Cost Management

Beancounting for OpenShift

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Senior Architect, UKI Services

Red Hat

What we'll discuss today

- Use cases
- CNCF research
- Cost Management for Red Hat OpenShift
- What's next

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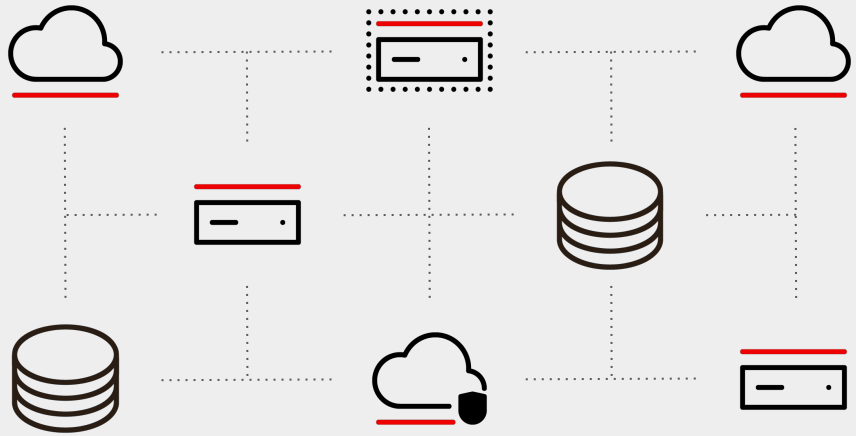
Consolidating environments

Centralised costs



Red Hat OpenShift

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Software usage

Subscription tracking & popularity contests

QUARKUS

python™

OpenJDK

redis

Our first list. Isn't it exciting?

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Hybrid OpenShift workload

De-centralised costs

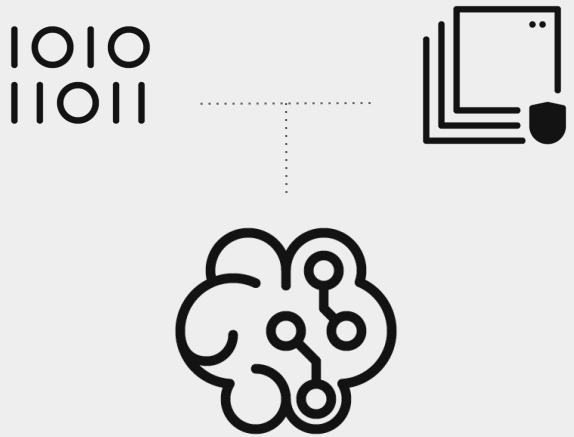
Red Hat OpenShift

IBM

Microsoft Azure

aws

Google Cloud Platform



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A joint report from CNCF and the FinOps Foundation

June 2021

- 24% of companies do not monitor costs at all. 44% rely on monthly estimates
- 68% of companies using Kubernetes report costs increasing (half of them more than 20% YoY)
- Only 13% have accurate showbacks, only 14% have chargeback programs
- The majority (90%) of costs come from compute and memory

CONCLUSION: The majority of companies using Kubernetes need to become more cost-efficient.

FinOps Foundation

Source: https://www.cncf.io/wp-content/uploads/2021/06/FINOPS_Kubernetes_Report.pdf

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Different personas, Different needs

"I want to ..."

Finance Manager

- ... "Map charges to projects and organizations"
- ... "Set up showback and/or chargeback reports"

App Owner / Dev Lead

- ... "Forecast capacity needs, and what-if scenarios"
- ... "Know when I am over the budget"

Operations

- ... "Drill down into details for root cause analysis"
- ... "Know unexpected behaviours"

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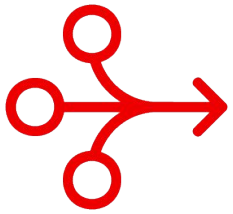
Cost Management

for Red Hat OpenShift Container Platform

Visualize costs

Review OpenShift costs aggregated across hybrid infrastructure so you can stay on budget

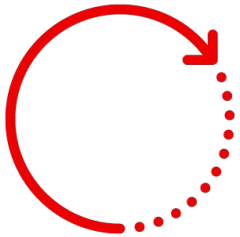
Show Red Hat related costs in context



Allocate costs

Understand spending habits and distribute costs into projects, organizations, and regions

Improve communication between IT and line of business (LOB)



Influence behaviours

Models costs to align operations, developers and business.

Make those responsible accountable so they take action

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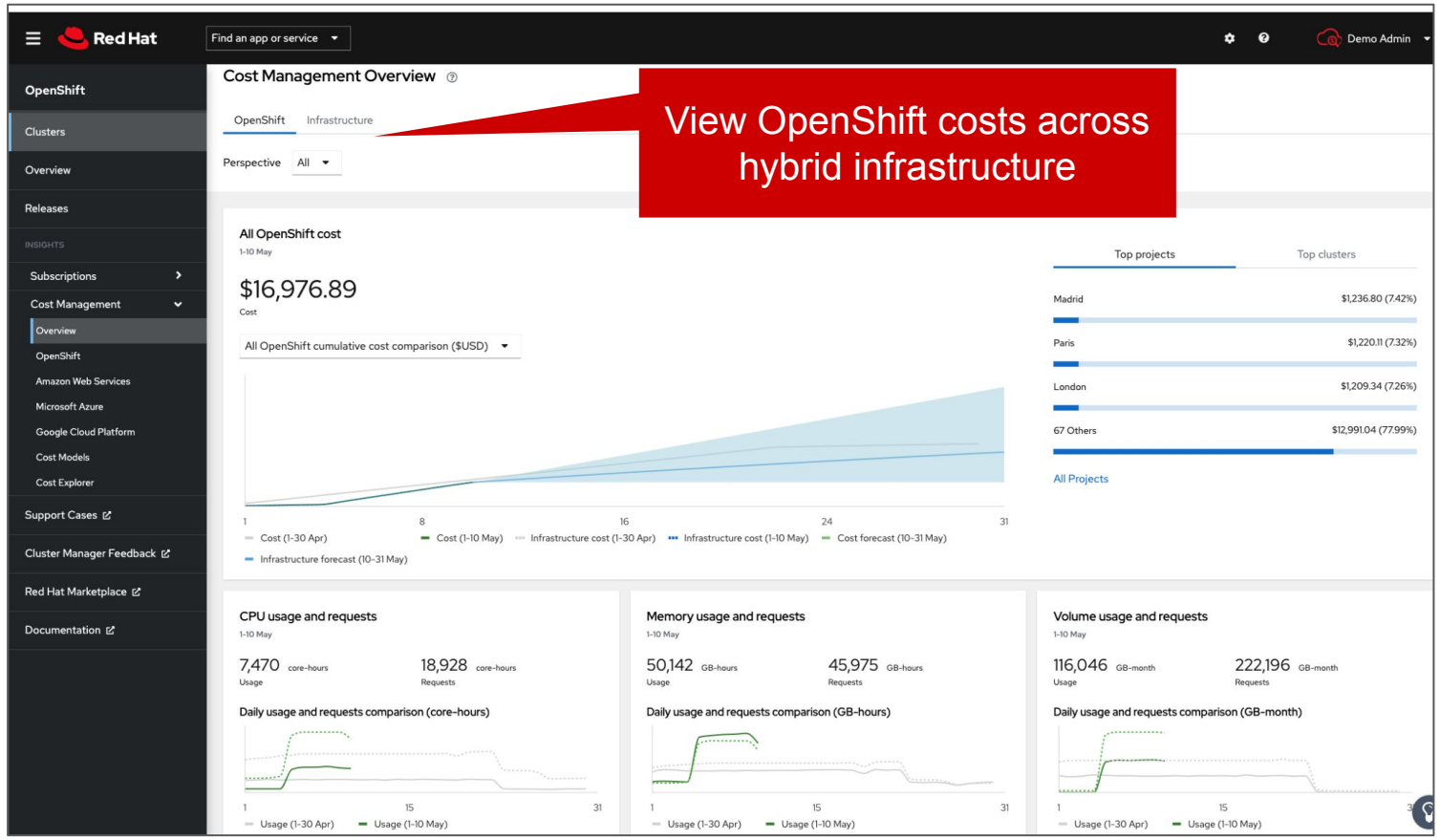
Cost management for Red Hat OpenShift

Red Hat SaaS offering to provide customers with cost visibility across OCP clusters on-premises and in the cloud



- Visualize costs across hybrid cloud infrastructure
- Track cost trends
- Map charges to projects, labels and organizations. Slice and dice the data with filters
- Use cost models to normalize data from the cluster and clouds
- Generate showback exports and utilize them to build your chargeback reports

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Red Hat Insights

Business

Track and optimize spending

Operations

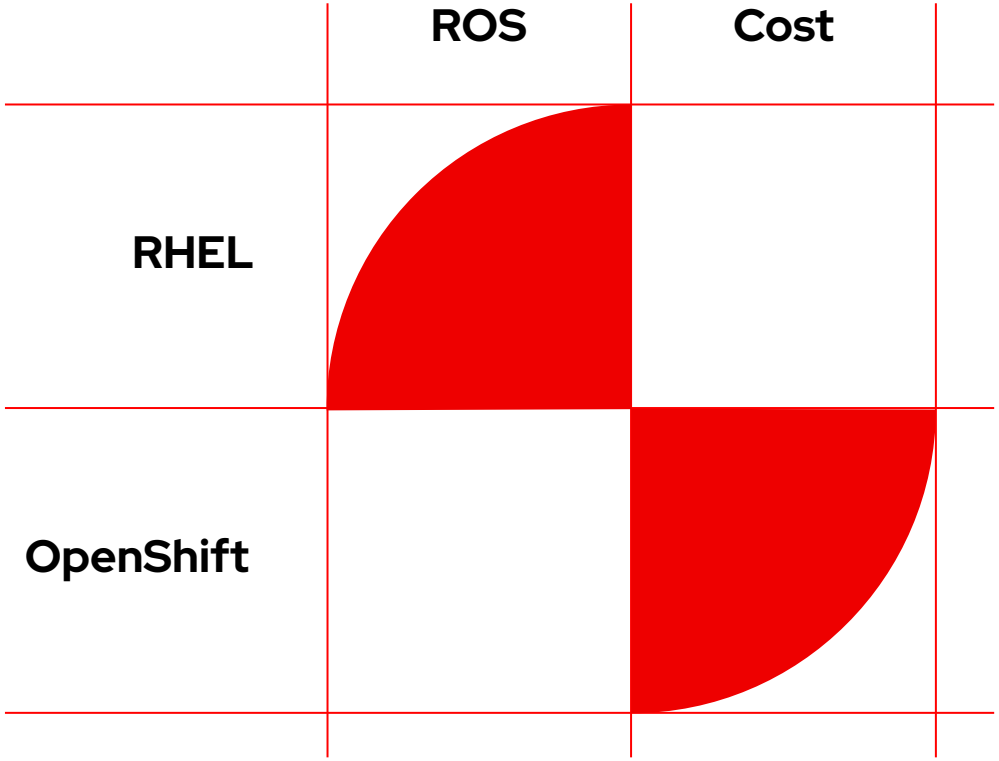
Improve stability and performance

Security

Reduce risk

Resource Optimization (ROS) and Cost Management

Currently two independent applications, targeting two different platforms



ROS: Resource Optimization Service

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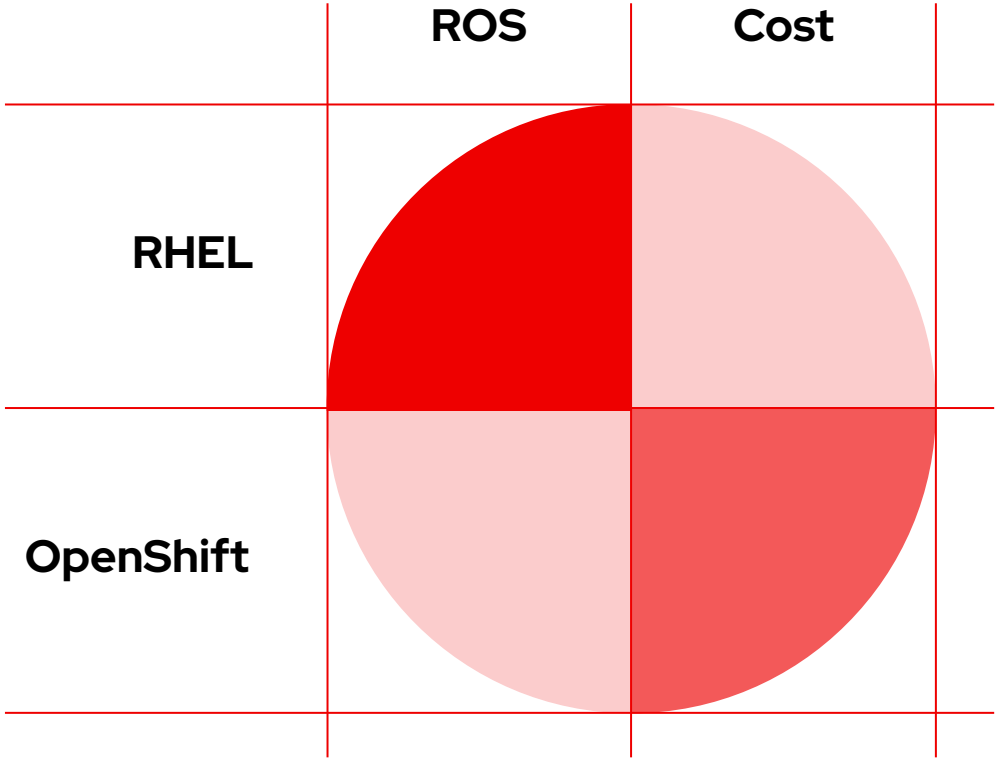
Resource Optimization (ROS) and Cost Management

Started as two independent applications targeting two different platforms



ROS: Resource Optimization Service

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Immediate priorities

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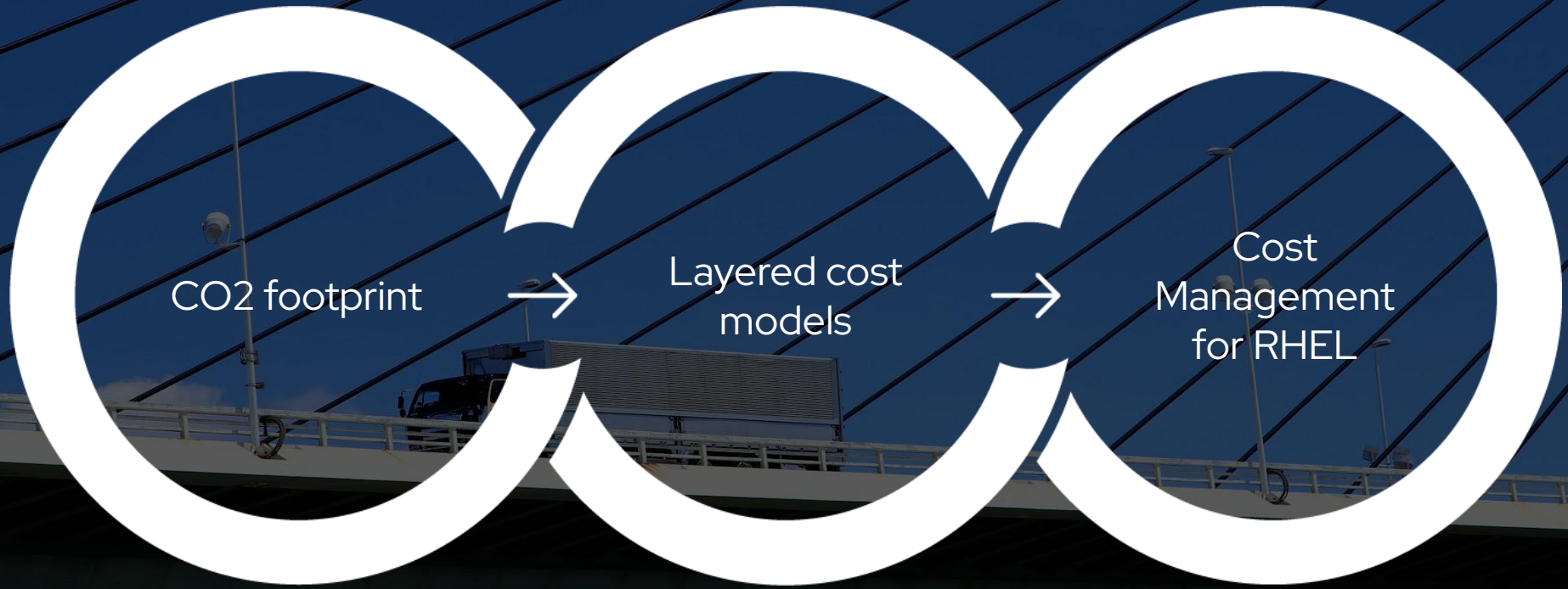
Further plans



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Resource Optimisation

Integrated into the Cost Management interface

Utilisation reports

Pods - requests vs usage

Identify unlimited pods

Application right-sizing

Workload-based

Historical analysis of similar pods

Cluster right-sizing

Smaller workers?

Fewer workers?

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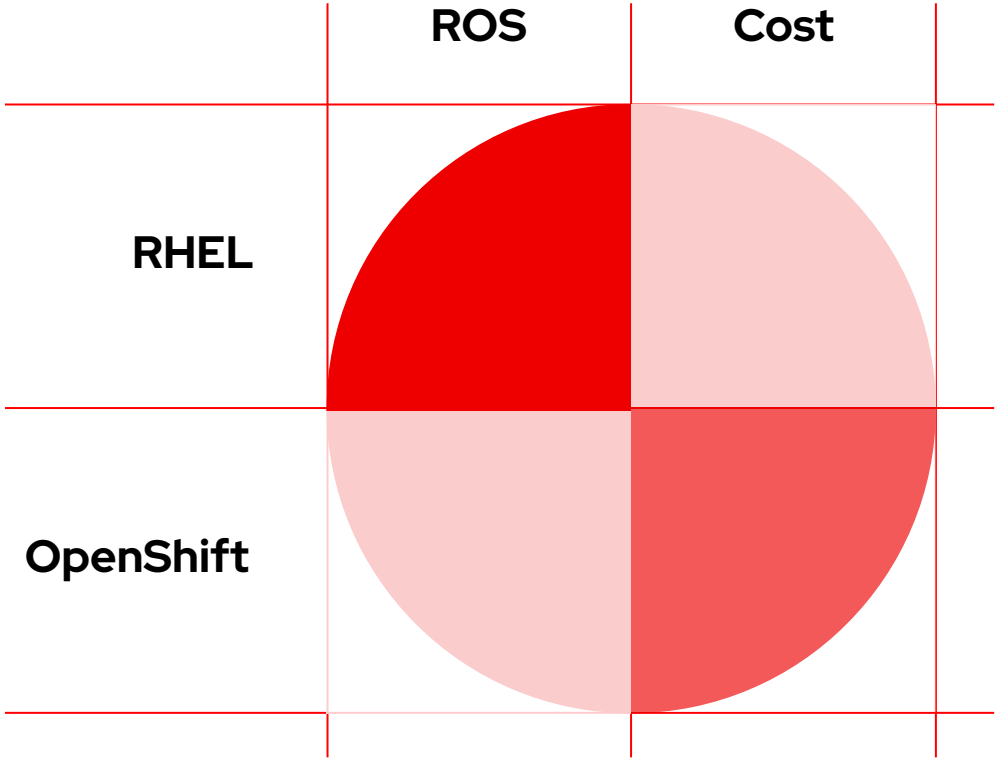
Resource Optimization (ROS) and Cost Management

All things to all people



ROS: Resource Optimization Service

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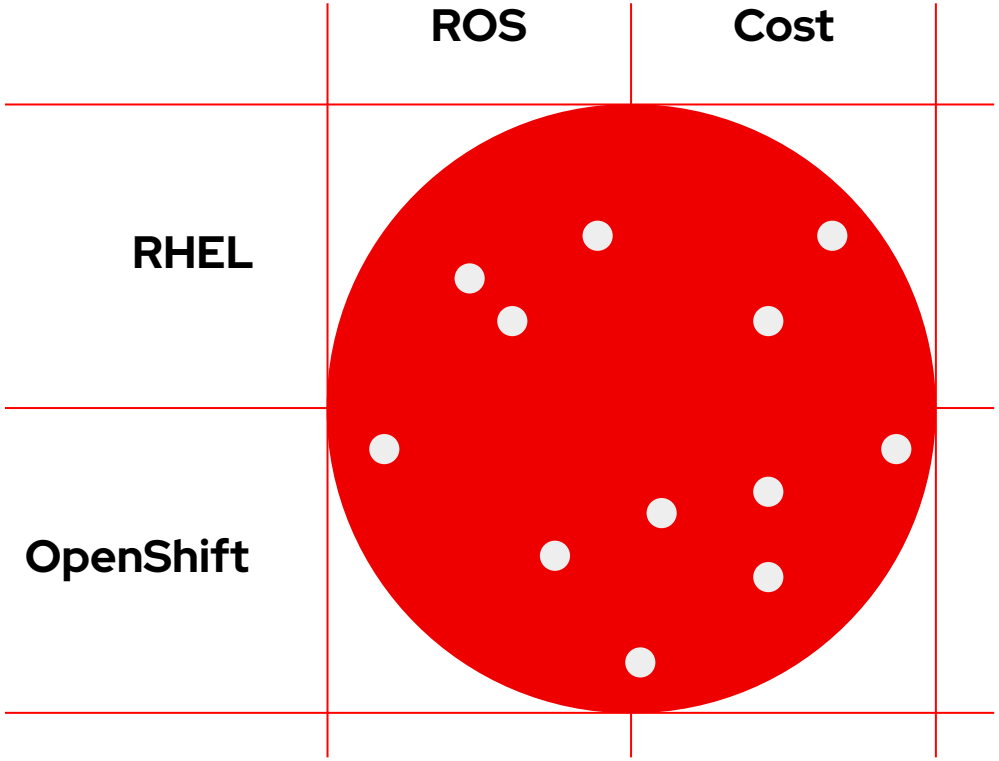
Resource Optimization and Cost Management

There will be gaps



ROS: Resource Optimization Service

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Red Hat Summit

Thank you


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youtube.com/user/RedHatVideos


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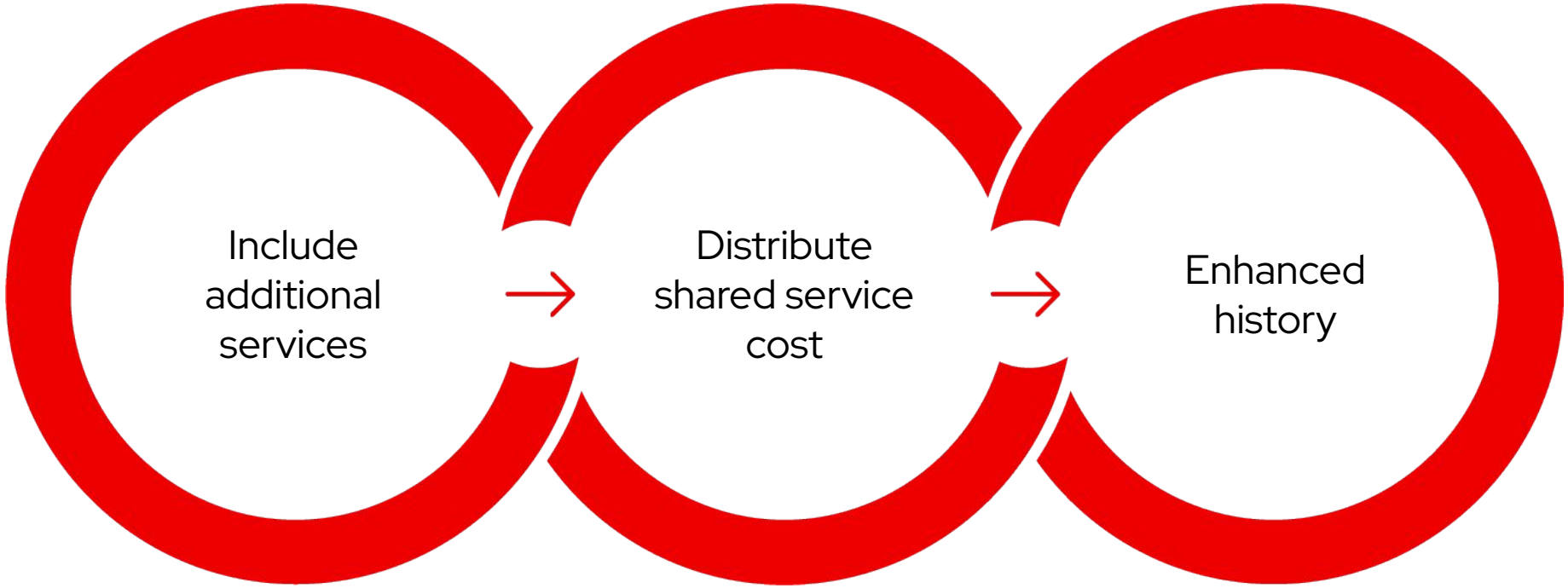
Examples

- NICK: Customer - doing a DC migration and consolidation of k8s platforms, which is bringing a variety of applications from lots of **different BUs & departments** into a single OCP architecture. Centralises the cost, but because everything's in OCP, they can't use high-level reporting (like AWS's) to spread it back out to users accurately and fairly. They Need Something Clever
  - Intense pressure to deliver quickly, lots of different "experts", chaos, accountability and governance will naturally be hard to maintain. Platform admins under lots of stress.
- NICK: Customer is running software on their clusters (which may have separate commercial terms) and need to track each, and they need to monitor and forecast usage so they can make sure they're complying with those terms and/or buying the right amount.
- CHRISTINA: Customer has **cross-cloud provider** OCP clusters with multiple applications on each cluster, can get breakdown from each cloud provider on infrastructure utilisation but use of the total application spend was not transparent at the time. Need a hybrid platform cost management solution that can take account of the usage of a BU/project across multiple clusters/infra platforms.

Immediate priorities



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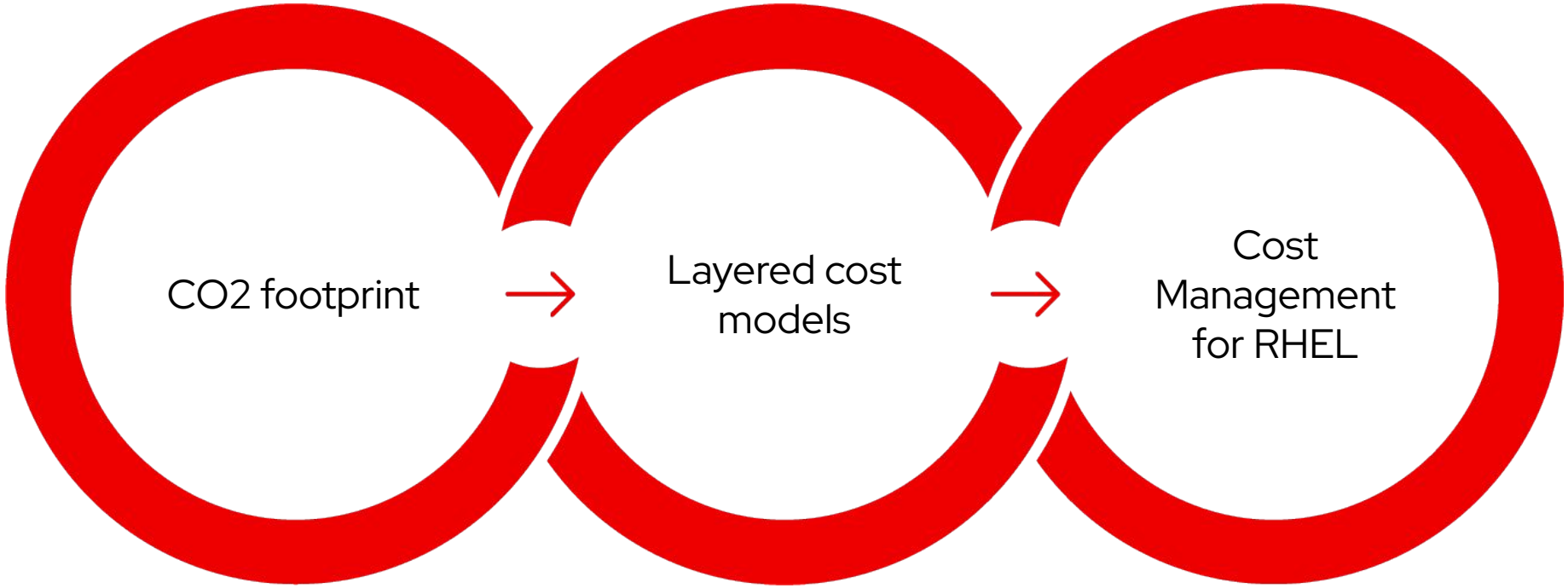
Further plans



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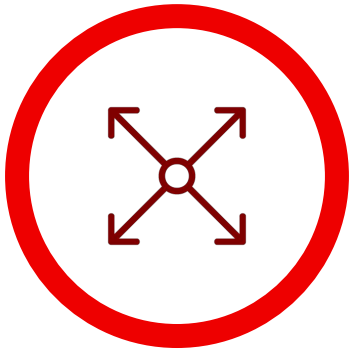
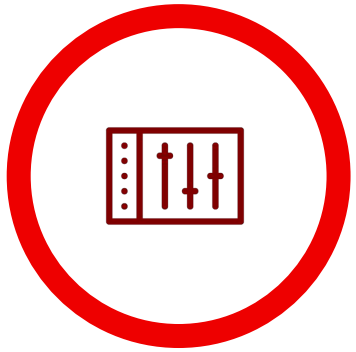


Application right-sizing

Workload-based

Historical analysis of similar pods



Cluster right-sizing

Smaller workers?

Fewer workers?