

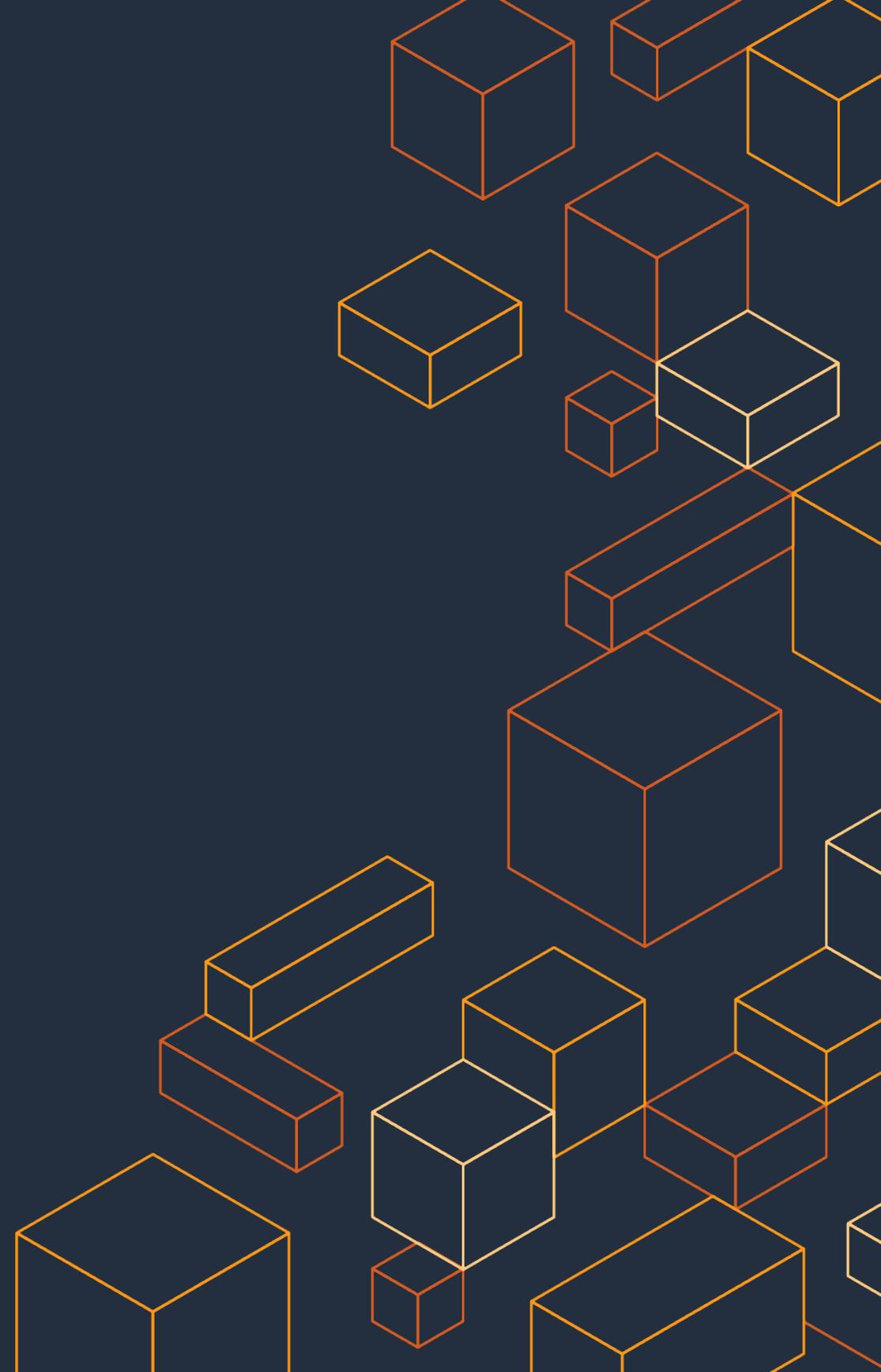


Introduction to ROSA

Red Hat OpenShift Service on AWS

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Sr. Partner Solutions Architect



AWS has the richest container services portfolio

Application Platform
Accelerate and standardize application Management

Build your Own Application Platform

-  AWS Proton
-  EKS Blueprints
-  AWS X-Ray
-  AWS App Runner
-  Cloud Watch
-  Amazon Managed Prometheus

Turnkey Application Platform

-  Red Hat OpenShift Service on AWS

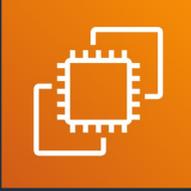
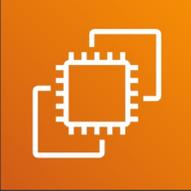
Containers Orchestration
Deployment, scheduling, and scaling, containerized applications

-  Amazon Elastic Container Service (Amazon ECS)
-  Amazon Elastic Kubernetes Service (Amazon EKS)

Containers Infrastructure
Registry, Networking, CI/CD

-  Amazon Elastic Container Registry (Amazon ECR)
-  AWS App Mesh
-  AWS Cloud Map
-  AWS CodePipeline

Compute

-  Elastic Compute Cloud (Amazon EC2)
-  Fargate
-  Elastic Compute Cloud (Amazon EC2)



Container Orchestration Services: EKS, ECS, 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.

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

What is Red Hat OpenShift? – Opinionated Kubernetes based Platform

Manage Workloads

Build Cloud-native apps

Developer Productivity

OpenShift
Container
Platform

Platform Services

Service Mesh | Serverless
Builds | CI/CD Pipelines
Full Stack logging
Chargeback

Application Services

Databases | Languages
Runtimes | Integration
Business automation
100+ ISV services

Developer Services

Developer CLI | VS Code
Extensions | IDE Plugins
CodeReady Workspaces
CodeReady Containers

OpenShift
Kubernetes
engine

Cluster Services

Automated Ops | Over-the-air updates | Monitoring | Registry | Networking | Router | Virtualization | OLM | Helm

Kubernetes

Red Hat Enterprise Linux & Red Hat Enterprise Linux CoreOS



Physical



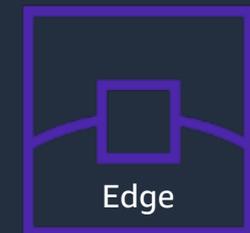
Virtual



Private Cloud

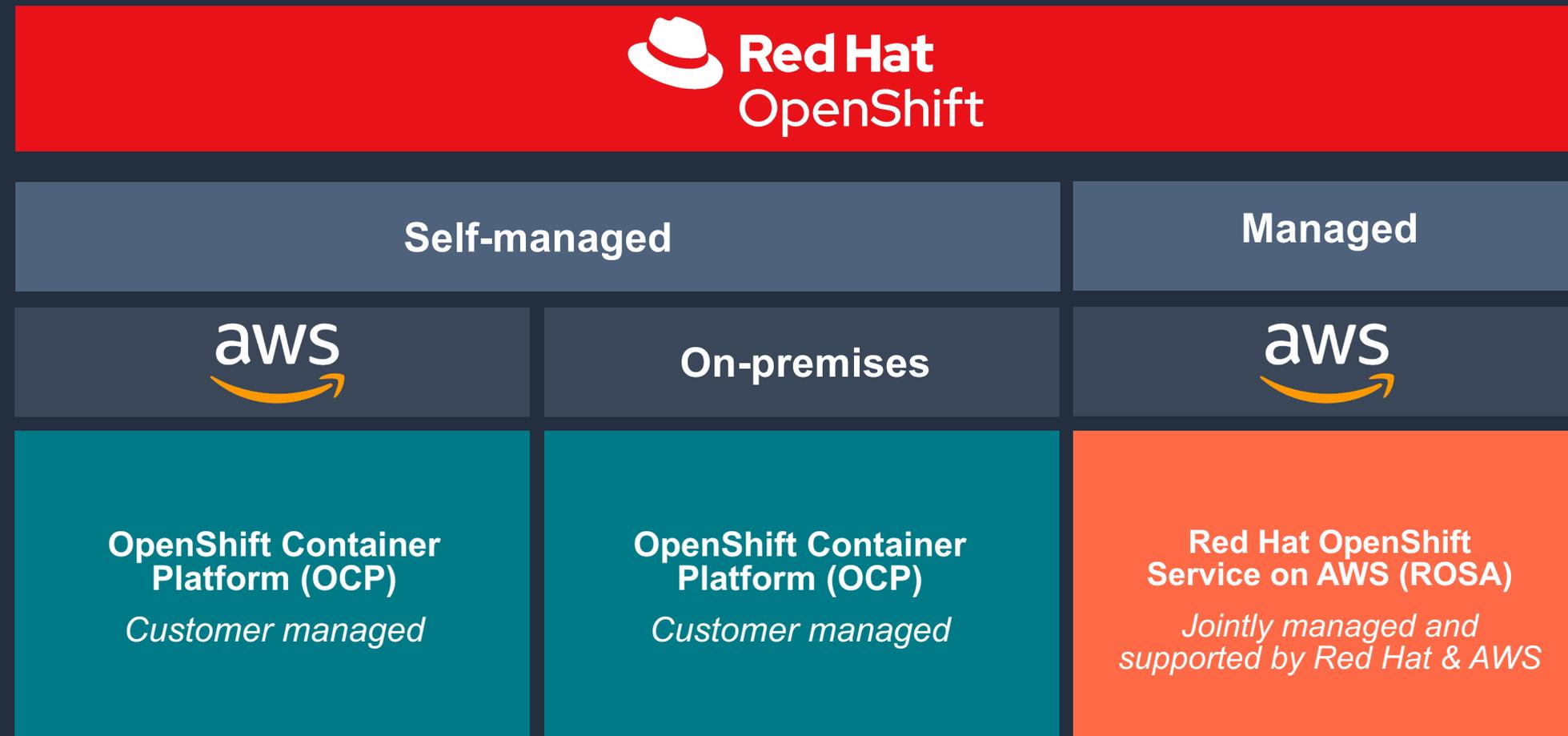


Managed Cloud



Edge

OpenShift & AWS offer the broadest set of hybrid cloud services



Benefits of ROSA – Turn-Key Application Platform



Developers

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

Collaborate across teams via shared projects.



Administrators

Standardized and streamlined operations across on-prem and cloud environments.

Built-in monitoring, logging, and networking

Choose platform version upgrades as required for the business.*



Business Leaders

Consolidated billing and cost management across the business.

Consumption based pricing for surge and R&D usage.

24x7 full-stack management and support

Financially backed 99.95% SLA

ROSA – Joint Offering from AWS & Red Hat

Who's responsible for what?

On-premises

OpenShift Container Platform (OCP)

Customer

Customer

Customer

 Red Hat

 Red Hat

Cloud

OpenShift Container Platform (OCP) on AWS

Customer

Customer

Customer

 Red Hat

 Red Hat

Red Hat OpenShift Service on AWS (ROSA)*

 Red Hat

 Red Hat

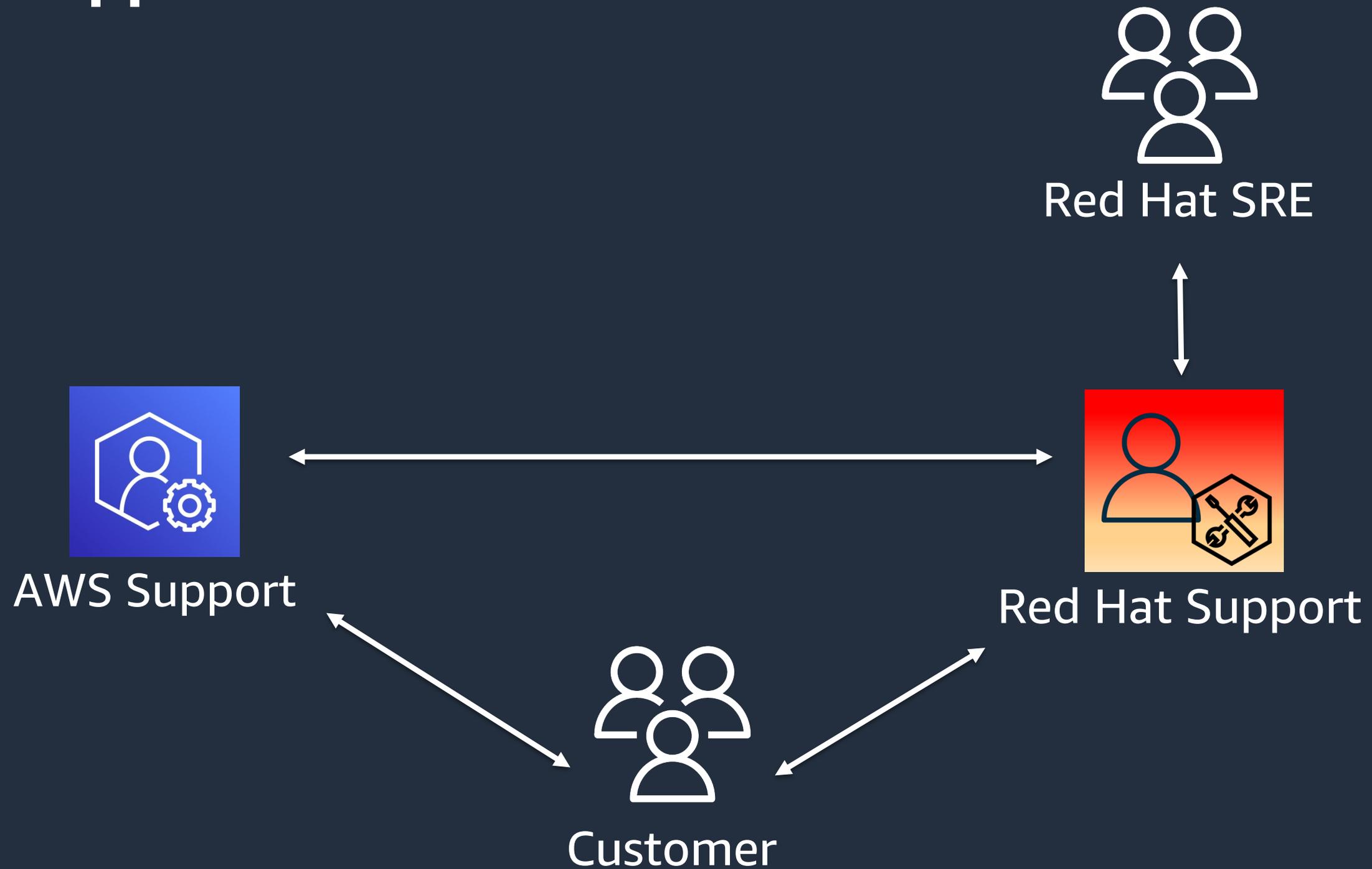
 Red Hat

 Red Hat  aws*

 aws

Fully Managed

ROSA Support Flow



ROSA – Consumption based Pricing

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

**ROSA
Service Fees**



**AWS
Infrastructure
Fees**



**Pay As you Go and
Private Offers**

- Accrue on demand per 4vCPU/hour for Worker Nodes
- Plus per cluster per hour

- Infra, Worker, and Control plane EC2 nodes and EBS volumes by region
- Data transfer costs for multi-AZ deployments

- 1 and 3 year subscriptions
- Reserved Instance Savings and EDP

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

Console page for ROSA

The screenshot shows the AWS console interface for Red Hat OpenShift Service on AWS. At the top, there is a search bar and navigation links for 'Services', 'ike @ 9535-4096-8697', 'N. Virginia', and 'Support'. The main heading is 'Red Hat OpenShift Service on AWS', followed by 'Fully managed Red Hat® OpenShift® service on AWS'. A sub-heading states: 'Red Hat OpenShift Service on AWS allows you to deploy fully operational and managed Red Hat OpenShift clusters while leveraging the full breadth and depth of AWS.' Below this, there is a 'How it works' section with four steps: 'Configure permissions', 'Download CLI', 'Provision cluster', and 'Deploy your applications'. The 'Pricing (US)' section lists: 'Control plane' at \$0.03/hour*, 'Worker nodes (hourly)' at \$0.171/4 vcpu*, and 'Worker nodes (annually)' at \$1000/4 vcpu*. A note indicates '*EC2 Pricing is additional'. The 'Getting started' section includes a link to 'For more details, see the Red Hat OpenShift Service on AWS Product Page'.

Containers

Red Hat OpenShift Service on AWS

Fully managed Red Hat® OpenShift® service on AWS

Red Hat OpenShift Service on AWS allows you to deploy fully operational and managed Red Hat OpenShift clusters while leveraging the full breadth and depth of AWS.

aws | Red Hat

Enable Red Hat OpenShift

Click below to begin by enabling the service.

[Enable OpenShift](#)

How it works

- Configure permissions**
Set permissions to ensure successful cluster creation and support by Red Hat Site Reliability Engineers
- Download CLI**
Download the command line tool to create and manage your OpenShift clusters
- Provision cluster**
Specify your cluster requirements in the CLI, and your OpenShift clusters are automatically created in minutes
- Deploy your applications**
Deploy your OpenShift applications to your Amazon Red Hat OpenShift clusters

Benefits

Pricing (US)

Control plane	\$0.03/hour*
Worker nodes (hourly)	\$0.171/4 vcpu*
Worker nodes (annually)	\$1000/4 vcpu*

*EC2 Pricing is additional

Getting started

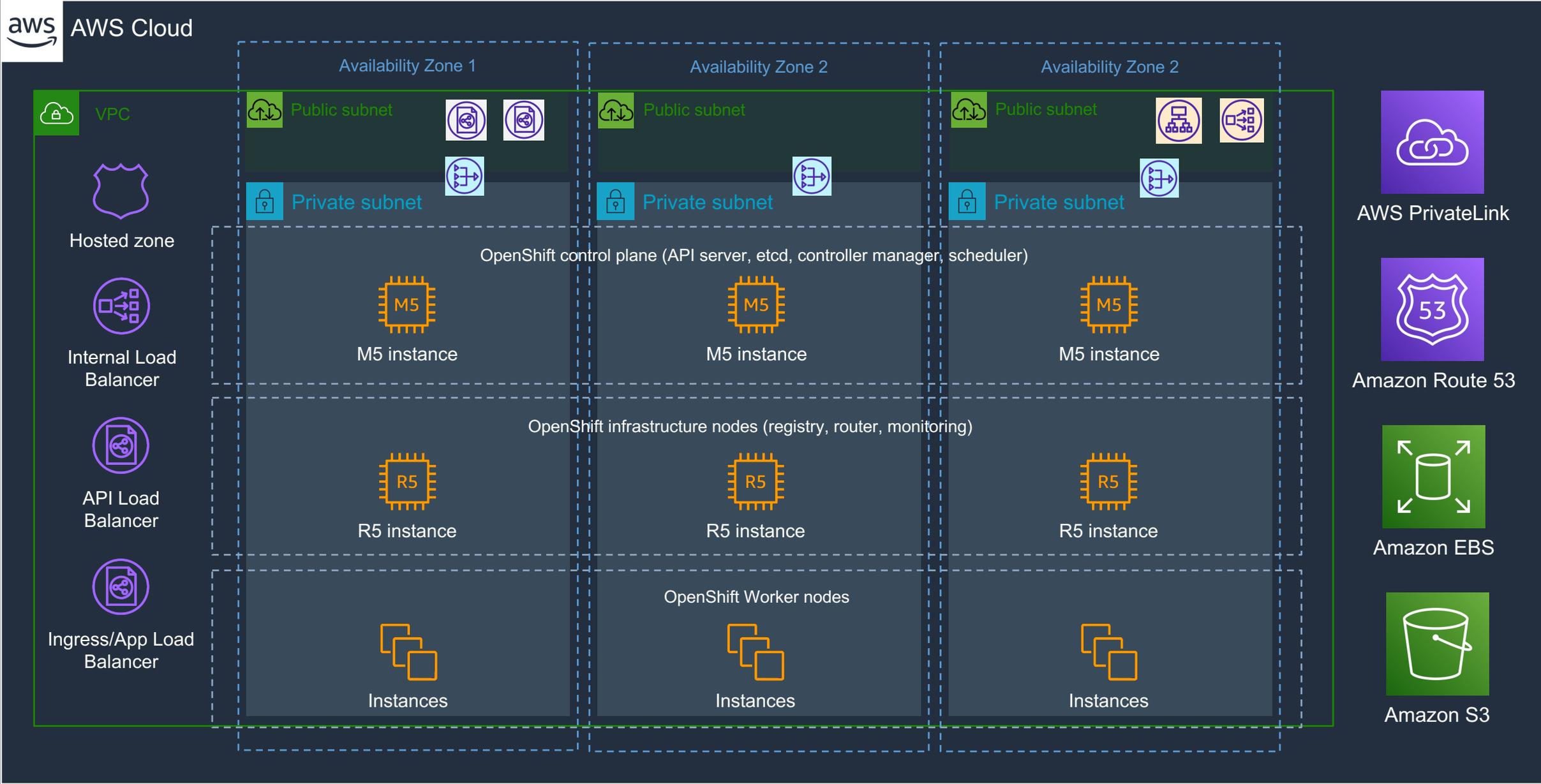
[For more details, see the Red Hat OpenShift Service on AWS Product Page](#)

Architecture and Network Overview

ROSA Public Cluster Architecture



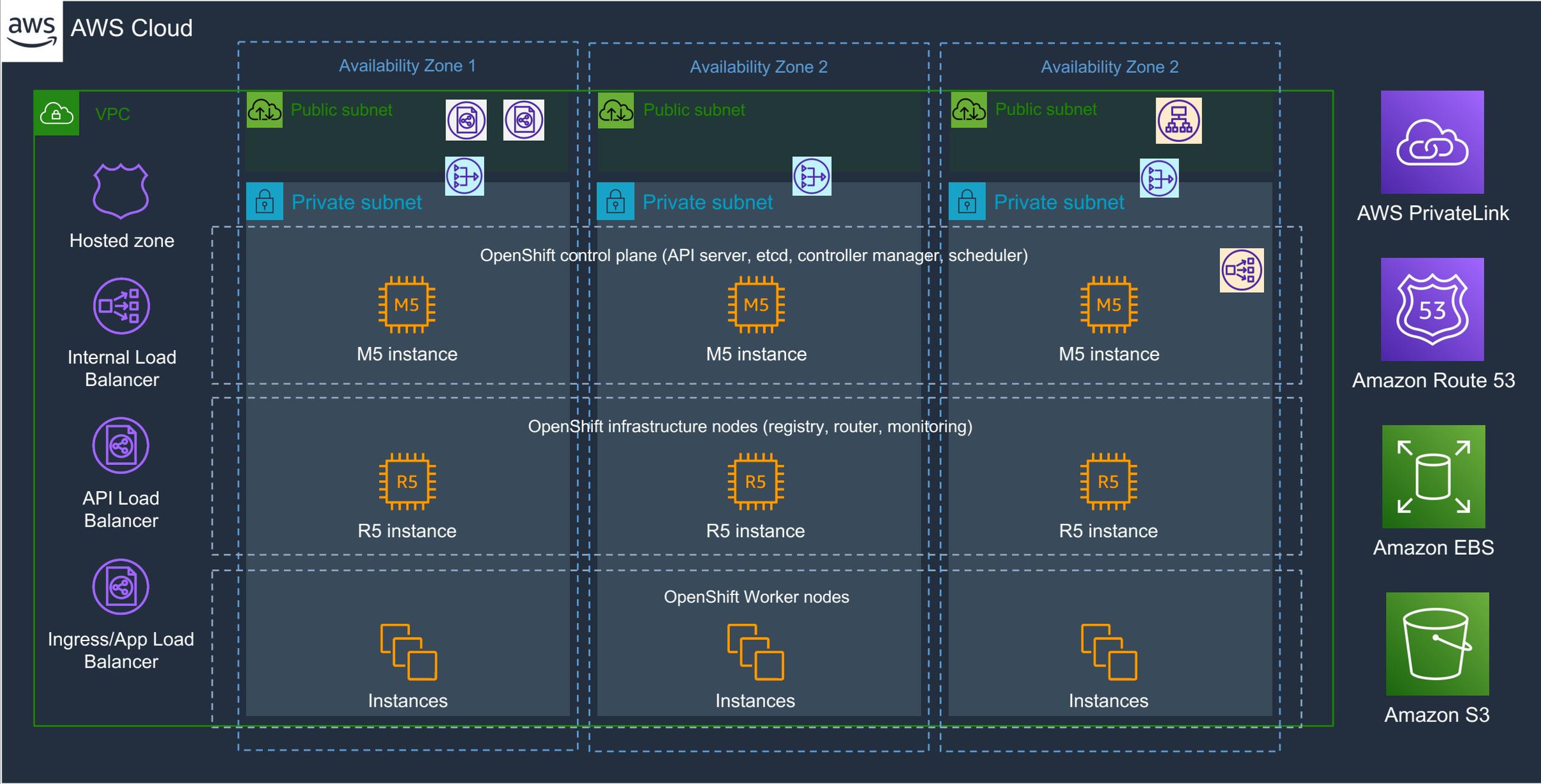
ROSA Cluster



ROSA Private Cluster Architecture



ROSA Cluster



ROSA PrivateLink Cluster



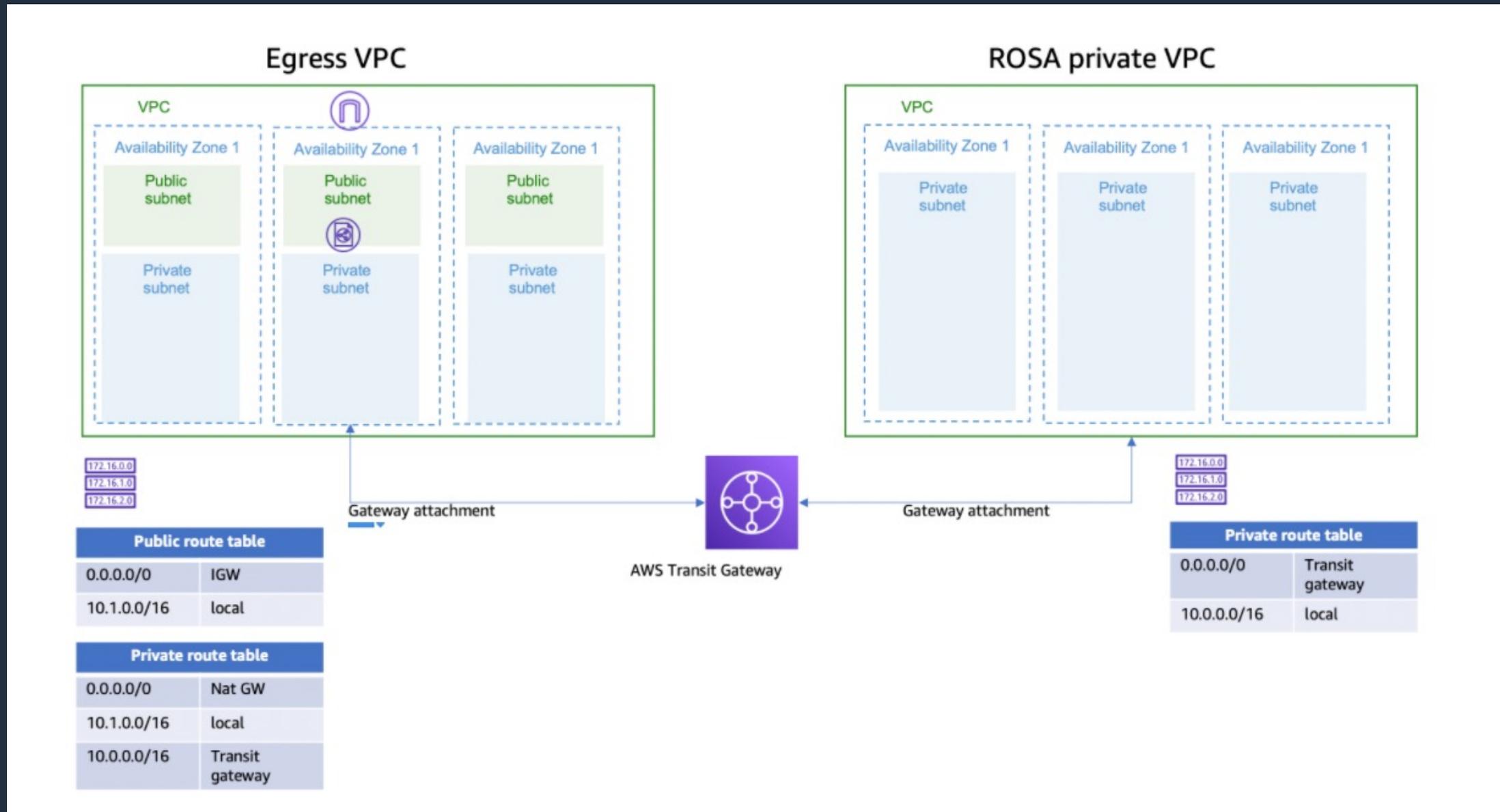
ROSA Cluster



Most Common Network Arch Pattern



ROSA Cluster



Accelerate Migration to Cloud with Integrated AWS Services



ROSA

Application Development and Monitoring



AWS
DynamoDB



AWS
RDS



Amazon
Aurora



Amazon
API Gateway



AWS
CodeCommit



AWS
EventBridge



Cloud Watch

Ongoing updates to integrations available via AWS Controllers for Kubernetes on [Operator Hub](#)

Infrastructure and Operations



Amazon EC2



Amazon EBS



Amazon EFS



Amazon FSx



Amazon ELB



Amazon VPC



Route 53



AWS
Private Link



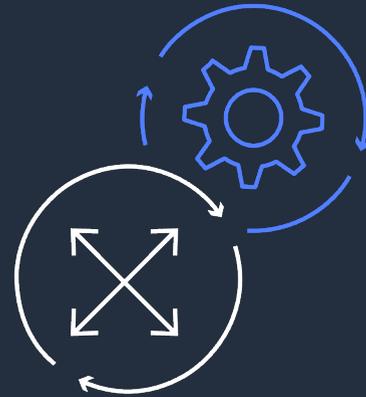
Amazon Elastic Container Registry (ECR)

AWS Controllers for Kubernetes (ACK)



Harness AWS

Create and use AWS resources directly within your cluster; improve reliability and uptime at any scale



Cloud-native control

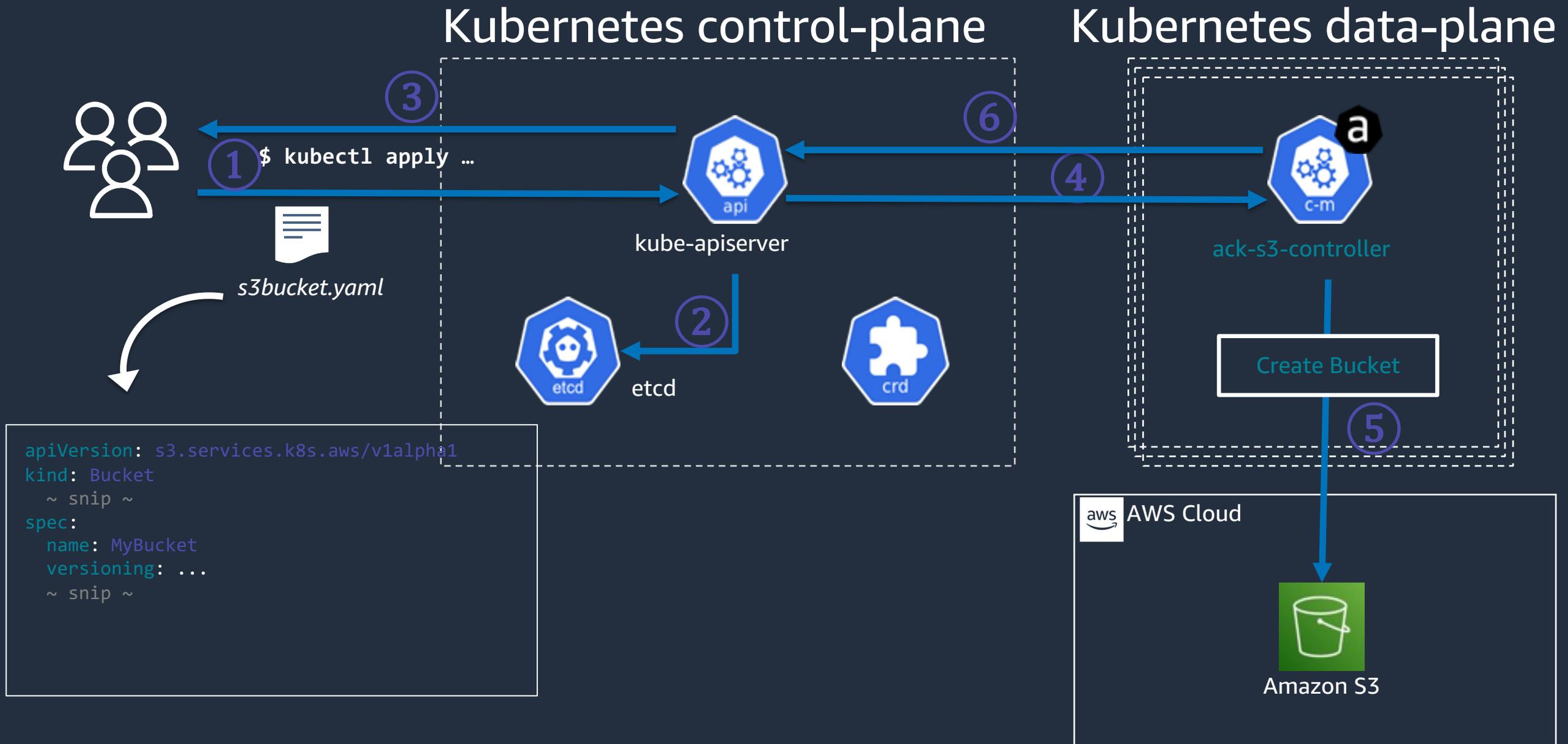
With Kubernetes custom resources and controllers, you can define the AWS resources your applications need directly within the cluster



Always up to date

ACK generates automatically using the AWS SDKs; this ensures controllers are up to date with the latest features and functionality

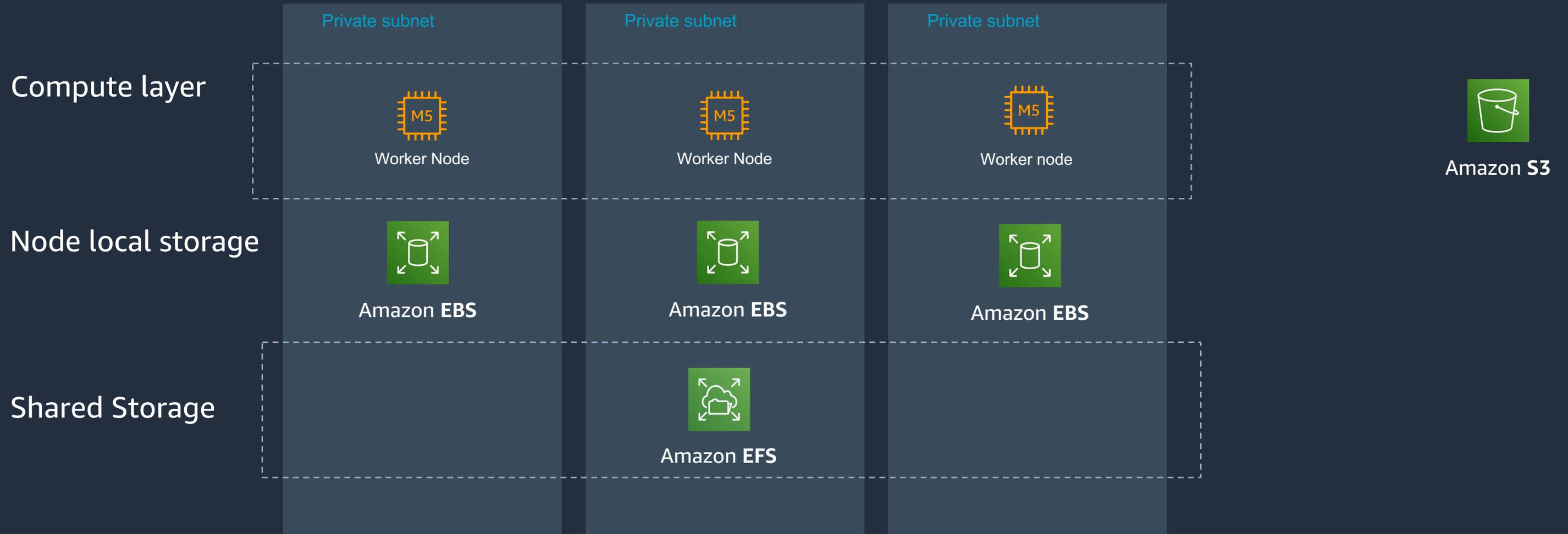
ACK Deployment Workflow



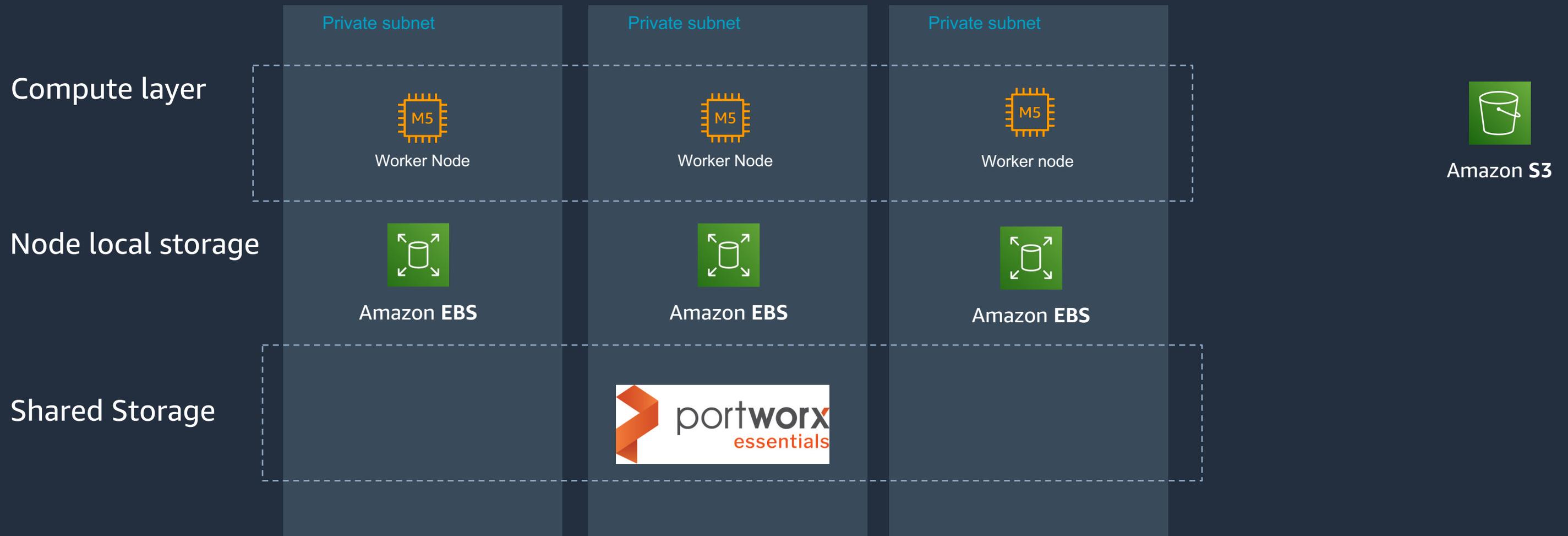
AWS Storage Options



AWS Native Storage Options



3rd Party Storage Options



Note: Red Hat OCS / ODF is not supported on ROSA

Persistent Storage for Workloads



Amazon EBS

Provision option:

OpenShift Tree
EBS CSI

Workload binding

PV



Amazon EFS

EFS CSI*

PV



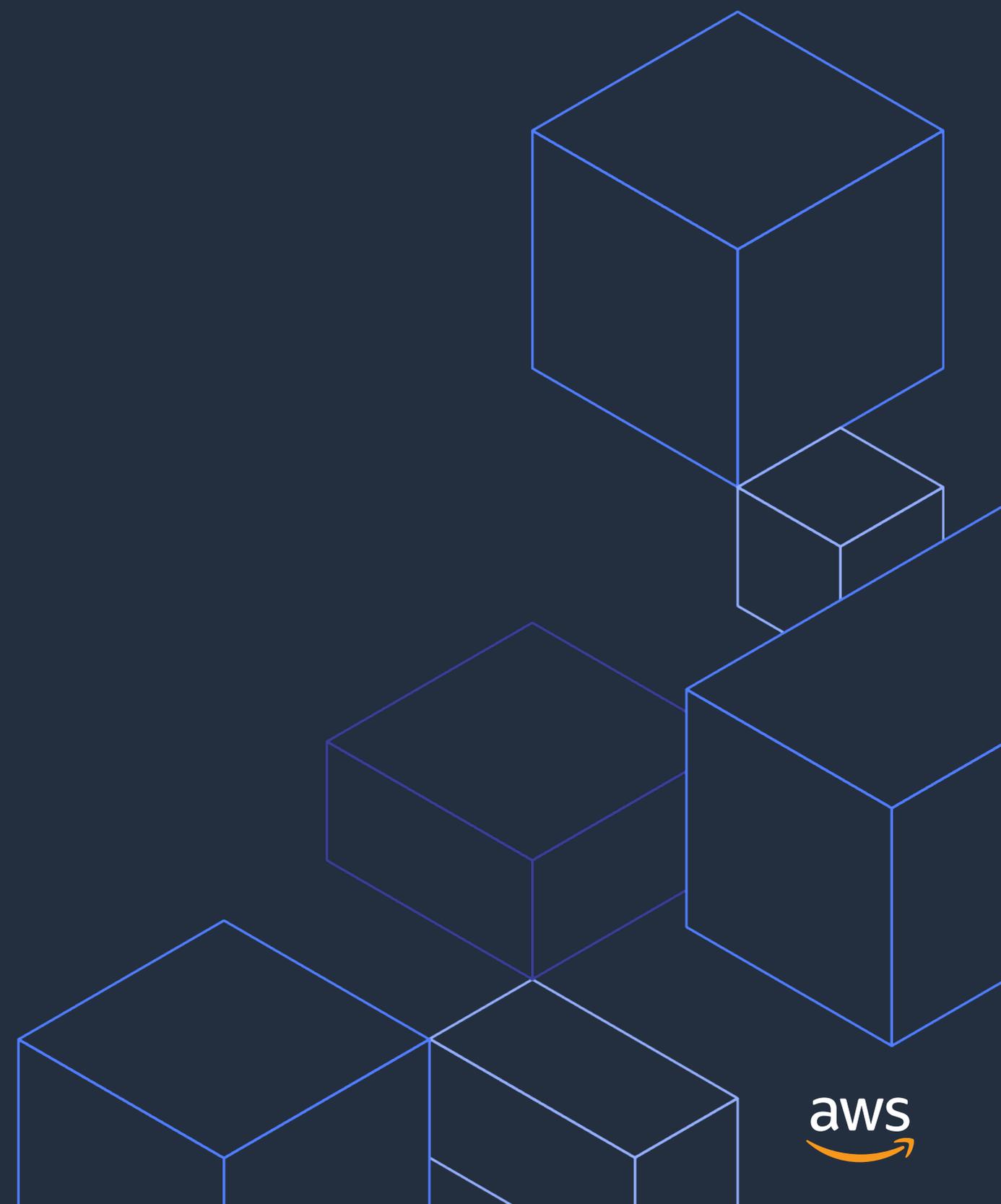
Amazon S3

AWS Controllers for Kubernetes

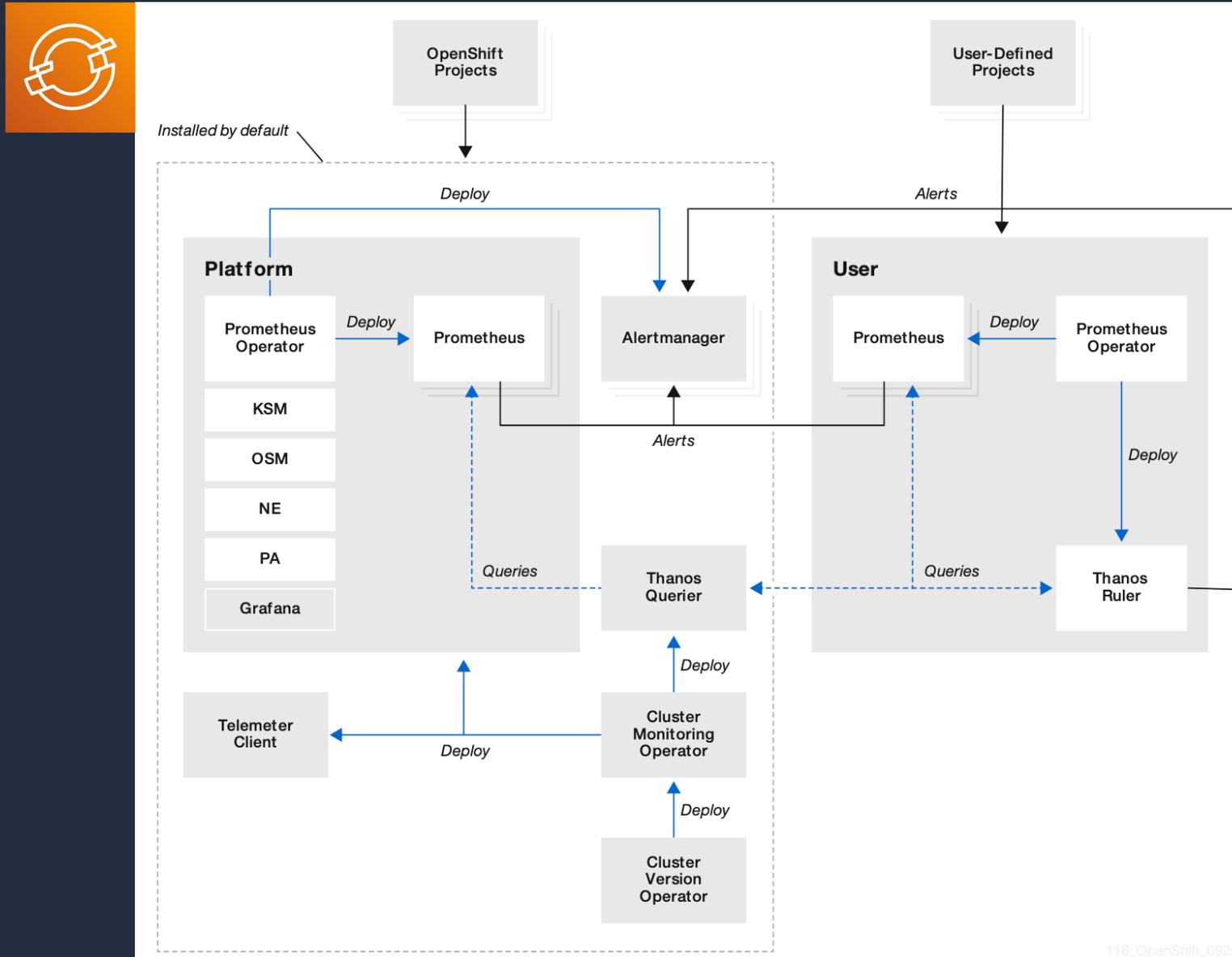
Direct connection

Secrets, services, config mappings

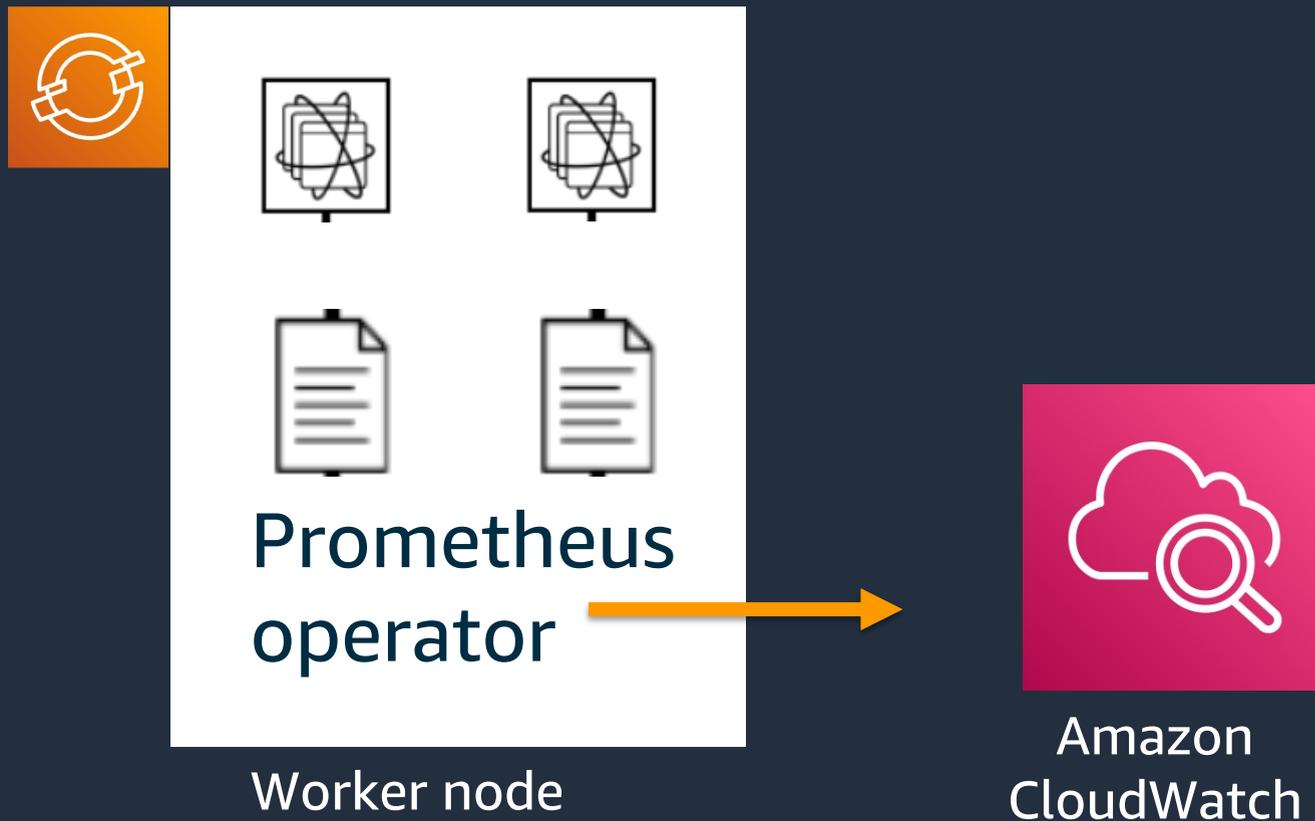
Monitoring and Logging



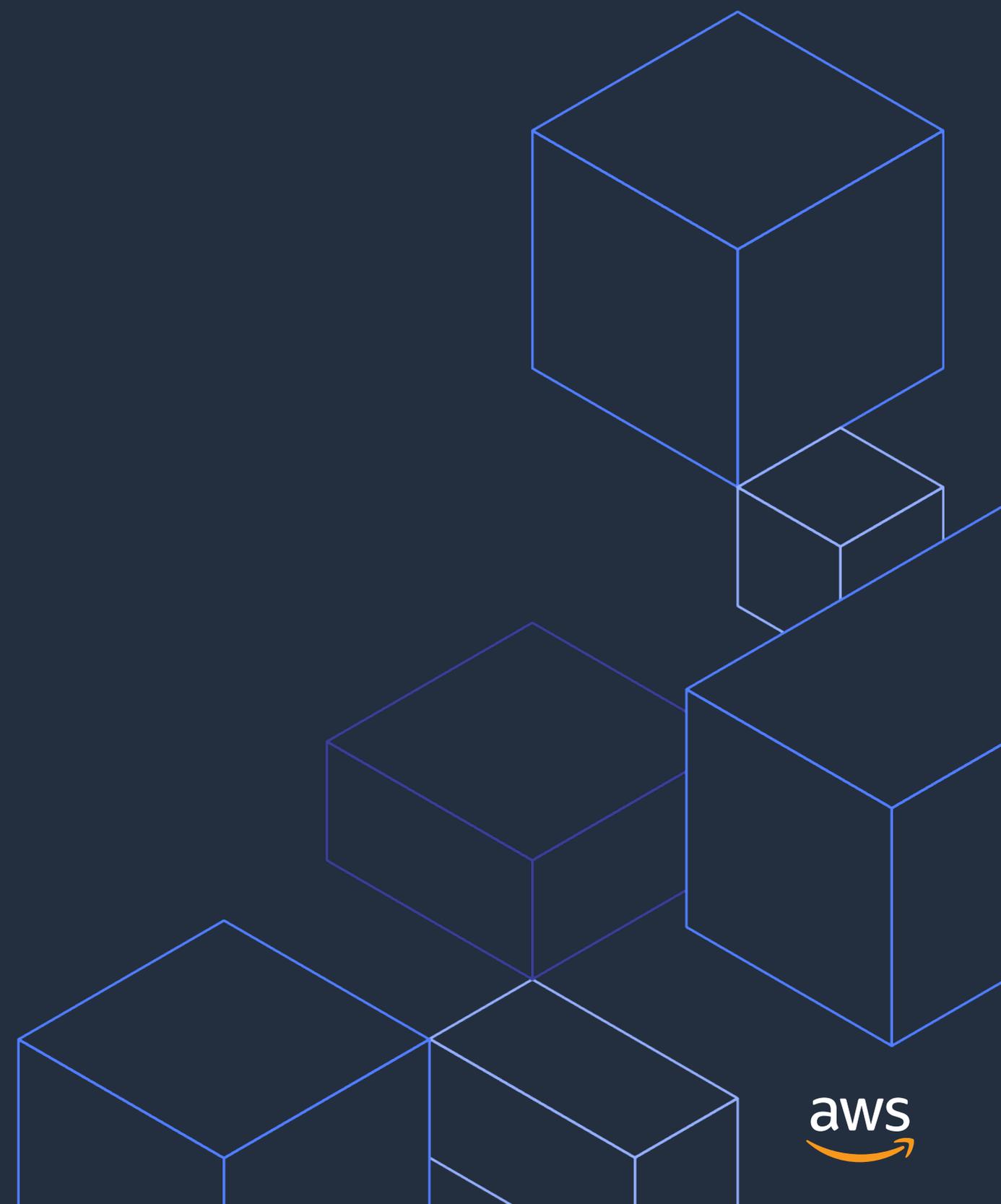
Built in Prometheus and Grafana (Default in ROSA, OCP 4.x)



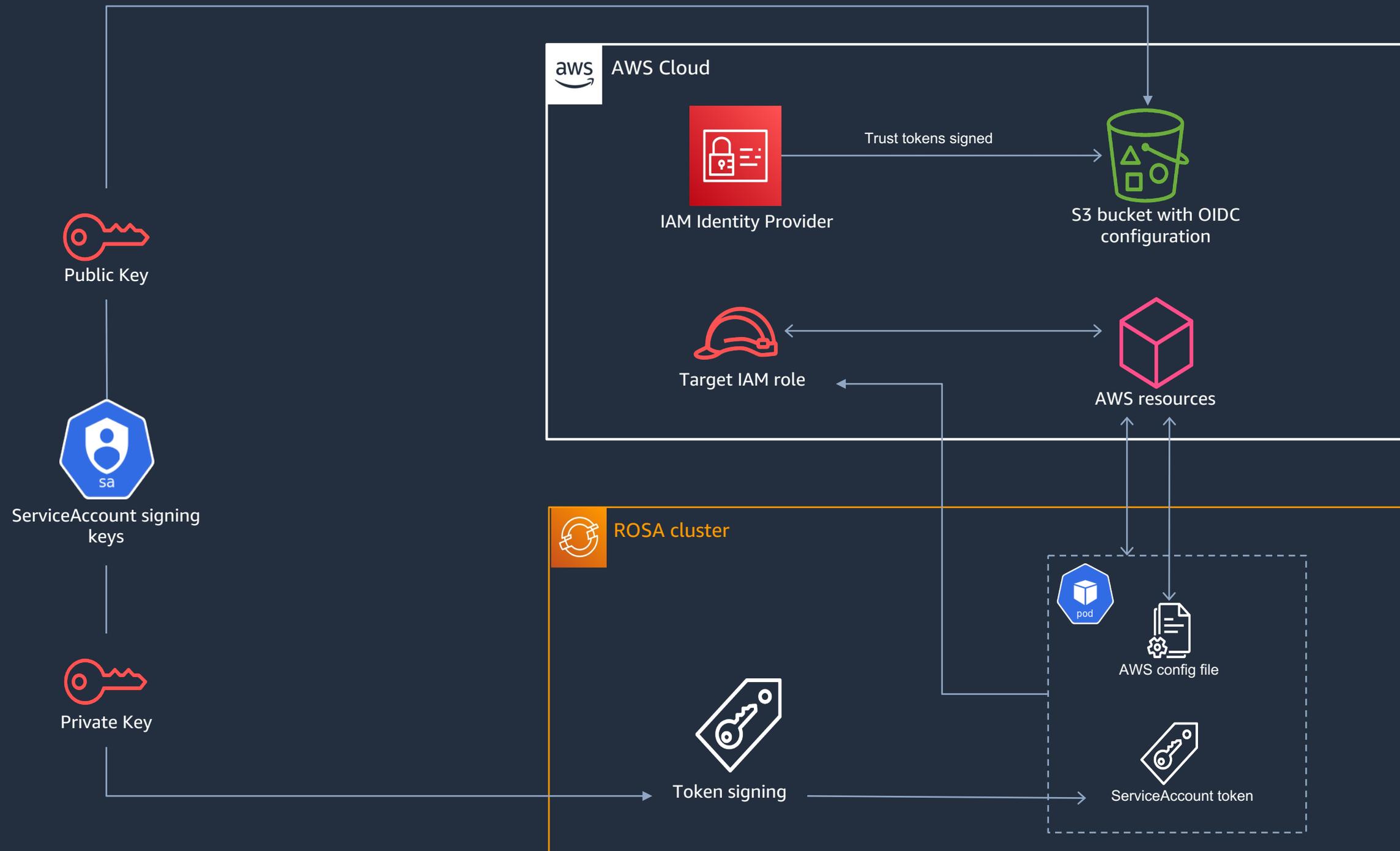
Log Forwarding to AWS Cloudwatch Logs (ROSA)



Security Considerations



Security Token Service (STS) with OpenShift



Policy-Based Governance and Risk Assessment with RHACM

The screenshot displays the AWS Governance console interface. At the top, there's a 'Governance' header with a 'Refresh every 10s' button and a 'Create policy' button. Below this, several policy compliance cards are shown for standards like NIST SP 800-53, NIST-CSF, HIPAA, NIST 800-53, and PCI. Each card shows the number of cluster and policy violations. For example, NIST SP 800-53 shows 1 cluster violation and 2 policy violations. Below the cards, there's a search bar and a table of policies. The table has columns for Policy name, Namespace, Remediation, Cluster violations, Controls, Automation, and Created. The policies listed include policy-grc-tower, policy-gatekeeper-operator, policy-comp-operator, policy-certificatepolicy, and policy-managed-argocd.

Policy name	Namespace	Remediation	Cluster violations	Controls	Automation	Created
> policy-grc-tower	policies	inform	0/1	PR.IP-1 Baseline Configuration	policy-gr...tomation	a day ago
> policy-gatekeeper-operator	policies	enforce	0/1	CM-2 Baseline Configuration	Configure	a day ago
> policy-comp-operator	policies	inform	1/1	CA-2 Security Assessments, CA-7 Continuous Monitoring	Configure	a day ago
> policy-certificatepolicy	policies	inform	0/6	PR.DS-2 Data-in-transit	Configure	a day ago
> policy-managed-argocd	managed-argocd	enforce	-	CM-2 Baseline Configuration	Configure	4 days ago

- Centrally set & enforce policies for security, applications, & infrastructure
- Quickly visualize detailed auditing on configuration of apps and clusters
- Perform remediation actions by leveraging **Ansible Automation Platform** integration.
- Built-in **compliance policies** and audit checks, including **GitOps** Integration.
- **Immediate** visibility into your compliance posture based on **your** defined standards

AWS Consulting Partners for ROSA



Conclusion



Most customers choose to run OpenShift on AWS because they want to keep existing tools and practices while leveraging investments in the vast AWS services portfolio

ROSA is the easiest and most convenient way to pay for and deploy fully supported and managed OpenShift clusters on AWS

Find out more!

- **AWS ROSA product page:**
aws.amazon.com/rosa/
- **Launch blog:**
aws.amazon.com/blogs/containers/whats-new-red-hat-openshift-service-on-aws/
- **Workshop:**
<https://openshift4-on-aws.awsworkshop.io/>
- **ROSA Docs:**
<https://docs.openshift.com/rosa/welcome/index.html>
- **Pricing:**
aws.amazon.com/rosa/pricing/



Thank you!

