Red Hat Summit

Connect

Get Really Hybrid with Red Hat Openshift

Simone Dozza
(Head of Open Source Division – Var Group)

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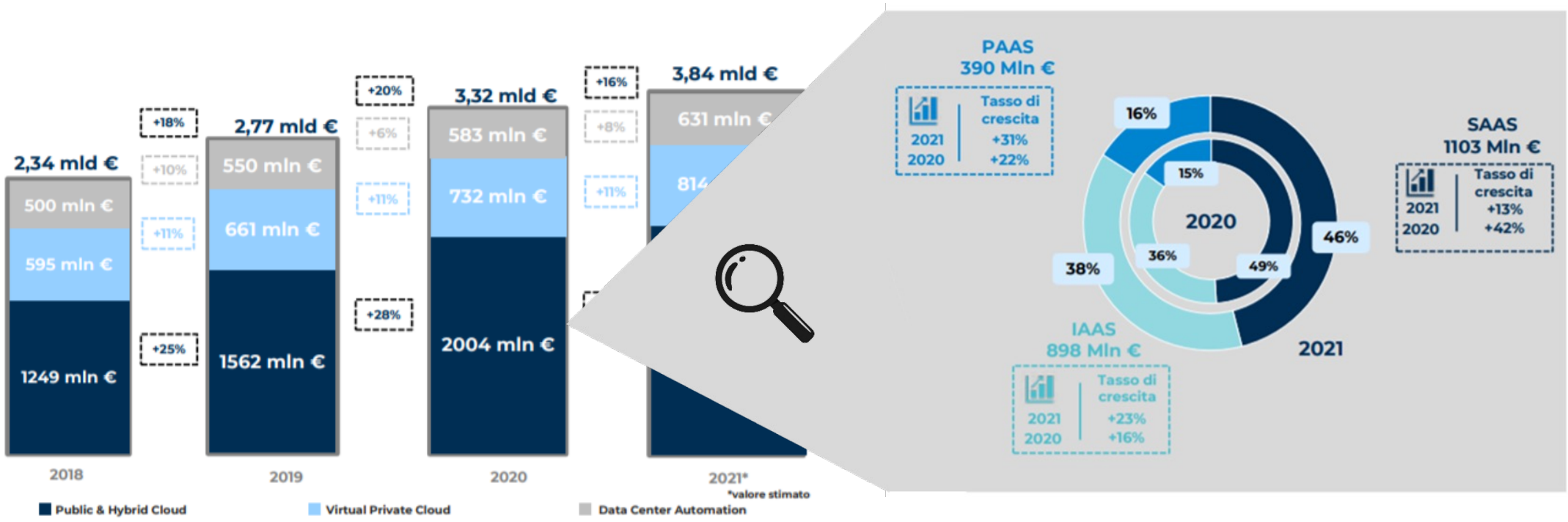
Il Cloud in Italia

Hybrid Cloud e PaaS fra i trend in maggiore crescita



Fonte: Osservatori Digital Innovation Politecnico di Milano (www.osservatori.net)

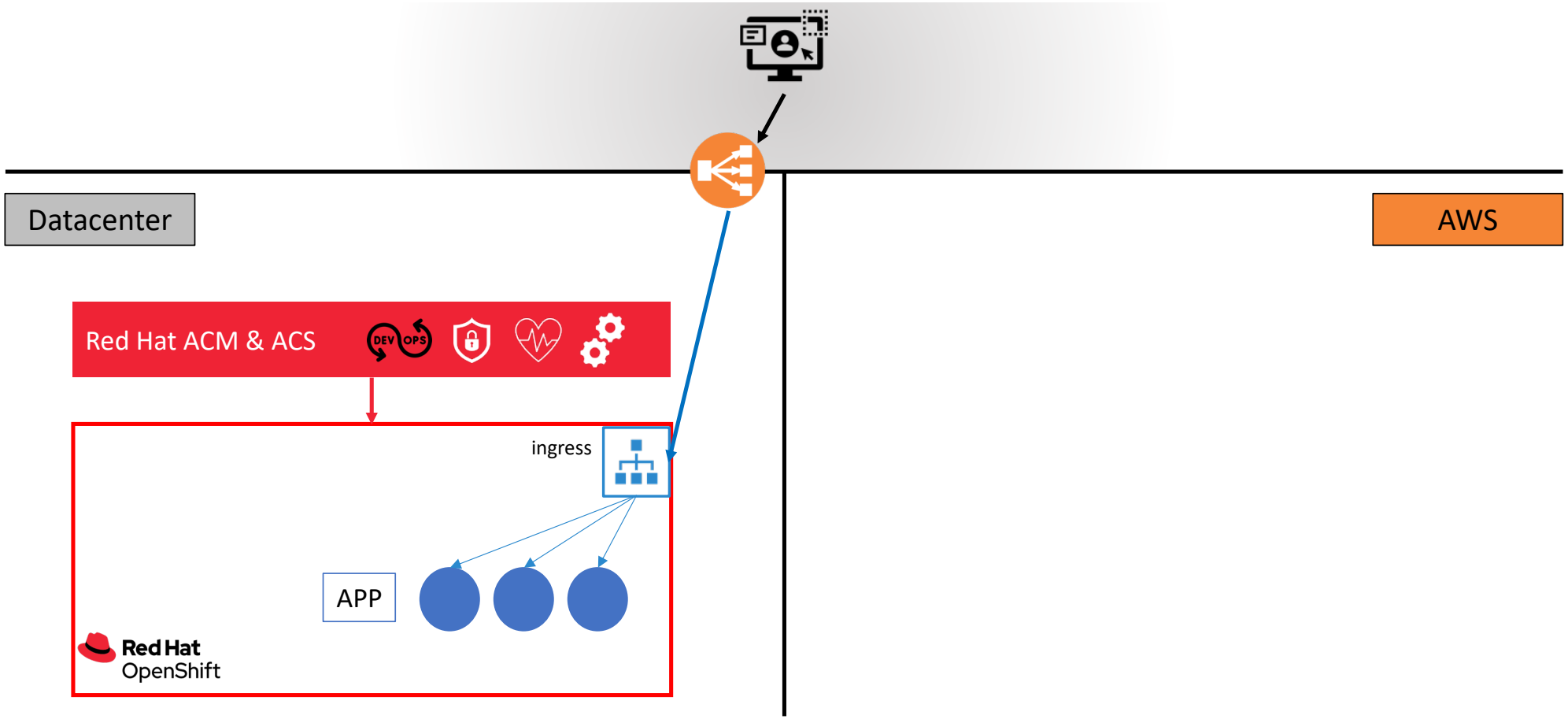
Il vero Hybrid Cloud

*"Hybrid cloud computing **refers to** policy-based **and** coordinated service provisioning, use and management **across a mixture of internal and external cloud services**"*

– Gartner –

Lo Scenario

Il core business di un'azienda on-premise



Red Hat Openshift Container Platform

Una singola piattaforma per un'unica esperienza in public e private cloud

Orientato allo sviluppo applicativo

Dal day-2 disponibili tutti gli strumenti per costruire pipeline CI/CD, provisioning self-service, log monitoring, life-cycle management

Le Operations stanno a 0

One-click update, nessuna gestione di sistemi operativi, developers autonomi in provisioning e rilasci applicativi, automazione del networking

A cloud-like experience, everywhere

Operazioni di installazione e gestione automatizzate su qualsiasi tipo di infrastruttura, anche managed sui principali Cloud provider

Trusted enterprise Kubernetes

Security by design, OS immutabili, supporto Red Hat di livello enterprise

Red Hat Openshift Container Platform

Una singola piattaforma per un'unica esperienza in public e private cloud

Red Hat OpenShift Platform Plus

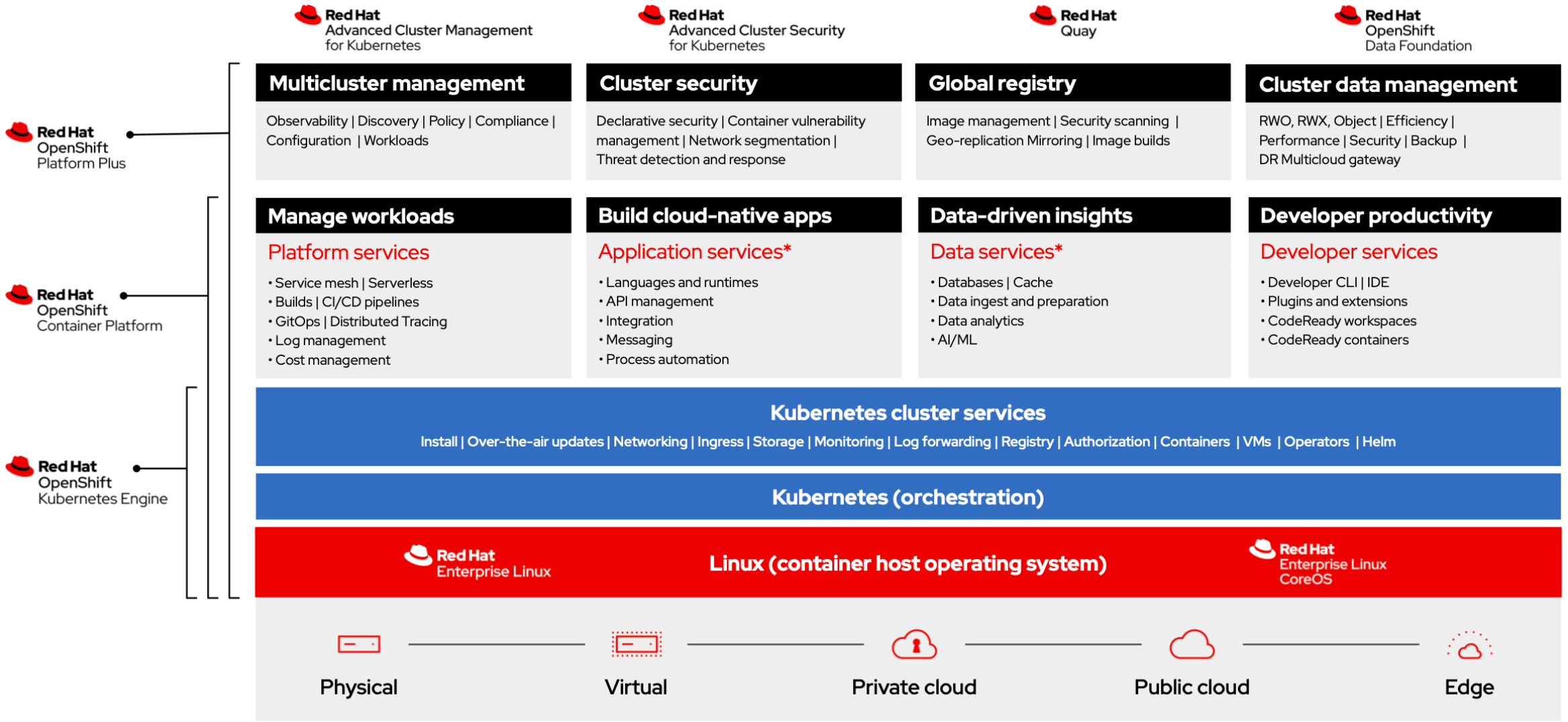
Governance centralizzata in scenari multi cluster (ACM)
Gestione life-cycle sia infrastrutturale che applicativa, policy-based governance, observability

Enhanced Security Kubernetes-Native (ACS)
Vulnerability, compliance, visibilità delle interazioni e dipendenze applicative, check segmentazione networking

Image Registry centralizzato (Quay)
Registry in High Availability centralizzato, image management, security scan

Multi-cluster storage management (ODF)
DR multi cloud gateway

Get Really Hybrid with Red Hat Openshift



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GitOps

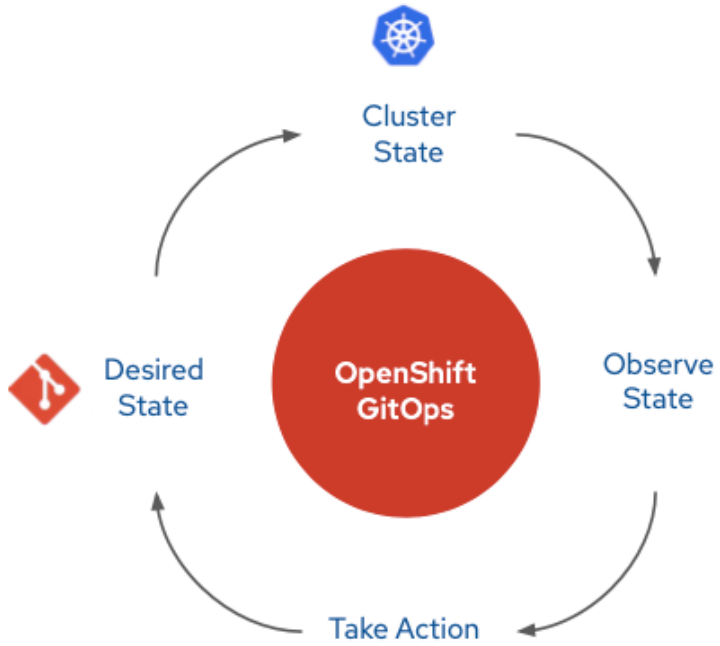
Un'unica fonte di verità centrale per tutto lo stack IT

Cos'è?

Git come unica fonte di verità. Ogni modifica su Git scatena una modifica sull'intero stack IT.

I vantaggi

- Governance
- Ripetibilità
- Predicibilità
- Visibilità



La fiera di settore

Quante richieste arriveranno? Quante risorse devo avere a disposizione?

Ogni 5 minuti di disservizio potrei perdere milioni...

Sono i rischi dell'on-premise nel mondo attuale:

- **Impredicibile**
- **Tipologie di richieste molto variabili**
- **Sono richieste performance elevate** (Google ha scoperto che mezzo secondo di ritardo nella risposta ad una ricerca porta una diminuzione del traffico del 20%, un broker può perdere 4mln al millisecondo se la sua piattaforma di trading fosse 5 millisecondi in ritardo rispetto ai competitor...)
- **La posizione geografica dell'utente non deve essere un problema**

La fiera di settore

Quante richieste arriveranno? Quante risorse devo avere a disposizione?

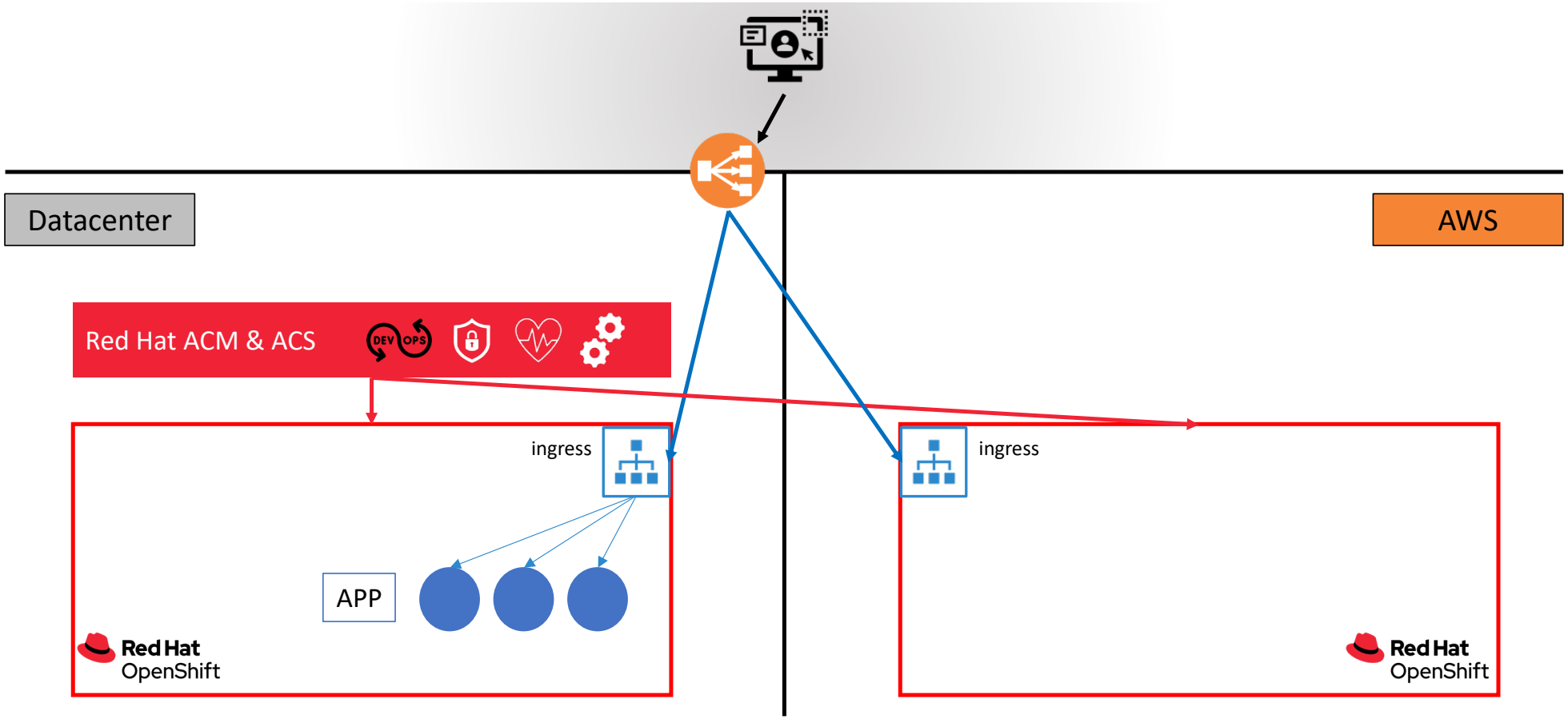
Ogni minuto di disservizio potrei perdere milioni...

Per questo servono:

- **Scalabilità**
- **Portabilità**
- **Time-to-Market ridotto**
- **Efficienza**
- **Governance semplice su scenari complessi (es. Hybrid e Multi Cloud)**

Il nuovo scenario – Hybrid Cloud

Deploy di un nuovo cluster ROSA



Il nuovo scenario – Hybrid Cloud

Deploy di un nuovo cluster ROSA

Per il deploy di un cluster ROSA servono letteralmente due comandi:

- **Creazione automatica di ruoli e policy sull'account AWS (solo al primo deploy di ROSA)**

```
$ rosa create account-roles --mode auto --yes
```

- **Creazione automatica del cluster**

```
$ rosa create cluster --cluster-name my-rosa-cluster --sts --mode auto --yes
```

Red Hat Advanced Cluster Manag | Overview · Red Hat OpenShift Se | Routes · Red Hat OpenShift Cont | Delete route.yaml · peterparser/s

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Red Hat
Advanced Cluster Management for Kubernetes

superuser

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- Governance
- Credentials

Welcome! Let's get started.

Red Hat Advanced Cluster Management for Kubernetes provides the tools and capabilities to address various challenges with managing multiple clusters and consoles, distributed business applications, and inconsistent security controls across Kubernetes clusters that are deployed on-premises, or across public clouds.

Overview

View system alerts, critical application metrics, and overall system health. Search, identify, and resolve issues that are impacting distributed workloads using an operational dashboard designed for Site Reliability Engineers (SREs).

Clusters

Create, update, scale, and remove clusters reliably, consistently using an open source programming model that supports and encourages Infrastructure as Code best practices and design principles.

Applications

Define a business application using open standards and deploy the applications using placement policies that are integrated into existing CI/CD pipelines and governance controls.

Governance

Use policies to automatically configure and maintain consistency of security controls required by industry or other corporate standards. Prevent unintentional or malicious configuration drift that might expose unwanted and unnecessary threat vectors.

Multicluster networking

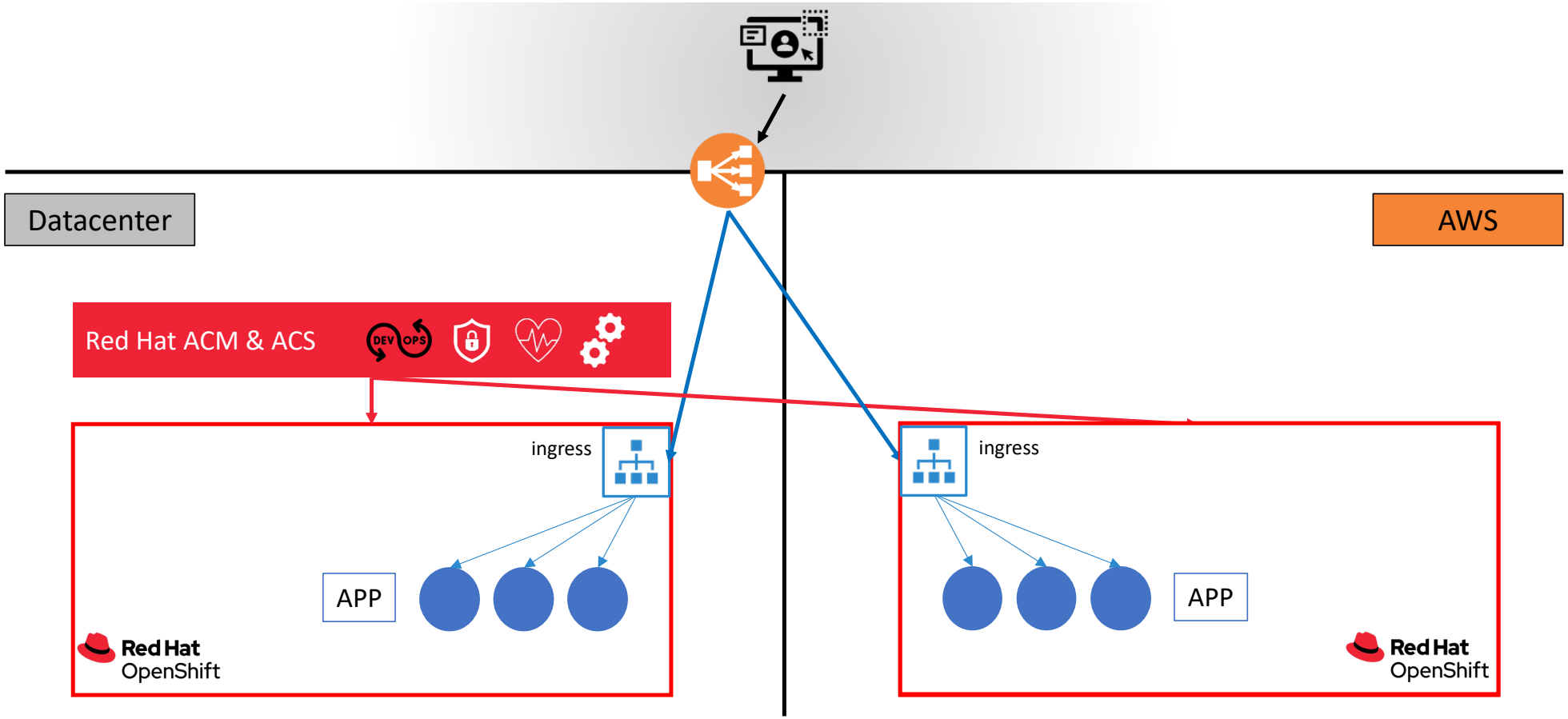
Enable direct networking connection between different on-premises or cloud-hosted Kubernetes clusters by grouping them in cluster sets and enabling the Submariner add-on.

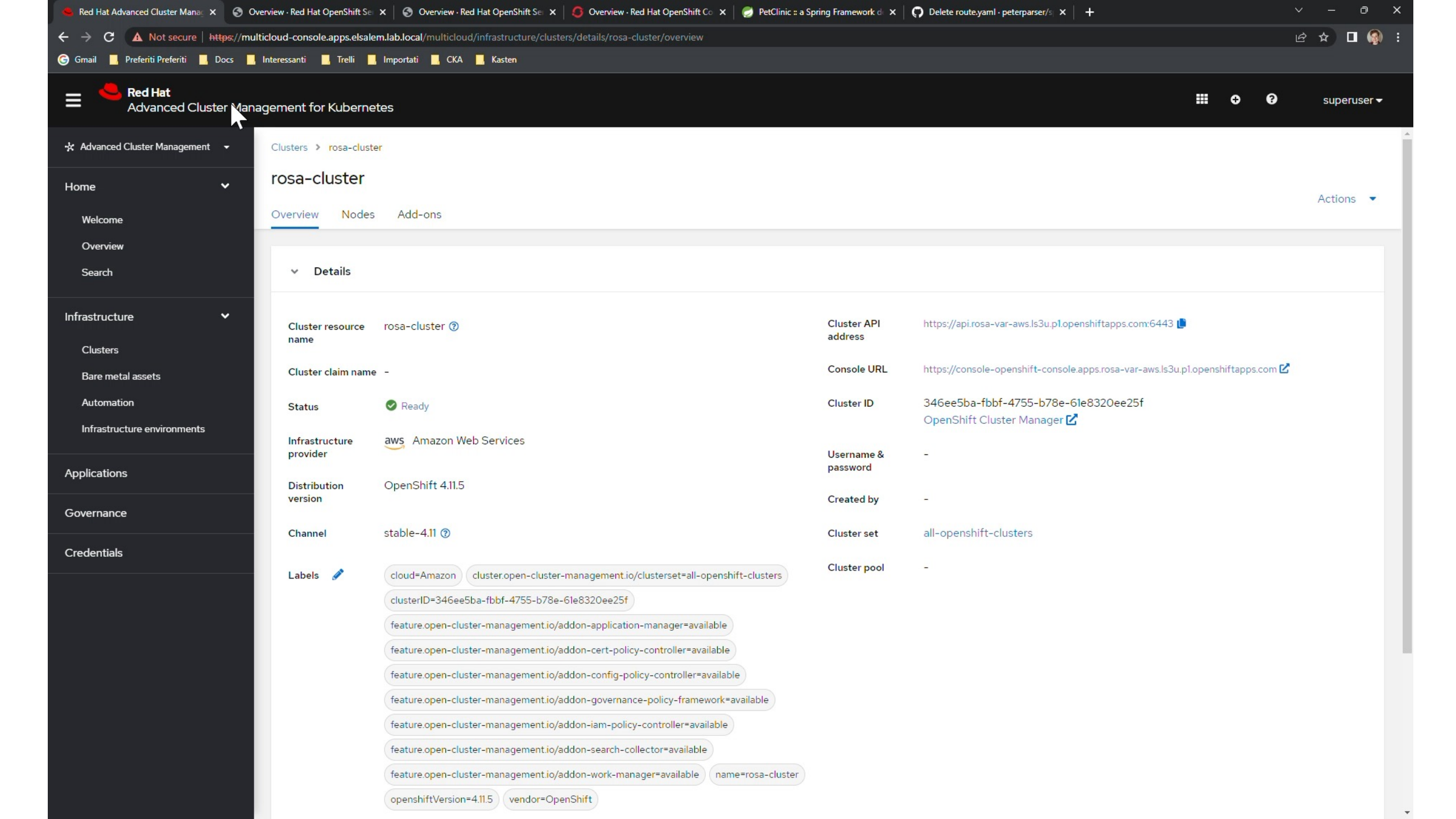
Easy, simple, and secure.

Easy to use and simple to understand, Red Hat Advanced Cluster Management for Kubernetes provides the following mission critical capabilities based on open source projects:

Il nuovo scenario – Hybrid Cloud

Deploy dell'applicazione su tutti i cluster

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Overview
Nodes
Add-ons
Details
Cluster resource name
rosa-cluster
Cluster claim name
-
Status
Ready
Infrastructure provider
Amazon Web Services
Distribution version
OpenShift 4.11.5
Channel
stable-4.11
Labels
cloud=Amazon
cluster.open-cluster-management.io/clusterset=all-openshift-clusters
clusterID=346ee5ba-fbbf-4755-b78e-61e8320ee25f
feature.open-cluster-management.io/addon-application-manager=available
feature.open-cluster-management.io/addon-cert-policy-controller=available
feature.open-cluster-management.io/addon-config-policy-controller=available
feature.open-cluster-management.io/addon-governance-policy-framework=available
feature.open-cluster-management.io/addon-iam-policy-controller=available
feature.open-cluster-management.io/addon-search-collector=available
feature.open-cluster-management.io/addon-work-manager=available
name=rosa-cluster
openshiftVersion=4.11.5
vendor=OpenShift
Cluster API address
https://api.rosa-var-aws.ls3u.p1.openshiftapps.com:6443
Console URL
https://console-openshift-console.apps.rosa-var-aws.ls3u.p1.openshiftapps.com
Cluster ID
346ee5ba-fbbf-4755-b78e-61e8320ee25f
OpenShift Cluster Manager
Username & password
-
Created by
-
Cluster set
all-openshift-clusters
Cluster pool
-

Dashboard | Red Hat Advanced C | Red Hat Advanced Cluster Manag | petclinic-build-btp3yz · Details · F

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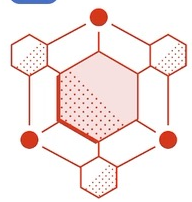
Clusters

Managed clusters | Cluster sets | Cluster pools | Discovered clusters

New



Create Cluster on Premise with a cloud like experience

The best solution for creating cluster on an **On Premise** at scale. Easily create ready to go clusters for your applications.
Easily create and re-create clusters from hosts that are provided by an infrastructure environment.

Get started with infrastructure environments | Dismiss

Search | Filter | Create cluster | Import cluster | Actions | 1 - 4 of 4

Name	Status	Infrastructure provider	Distribution version	Labels	Nodes
elclown	Ready	VMware vSphere	OpenShift 4.10.18 Upgrade available	role=app 13 more	5
integration	Ready	VMware vSphere	OpenShift 4.10.13 Upgrade available	env=integration 13 more	7
local-cluster	Ready	VMware vSphere	OpenShift 4.10.11 Upgrade available	velero.io/exclude-from-backup=true 15 more	5
rosa-cluster	Ready	Amazon Web Services	OpenShift 4.11.5	role=app 13 more	9

1 - 4 of 4 | 1 of 1

Finita l'emergenza – torniamo on-premise o migriamo?

Libertà strategica e zero costi di migrazione

Finita l'emergenza, ci accorgiamo che partendo da un sistema Openshift:

- I costi di migrazione al Cloud sono quasi 0
- I lock-in verso il Cloud provider non ci sono, posso tornare on-premise o migrare su un altro Cloud con un click
- Il Business può godere di una libertà strategica inimmaginabile

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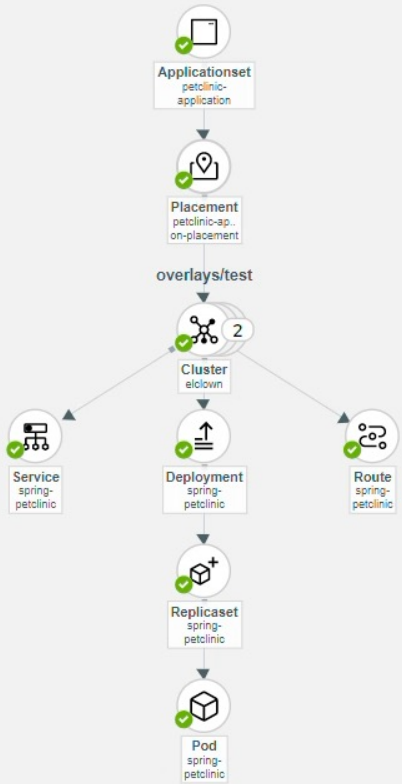
Applications > petclinic-application

petclinic-application

Overview | Topology



Applicationset
petclinic-application
Launch resource in Search

Details | YAML

Type: Applicationset
API Version: argoproj.io/v1alpha1
Namespace: openshift-gitops
Labels: No labels

Application deploy status

petclinic-application-elclown: Healthy
Sync status: Synced
Launch Argo editor

petclinic-application-rosa-cluster: Progressing
Sync status: Synced
Launch Argo editor

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