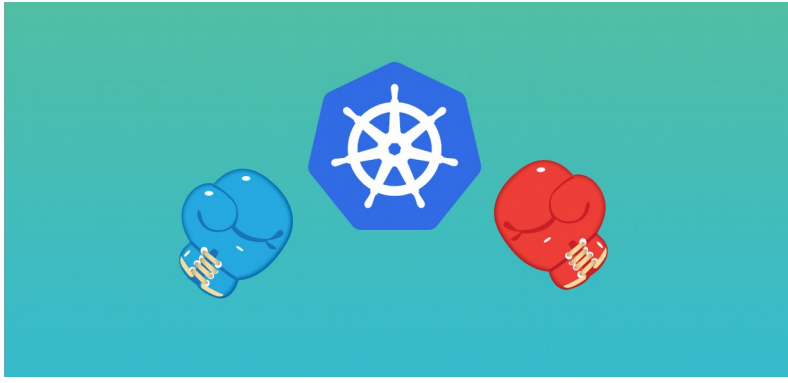
Kubernetes in the Cloud: AWS vs. GCP vs. Azure

Amazon Web Services (AWS), Google Cloud Platform (GCP), and Microsoft Azure all have services that are capable of setting up Highly Available installations of Kubernetes.



Amazon Web Services (AWS)

AWS is the most mature public cloud, and many businesses already have a well established presence on AWS. AWS has their own proprietary container orchestrator, Elastic Container Service (ECS), but it is different than Kubernetes.

The project Kubernetes Operations (kops) has become the de-facto standard for creating, upgrading, and managing Kubernetes clusters on AWS. Kops is a well maintained open source project with an active community.

Amazon Web Services (AWS)

Pros: (kops)

Deploy HA Kubernetes master nodes

Upgrade Kubernetes master nodes

Upgrade, add, or remove worker nodes

kops is highly configurable

Cons:

No support for Kubernetes in AWS management console; must use kops or another third-party service

Google Cloud Platform (GCP)

Google manages the Kubernetes master nodes for you in GKE, meaning that you don’t have access to them but you also aren’t charged for their compute resources. If your GKE cluster grows above 5 nodes, it costs around $100 per month.

Google Cloud Platform (GCP)

Pros:

Nodes use container optimized image

Upgrade Kubernetes Master through GCP management console

Upgrade, add, or remove worker nodes through GCP management console

Global spanning load balancer built-in

Easy deployment and automation

Optional support for Kops

Cons:

Unable to login to Kubernetes master nodes and change advanced settings

Microsoft Azure

Azure Container Service (ACS) allows for quick deployment of Kubernetes to Microsoft Azure. ACS is the newest tool of the three clouds to support Kubernetes.

ACS acts as more of a deployment template since it does not include features to upgrade a cluster after it has been deployed. In order to upgrade clusters using ACS, you would need to use ACS to create a new cluster, migrate containers to it, and remove the old cluster.

Microsoft Azure

Pros:

Deploy HA Kubernetes master nodes

Add or remove worker nodes through Azure management console

Save infrastructure definition

Cons:

Upgrading Kubernetes nodes is a manual process