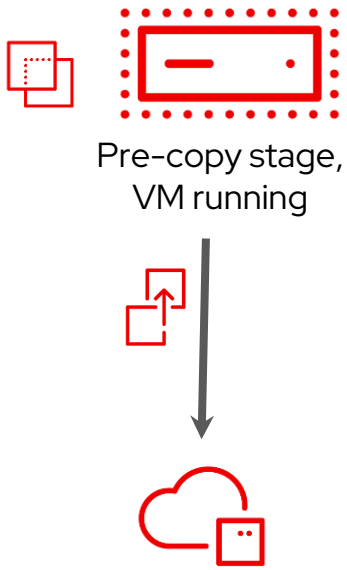
Avoid impact on other running workloads

Types of migrations with MTV

Cold migration



Warm migration



Enable faster, flexible migrations:

Live Cross-Cluster Migration

Move running VMs between OpenShift clusters

Raw Copy Mode

Bypass guest conversion for unsupported OS/filesystems

Storage Offload

Accelerated disk transfer via storage array

Migration Speed We've Seen

+200 VMs/day

Automated Conversion

Average speed achieved in stable executions at scale using the Migration Toolkit for Virtualization (MTV).

-45%

TCO Reduction

Consolidated operational cost savings by eliminating hypervisor layers and consolidating support management.

x20

Provisioning Speed

Reduction in deployment time from traditional infrastructure to GitOps-based declarative virtual environments.

99%

VM Migration Success

Guarantee of stable replication and VirtIO driver validation prior to the shutdown window ("cutover").

Experience matters

How customers are engaging with us

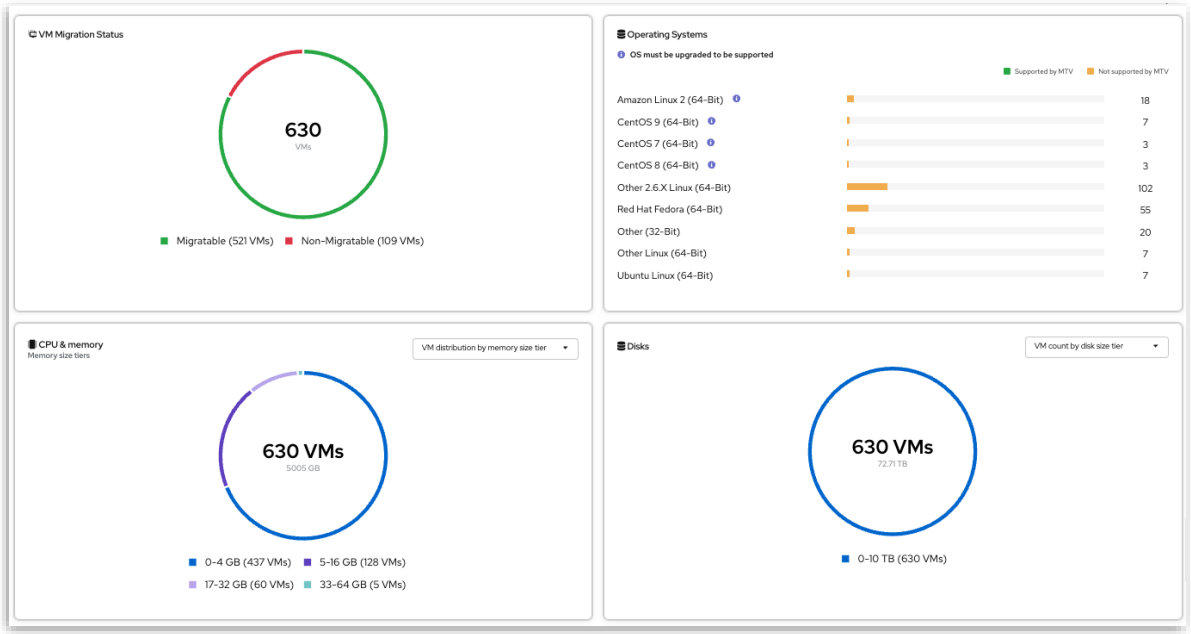


- 150+ VMAs successfully complete
- 250+ Virt Migration Projects in progress
- 2M+ Total VMs assessed
- 350+ Migrated VMs per day, per customer
- 350K+ VMs in migration (active or planned)
- 99% VM migration success rate

*Data as of May 2026

OpenShift Migration Advisor

Assess your VMware workloads with a no-cost migration report



Automated, data-driven insights

Analyze VMware workloads for precise, actionable recommendations to support migration readiness

Risk-free evaluation

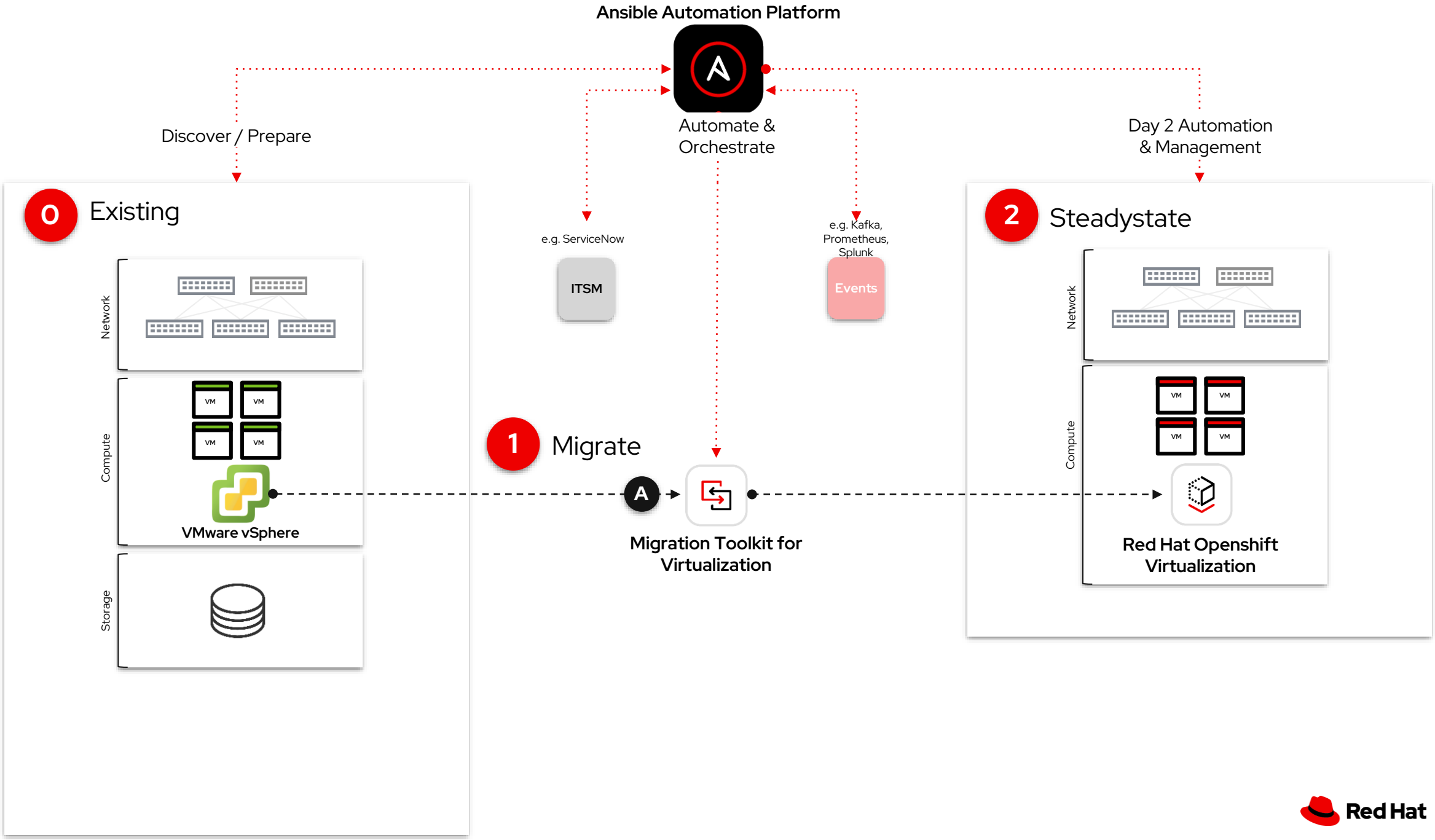
Gain instant access at no-cost to assess your migration path to Red Hat OpenShift

User-driven experience

Connect VMware environments and explore migration readiness at your own pace

Access the advisor via the Red Hat Console

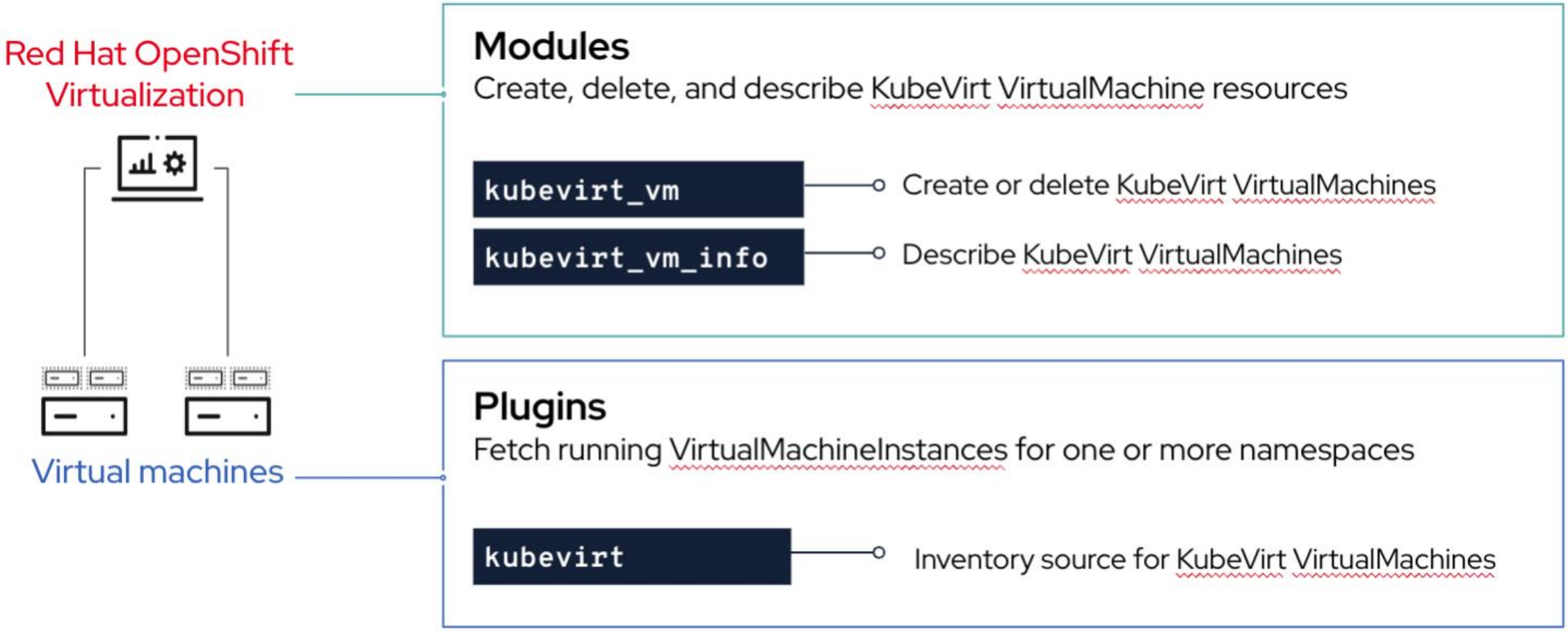
https://www.youtube.com/watch?v=iDqlo42vOXs&authuser=0


Ansible Automation Platform
Discover / Prepare
Automate & Orchestrate
Day 2 Automation & Management
0 Existing
Network
Compute
VM
VM
VM
VM
VMware vSphere
Storage
e.g. ServiceNow
ITSM
e.g. Kafka, Prometheus, Splunk
Events
1 Migrate
A
Migration Toolkit for Virtualization
2 Steadystate
Network
Compute
VM
VM
VM
VM
Red Hat Openshift Virtualization

Red Hat

Ansible for OpenShift Virtualization

Provided by the **`redhat.openshift_virtualization`** collection



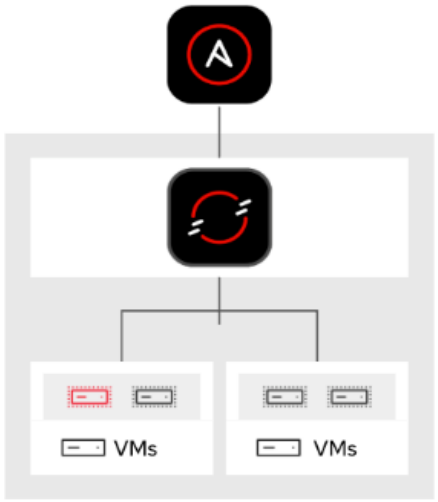
Example 1: Create a Virtual Machine

```
---
- name: Create a Virtual Machine
  redhat.openshift_virtualization.kubevirt_vm:
    state: present
    name: "{{ vm_name }}"
    namespace: "{{ vm_namespace }}"
    instancetype:
      name: "{{ vm_instance_type }}"
    spec:
      …
```




Ansible for OpenShift Virtualization

Provided by the **infra.openshift_virtualization_migration** and **infra.openshift_virtualization_ops** collection



infra.openshift_virtualization_migration

At a glance

aap_deploy	network_mgmt
bootstrap	operator_mgmt
mtv_mgmt	validate_migration
mtv_migrate	...and more!

infra.openshift_virtualization_ops

At a glance

vm_backup_restore	vm_lifecycle
vm_collect	vm_networking
vm_hot_plug	vm_patching

Get started fast with Red Hat's OpenShift Virtualization Boot Camp DO730

This fully customizable boot camp allows your teams to focus on the skills they need most. Plus, enrollment gives attendees a free 1-year subscription to RHLS Standard, unlocking access to Red Hat's full training catalog and up to 5 exam opportunities!

Boot camp is comprised of:

- OpenShift Administration I: Operating a Production Cluster | DO180
- OpenShift Virtualization Administration I: Operating Virtual Machines | DO156
- OpenShift Virtualization Administration II: Configuring Production Virtual Machines | DO256
- Multicluster Management with Red Hat Advanced Cluster Management for Kubernetes | DO432

DO730 extracts components from DO180, DO156, DO256 and DO432, but does not cover the entire course. VM admins and OpenShift Administrators looking for a preview of the three courses will benefit from taking this boot camp.

Corresponding Exams & Certifications

- Red Hat Certified Specialist in OpenShift Virtualization Exam (EX316)
- Red Hat Certified Specialist in OpenShift Virtualization

After completing the boot camp (DO730), we recommend sitting for the EX316 and become certified.

To ensure success, confirm you have selected the same OpenShift exam version to align with the course version you took. (ex: Course version is on OpenShift 4.18 so your exam version also be on OpenShift 4.18).

Common technical issues ....



Network Complexities

- Use cases must be validated beforehand, especially for legacy Layer 2 connectivity.
- Network saturation during migrations.
- Implement dedicated networks (Multus) to isolate data and storage migration traffic.



Storage Incompatibility

Use of storage incompatible with modern CSI, making critical features like Live Migration of active virtual machines impossible.

Common technical .. and not so technical issues..



Boot Failures in Migrated VMs

Preventively inject VirtIO drivers through the Migration Toolkit for Virtualization (MTV).



Operational Resistance from the IaaS Team

Involve the team in early phases Workshops and PoC) and design training pathways.

Migration warnings

What could go wrong?



Lift & Shift

Don’t blindly "Lift and Shift": Look for technical debt, use the assessment to perform your "inventory cleanup".



Rush, rush, rush

Rushing it:

Migrating without a performance (and functionality) testing window usually leads to the degradation of your critical services



Enablement

Skills matter:

VM management in OpenShift is handled via APIs and state!

Failing to train the team creates operational bottlenecks on "Day 2".



Rollback plan

No tested Rollback Plan:

It is essential to guarantee a fast rollback mechanism before shutting down the source VM.



Links & references

Simplify your VM Migration

- https://www.redhat.com/en/resources/simplify-your-virtual-machine-migration-overview
- VDDK - move forward

Virtualization Promo

- Landing page on redhat.com: http://red.ht/virt-promo
- Public blog on redhat.com: http://red.ht/virt-promo-blog

OpenShift Migration Advisor

- Blog https://www.redhat.com/en/blog/assess-your-vms-migration-migration-advisor-red-hat-openshift
- Video Demo https://www.youtube.com/watch?v=iDqlo42vOXs
- Project https://kubev2v.github.io/openshift-migration-advisor-docs/docs/

Conclusions and next steps



Start with Strategy

Successful adoption requires properly mapping the stages. Do not skip discovery workshops or the VMA or Accelerator.



Staff Enablement

Plan official training courses in OpenShift Virtualization. The knowledge gap is the biggest "Day 2" stopper.



Migration Factory

Establish an automated and predictable model with Ansible (Migration Factory) and MTV to achieve an agile migration without surprises during the VMF.

Red Hat Summit

Connect

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 youtube.com/user/RedHatVideos

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