

Kubernetes Administration (NA-KA)

Course Description

Learn about the basic administration tasks of managing a Kubernetes cluster. Use the kubectl and kubeadm command-line tools and an integrated development environment (IDE) to provision cluster and network resources. Explain the configuration and deployment of basic workload objects and common Kubernetes cluster tasks. This course was written for the Kubernetes 1.29 release.

Course Duration

2 days.

Prerequisites

- Basic Linux administration skills

Objectives

This course focuses on enabling you to do the following:

- Describe a Kubernetes cluster
- Discuss creating basic pod configuration
- Investigate the Kubernetes scheduling
- Manage workloads deployed in Kubernetes
- Discuss the internal pod network in Kubernetes
- Review monitoring tools for Kubernetes
- Configure role-based access control (RBAC) for a Kubernetes cluster

Course Outlines

Module 1: Introduction

- Kubernetes overview
- Kubernetes interfaces

Module 2: Pod administration

- YAML
- Pods and containers
- Namespaces
- Configuration
- Multicontainer pods
- Services
- Creating and updating configurations

Module 3: Scheduler

- Basic scheduling
- Influencing the scheduler
- Static pods

Module 4: Workloads

- ReplicaSets
- Deployments
- DaemonSets
- StatefulSets
- Jobs and CronJobs

Module 5: Networking

- Cluster networking
- Pod networking
- Container Network Interface
- Service networking
- DNS
- Network policies

Module 6: Monitoring and logging

- Debugging through logging
- Enterprise logging
- Monitoring Kubernetes
- Performance monitoring
- Autoscaling with monitoring
- State monitoring

Module 7: Role-based access control

- Authentication
- User authentication
- Service account authentication
- Authorization
- Pod permissions
- Container image access

Module 8: Next steps

- Next steps

Who Should Attend

Systems administrator, architect, and integration engineer