AWS – Running Containers on Amazon Elastic Kubernetes Service

Description

Running Containers on Amazon Elastic Kubernetes Service is a comprehensive course for cloud professionals looking to master container orchestration with Kubernetes on AWS. With Amazon EKS, you can run Kubernetes clusters on AWS without the need to manage your own Kubernetes control plane, greatly simplifying containerized application management. This course will teach you how to deploy applications using continuous integration (CI/CD) tools, effectively configure networking, ensure security, and automate scaling. Whether you're a cloud architect or a DevOps engineer, this training will provide the skills you need to manage Kubernetes environments at scale.

Course Content
Module 1: Fundamentals of Containers

- Design principles for building applications
- What are containers?
- Container components
- Writing Dockerfiles

Module 2: Kubernetes Basics

- Challenges of managing many containers
- What is Kubernetes and why is it important?
- Kubernetes control plane components
- Kubernetes worker nodes and pods
- Key Kubernetes objects
- Managing Kubernetes with kubectl
- Workshop 1: Deploying Kubernetes pods

Module 3: Amazon EKS Fundamentals

- How Amazon EKS manages the Kubernetes control plane
- Amazon EKS security fundamentals
- Use cases for extending Amazon EKS to the data plane
- Running worker nodes on managed node groups

© Copyright ITTA – All contents are protected by copyright.

- Running containers on AWS Fargate with Amazon EKS
- Amazon EKS tasks and Kubernetes tasks

Module 4: Building an Amazon EKS Cluster

- Visual review of the Amazon EKS architecture to be built in labs
- IAM authentication
- Amazon VPC and AWS networking fundamentals
- Different methods to create a cluster
- High-level steps in creating a cluster
- eksctl function
- Preparation for labs: Reviewing course lab activities
- Workshop 2: Creating an Amazon EKS cluster

Module 5: Deploying Applications on Your Amazon EKS Cluster

- Pushing container images to Amazon ECR
- Deploying applications with Helm
- Continuous deployment in Amazon EKS
- GitOps and Amazon EKS
- Workshop 3: Deploying applications

Module 6: Architectures on Amazon EKS Part 1: Observing and Optimizing

- Configuring observability in an Amazon EKS cluster
- Collecting metrics
- Using metrics to automatically scale EC2 Auto Scaling groups
- Managing logs
- Tracing applications in Amazon EKS
- Gaining insights and applying observability findings
- Workshop 4: Monitoring Amazon EKS

Module 7: Architectures on Amazon EKS Part 2: Balancing Efficiency, Resilience, and Cost

- Optimizing your Amazon EKS application architecture
- Balancing cost, efficiency, and resilience
- Anatomy of an Amazon EKS cluster from a cost perspective
- Using pod placement and tagging for cost accountability
- Effective sizing of containers and worker nodes

Module 8: Managing Networking in Amazon EKS

- Review: VPC fundamentals
- The importance of key communication components
- Communication flows in a non-containerized architecture
- Networking challenges in Kubernetes
- Comparison of Docker communication with Kubernetes model
- How Amazon EKS and Amazon VPC simplify inter-node communications
- Managing pod-to-pod communication in Amazon EKS
- The relationship between communication and scalability
- Running worker nodes in a non-cluster subnet
- Managing service name resolution
- Using service mesh with Amazon EKS

© Copyright ITTA – All contents are protected by copyright.

- Configuring AWS App Mesh
- Workshop 5: Exploring Amazon EKS communication

Module 9: Securing Amazon EKS Clusters

- How IAM integrates with Kubernetes role-based access control (RBAC)
- Managing access control to cluster endpoints
- Auditing access with AWS CloudTrail logs
- Mitigating security risks when building container images
- Securing network communications
- Managing secrets
- Workshop 6: Securing Amazon EKS

Module 10: Managing Updates in Amazon EKS

- Contrast between Kubernetes version updates and Amazon EKS platform version updates
- Upgrading your Kubernetes version
- Upgrading your Amazon EKS version
- Maintaining third-party applications

Documentation

- Digital course material included

Participant profiles

- Cloud architects
- DevOps engineers
- Systems administrators
- Application deployment specialists

Prerequisites

- Basic knowledge of Linux and network administration
- Familiarity with containers and Docker fundamentals
- Completion of the Amazon EKS introduction course
- Understanding of microservices architecture
- Experience with AWS services

Objectives

- Master Kubernetes key components
- Manage Kubernetes control plane with Amazon EKS
- Build and maintain an Amazon EKS cluster
- Deploy applications on Amazon EKS clusters
- Ensure security in EKS environments
- Configure complete observability of EKS clusters

Description
AWS Training - Running Containers on Amazon Elastic Kubernetes Service
Niveau
Intermédiaire
Classroom Registration Price (CHF)
2550
Virtual Classroom Registration Price (CHF)

© Copyright ITTA – All contents are protected by copyright.

2550

Duration (in Days)

3

Reference

AWS-205

© Copyright ITTA – All contents are protected by copyright.