

**Advanced Amazon EKS (Elastic Kubernetes Service)**

**Course Number:** EKS-104
**Duration:** 2 days

**Overview**

This Advanced Amazon EKS (Elastic Kubernetes Service) training teaches attendees advanced EKS skills, including launching EKS Kubernetes clusters, deploying Jenkins, using AWS X-Ray, and more.

**Prerequisites**

All students should have taken Accelebrate's [Introduction to EKS course](file:////training/amazon-eks-introduction) or have equivalent knowledge.

**Materials**

All EKS training students receive comprehensive courseware.

**Software Needed on Each Student PC**

Each attendee must have their own AWS account. In the first session, we can assist in the setup if needed. For other courses in the series, you will use your same AWS account.

**Objectives**

* Launch EKS Kubernetes clusters
* Deploy Jenkins on EKS
* Implement continuous integration/continuous deployment using CodePipeline
* Centralize and visualize log data using EFK (Elasticsearch, Fluentd, and Kibana)
* Set up real time monitoring with alerts using Prometheus and Grafana
* Debug production issues using AWS X-Ray
* Monitor applications and system health with Cloudwatch
* Enable continuous delivery of container images using Weave Flux

**Outline**

* Introduction
* Setting up a K8s Client Environment on AWS's Cloud9 IDE
	+ ssh keys, secret/access keys, kubectl, and eksctl setup
* Launching EKS Kubernetes Clusters using eksct
* Deploying Jenkins on EKS using Helm v3
* CI/CD with CodePipeline in AWS
* Elasticsearch/Fluentd/Kibana on EFK and View Data
* Monitoring with Prometheus and Grafana
* Using AWS X-Ray to Trace an Application from Container to Related Services
* AWS Cloudwatch Container Insights
* GitOps with Weave Flux
* Custom Resource Definition (CRD)
* Conclusion