Training: SUSE
KUB201 Kubernetes Administration

TRAINING GOALS:

This course is designed for system administrators, DevOps, system engineers and others who need an introduction to Kubernetes.

The course begins with an introduction to containers and container orchestration. Students will then learn about and explore Kubernetes, including launching applications, configuring networking, storage and security, and using Kustomize and Helm to deploy applications. The course includes comprehensive presentation content to introduce new concepts and processes and extensive hands-on experience.

Key Objectives

Attendees will be taught the following concepts and skills:

- Containers and Orchestration Concepts
- Basic Kubernetes Concepts and Architecture
- Kubernetes Cluster Administration
- Kubernetes Networking, Storage and Security
- Application Deployment with Kustomize and Helm
- Kubernetes Role Based Access Control

Audience

This course is designed for system administrators and others who want to administer Kubernetes.

CONSPECT:

- Section 1: Course Overview
- Section 2: Introduction to Containers and Container Orchestration
  - Container Concepts
  - Microservice Architecture
  - Kubernetes Concepts

Compendium Centrum Edukacyjne Spółka z o.o.
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- SUSE Kubernetes Offerings
- Kubernetes Installation

- Section 3: Basic Kubernetes Administration
  - Basic Kubernetes Commands
  - Kubernetes Manifests
  - Work with Pods
  - Work with Namespaces
  - Labels, Selectors and Annotations
- Section 4: Kubernetes Workload Administration
  - Introduction to Kubernetes Workload Management
  - Update Workloads
  - Configure Node Affinity
  - Scale Workloads
- Section 5: Configuration for Kubernetes Objects
  - Configuration for Applications in Containers
  - Work with Environment Variables
  - Work with ConfigMaps
  - Work with Secrets
- Section 6: Cluster Networking, Services and Ingress in Kubernetes
  - Introduction to Cluster Networking in Kubernetes
  - Expose Network Applications with Services
  - Expose Web Applications with Ingresses
- Section 7: Storage in Kubernetes
  - Kubernetes Storage Concepts
  - PersistentVolumes and PersistentVolumeClaims
  - PersistentVolumes with a StorageClass
- Section 8: Kubernetes Application Management with Kustomize
  - Introduction to Kustomize Concepts
  - Application Configuration and Deployment with Kustomize
- Section 9: Kubernetes Application Management with Helm
  - Basic Helm Concepts
  - Manage Applications with Helm
- Section 10: Resource Usage Control
  - Resource Usage Control in Kubernetes
  - Limit Ranges
  - Resource Quotas

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- Section 11: Role Based Access Control in Kubernetes
  - Role Based Access Control in Kubernetes
  - Authenticate to a Kubernetes Cluster
  - Configure RBAC in Kubernetes

REQUIREMENTS:

Attendees should have familiarity with the Command Line, Linux System Administration skills and attention to details. SUSE Certified Administrator (SCA) in Enterprise Linux or SUSE Certified Linux Engineer (SCE) in Enterprise Linux certification or level of experience recommended.

Difficulty level



CERTIFICATE:

The participants will obtain certificates signed by SUSE.

TRAINER:

Certified SUSE Trainer

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