企业转型分论坛

Introduction to Amazon Elastic Container Service for Kubernetes (Amazon EKS)

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51%

of Kubernetes runs on AWS today

— Cloud Native Computing Foundation

Kubernetes on AWS

3x Kubernetes masters for HA

Kubernetes Controller

API server	Controller manager	Cloud controller
Scheduler	KubeDNS	Add-ons

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“Run Kubernetes for me.”

"Give us an upstream experience."

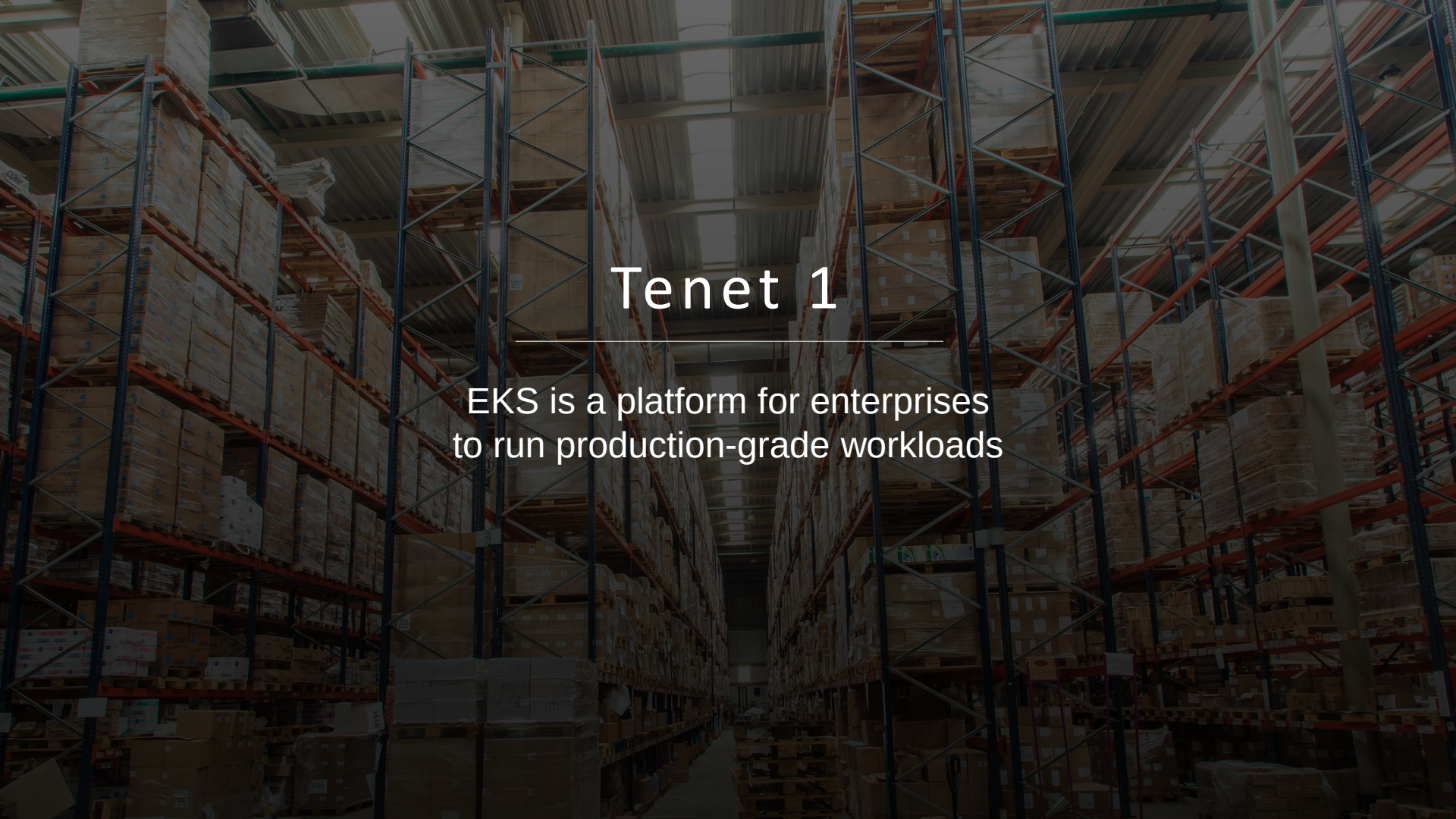
"Please don't fork."

"Make sure it's compatible"

Amazon EKS

AMAZON ELASTIC CONTAINER SERVICE FOR KUBERNETES

(Amazon EKS)



Tenet 1

EKS is a platform for enterprises
to run production-grade workloads


Tenet 2
EKS provides a native and
upstream Kubernetes experience

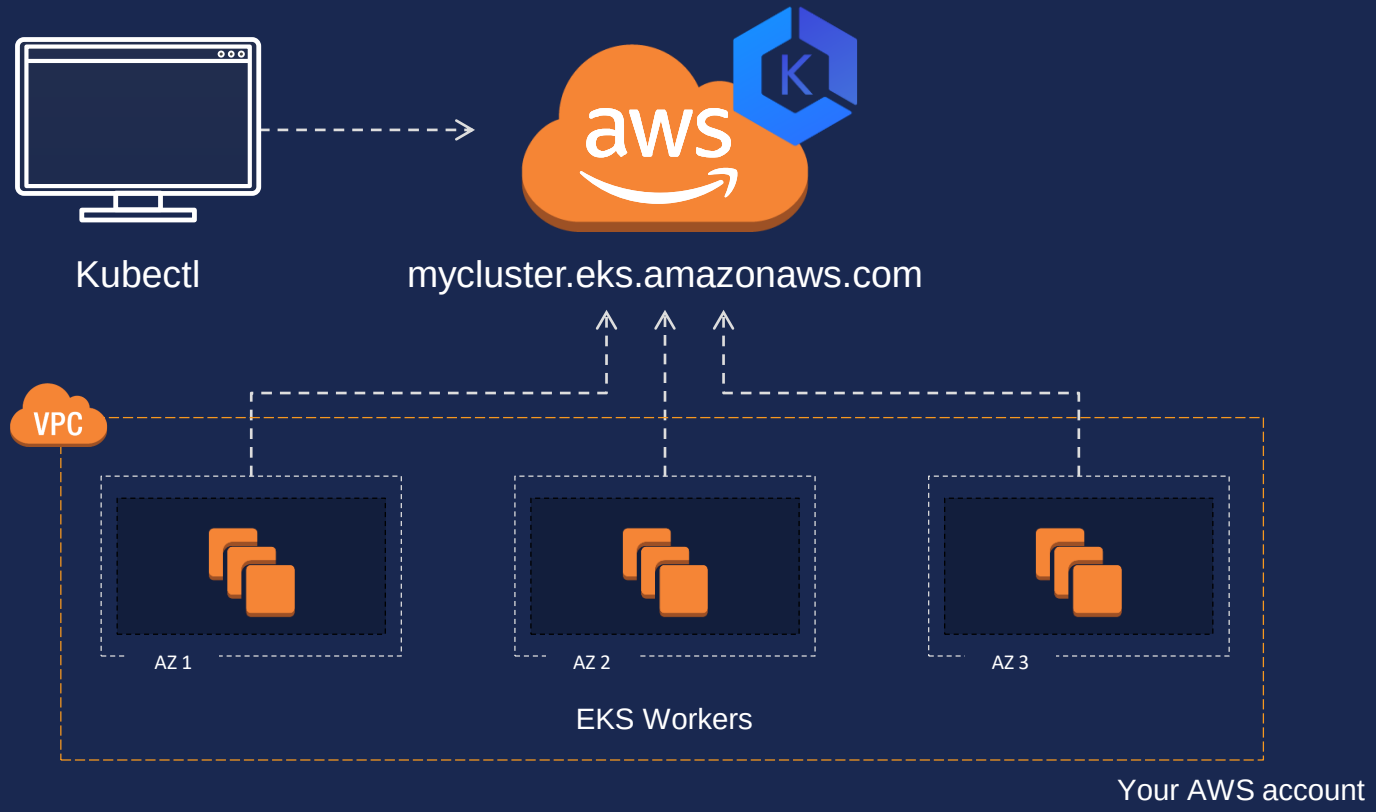
Tenet 3

If EKS customers want to use additional AWS services, the integrations are seamless and eliminate undifferentiated heavy lifting

Tenet 4

EKS team actively contributes
to the Kubernetes project

Amazon EKS



How do I provision EKS Worker Nodes?

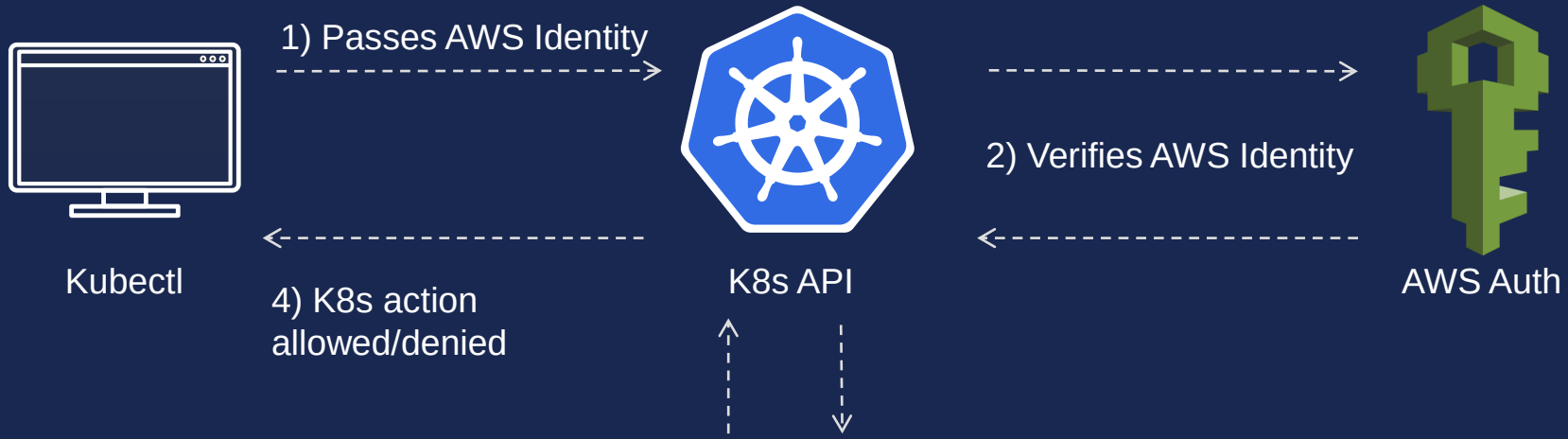
https://github.com/awslabs/amazon-eks-ami

AWS IAM Authenticator

https://github.com/kubernetes-sigs/aws-iam-authenticator

An open source approach to integrating
AWS IAM authentication with Kubernetes

IAM Authentication + Kubectl



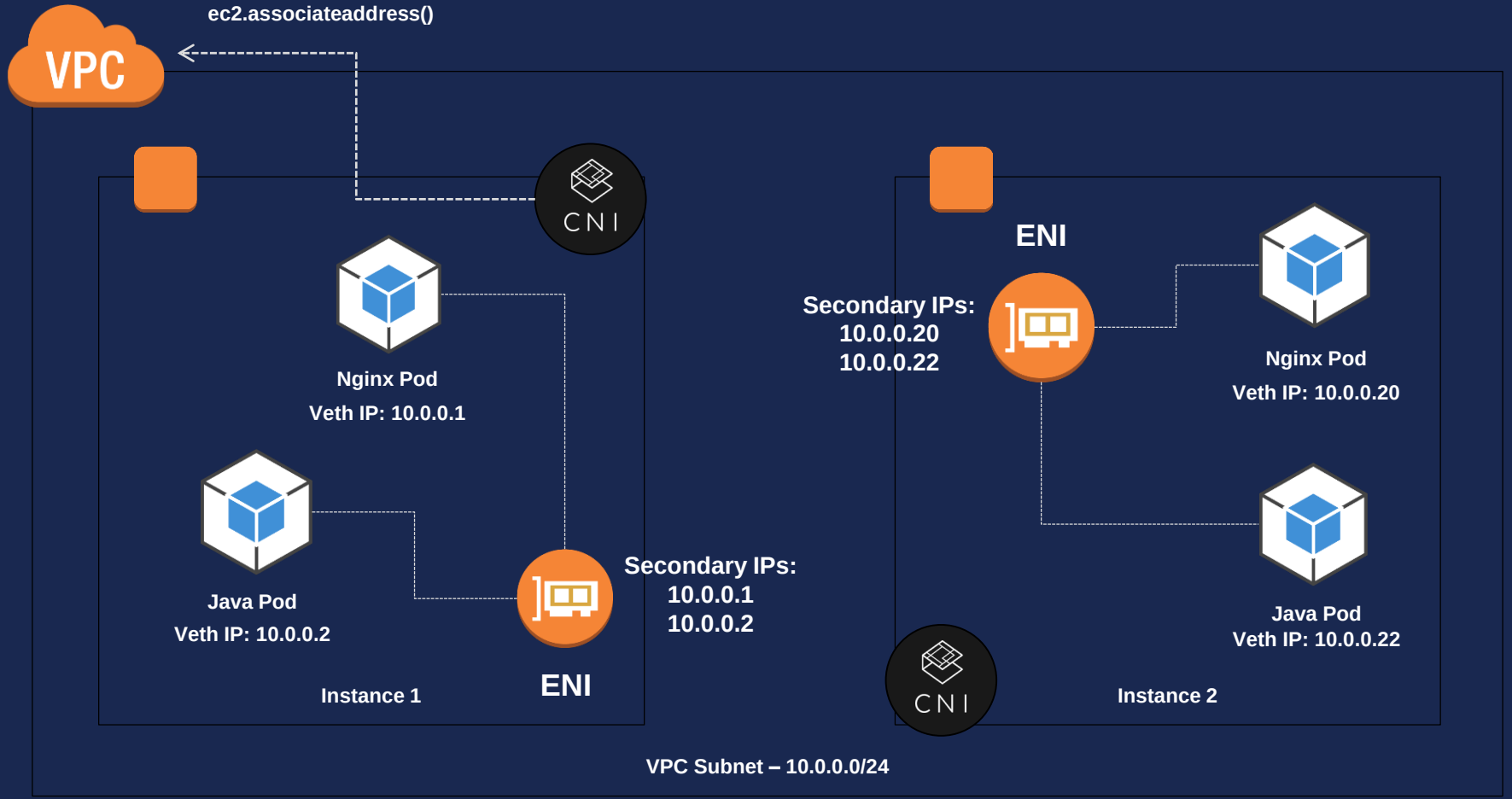
Native VPC networking with CNI plugin

Pods have the same VPC address inside the pod as on the VPC

Simple, secure networking

Open source and on Github

https://github.com/aws/amazon-vpc-cni-k8s



TIGERA

PROJECT CALICO

Kubernetes Network Policies enforce network security rules

Calico is the leading implementation of the network policy API

Open source, active development (>100 contributors)

Commercial support available from Tigera

TIGERA

PROJECT CALICO

STAGE SEPARATION

Isolate dev, test, and prod

“TENANT” SEPARATION

E.g., typically use namespaces for different teams within a company—but without network policy, they are not network isolated

FINE-GRAINED FIREWALLS

Reduce attack surface within microservice-based applications

COMPLIANCE

E.g., PCI, HIPAA

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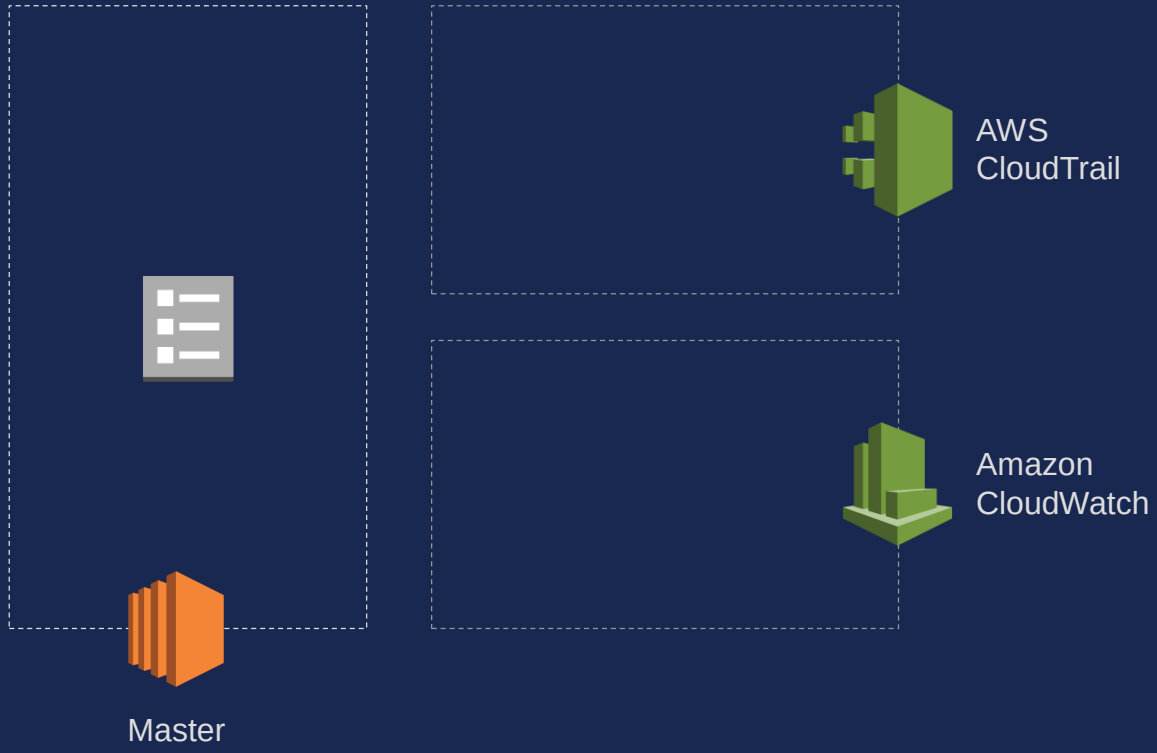
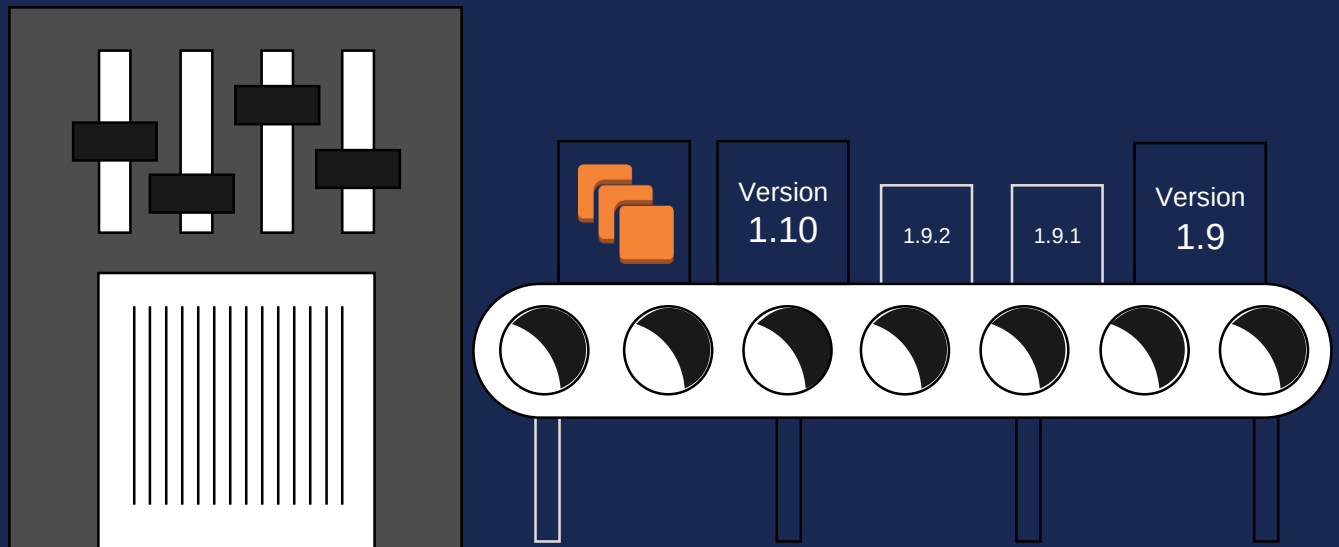
Master access and visibility



Kubernetes Upgrades

Upgrade Strategy: “On-Demand Updates”

Kubernetes Upgrades



Kubernetes Autoscaling with Amazon EKS

Auto Scaling - Application

- Horizontal Pod Autoscaler – scales pods in response to K8s generated metrics (CPU)

- Has support for custom metrics

Auto Scaling – Cluster

- Two options: Native Auto Scaling, K8s Cluster Auto Scaler
- Cluster Autoscaler is reactive
- AWS Auto Scaling Groups work as usual

Will $(thing) work on Amazon EKS?

Amazon EKS is Kubernetes Certified

Amazon EKS and Open Source

- Packer scripts: https://github.com/awslabs/amazon-eks-ami
- CNI plugin: https://github.com/aws/amazon-vpc-cni-k8s
- AWS IAM authenticator: https://github.com/kubernetes-sigs/aws-iam-authenticator
- eksctl: Create EKS cluster with one CLI
- SIG AWS
    - ALB Ingress controller: https://github.com/kubernetes-sigs/aws-alb-ingress-controller
    - AWS Encryption Provider: https://github.com/kubernetes-sigs/aws-encryption-provider

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Customers adopting Amazon EKS

Customer adopting EKS

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Thank you!

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谢谢

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