Cost Management

Preview new SaaS capabilities for Red Hat OpenShift
OpenShift Commons Briefing

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Red Hat

Disclaimer

The content set forth herein does not constitute in any way a binding or legal agreement or impose any legal obligation or duty on Red Hat.

Cost management is currently in Tech Preview which means we're providing early access to features that are not supported through normal channels and may not be functionally complete. This allows customers to test functionality and provide feedback during the development process.

For more information about the support scope of
Red Hat Technology Preview features, click here.

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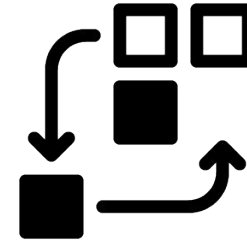# Understanding container costs in the cloud is a full time job

Misalignment between business and resources

Correlating detailed bills from cloud vendors with specific projects is difficult

A paradigm shift

Finding the root cause of deviations to forecasts and budgets can be baffling when the environment is fully dynamic

Cloud services spread

Unclear why specific services and applications are being consumed, and which option should be used

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Different stakeholders, different needs

Finance manager

"I need to …

… Forecast and budget overall resources"

… Distribute showback and/or chargeback reports"

Business Owner

"I need to …

… Forecast capacity needs, and what-if scenarios"

… Know when I am over the budget"

… Map charges to projects and organizations"

Operations / IT Manager

"I need to …

…Drill down into details for root cause analysis"

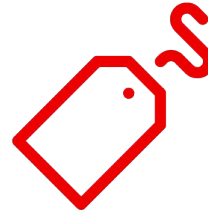… Know unexpected behaviours

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Cost management
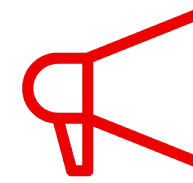
for OpenShift Container Platform

Cost visibility

View OpenShift costs across hybrid infrastructure to stay on budget

Cost mapping

Understand spending habits and cost requirements for projects, organizations, and regions

Effective communication

Generate showback/chargeback data to improve communication between IT and line of business (LOB)

Introducing cost management for OpenShift Container Platform

Red Hat's newest SaaS offering available in Tech Preview
to provide customers with cost visibility across clusters both on-premises and in the cloud
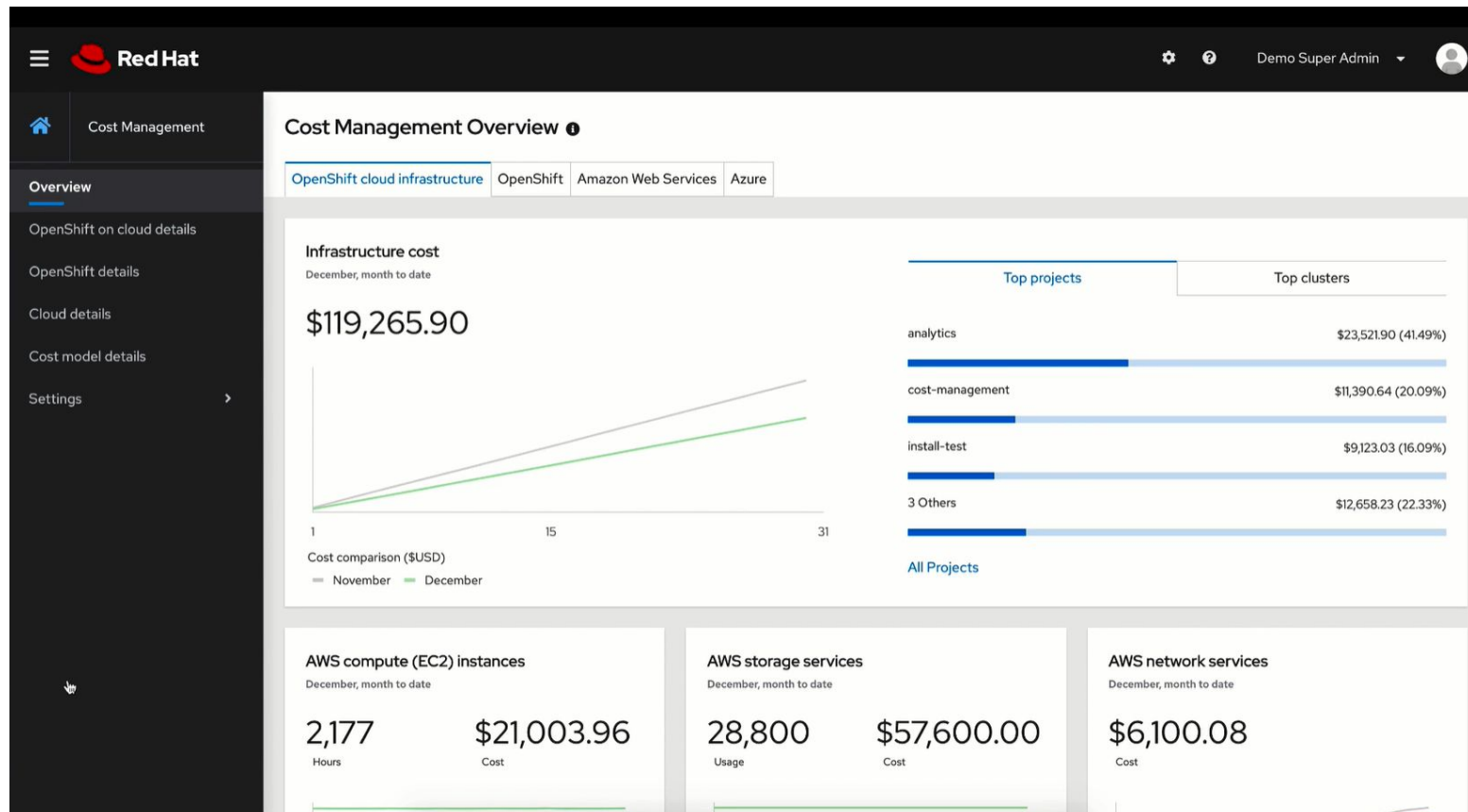
- **Visualize costs** across hybrid cloud infrastructure
- Track **cost trends**
- **Map charges** to projects and organizations
- **Normalize data** and add markups with cost models
- Generate showback and chargeback information

OpenShift metering and cost management

Understanding the difference

OpenShift operator metering

- **OpenShift reporting, *weighted***
- Raw data based on Prometheus metrics
- Optional integration to Amazon EC2
- To be plugged into BI tools
- SQL-like query language

OpenShift cost management

- **Cost *management* for OpenShift running across hybrid environments**
- Captures metrics ***and metadata*** from OpenShift operator metering, AWS and Azure
- Graphical interface and API
- Cost modeling
- Business mapping

Subscription Watch

- **Simplify Red Hat Subscriptions**
- Red Hat subs commitment by unit
- Make it easier to do business with Red Hat
- Subscription budgeting control tool

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Cost Management

Cost Management Overview ⓘ

| OpenShift cloud infrastructure | OpenShift | Amazon Web Services | Azure |

View OpenShift costs across hybrid infrastructure

Overview
OpenShift on cloud details
OpenShift details
Cloud details
Cost model details
Settings

Infrastructure cost
December, month to date

$119,265.90

Cost comparison ($USD)
— November — December

| Top projects | | Top clusters |

analytics — $23,521.90 (41.49%)
cost-management — $11,390.64 (20.09%)
install-test — $9,123.03 (16.09%)
3 Others — $12,658.23 (22.33%)

All Projects

Compare with previous month's spending

AWS compute (EC2) instances
December, month to date

2,177 — $21,003.96
Hours — Cost

AWS storage services
December, month to date

28,800 — $57,600.00
Usage — Cost

AWS network services
December, month to date

$6,100.08
Cost

9

Cost Management Use Case Examples

Aggregating visibility across OpenShift clusters

Use Case	Details	Stakeholder(s)
AWS visibility	- High number of AWS accounts (both master and linked accounts) - Needs consolidated view of costs	All
OpenShift visibility	- Multiple OCP clusters - Needs consolidated dashboard to see resources and overall costs	Business Owner Ops / IT Manager
OpenShift infrastructure costs	- Multiple OCP clusters on AWS - Needs to understand the overall costs that AWS is charging to run OCP	All
OpenShift cost per project	- Running several projects in different OCP clusters - Needs to understand the cost of each project	Business Owner Ops / IT Manager
Visibility into business costs	- IT Ops tasked to report the cost of running services - Needs to group by user, region, department and/or application	All

Example: AWS Insights

The customer has a high number of AWS accounts (both master accounts and linked accounts) and wants to see costs consolidated

Solution:

The customer adds all master accounts to cost management. The linked accounts are automatically added as part of the master account consolidated billing and the sum of all that shows in the interface.

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Example: OCP visibility

The customer has a number of OCP clusters and wants to see a consolidated dashboard that shows resources and overall costs

Solution:

The customer sets up all the clusters in cost management and can follow the information in the dashboard in the OpenShift section

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Example: OCP Infrastructure costs

The customer is running several OCP clusters on AWS and wants to know the overall costs that AWS is charging to run OCP

Solution:

Configuring AWS and OCP clusters in cost management, along with the proper resource tagging, enables cost management to identify and show the part of the AWS services that are being used to run OCP and show them in the appropriate section. Tags allows to associate non-EC2 costs to clusters (like RDS)

Example: OCP cost by project distribution

The operator is running several projects in the different OCP clusters and wants to understand the cost of each of the projects

Solution:

Calculated costs for OCP based on both infrastructure and metrics can be distributed to projects, based on the percentage of CPU and memory in use and using tagging to add up additional services needed to run the project (like RDS, EBS or S3)

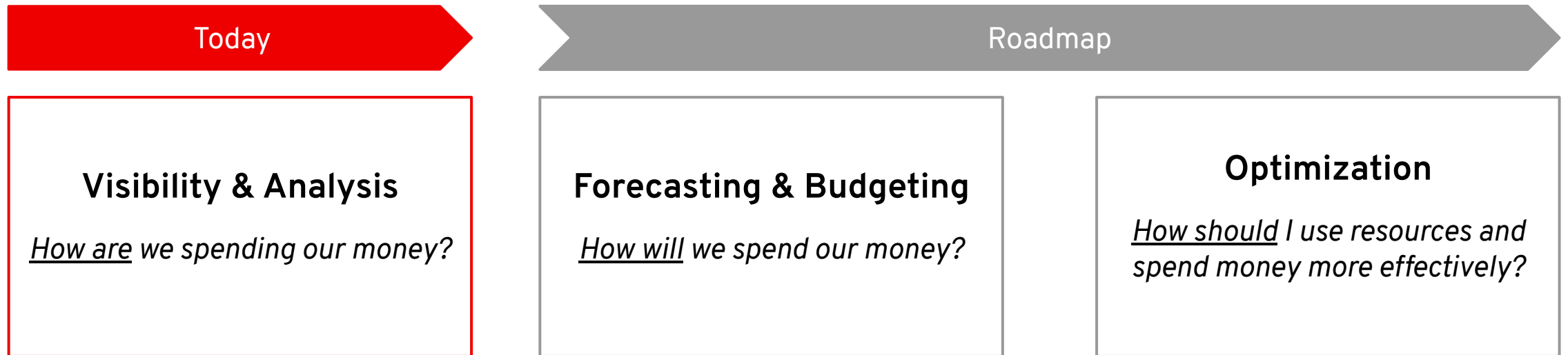Red Hat

Example: Business costs report

The cost operator is tasked to report about the cost of running services, grouped by user, groups or applications

Solution:

Calculated costs for OCP based on both infrastructure and metrics can be distributed using tags. Mapping tags to business dimensions allows cost management to show the information filtered and grouped by those tags, and thus reflecting the needs of the business

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Cost management vision

To meter, allocate, visualize, and optimize consumption of OpenShift

Today	Roadmap

Visibility & Analysis

How are we spending our money?

Forecasting & Budgeting

How will we spend our money?

Optimization

How should I use resources and spend money more effectively?

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Demo

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Create a cost model

A cost model is used to calculate the cost of resources for forecasting and budgeting purposes.

1 General information

2 **Price list**

3 Markup

4 Sources

5 Review

Set a price list (optional)

The following is a list of rates you have set so far for this price list. To continue adding rates to this price list, click "Add another rate". If you are finished setting this price list, click "Next".

| Filter by rate... 🔍 | Add another rate | 1 - 3 of 3 ▼ | ≪ ‹ | 1 | of 1 | › ≫ |

Results 3

CPU-Request (Core-hour)
$1.00 per Core-hour   Remove

Memory-Request (GB-hour)
$0.57 per GB-hour   Remove
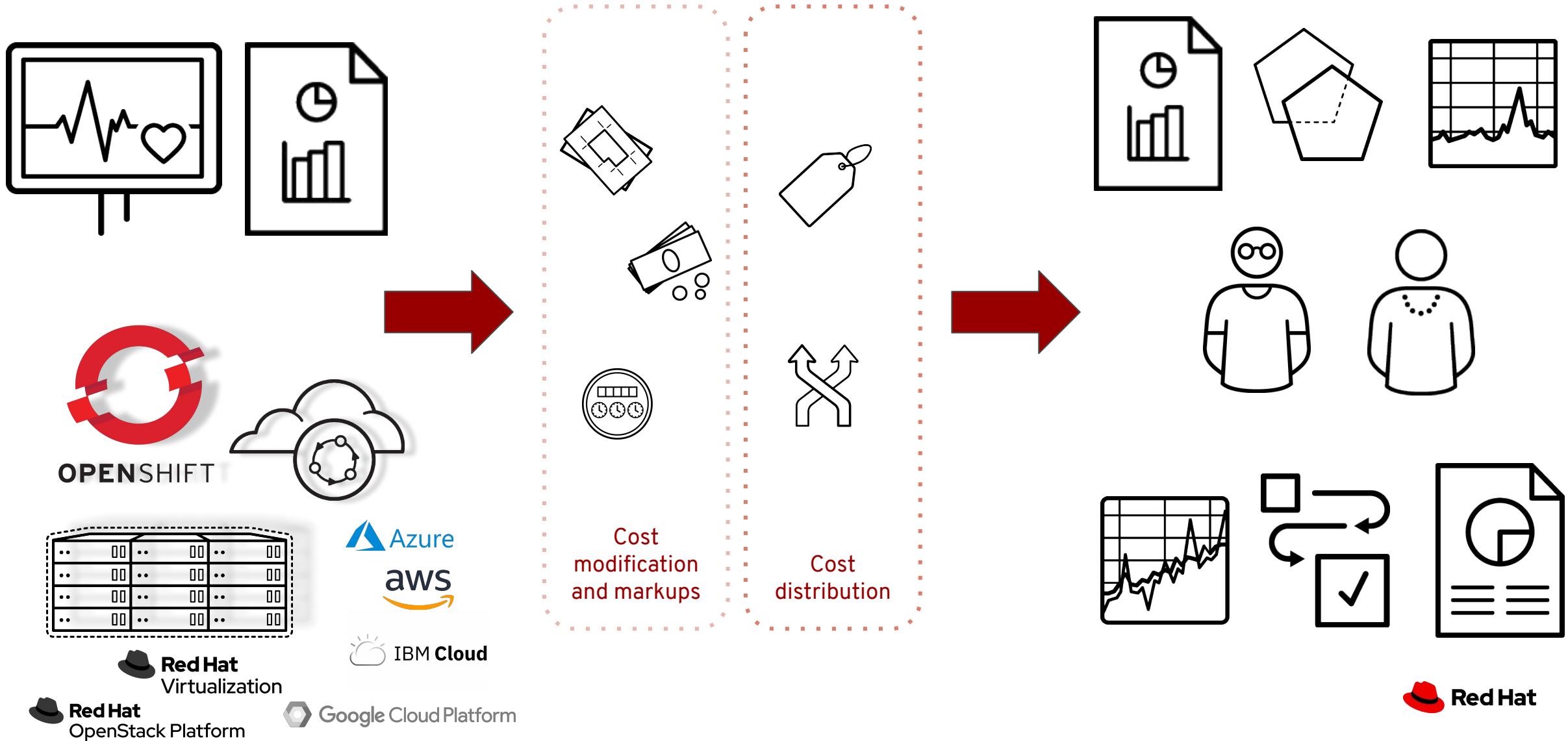

Storage-Request (GB-month)
$1.10 per GB-month   Remove

Next   Back   Cancel

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Data inputs

Cost modification and markups

Cost distribution

Ways to collaborate - Open Source Project Koku

Koku-UI
User interface

API

Koku
Data ingestion engine

Koku
Core services

API **API**

Yosoku
Forecasting

Korekuta
OCP Data ingestion engine

API

Nise
Data generator

https://github.com/project-koku
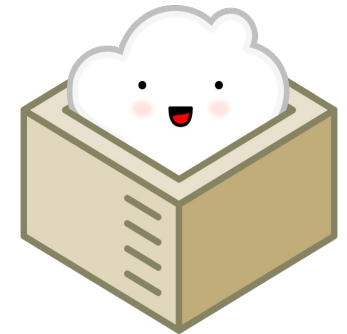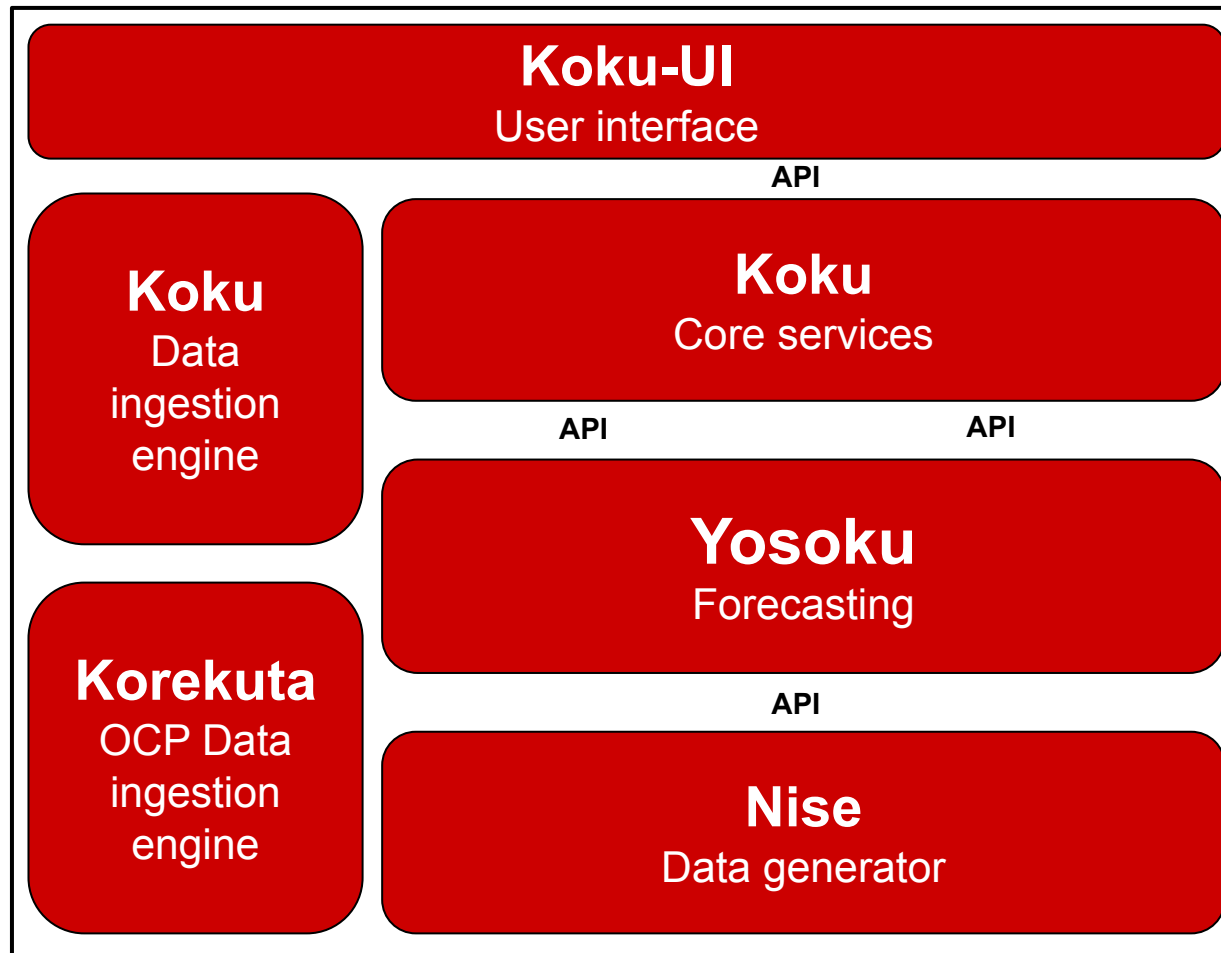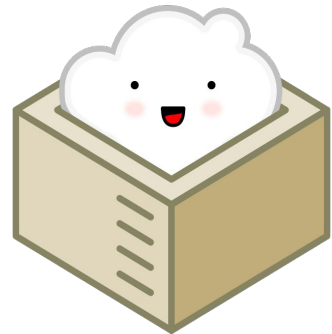
Cost Management Roadmap

Tech Preview

- Cost visibility
- AWS, Azure and OCP feeds
- Resource tag mapping
- Cost models

(*)

Better support for on-premises

Improvements to business mapping with tags

Simplified UX and onboarding

Next year

- New sources: GCP and IBM cloud
- Forecasting & Budgeting
- Multi currency support
- Better integration to OpenShift cluster manager
- Infrastructure Optimization
- Yearly views
- Reporting

2020

Today

Included with OpenShift 4.x

Available to all OpenShift customers in Tech Preview

General Availability

Summit 2020

Future

- Cost models enhancements
- Additional tagging filtering
- OpenShift UX enhancements
- Data export
- 3rd party API access
- Foundations for AI enhancements

Future

- Alibaba cloud
- Alerts
- What-if scenarios
- Licensing management
- ISV support
- Line Item Visibility
- Cloud price analysis
- Configurable UX
- Annotations

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Get Started

1. Available today to any OpenShift 4.3+ customer

2. Getting Started with Cost Management guide

3. Configure advanced features:
   a. Use tagging to map costs to projects (review this blog for tagging guidelines)
   b. Use cost models to distribute costs more accurately

Email costmanagement@redhat.com with any questions

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in   linkedin.com/company/red-hat

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f   facebook.com/redhatinc

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