

# Running Containers on Amazon Elastic Kubernetes Service (Amazon EKS)

Price  
**\$2,025.00**

Duration  
**3 Days**

Delivery Methods  
**VILT, Private Group**



In this course, you will learn how to use Amazon EKS to manage and orchestrate containers with Kubernetes. With Amazon EKS you can run Kubernetes on AWS without needing to install, operate, and maintain your own Kubernetes control plane. You will manage container images using Amazon Elastic Container Registry (Amazon ECR) and learn how to automate application deployment. You will deploy applications using continuous integration and delivery (CI/CD) tools. You will learn how to monitor and scale your environment by using metrics, logging, tracing, and horizontal and vertical scaling. You will also manage storage for your containerized applications, configure AWS networking services to support the cluster, and learn how to secure your Amazon EKS environment.

## Who Should Attend

- Cloud architects
- DevOps engineers
- Systems administrators

## Course Objectives

- Describe the main components of Kubernetes, including the key objects and the core components of the Kubernetes API.
- Describe how Amazon EKS manages the Kubernetes control plane and parts of the data plane.
- Build and maintain an Amazon EKS cluster.
- Deploy applications to an Amazon EKS cluster.
- Manage applications running in enterprise-scale Amazon EKS clusters.
- Configure efficient, secure communication both within the cluster and with outside services.
- Configure observability in an Amazon EKS cluster.
- Provision storage for applications running on Amazon EKS.
- Secure an Amazon EKS cluster.

## Agenda

### MODULE 1: KUBERNETES FUNDAMENTALS

- Benefits of containers
- Container orchestration
- Kubernetes internals
- Pod scheduling
- Kubernetes objects

### MODULE 2: AMAZON EKS FUNDAMENTALS

- Introduction to Amazon EKS
- Amazon EKS control plane
- Amazon EKS data plane
- Fundamentals of Amazon EKS security
- Two APIs: Kubernetes and Amazon EKS
- Hands-On Lab: Deploying Kubernetes Pods

### MODULE 3: BUILDING AND MAINTAINING AN AMAZON EKS CLUSTER

- Creating an Amazon EKS cluster
- Deploying nodes
- Planning for an upgrade
- Upgrading your Kubernetes version

### MODULE 4: DEPLOYING APPLICATIONS TO YOUR AMAZON EKS CLUSTER

- Application deployment methods
- Working with Amazon ECR
- Deploying applications with Helm
- Hands-On Lab: Deploying Applications

### MODULE 5: MANAGING APPLICATIONS AT SCALE IN AMAZON EKS

- Scale to meet demand in Amazon EKS

- Continuous deployment in Amazon EKS
- GitOps and Amazon EKS
- Hands-On Lab: Continuous Deployment and GitOps

## **MODULE 6: MANAGING NETWORKING IN AMAZON EKS**

- Review: Networking in AWS
- Communicating in Amazon EKS
- Improving Pod-level security
- Load balancing with Services

## **MODULE 7: CONFIGURING OBSERVABILITY IN AMAZON EKS**

- Configuring observability in an Amazon EKS cluster
- Collecting metrics
- Managing logs
- Application tracing in Amazon EKS
- Hands-On Lab: Monitoring Amazon EKS

## **MODULE 8: MANAGING STORAGE IN AMAZON EKS**

- Design patterns for storage
- Persistent storage in Kubernetes
- Persistent storage with AWS storage services
- Managing secrets
- Hands-On Lab: Persistent Storage in Amazon EKS

## **MODULE 9: MANAGING SECURITY IN AMAZON EKS**

- Cloud security fundamentals
- Authentication and authorization
- Managing IAM and RBAC
- Managing Pod permissions using RBAC service accounts
- Hands-On Lab: Capstone Exercise