

Red Hat  
**Summit**

## Connect

Plataforma unificada de  
máquinas virtuales y  
contenedores, clave para un  
nuevo ISP

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# Necesidades de un nuevo ISP

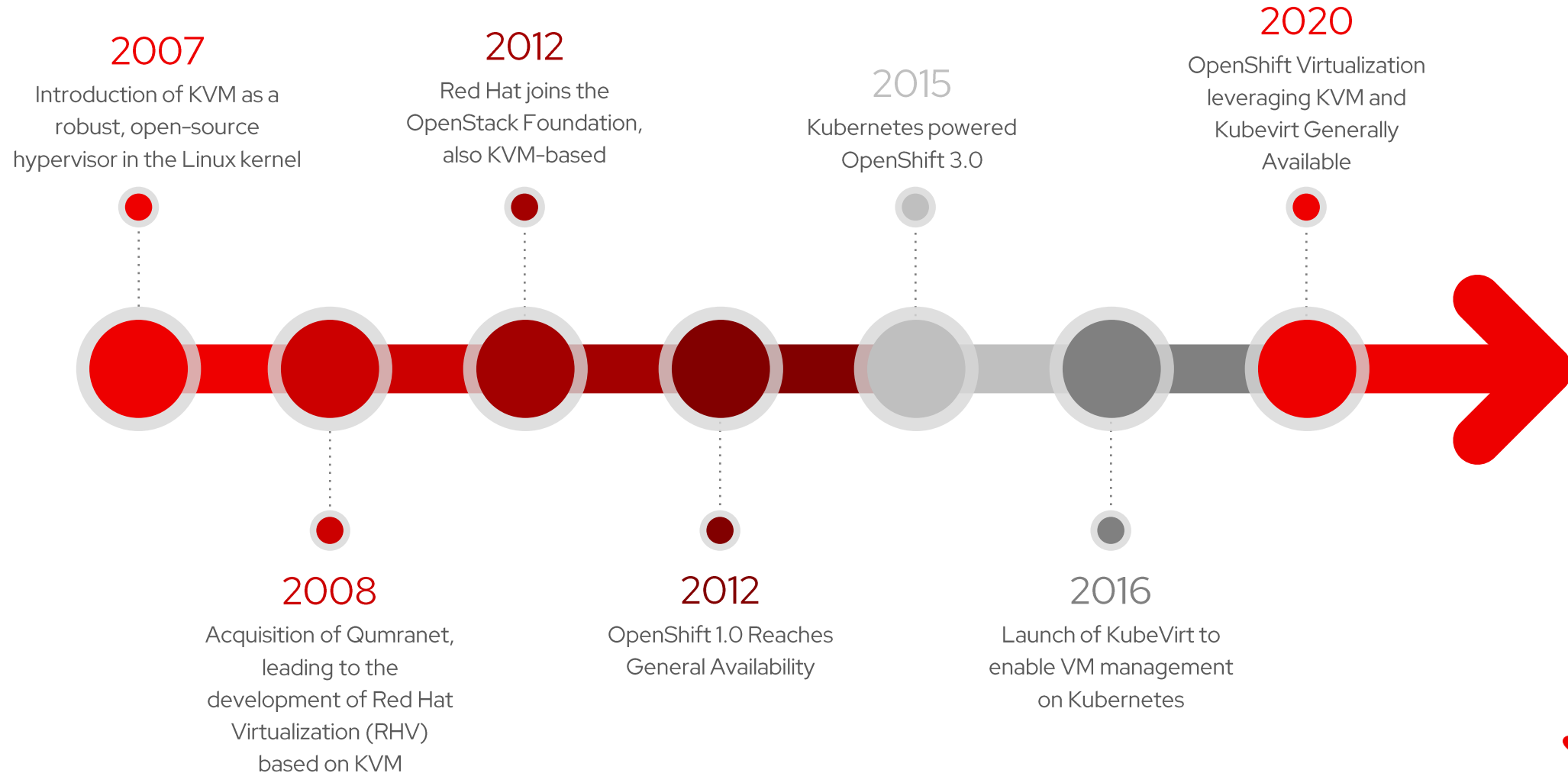
Obviando la parte lógica de facilities y centrándonos en servicios básicos que cubren la gran mayoría de los escenarios habituales:

- Capacidad multi-tenant y autoservicio
- Servicio de instancias / máquinas virtuales
- Servicio de contenedores y/o clúster de contenedores
- Toda clase de almacenamiento: bloque, archivo, objeto
- Servicio de redes sencillo o complejo (SDN)
- Balanceo de carga / publicación de aplicaciones y servicios
- Observabilidad
- Backups
- Automatización
- Seguridad y cumplimiento normativo
- Identidad
- ...

ALL You Need  
is  
OpenShift

# Red Hat OpenShift Virtualization

# Red Hat tiene una larga historia con la virtualización





# KubeVirt

## KubeVirt está ya maduro

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**200+** Contributing companies

**60** Releases

**Top 10** CNCF active projects

**50% increase** in Contributing companies in CY23



# Rendimiento y escalabilidad comprobados con KubeVirt



**28 million**  
Users



**1500+**  
Games



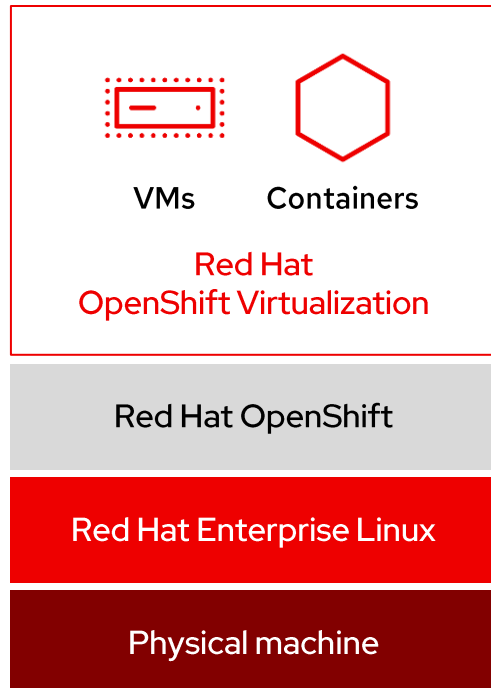
**100+**  
Countries



**30+**  
Data centers

# Red Hat OpenShift Virtualization

La opción moderna para la virtualización de propósito general



- ▶ **Unified platform**  
for virtual machines and containers
- ▶ **Consistent management**  
tools, interfaces, and APIs incl. ACM and AAP integrations
- ▶ **Performance and stability**  
of Linux, KVM, and qemu
- ▶ **Healthy open source community**  
the KubeVirt project is a top 10 CNCF active project, with 200+ contributing companies
- ▶ **Diverse ecosystem**  
of Red Hat & partner operators
- ▶ **Includes Red Hat Enterprise Linux**  
guest entitlements
- ▶ **Supports Microsoft Windows**  
guests through Microsoft SVVP
- ▶ **Inbound guest migration**  
using Ansible Automation Platform + Migration Toolkit for Virtualization, Training and Consulting

# Hasta dónde se ha llegado con respecto a RHV

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

\*Score is % complete to best in class in category

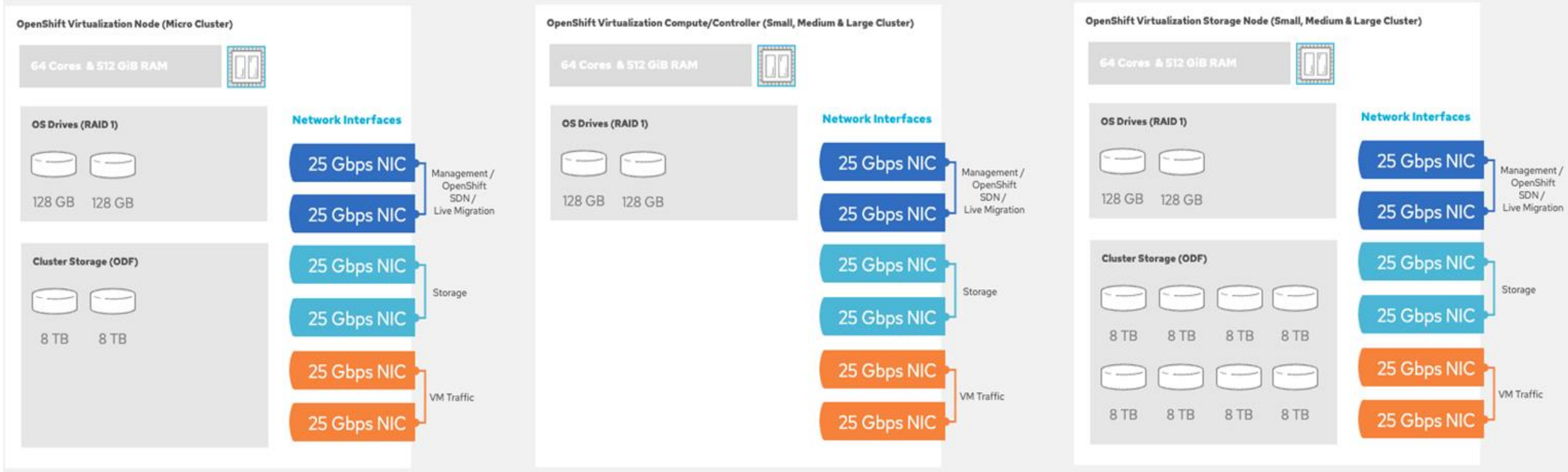


# Arquitectura de referencia e implementación

## OpenShift Virtualization

Node Types

Nodes



# Con frecuencia escuchamos de los clientes ...



## "Quiero migrar lo antes posible"

- **Migrate** off their current traditional virtualization platform completely



## "Quiero modernizarme"

- Want to run their VMs leveraging the benefits associated with a hybrid and **modern** cloud native approach

# Migra tus máquinas virtuales tradicionales

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Los eventos en el panorama de la virtualización han dado a las empresas razones para reconsiderar su solución de virtualización actual:

- Aumento de los costes de suscripción
- Pérdida de flexibilidad en la compra a nivel de producto
- Necesidad de modernizar su infraestructura de virtualización para dar un mejor soporte a las aplicaciones nativas de la nube
- Innovación futura y incertidumbre de apoyo

“In 2024, Forrester predicts that **20%** will begin their escape.”  
(customers from the VMware stack)

# Trae las máquinas virtuales tradicionales a OpenShift



## Comportamiento tradicional pero en una plataforma moderna

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



## Uso de roles de máquina virtual existentes

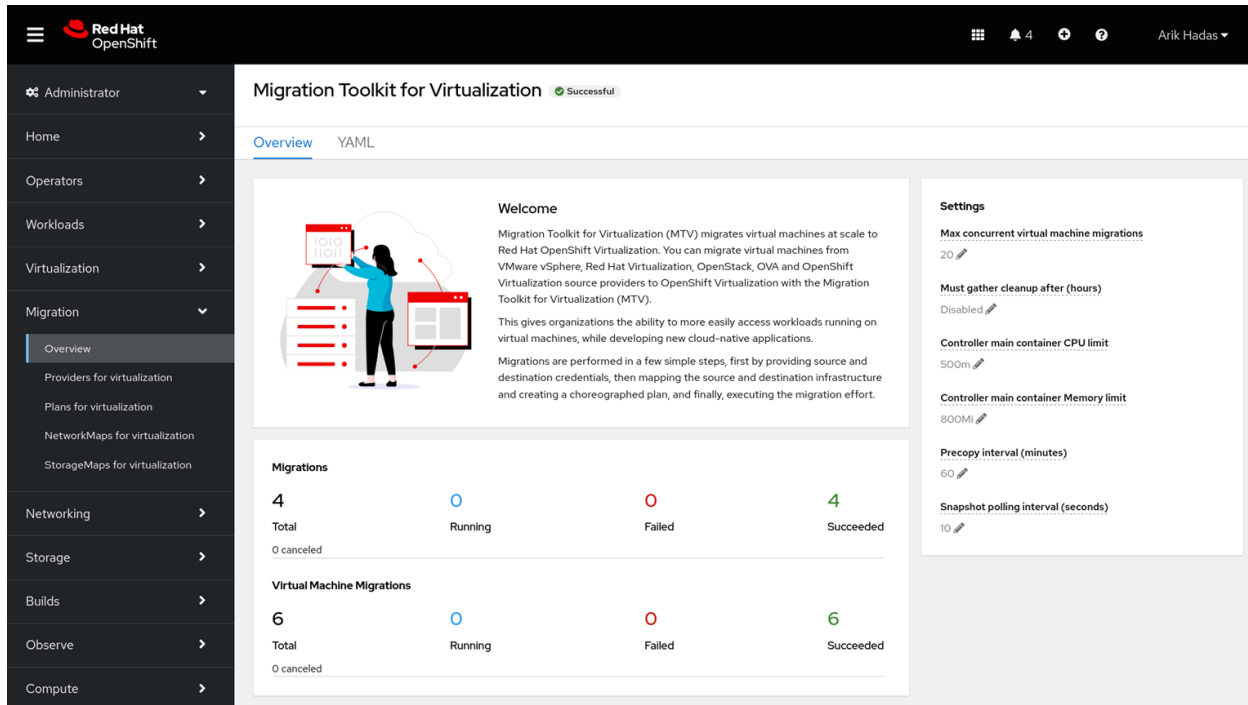
- ▶ Migrate traditional VMs easily with a set of comprehensive tools
- ▶ Maintain application components that are business critical
- ▶ Modernize application workloads and skill sets over time





# Migración de aplicaciones basadas en máquinas virtuales con una interrupción mínima

 **Migration toolkit for virtualization (MTV)** incluido con OpenShift



**Migration Toolkit for Virtualization** Successful

[Overview](#) [YAML](#)

**Welcome**

Migration Toolkit for Virtualization (MTV) migrates virtual machines at scale to Red Hat OpenShift Virtualization. You can migrate virtual machines from VMware vSphere, Red Hat Virtualization, OpenStack, OVA and OpenShift Virtualization source providers to OpenShift Virtualization with the Migration Toolkit for Virtualization (MTV).

This gives organizations the ability to more easily access workloads running on virtual machines, while developing new cloud-native applications.

Migrations are performed in a few simple steps, first by providing source and destination credentials, then mapping the source and destination infrastructure and creating a choreographed plan, and finally, executing the migration effort.

**Settings**

- Max concurrent virtual machine migrations: 20
- Must gather cleanup after (hours): Disabled
- Controller main container CPU limit: 500m
- Controller main container Memory limit: 800Mi
- Precopy interval (minutes): 60
- Snapshot polling interval (seconds): 10

**Migrations**

4	0	0	4
Total	Running	Failed	Succeeded
0 canceled			

**Virtual Machine Migrations**

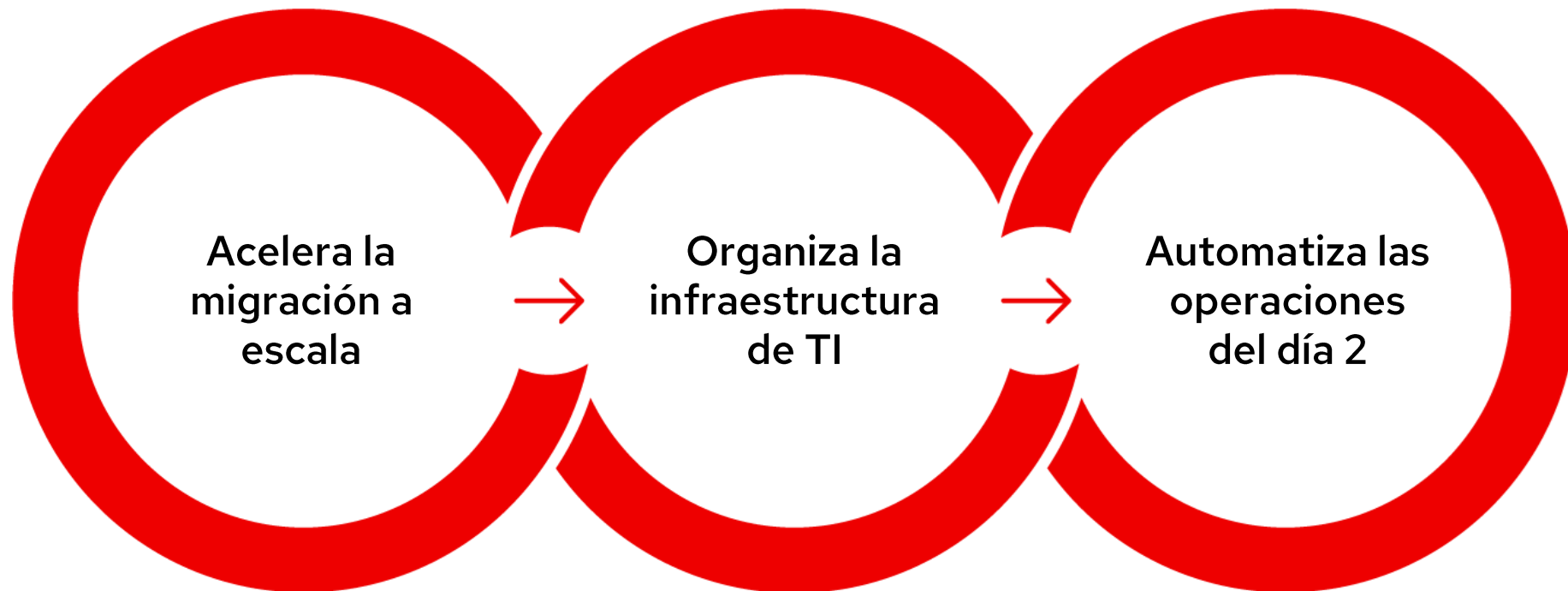
6	0	0	6
Total	Running	Failed	Succeeded
0 canceled			

## Mass migration of virtual machines

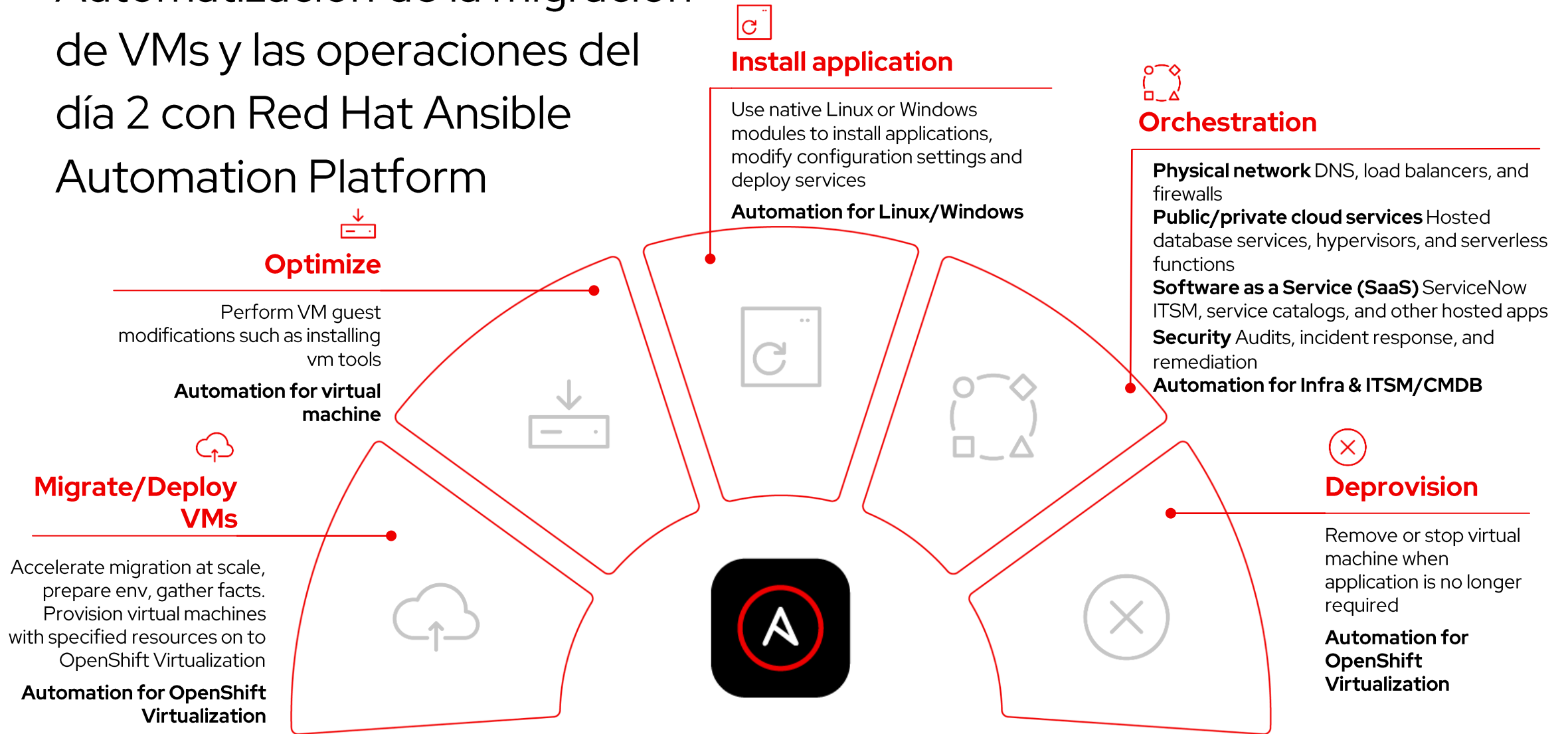
- Migrate virtual machines at scale to OpenShift Virtualization in a few simple steps
- Provide source and destination credentials, map infrastructure and create migration plans

# Red Hat Ansible Automation Platform & OpenShift Virtualization

**Mejor juntos**



# Automatización de la migración de VMs y las operaciones del día 2 con Red Hat Ansible Automation Platform

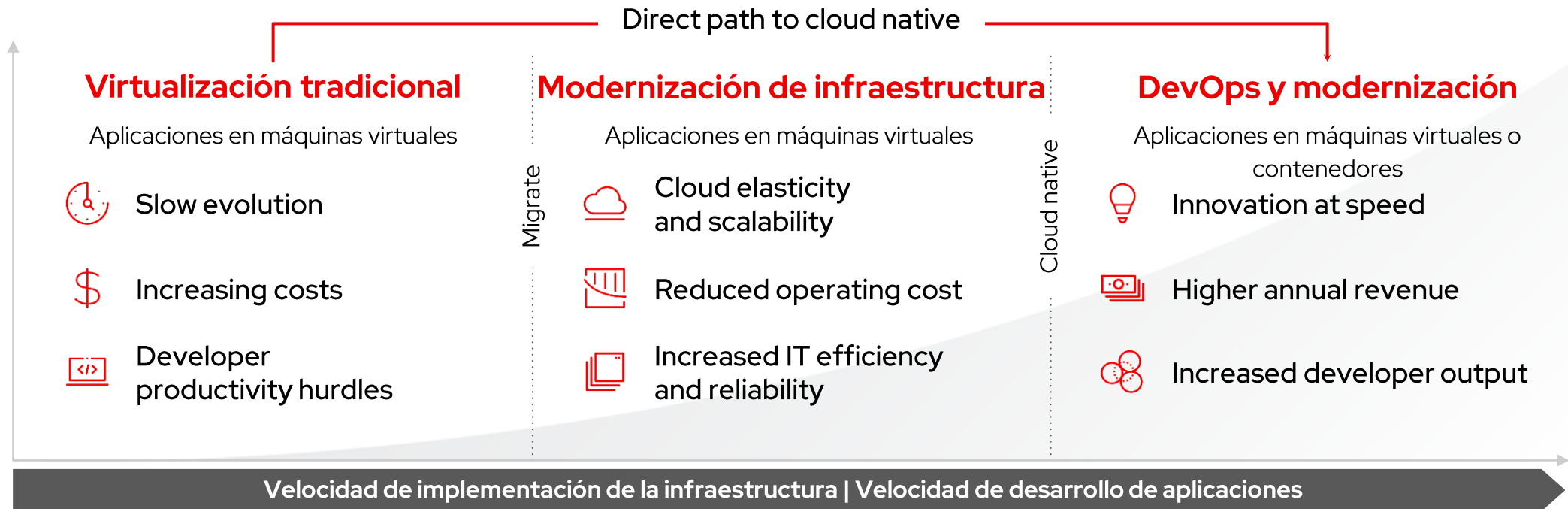


# Moderniza tu infraestructura

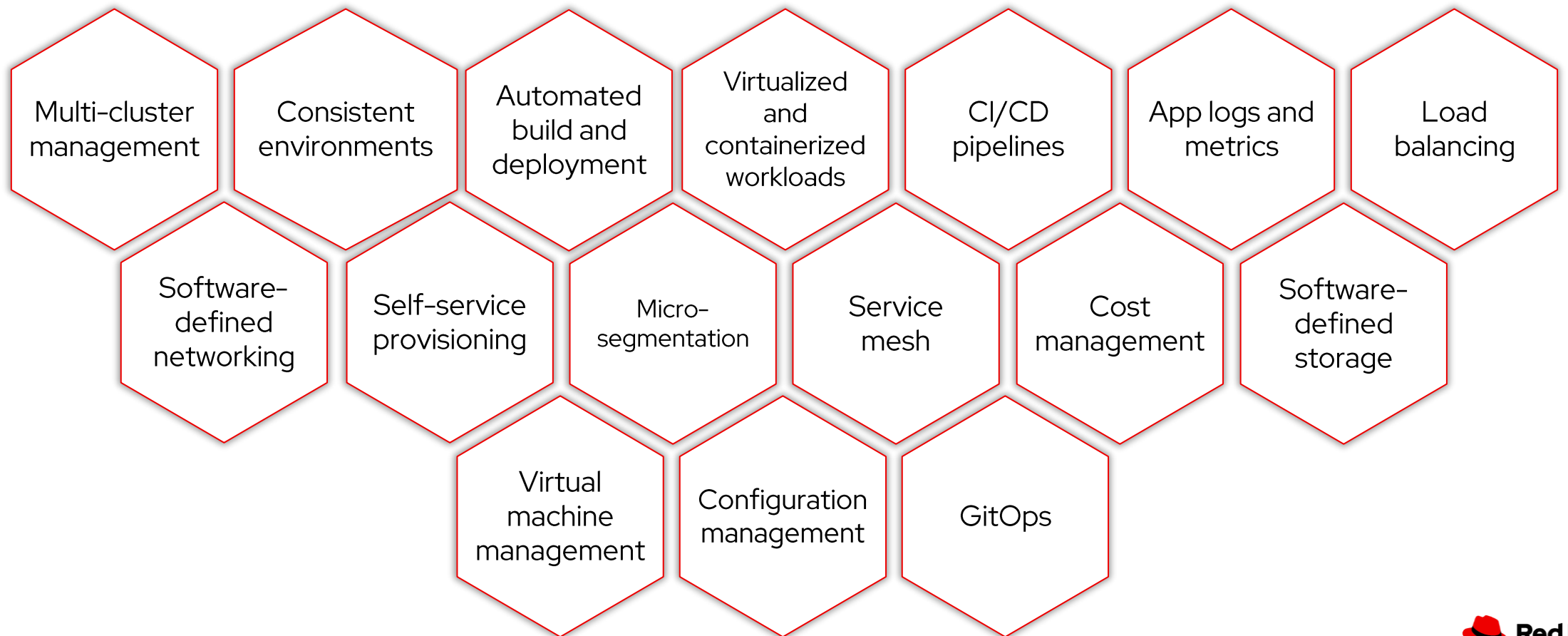
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# A tu propio ritmo



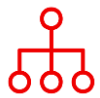
# Una plataforma de aplicaciones moderna con un ciclo de vida integral y una gestión de la infraestructura



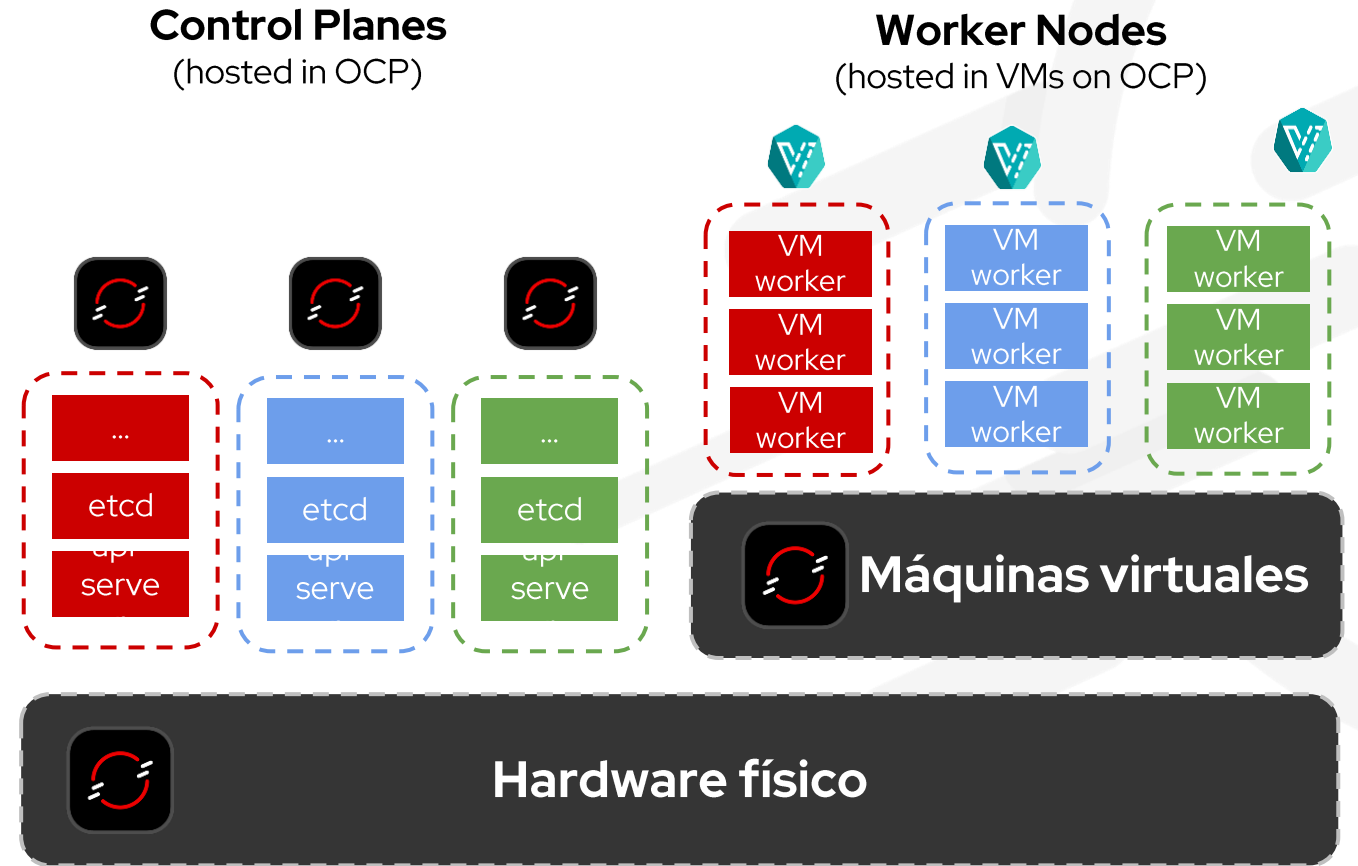
# Uso de OpenShift Virt para consolidar clústeres de OpenShift



**Aumentar la utilización de la infraestructura**



**Reducir la dependencia de la virtualización tradicional**



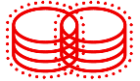
# Roadmap

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# +15 años de experiencia en virtualización empresarial



## Capacidades de virtualización empresarial

- ▶ **Live migration**
- ▶ Infrastructure fencing
- ▶ Application fencing
- ▶ Hot pluggable disks / VM disk resize, SR-IOV and Bridge
- ▶ Non-disruptive upgrades
- ▶ Deduplicating memory with freePageReporting and KSM support
- ▶ **Performance, Scale, Stability of KVM**
- ▶ CPU 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**



## Nube híbrida y servicios gestionados

- ▶ X86 Intel and AMD 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**
- ▶ Virtual machine export
- ▶ **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

# ¿Qué va a llegar?



## Flexibilidad

- Seamlessly scale workloads with **CPU and memory hot-add**
- Increased workloads density using **memory overscribe**
- Optimize and balance clusters with descheduler



## Redes empresariales y almacenamiento

- **Manage static IPs and outbound connections with IPAM and Egress OVN-K** secondary overlay networks.
- Optimize storage lifecycle with storage class migration (TP)



## Multi-clúster y Nube Híbrida

- Regional-DR and Metro-DR with ACM and ODF
- Multi-cluster virtualization monitoring with ACM
- Oracle Cloud Infrastructure Bare Metal
- **Additional Cloud integrations**
- Improve GPU utilization with GPU workload support in hosted clusters

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Thank you



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