

Red Hat  
**Summit**

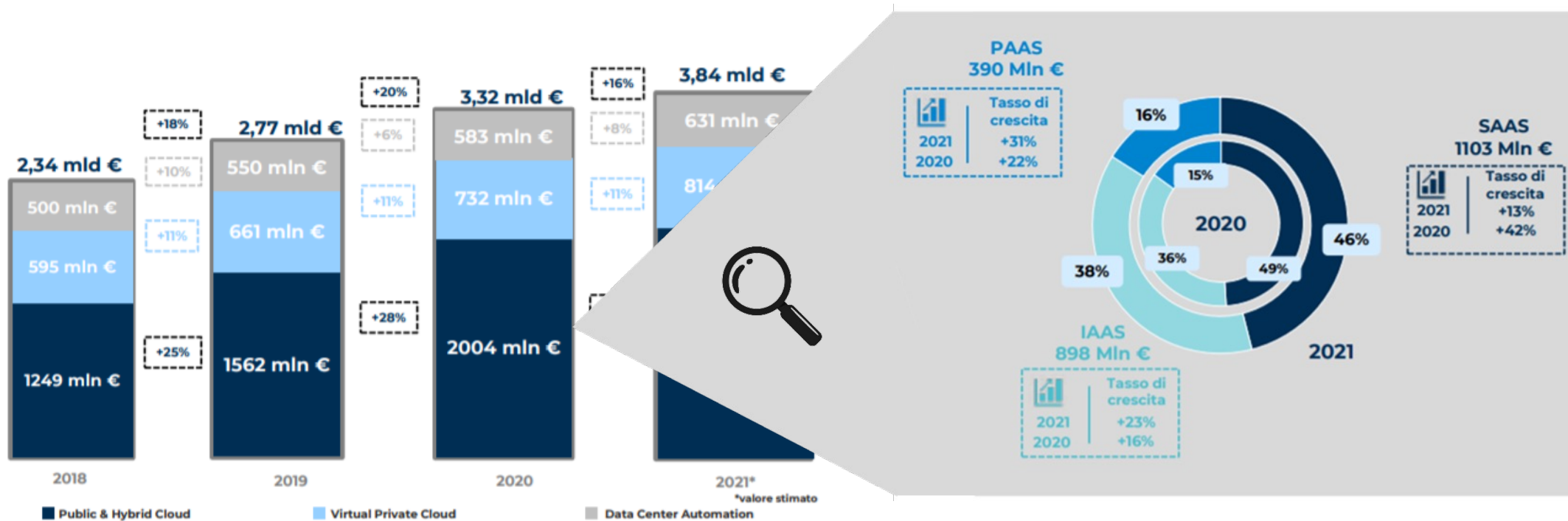
**Connect**

# Get Really Hybrid with Red Hat Openshift

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

# Il Cloud in Italia

## Hybrid Cloud e PaaS fra i trend in maggiore crescita



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

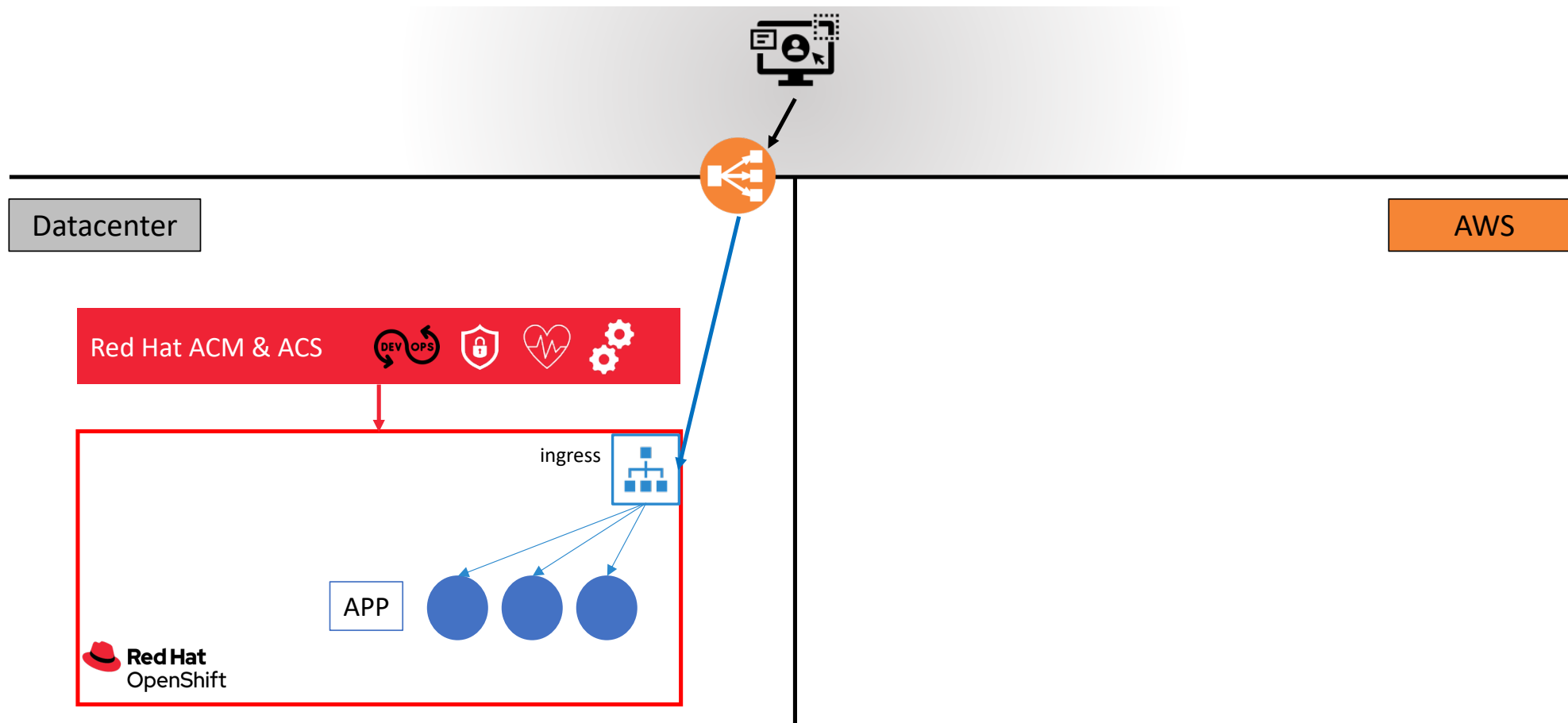
## Il vero Hybrid Cloud

*“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



## 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

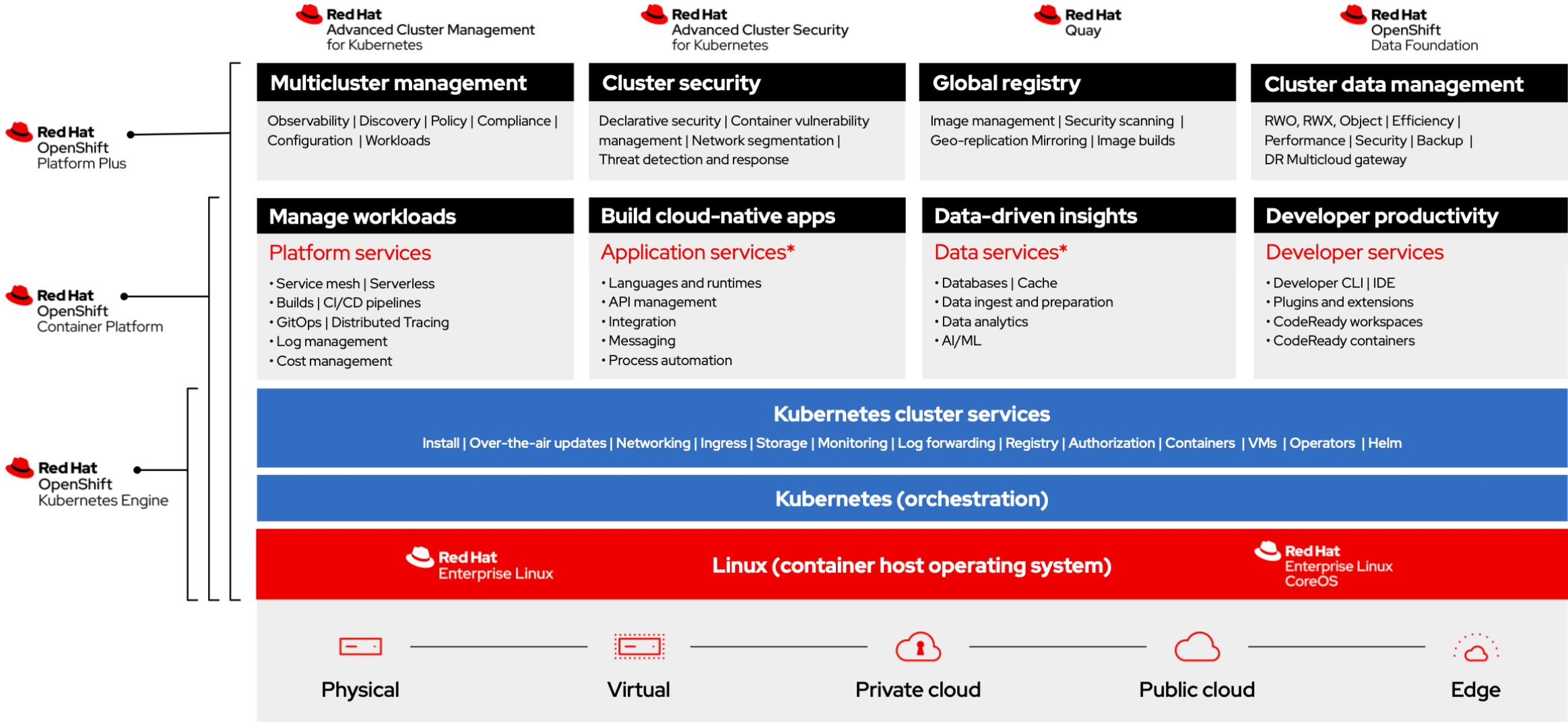
## Image Registry centralizzato (Quay)

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



# GitOps

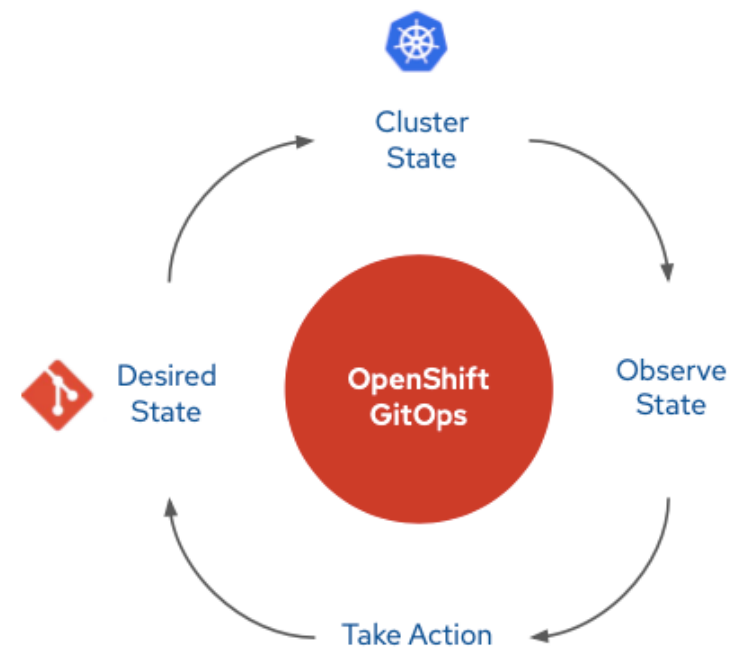
Un'unica fonte di verità centrale per tutto lo stack IT

## 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?

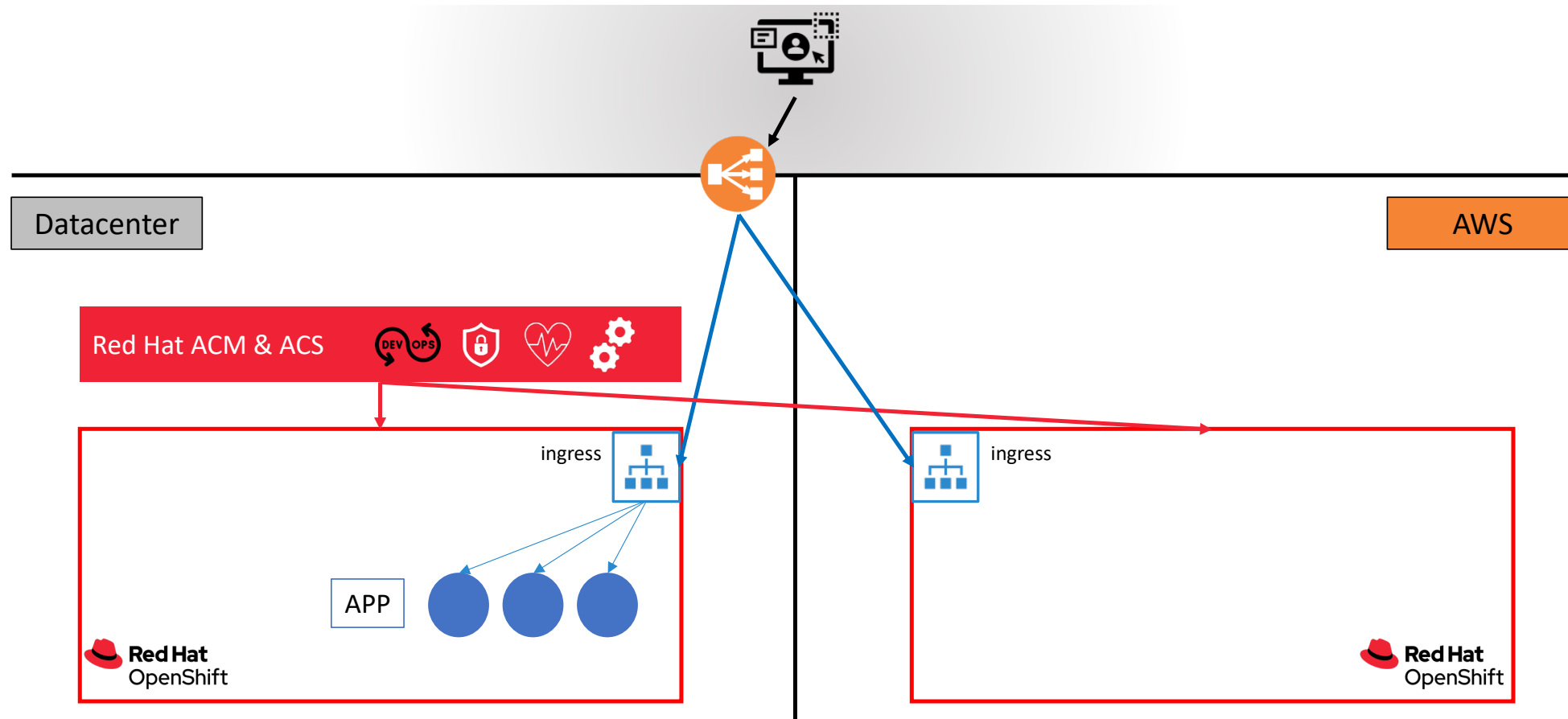
Ogni minuto di disservizio potrei perdere milioni...

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
```

## 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

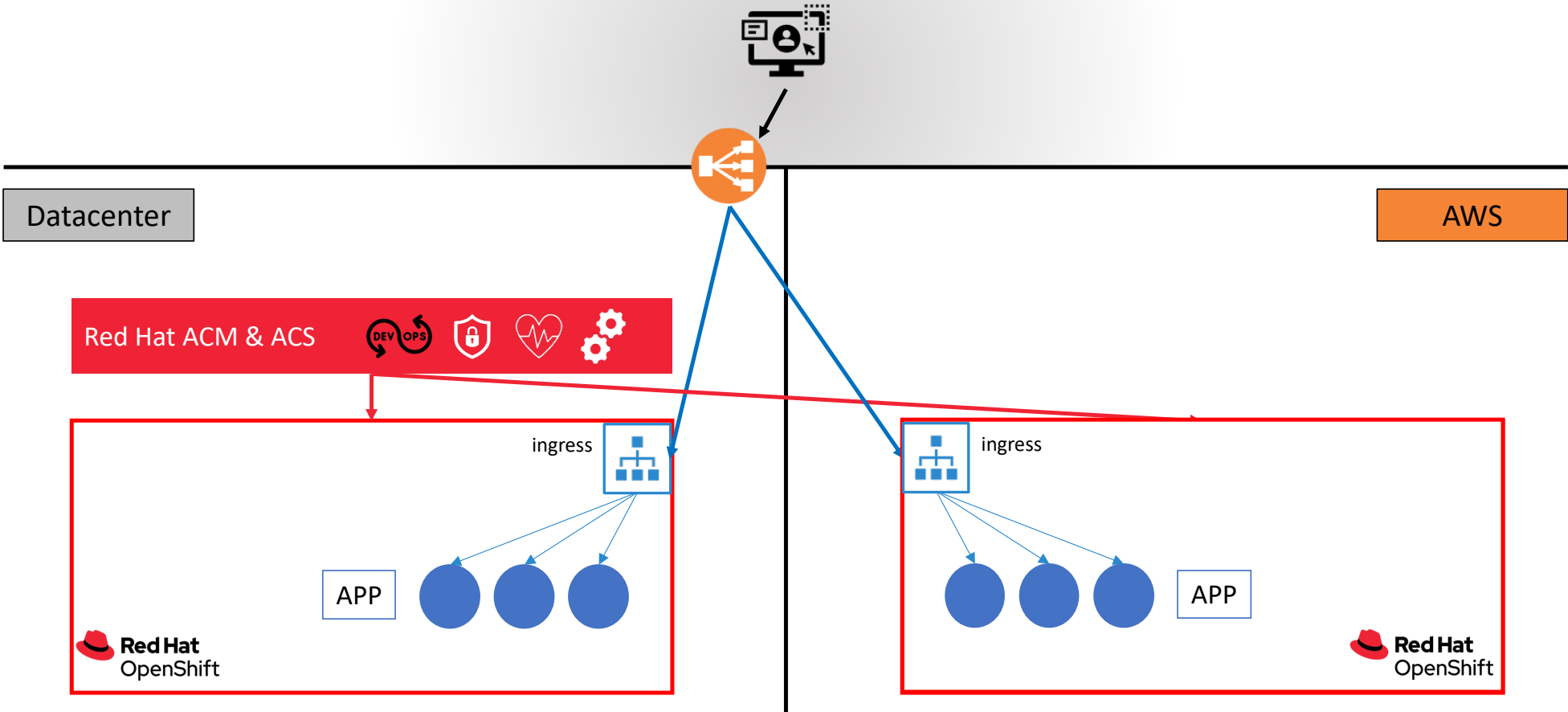
Enable direct networking connection between different on-premises or cloud-hosted Kubernetes clusters by grouping them in cluster sets and enabling the Submariner add-on.

## 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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- Governance
- Credentials

Clusters > rosa-cluster

# rosa-cluster

Overview Nodes Add-ons Actions

Details

|                         |  |                     |   |
|-------------------------|--|---------------------|---|
| Cluster resource name   | rosa-cluster   | Cluster API address | https://api.rosa-var-aws.l33u.p1.openshiftapps.com:6443                       |
| Cluster claim name      | -  | Console URL         | https://console-openshift-console.apps.rosa-var-aws.l33u.p1.openshiftapps.com |
| Status                  | Ready  | Cluster ID          | 346ee5ba-fbbf-4755-b78e-61e8320ee25f<br>OpenShift Cluster Manager             |
| Infrastructure provider | aws Amazon Web Services  | Username & password | -   |
| Distribution version    | OpenShift 4.11.5   | Created by          | -   |
| Channel                 | stable-4.11  | Cluster set         | all-openshift-clusters  |
| 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 pool        | -   |

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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](#)

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



# 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:

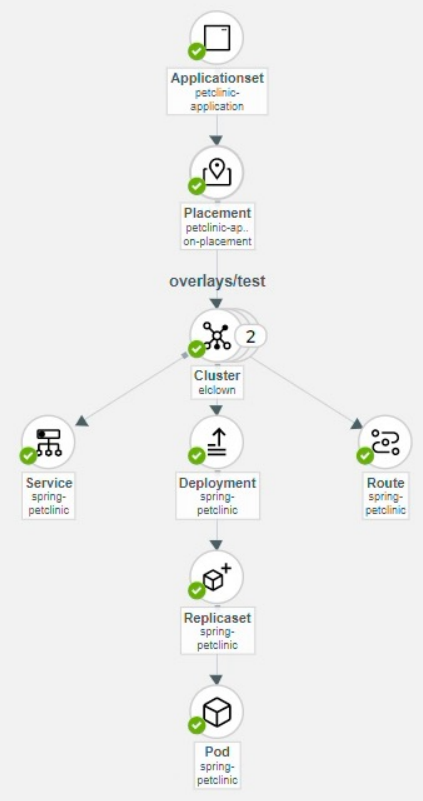
- ▶ I costi di migrazione al Cloud sono quasi 0
- ▶ I lock-in verso il Cloud provider non ci sono, posso tornare on-premise o migrare su un altro Cloud con un click
- ▶ Il Business può godere di una libertà strategica inimmaginabile

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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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# Thank you



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