Red Hat OpenShift Service on AWS

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Amazon Web Services

Agenda

AWS Cloud Introduction

Red Hat OpenShift Service on AWS (ROSA)

Integrating ROSA with AWS

AWS Cloud Introduction

How do customers benefit from the cloud?

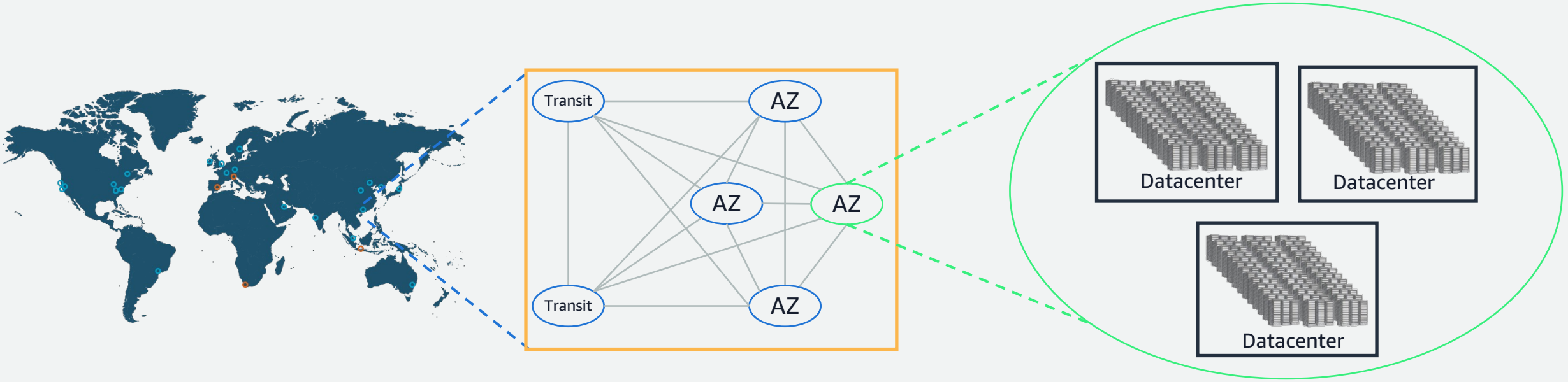
Agility	Teams can experiment and innovate quickly and frequently
Cost Savings	Only pay for what you use, leveraging economies of scale
Elasticity	Easily scale up or down with the needs of the business
Innovation	Focus on business differentiators, not infrastructure
Global Footprint	Extensive, reliable, and secure global cloud infrastructure

Global Presence

99 Availability Zones
31 Regions

Planned expansion
+5 Regions

AWS Region design



AWS Region

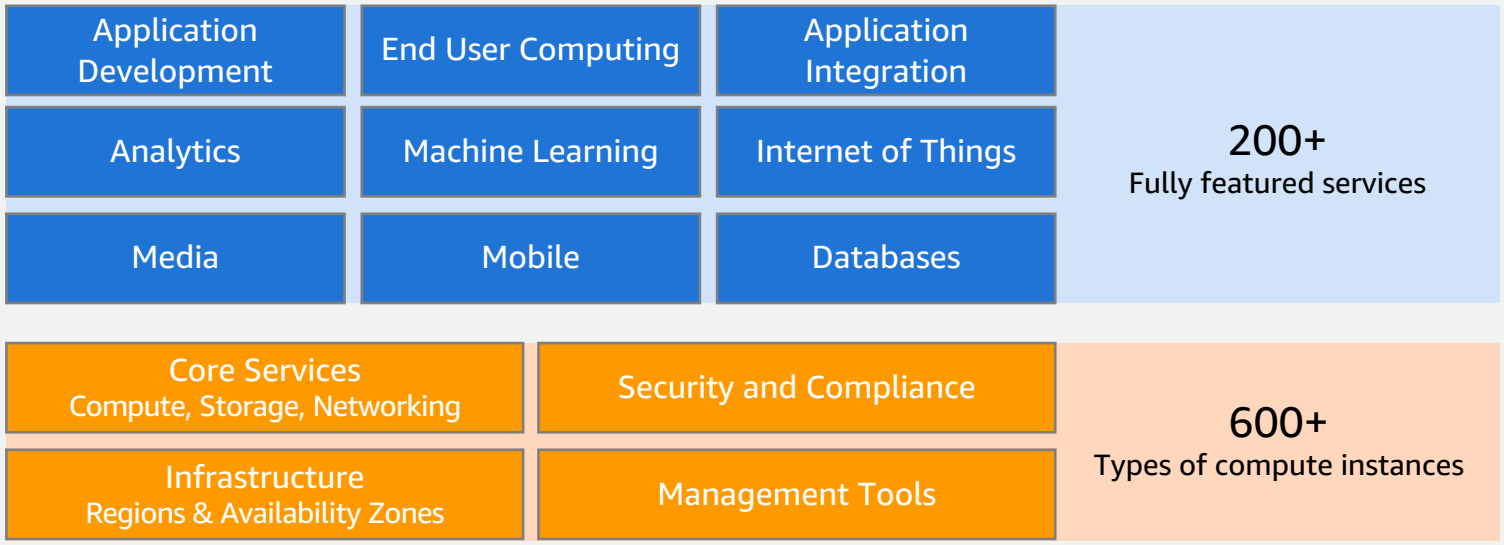
A Region is a physical location around the world where we cluster data centers.

We call each group of logical data centers an **Availability Zone**.

AWS Availability Zone (AZ)

Availability Zones consist of one or more discrete data centers, each with redundant power, networking, and connectivity, housed in separate facilities.

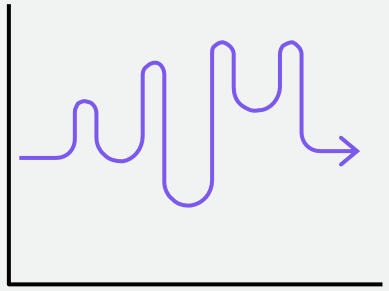
Support virtually any workload



Amazon EC2 purchase options

On-Demand

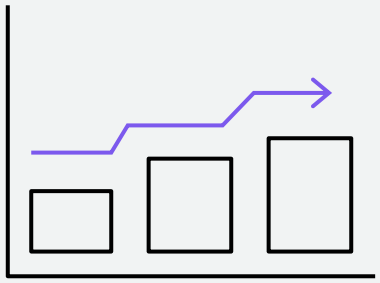
Pay for compute capacity by **the second** with no long-term commitments



Spiky workloads, to define needs

Reserved Instances

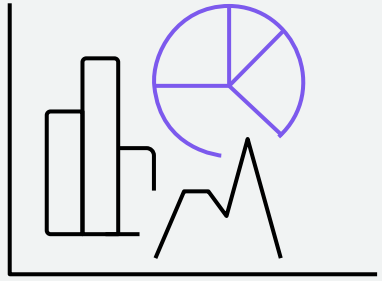
Make a 1 or 3 year commitment and receive a **significant discount** off On-Demand prices



Committed and steady-state usage

Savings Plans

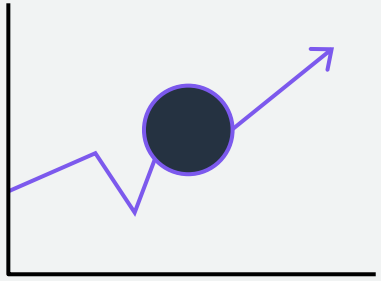
Same great discounts as Amazon EC2 RIs with **more flexibility**



Committed flexible access to compute

Spot Instances

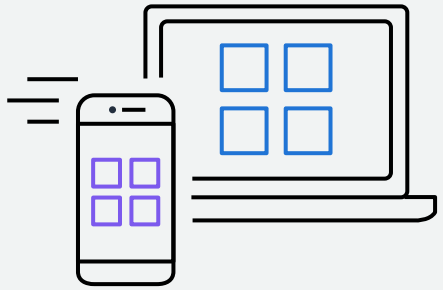
Spare Amazon EC2 capacity at **savings of up to 90%** off On-Demand prices



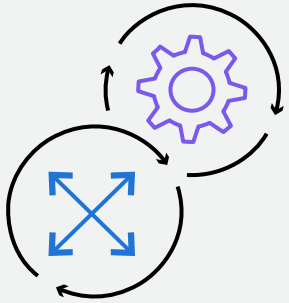
Fault-tolerant, flexible, stateless workloads

Red Hat OpenShift Service on AWS (ROSA)

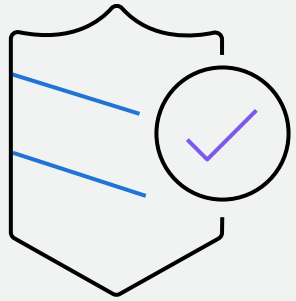
What our customers ask for



Build applications, not infrastructure



Scale quickly and seamlessly



Security and isolation by design

Container orchestration: ECS, EKS, and ROSA

ECS

Powerful simplicity

AWS-opinionated way to run containers at scale

Reduce decisions without sacrificing scale or features

Reduce time to build, deploy, and migrate applications

EKS

Open flexibility

AWS-optimized managed upstream Kubernetes with four supported versions

Build your custom platform for compliance and security, with AWS services and community solutions

Accelerate your containerization and modernization with canonical patterns using AWS Blueprints

ROSA

Turn-key Platform

Integrated Kubernetes based application platform with built-in CI/CD, monitoring, and developer tools.

Continue with existing OpenShift skills and processes from on-prem environments to the cloud

Accelerate application migration and modernization by re-hosting, re-platforming, or re-factoring workloads

Red Hat OpenShift Service on AWS differentiation

Ease of use

Create OpenShift clusters from console or CLI in minutes

Reuse existing skills

Unified bill

Leverage your existing AWS commitment to use OpenShift

Get single unified bill from AWS for both OpenShift and AWS consumption

Pay-as-you-Go pricing

24/7 joint support

Integrated support systems

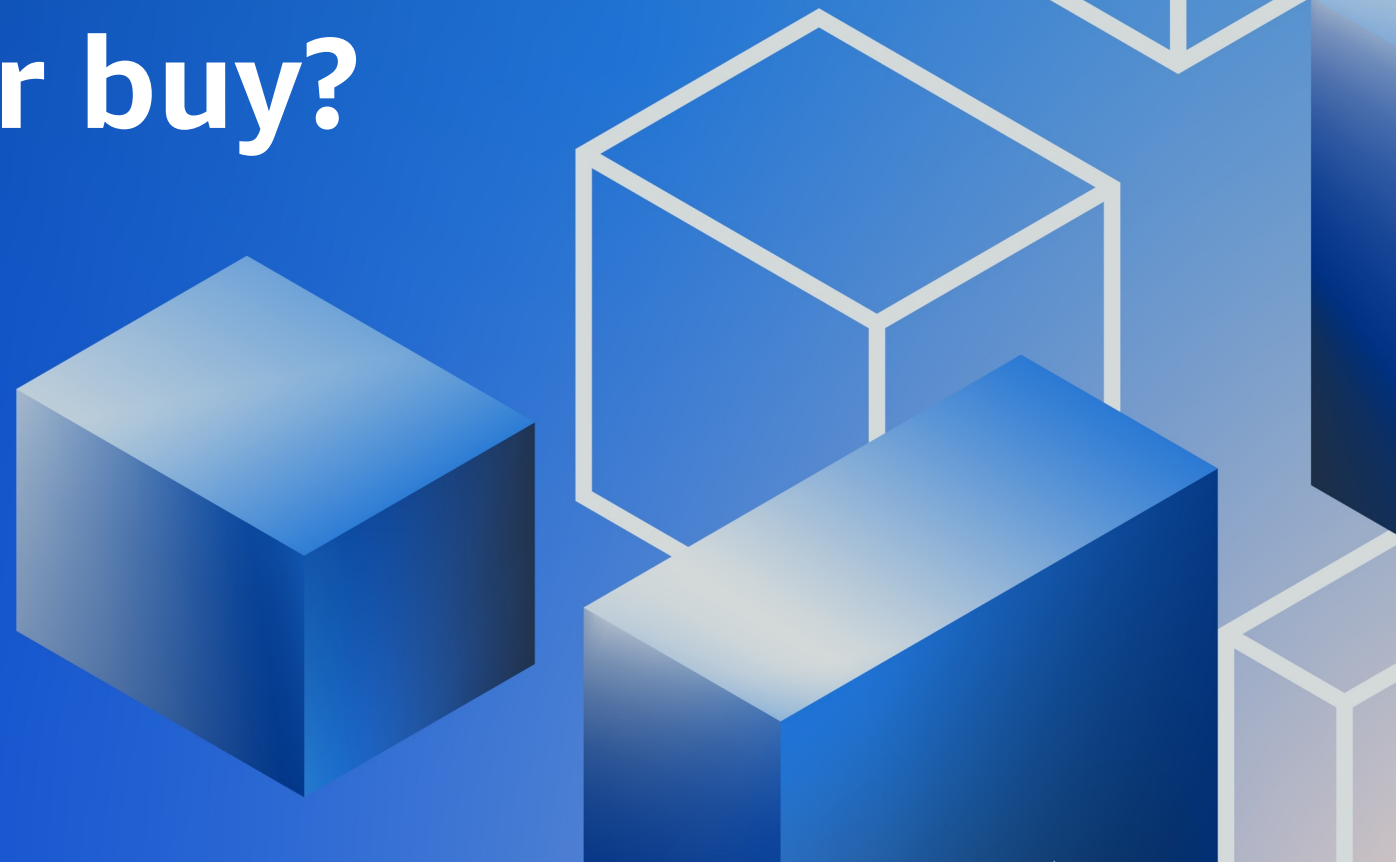
Contact AWS or RedHat for support

Built on AWS and RedHat's decades of enterprise IT knowledge and experience

AWS integrations

Consume AWS services through OpenShift

Platform: build or buy?

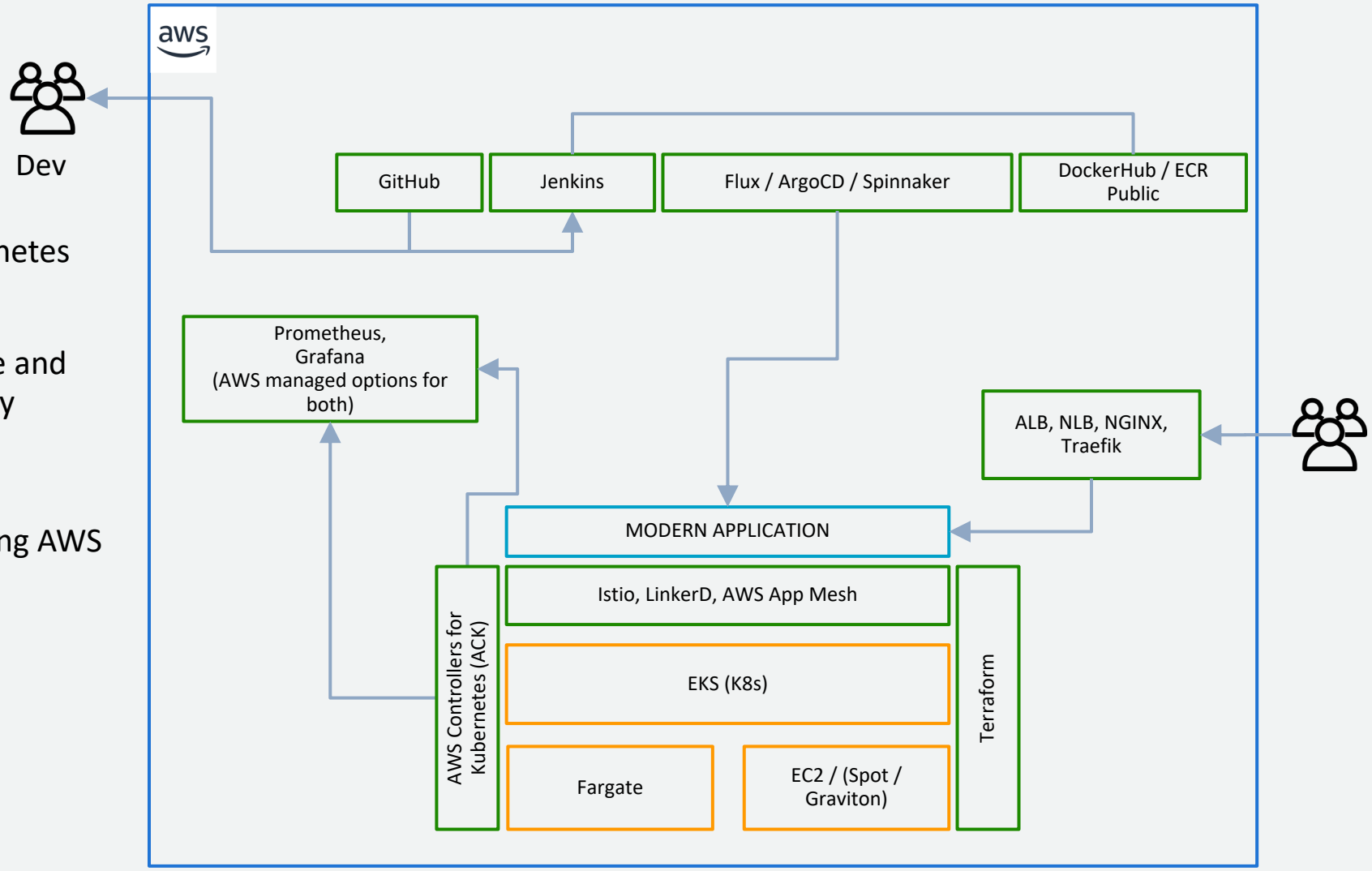


Build vs. buy

Amazon EKS

Open source flexibility

- AWS-optimized managed upstream Kubernetes with four supported versions
- Build your custom platform for compliance and security, with AWS services and community solutions
- Accelerate your containerization and modernization with canonical patterns using AWS Blueprints

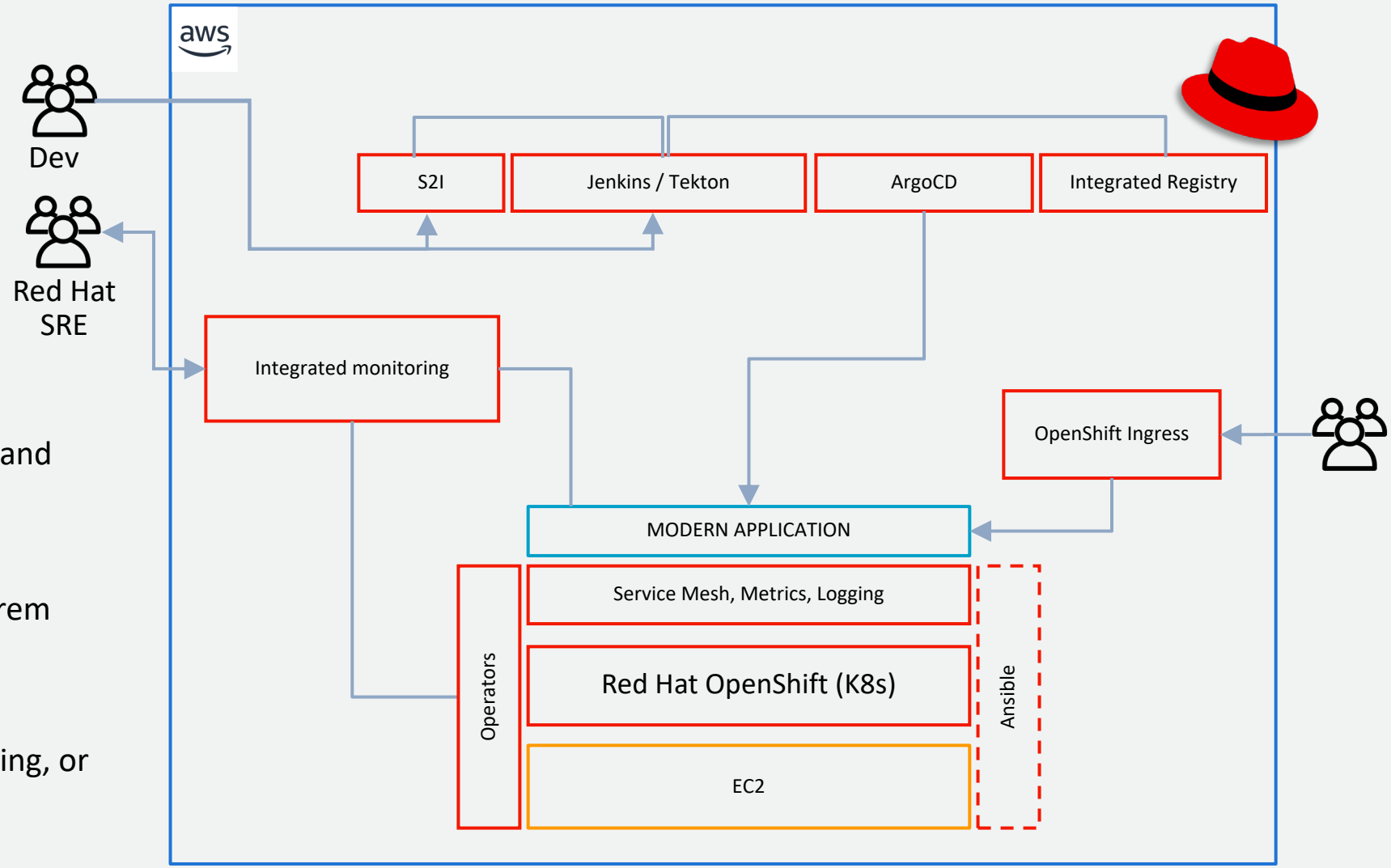


Build vs. buy

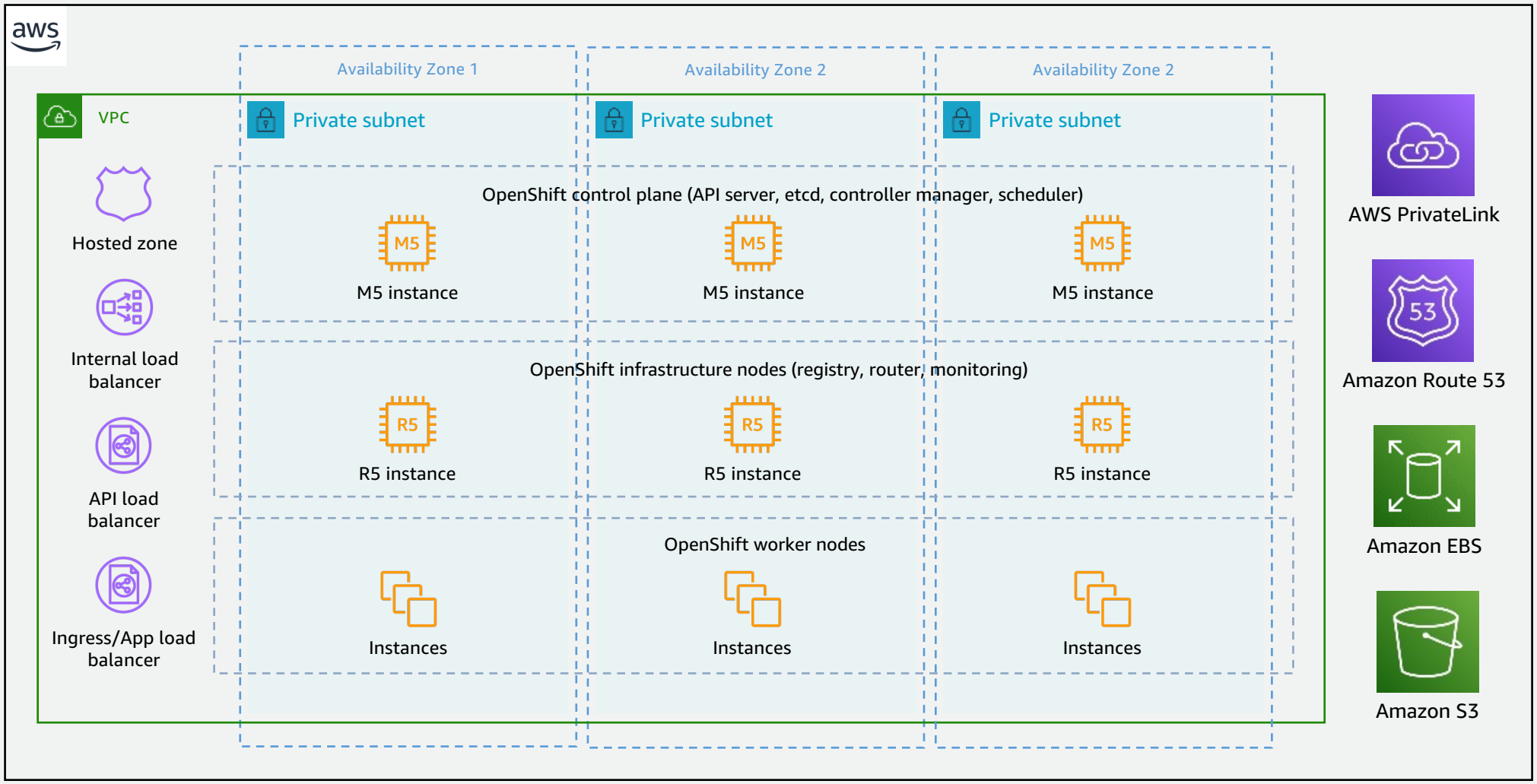
Red Hat OpenShift on AWS

Turn-key application platform

- Integrated Kubernetes based application platform with built-in CI/CD, monitoring, and developer tools.
- Activate ROSA and continue with existing OpenShift skills and processes from on-prem environments to the cloud
- Accelerate application migration and modernization by re-hosting, re-platforming, or re-factoring workloads



ROSA private cluster architecture example



ROSA: Batteries included but swappable

OpenShift Service Mesh with Istio to connect, secure, and observe services

OpenShift Serverless with Knative to enable hybrid serverless, FaaS, and event-driven architectures

OpenShift builds with Shipwright to build images from code using S2I + others and integrate with GitHub Actions

OpenShift Pipelines with Tekton to provide Kubernetes-native CI/CD pipelines

OpenShift GitOps with ArgoCD to enable declarative GitOps-based continuous delivery

Application-level observability for developers to build and manage their apps

Log management of infrastructure, application, and audit logs + forwarding capabilities

Cost management visibility, mapping, and modeling across hybrid infrastructure in order to stay on budget

Kubernetes Cluster Services

Install | Over-the-air updates | Networking | Ingress | Storage | Monitoring | Log forwarding | Registry | Authorization | Containers | Operators | Helm

Kubernetes

Linux

Red Hat Enterprise Linux CoreOS

Amazon EC2

aws

Benefits of ROSA turnkey application platform

Developers

Fully managed clusters in minutes to build, deploy, and run applications using built-in developer UI that abstracts the complexity of Kubernetes

Collaborate across teams via shared projects

Administrators

Standardized and streamlined operations across on-premises and AWS environments

Built-in monitoring, logging, and networking

Choose platform version upgrade as required for the business

Business leaders

Consolidated billing and cost management across the business

Consumption-based pricing for surge and R&D usage

24/7 full-stack management and support

Financially backed 99.95% SLA

OpenShift deployment options

	On-premises	Cloud	
	OpenShift Container Platform (OCP)	**OpenShift Container Platform (OCP) on AWS**	**Red Hat OpenShift Service on AWS (ROSA)***
Control Plane	Customer	Customer	Red Hat
Compute	Customer	Customer	Red Hat
Data Plane	Customer	Customer	Red Hat
Support	Red Hat	Red Hat	Red Hat, aws
Billing	Red Hat	Red Hat, aws	aws

Fully Managed

AWS and Red Hat Partnership Helps Customers Meet Digital Needs

Red Hat and AWS are industry leaders with extensive experience in **IT infrastructure, hybrid cloud, digital transformation, and open source innovation.**

Through **collaborative engineering** activities, they offer integrated, certified solutions to meet modern, digital business needs.

Consistent, enterprise-grade platforms with advanced security and management features help organizations build IT infrastructure that supports their business efficiently and cost-effectively and adapts on their schedule.

"Given that Red Hat is the world's leading provider of open-source solutions, our enterprise customers have been passionate about seamlessly running Red Hat Enterprise Linux and various other Red Hat solutions on AWS."

Andy Jassy | CEO, Amazon

Red Hat and AWS by the numbers

Partners since
2008

>60,000
of AWS customers consume Red Hat products and solutions

ROSA – Consumption based pricing

https://aws.amazon.com/rosa/pricing/

ROSA Service Fees

$0.171/4vCPU/hour for Worker Nodes ($1500/year)

Plus $0.03/hour/cluster ($263/year)

+

AWS Infrastructure Fees

Infra, Worker, and Control plane EC2 instances and EBS volumes by region

Data transfer costs for multi-AZ deployments

=

Private Offers

1 and 3 year subscriptions for 33% and 55% discount

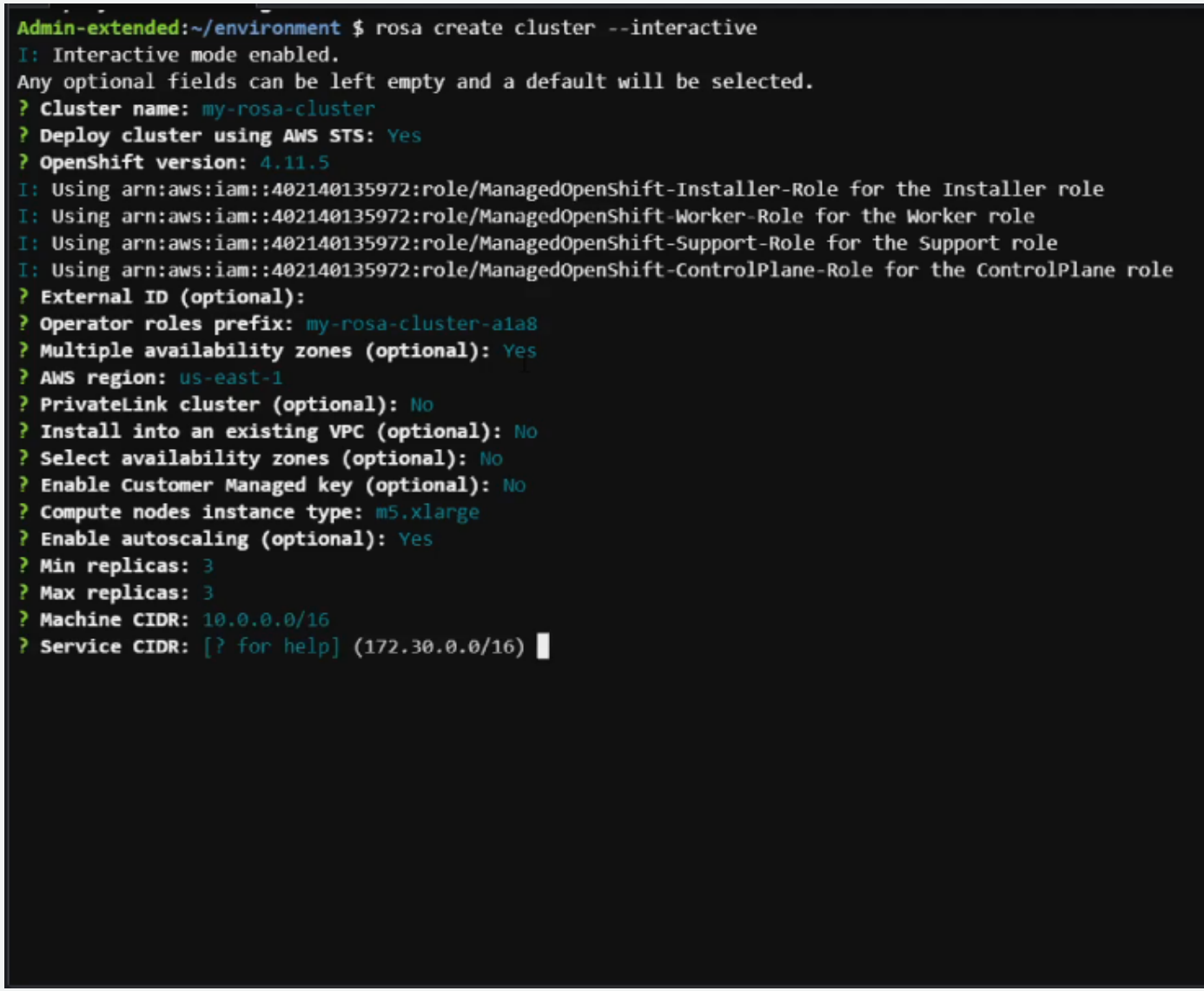
Reserved Instances, Savings Plans

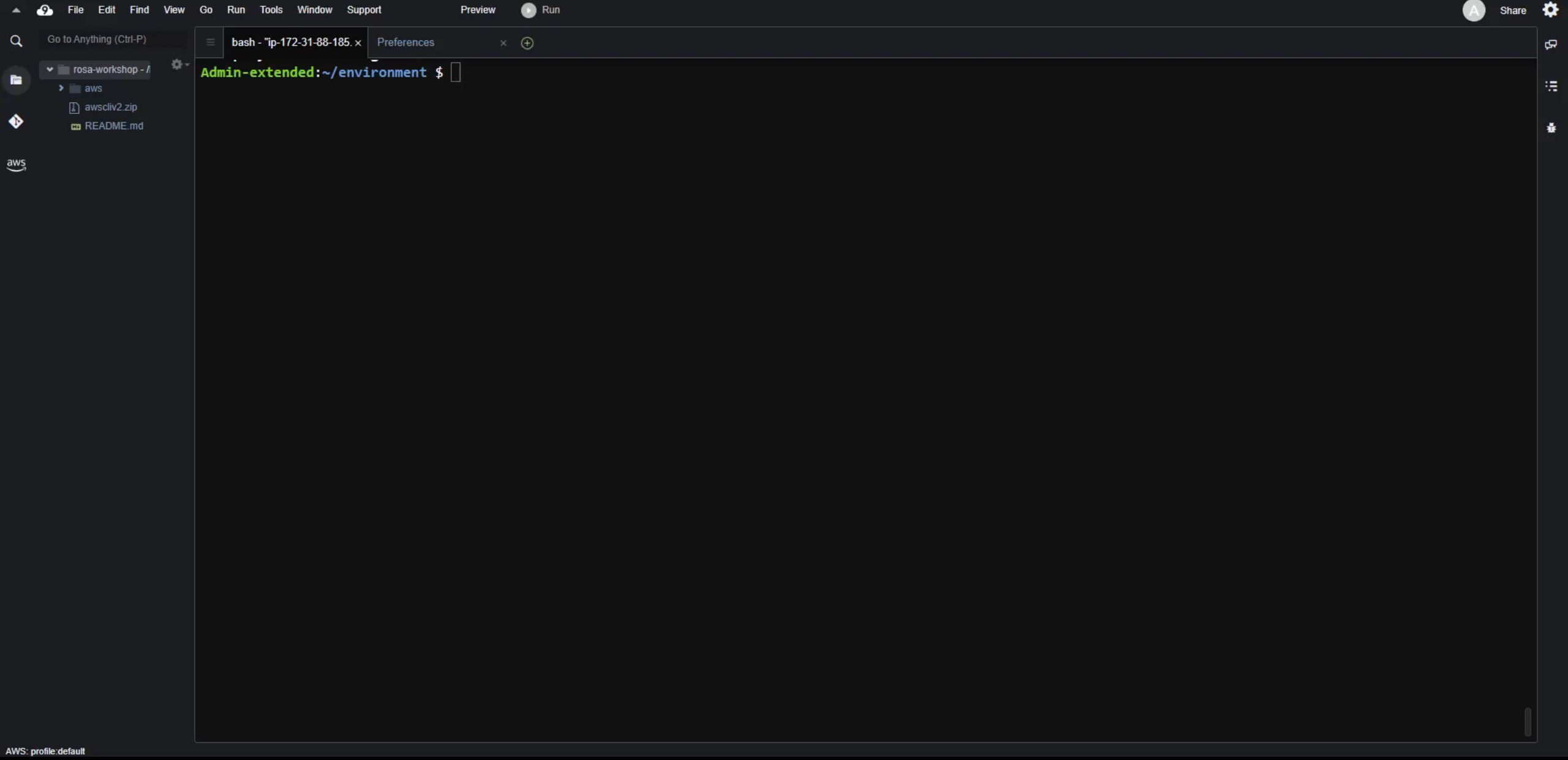
Pricing for Red Hat OpenShift Service on AWS is the same for all AWS supported regions.

Demo

ROSA Cluster Creation

Create clusters with only a few inputs

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Preview
Run
Share
Go to Anything (Ctrl-P)
rosa-workshop - /
aws
awscliv2.zip
README.md
bash - "ip-172-31-88-185.
Preferences
Admin-extended:~/environment $
AWS: profile:default

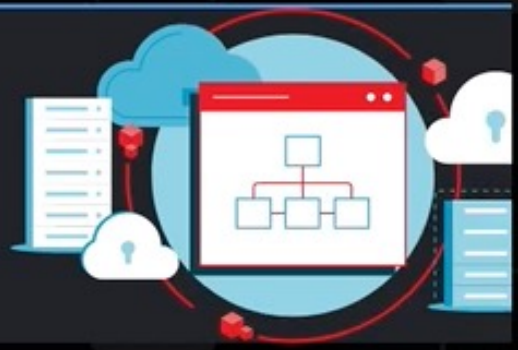
Red Hat Hybrid Cloud Console | Services | Search for services | Preview off

Hi, elindh.
Welcome to your Hybrid Cloud Console.

Red Hat OpenShift Service on AWS

Easily provision your ROSA cluster with AWS Security Token Service in the new web interface with the same secure and capable managed experience provided in the command-line interface.

Try out ROSA today



Get started with Hybrid Cloud Console capabilities

Application and Data Services

Configure, monitor, optimize, and orchestrate applications and data services on demand.

Explore services →

Red Hat OpenShift

Build, run, scale container-based applications - now with developer tools, CI/CD, and release management.

Scale your applications →

Red Hat Insights

Proactively assess, secure and stabilize the business-critical applications you scale from your Red Hat platforms.

Manage RHEL | Ansible | OpenShift

Edge Management

Keep your systems protected, available, and operating efficiently. Update all your RHEL for Edge systems with secure, over-the-air updates.

Ansible Automation Platform

Create, share, and manage automations - from development and operations to security and network teams.

Subscription Management

View and manage your Red Hat subscriptions.

View my favorite services

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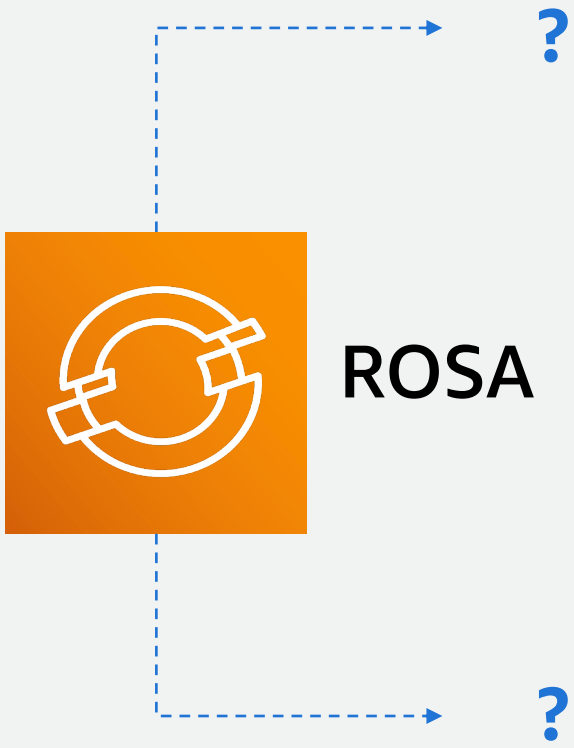
AWS Integrations

Business value beyond the applications running on ROSA



Application Development	End User Computing	Application Integration	200+ Fully featured services
Analytics	Machine Learning	Internet of Things	
Media	Mobile	Databases	
Core Services Compute, Storage, Networking	Security and Compliance		600+ Types of compute instances
Infrastructure Regions & Availability Zones	Management Tools		

ROSA

Application Development and Monitoring

AWS **DynamoDB**

AWS **RDS**

Amazon Aurora

Amazon API Gateway

AWS CodeCommit

AWS EventBridge

Amazon CloudWatch

AWS Controllers for Kubernetes (ACK) is an open source project built with ❤️ by AWS which lets lets you define and use AWS service resources directly from Kubernetes

Infrastructure and Operations

Amazon **EC2**

Amazon **EBS**

Amazon **EFS**

Amazon **FSx**

Amazon **ELB**

Amazon **VPC**

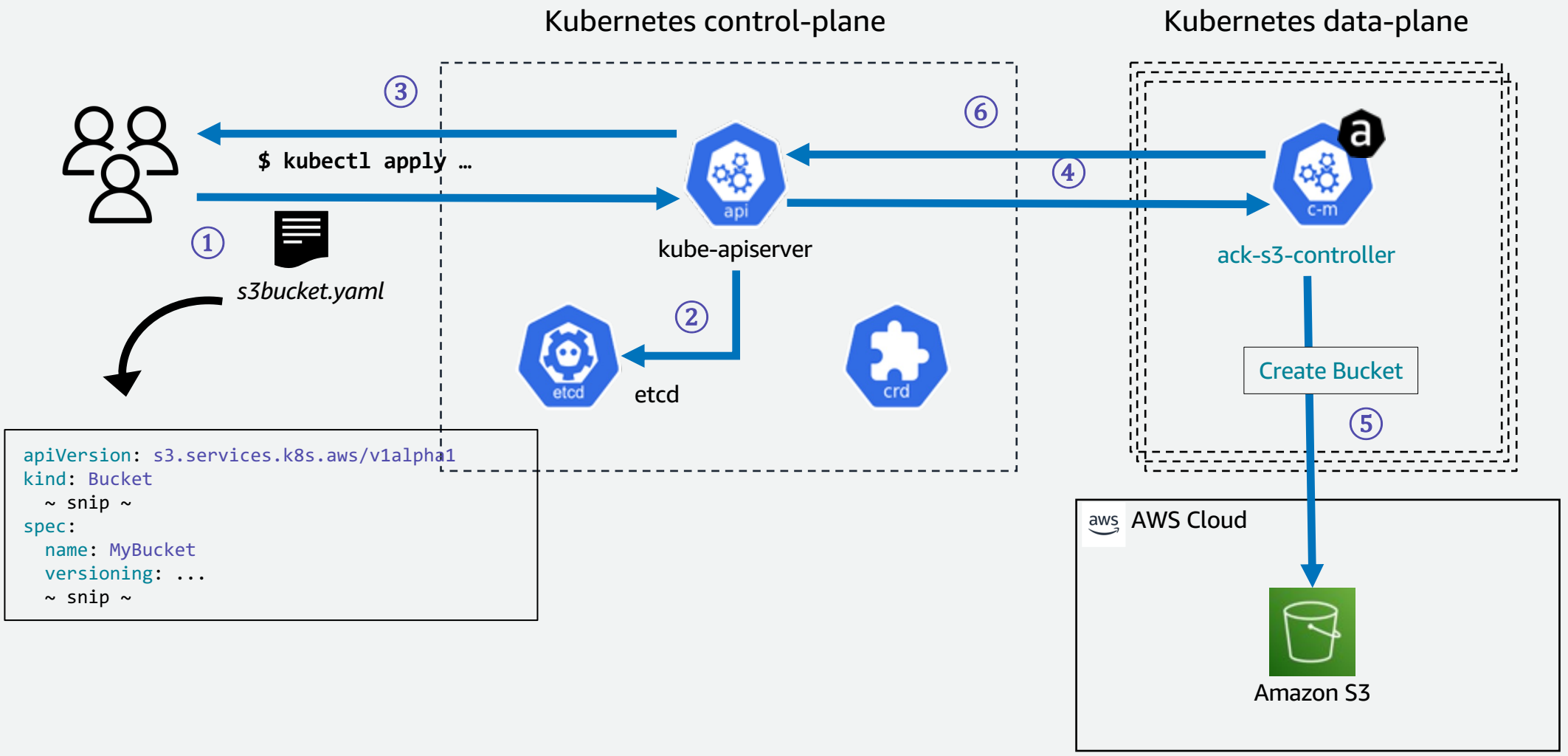
Route 53

AWS Private Link

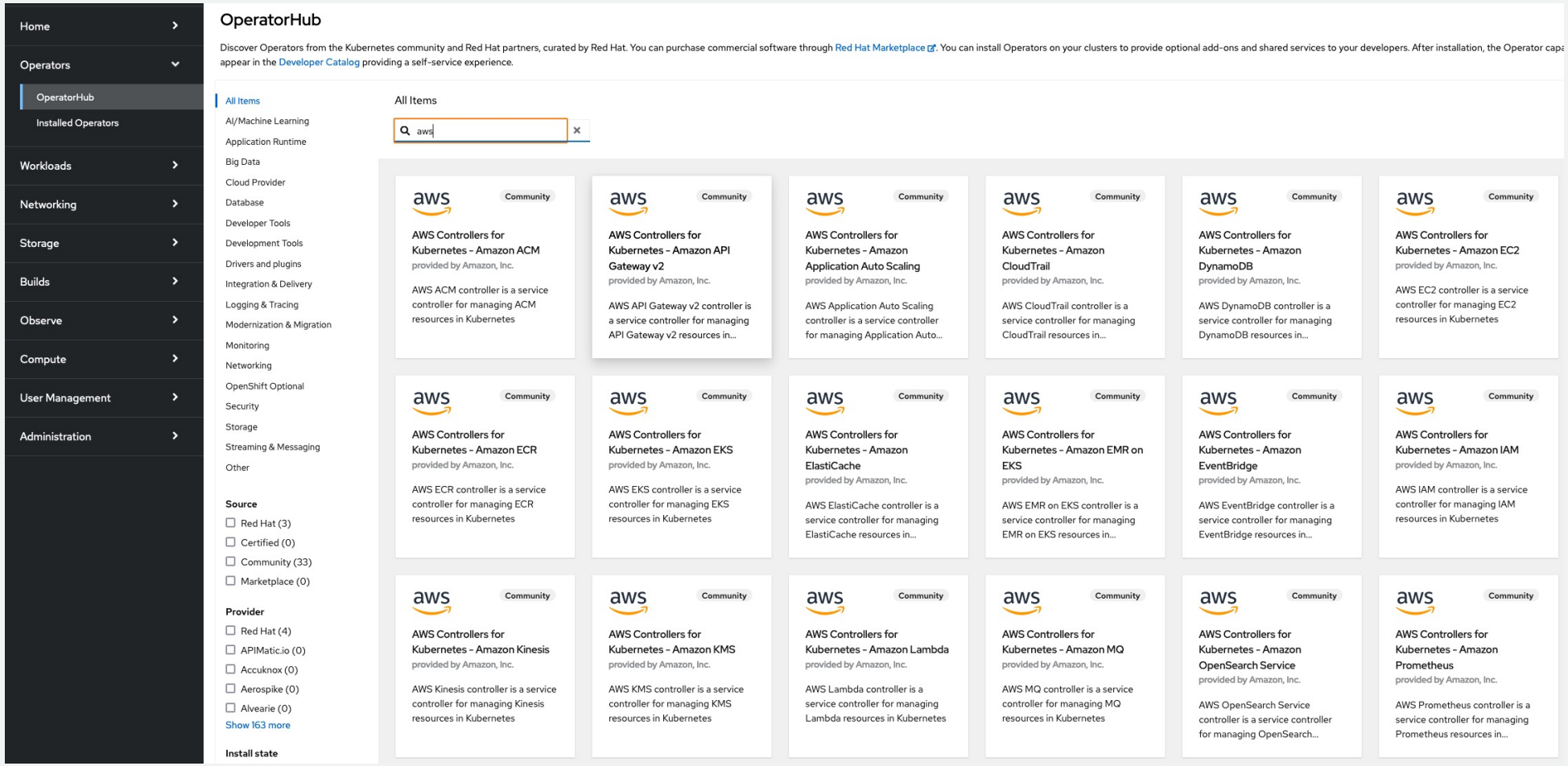
Amazon Elastic Container Registry (ECR)

Ongoing updates to integrations available via AWS Controllers for Kubernetes on Operator Hub

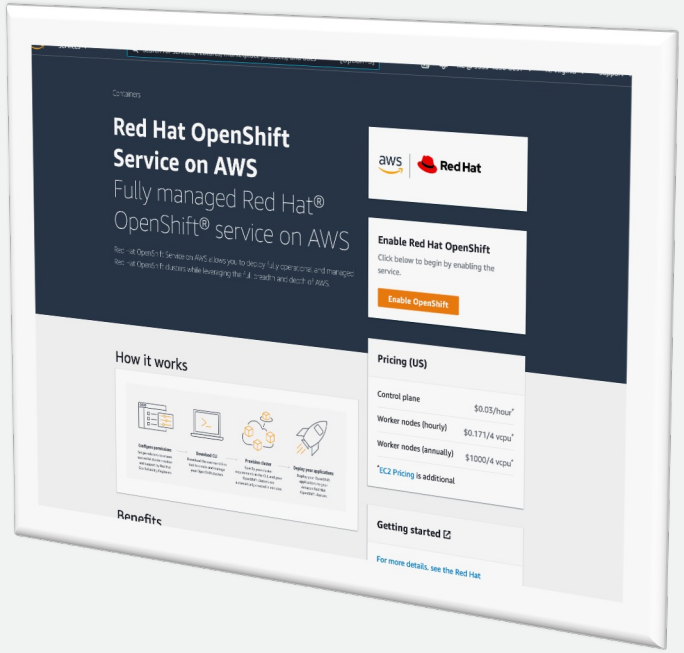
ACK Workflow



Available in OperatorHub



Red Hat OpenShift Service on AWS - Summary



- Focus on **innovation** to add value to your business
- Reduce **operational** overhead
- Increase **scaling** capabilities, increase **resource utilization**
- Helps to **accelerate** your cloud migration journey - no need to **re-architect** existing applications
- ROSA & AWS Service Integrations

Further information

- AWS ROSA product page: https://aws.amazon.com/rosa/
- Launch blog: https://aws.amazon.com/blogs/containers/whats-new-red-hat-openshift-service-on-aws/
- Workshop: https://catalog.workshops.aws/aws-openshift-workshop/
- Documentation: https://docs.openshift.com/rosa/welcome/index.html
- Public roadmap: https://github.com/openshift-cs/managed-openshift/projects/2
- Pricing: https://aws.amazon.com/rosa/pricing/

Thank you!

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