

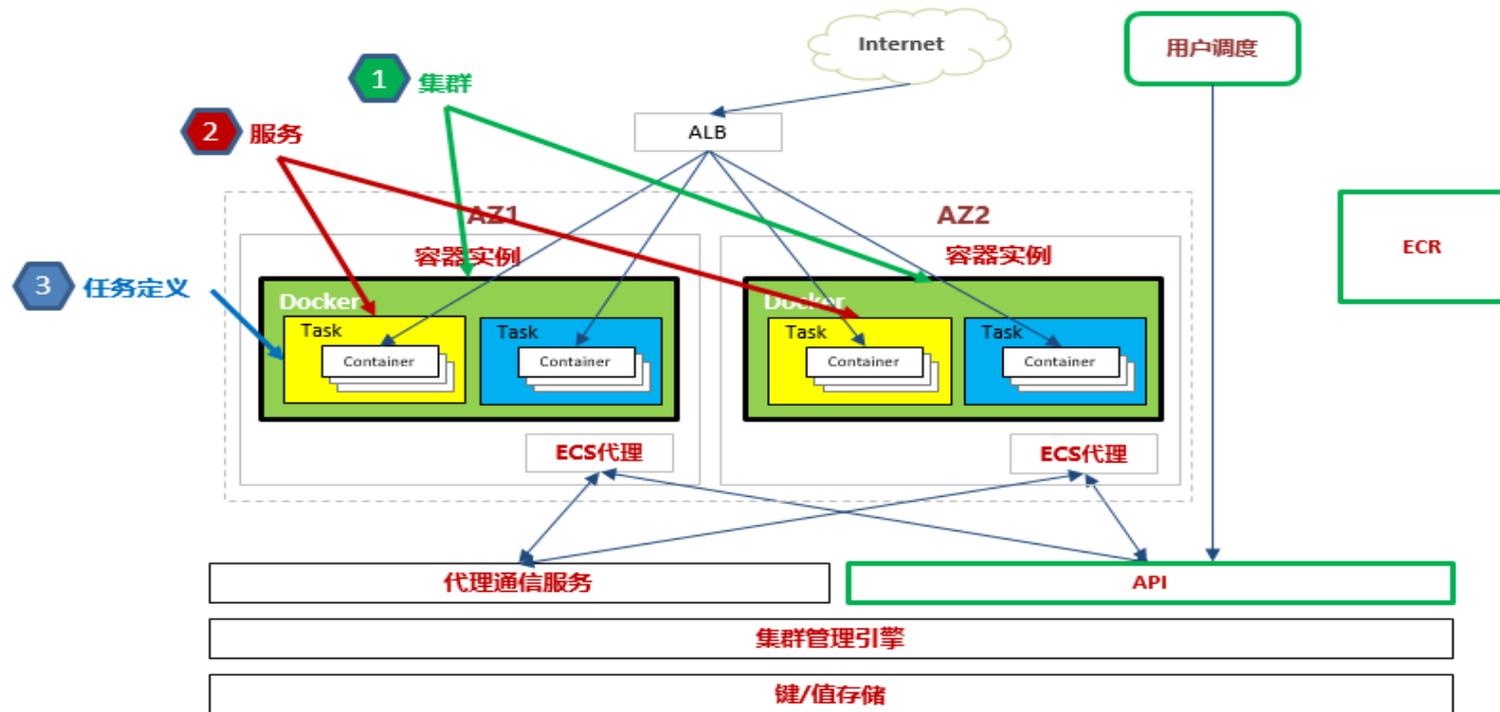
AWS re:Invent

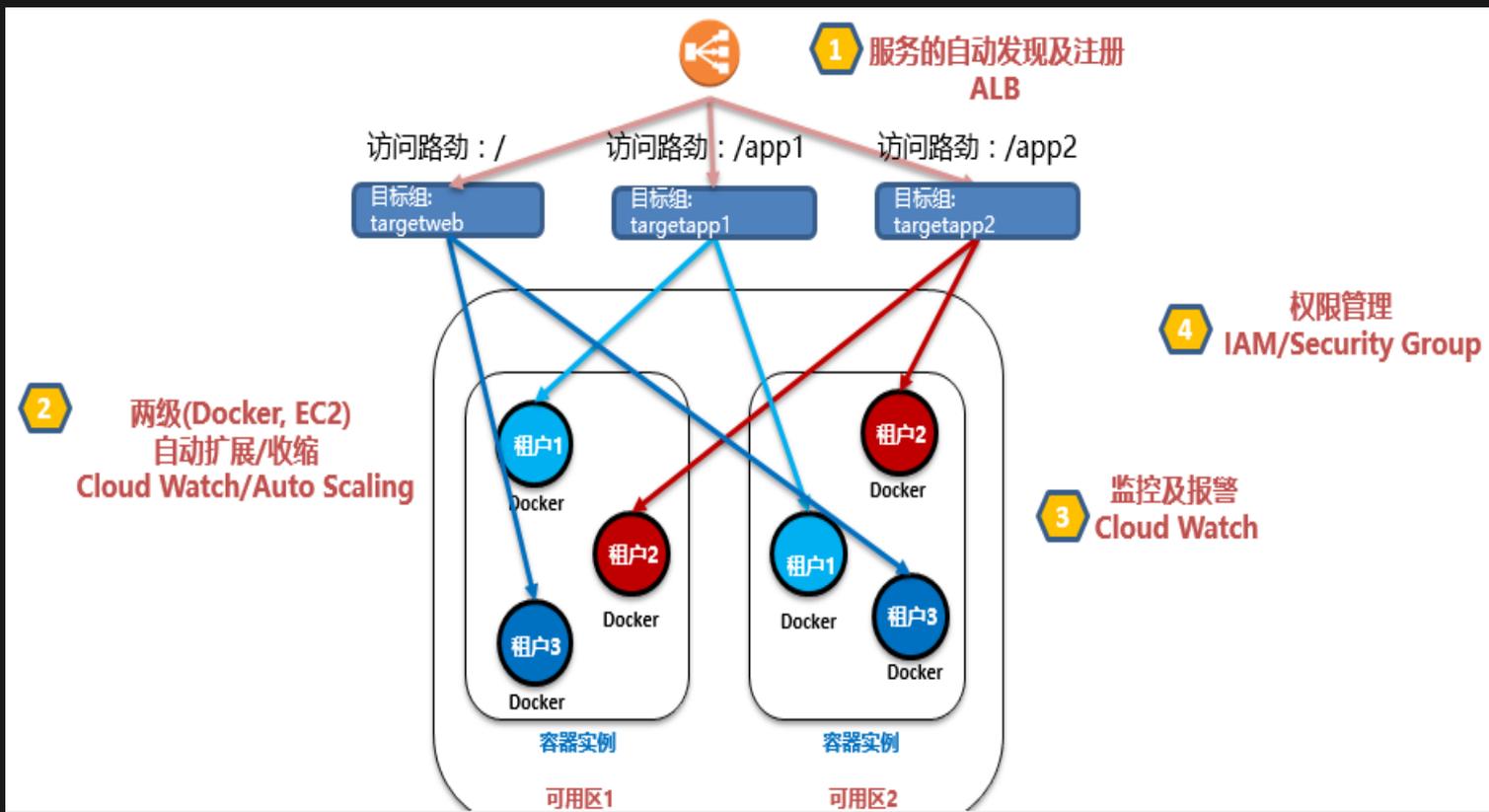
Elastic Container Service
for Kubernetes: EKS

AWS Container World

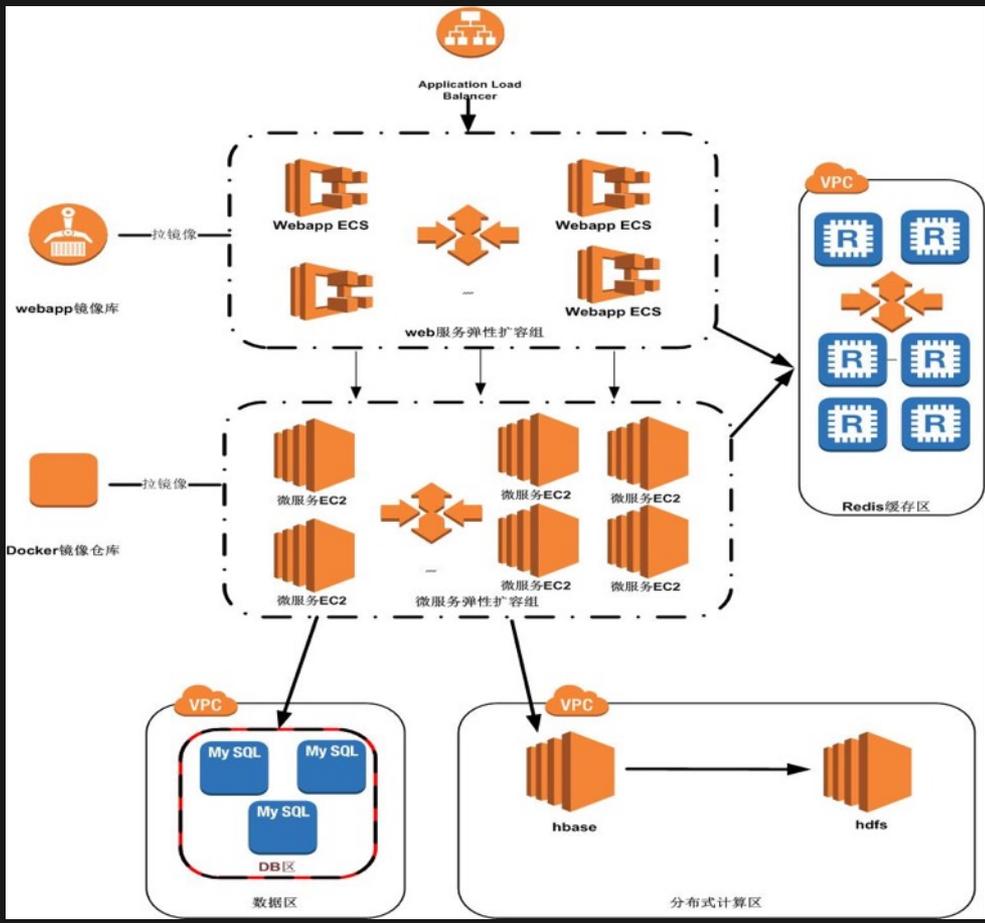


Amazon ECS





AWS ECS



What is Fargate?

```
ecs run-task --launch-type FARGATE
```

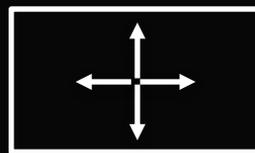
- Serverless Experience for Containers
- Manage everything at the container level
- Launch Easily, Scale quickly
- Resource based pricing



NO INFRA



MANAGE
EVERYTHING AT
THE CONTAINER



LAUNCH EASILY,
SCALE QUICKLY



RESOURCE
BASED PRICING



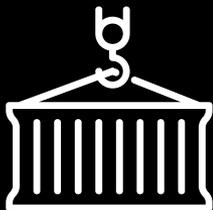
kubernetes



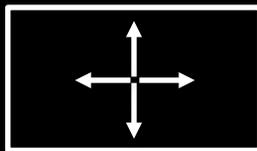
63%

of Kubernetes workloads run
on AWS today
—CNCF survey

What is Kubernetes?



Open source container
management platform



Helps you run
containers at scale



Gives you primitives
for building
modern applications

Why developers love Kubernetes

Vibrant and growing community
of users and contributors

Why developers love Kubernetes

Kubernetes can be run anywhere

ON-PREMISES

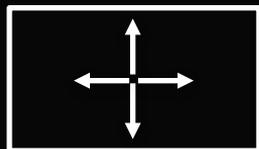


CLOUD



Why developers love Kubernetes

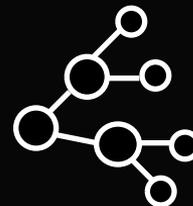
A single extensible API



SCALE

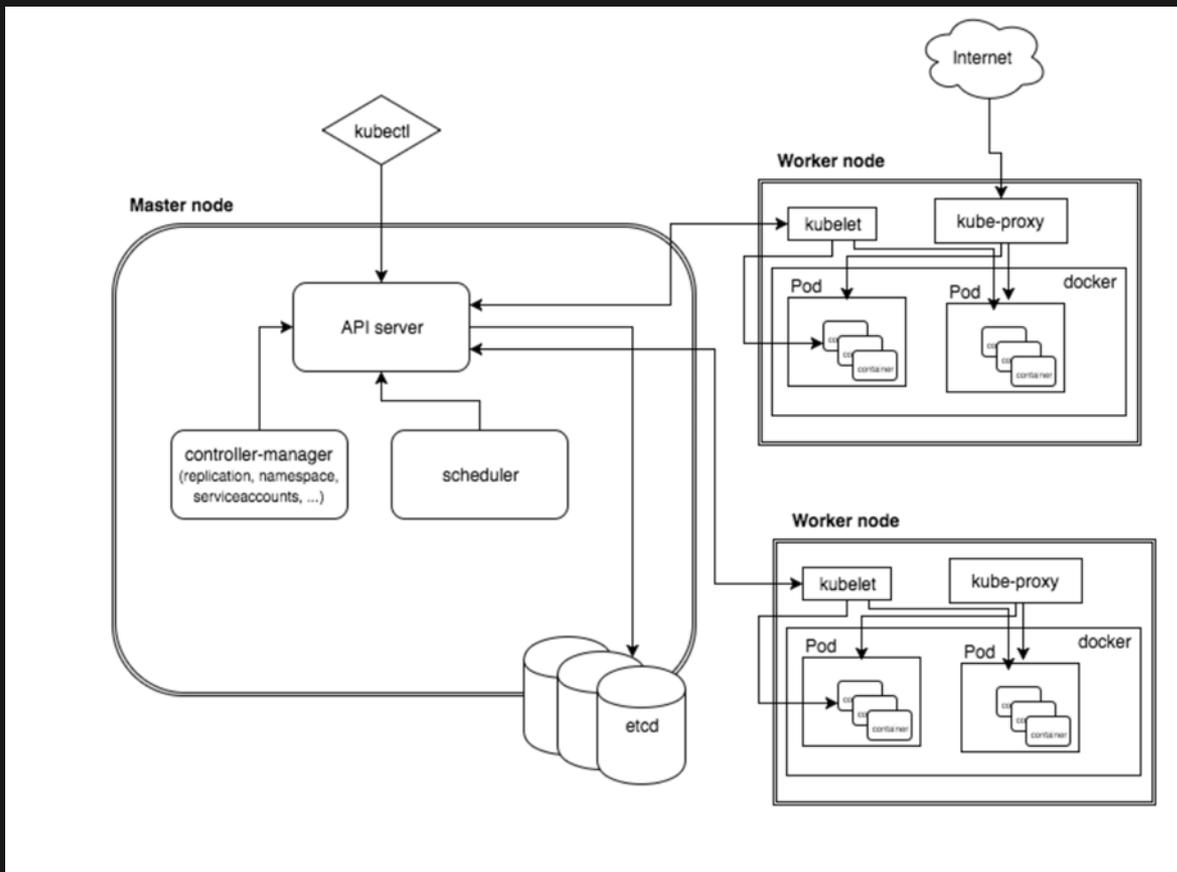


PERFORMANCE

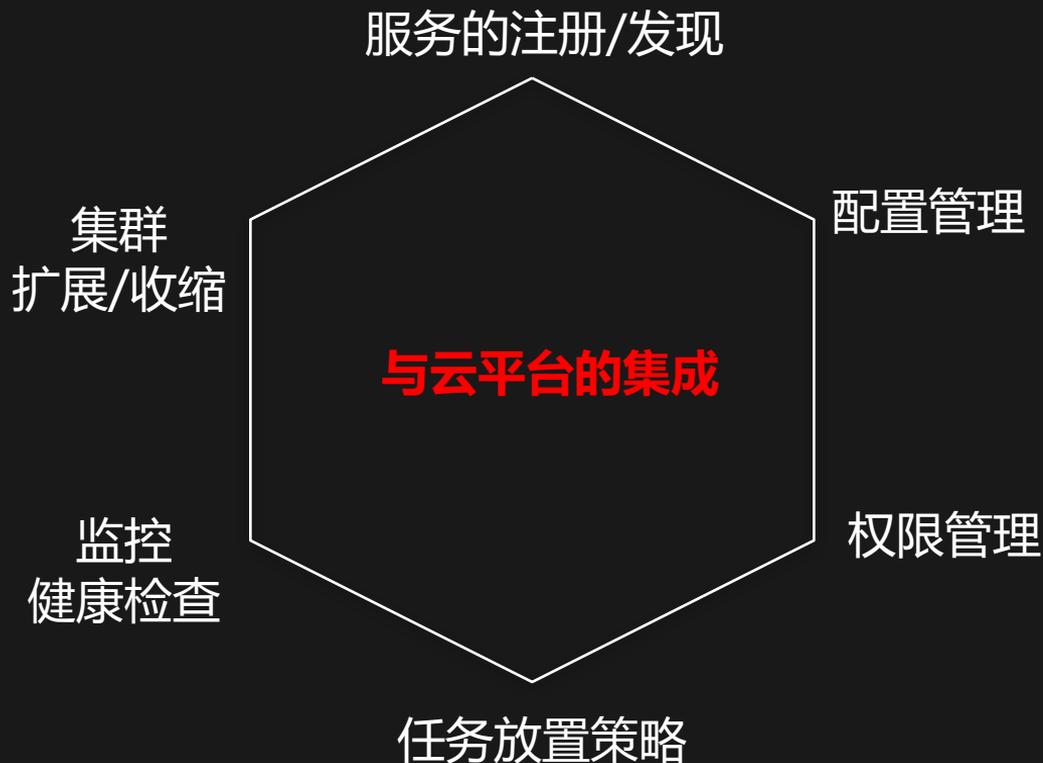


BREADTH

K8S Architecture



微服务改造的挑战

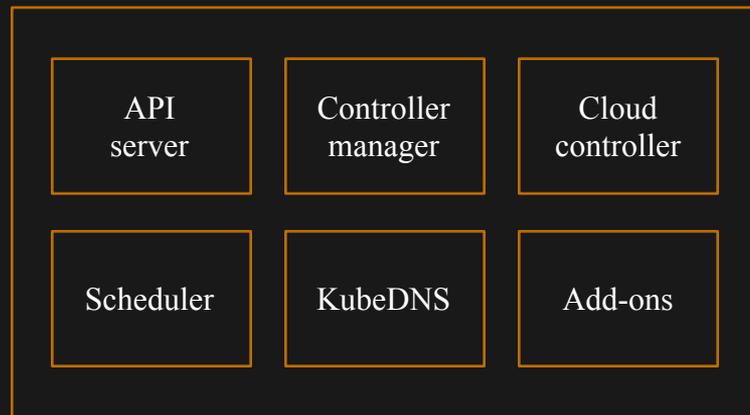


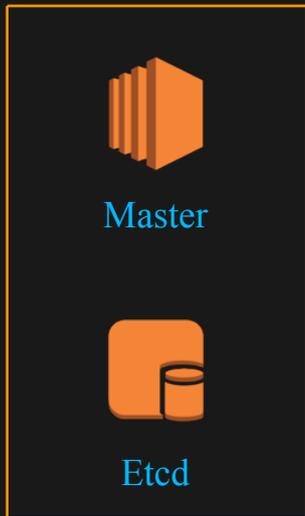
Kubernetes on AWS



3x Kubernetes masters for HA

Kubernetes master





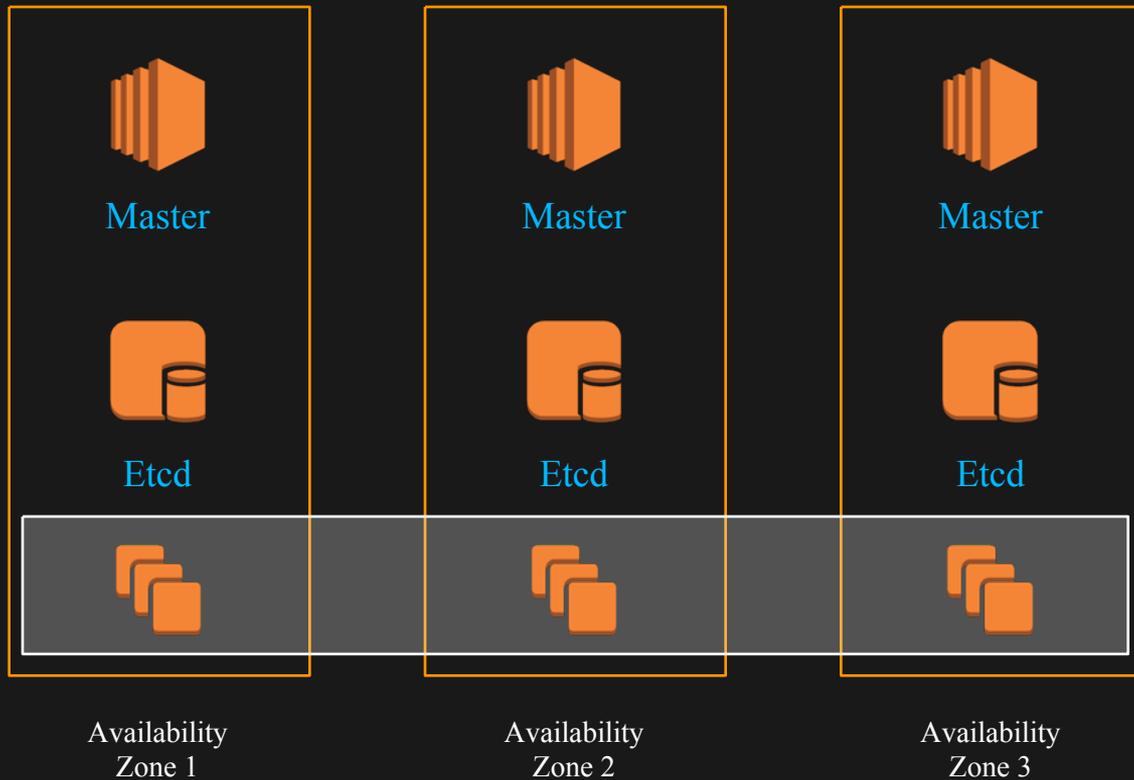
Availability
Zone 1



Availability
Zone 2



Availability
Zone 3



”Lets look an excellent Community Tool,
KOPS, to build a K8s Cluster on AWS”

1. Install Binaries & Tools: `kops`, `AWS CLI tools`, `kubectl`
2. Set IAM User to “`kops`”
3. Allow “`kops`” user Full access to EC2, Route53, S3, IAM, VPC
4. `Configure AWS client` to new IAM user “`kops`”
5. Configure DNS (or) Deploy a gossip-based cluster:
 - We hosted the subdomain “`dnishi.k8sdemolabs.com`” in `Route53`
6. Create a S3 bucket to save cluster config: “`dnishi-kops-store`”
7. Set the “`kops environmental variables`”
8. Create cluster: “`kops create cluster`” and “`kops validate cluster`”



“Native AWS Integrations.”



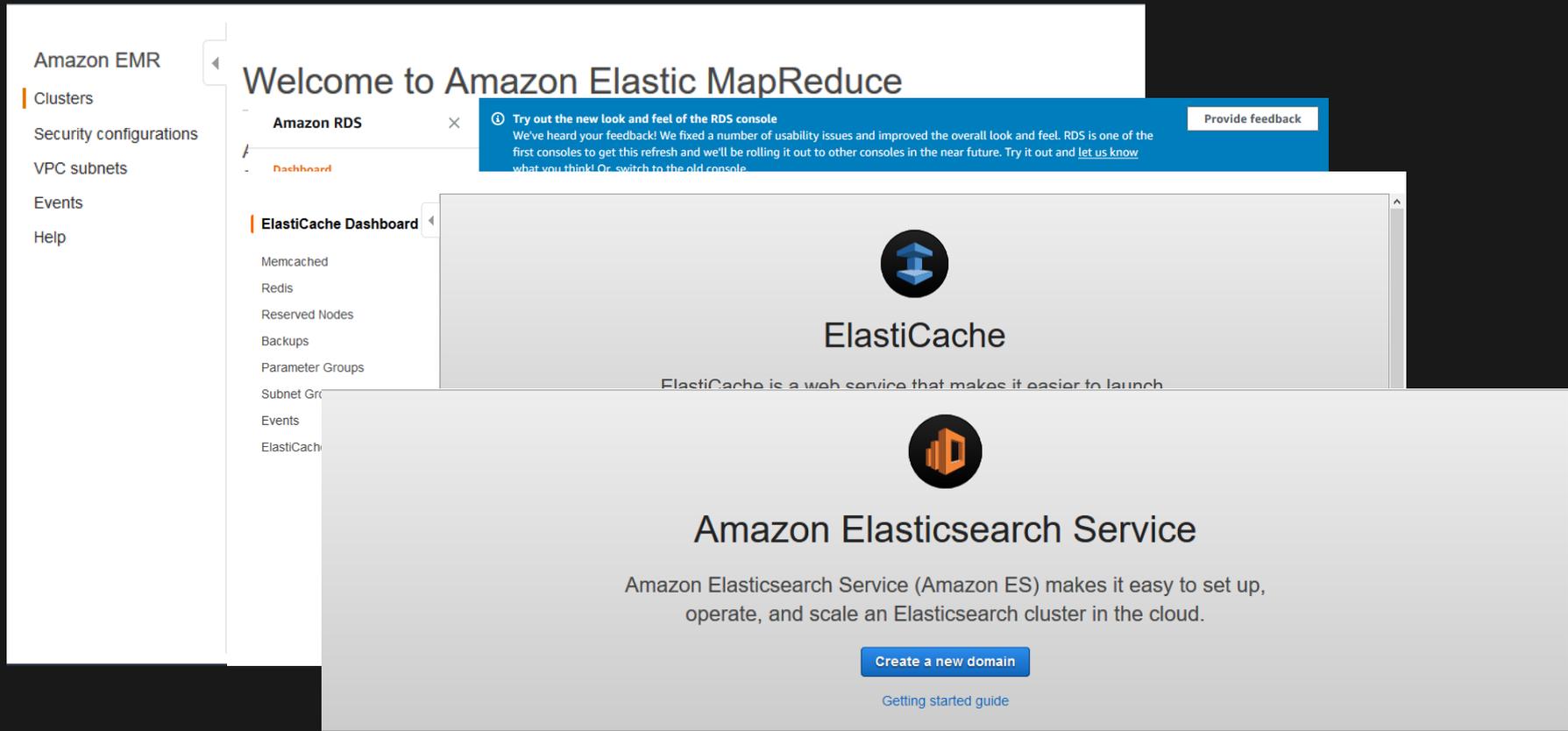
”An Open Source Kubernetes Experience.”



Amazon EKS

ELASTIC CONTAINER SERVICE FOR KUBERNETES
(EKS)

AWS & OpenSource



The screenshot displays the AWS Management Console interface. On the left is a navigation sidebar with categories: Amazon EMR, Clusters, Security configurations, VPC subnets, Events, and Help. The main content area is divided into three overlapping panels:

- Top Panel:** "Welcome to Amazon Elastic MapReduce". It includes a notification banner for Amazon RDS: "Try out the new look and feel of the RDS console. We've heard your feedback! We fixed a number of usability issues and improved the overall look and feel. RDS is one of the first consoles to get this refresh and we'll be rolling it out to other consoles in the near future. Try it out and [let us know](#) what you think! Or, [switch to the old console](#)." A "Provide feedback" button is also present.
- Middle Panel:** "ElastiCache Dashboard". It features the ElastiCache logo and the text "ElastiCache is a web service that makes it easier to launch".
- Bottom Panel:** "Amazon Elasticsearch Service". It features the Amazon Elasticsearch logo and the text "Amazon Elasticsearch Service (Amazon ES) makes it easy to set up, operate, and scale an Elasticsearch cluster in the cloud." Below this text are two buttons: "Create a new domain" and "Getting started guide".

Tenet 1

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

Tenet 2

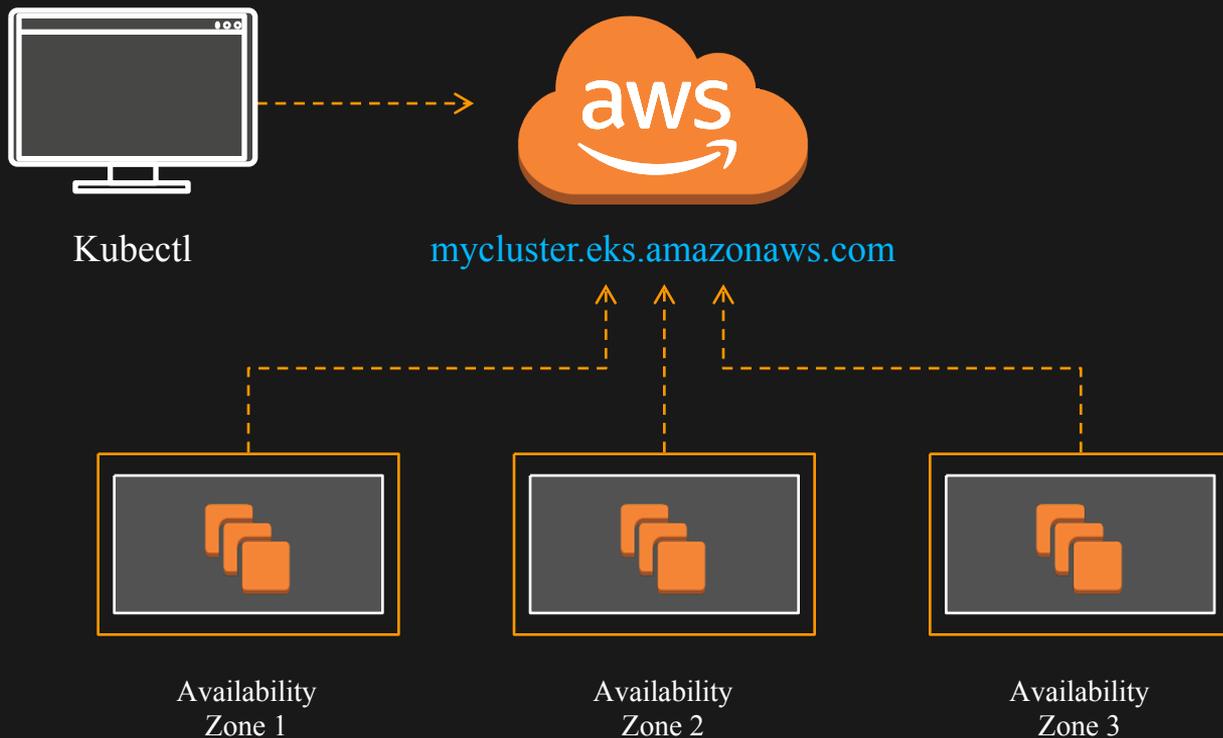
EKS provides a native and
upstream Kubernetes experience

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

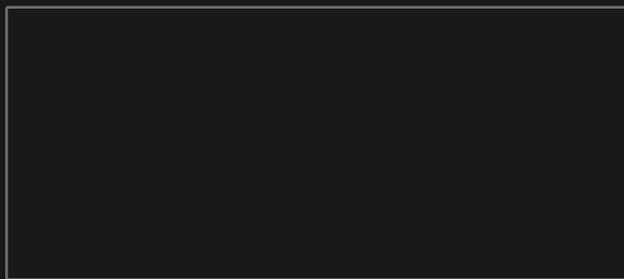
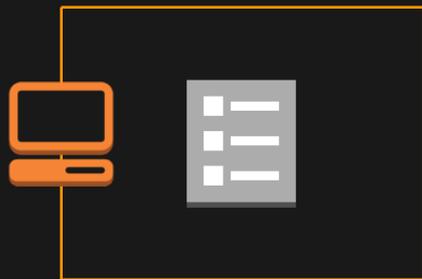


```
aws eks create-cluster  
aws eks describe-cluster  
aws eks list-clusters  
aws eks delete-cluster
```

How is EKS architected?

What is the master node configuration in
EKS?

TODO: Diagram/animation of logs leaving masters to cloudwatch and cloudtrail

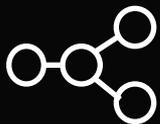


Do my EKS masters autoscale for me?

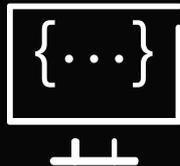


CNI

What is the networking configuration for EKS?



Native VPC networking with CNI plugin



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



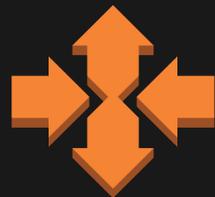
Simple, secure networking



Open source and on Github



How does IAM authentication
work with Kubernetes?

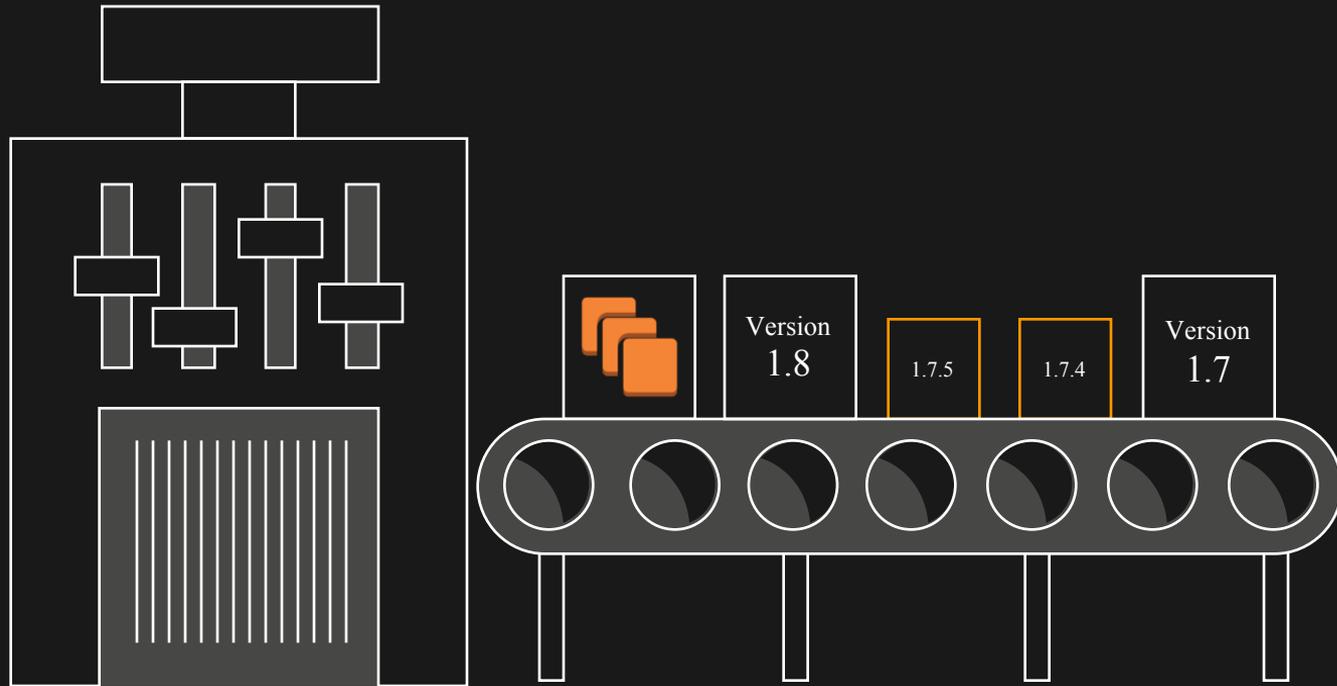


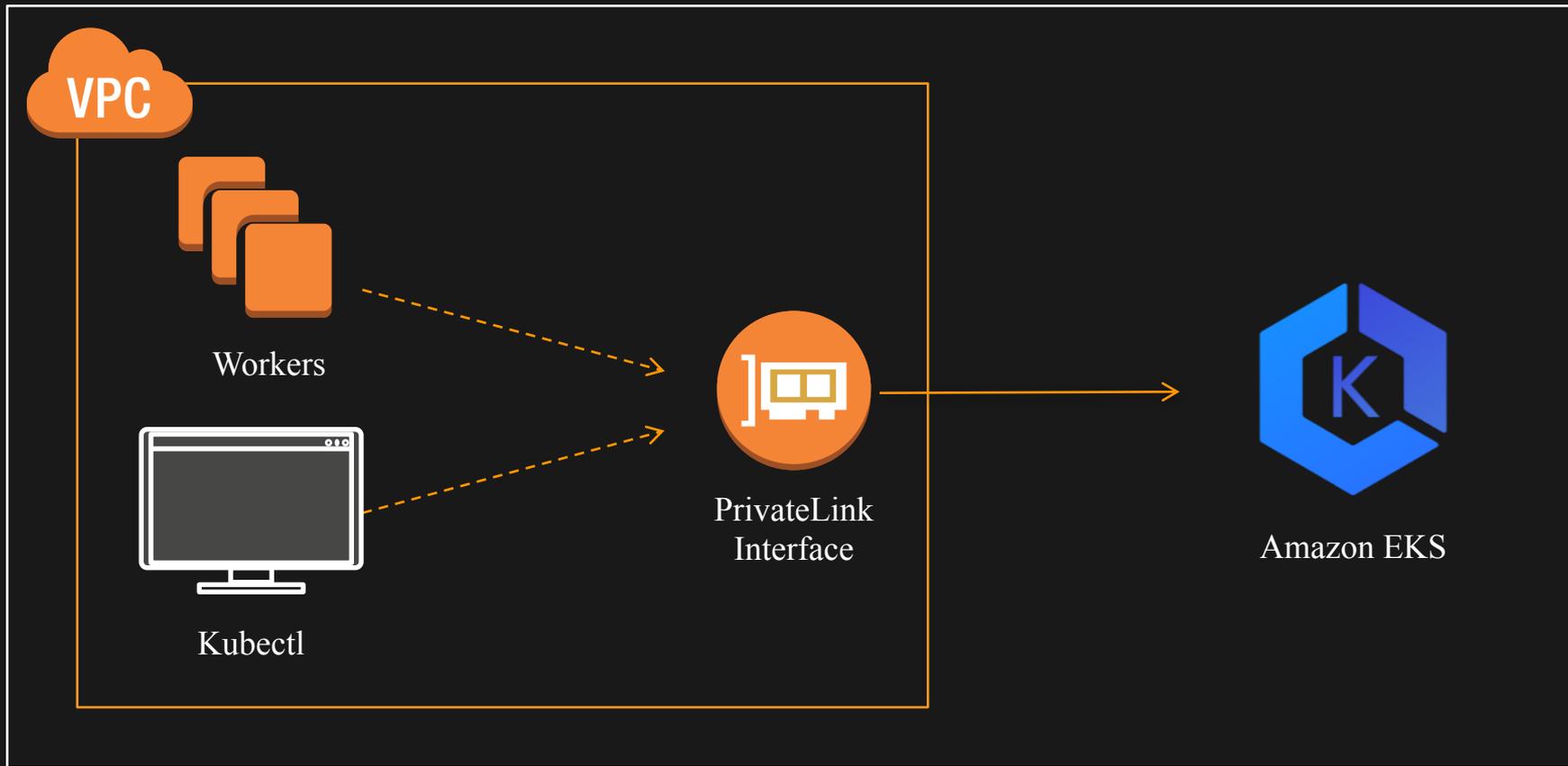
Can I use autoscaling with Amazon EKS?



Can I use Spot Instances with Amazon EKS?

What version of Kubernetes does EKS support?







Roadmap:
Can I use Cloudformation with EKS?

AWS re:Invent

THANK YOU!