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

Course Duration: 24 Hours **Course Code: AWS-EKS-101**

1. Course Overview

This course provides a comprehensive understanding of deploying, managing, and scaling containerized applications using Amazon Elastic Kubernetes Service (EKS). You will learn how to leverage Kubernetes on AWS to run container workloads efficiently, ensuring high availability, security, and scalability in the cloud.

2. What You'll Learn:

- Introduction to Kubernetes and Amazon EKS architecture
- Deploying and managing containerized applications on Amazon EKS
- Configuring networking, storage, and security for EKS clusters
- Scaling and monitoring applications in EKS
- Best practices for running production workloads on EKS

3. Target Audience:

- DevOps Engineers
- Cloud Architects
- System Administrators
- Developers looking to deploy containerized applications on AWS
- IT Professionals interested in Kubernetes and container orchestration

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4. Pre-Requisites:

- Basic understanding of AWS services and cloud computing
- Familiarity with Docker and container concepts
- Knowledge of Linux commands and system administration
- Understanding of basic networking concepts

5. Course Content:

Module 1: Introduction to Kubernetes and Amazon EKS

- Overview of Kubernetes
- Understanding EKS architecture
- Benefits of using EKS

Module 2: Setting up EKS Cluster

- Creating an EKS cluster
- Configuring kubectl for cluster management
- Node group creation and management

Module 3: Deploying Applications on EKS

- Deploying sample containerized applications
- Managing Pods, Deployments, and Services
- Rolling updates and rollbacks

Module 4: Networking and Security in EKS

- Configuring VPC, subnets, and security groups
- Role-based access control (RBAC) in EKS
- Integrating IAM with Kubernetes

Module 5: Storage and Persistent Volumes

- Working with Amazon EBS and EFS

- Persistent volume claims and storage classes

Module 6: Scaling, Monitoring, and Logging

- Horizontal and vertical pod scaling
- Monitoring using CloudWatch and Prometheus
- Logging and troubleshooting

Module 7: Best Practices and Advanced Topics

- High availability and disaster recovery
- Cost optimization strategies
- CI/CD integration with EKS

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