Tytuł szkolenia: Kubernetes Administration (GL360)

Kod szkolenia: HJ7F2S

Wprowadzenie

This course covers the topics of the Certified Kubernetes Administrator (CKA) exam. Topics include installation, application lifecycle management, networking, storage, security, scheduling, logging, maintenance, and troubleshooting of Kubernetes.

Adresaci szkolenia

Systems administrators and DevOps professionals.

Prerequisites

- Proficiency with the Linux CLI (U8583S: Linux Fundamentals (GL120))
- A broad understanding of Linux system administration (H7091S: Enterprise Linux Systems Administration (GL250))
- Basic knowledge of Linux containers, e.g. Docker (H0DS3S: Docker (GL340))

Cel szkolenia

During this course, students will learn:

- Kubernetes architecture
- Kubernetes core concepts (clusters, objects, etc.)
- Fundamentals:
- Images
- Containers
- Pods
- Installation
- Application lifecycle management
- Networking
- Storage
- Security
- Scheduling
- Jobs and CronJobs
- Linux containers

Czas i forma szkolenia

- 21 godzin (3 dni x 7 godzin), w tym wykłady i warsztaty praktyczne.

Plan szkolenia

1. Core Concepts

• CKA objectives covered
• Kubernetes architecture
• Cluster communication
• Objects
• Object properties
• Labels and selectors
• Annotations

- Object management
- Image fundamentals
- Container fundamentals
- Pod fundamentals
- Working with pods
- Writing YAML files

2. Installation

- CKA objectives covered
- Installation prerequisites
- Installation (single node)
- Installation (production)
- Client tool optimizations
- Installing HA control plane (demo)

3. Application Lifecycle Management

- CKA objectives covered
- Pod lifecycle
- Container lifecycle
- Init containers
- Container: command and args
- Container: defining environment
- ReplicaSet
- Deployments
- Working with deployments
- Deployment rollouts

4. Networking

- CKA objectives covered
- Network overview
- Service discovery and CoreDNS
- Container Network Interface (CNI)
- Services
- Ingress objects

5. Storage

- CKA objectives covered
- Storage
- Volume types
- Static volumes (demo)
- ConfigMaps
- Secrets

6. Security

- Controlling access to the Kubernetes API
- Kubectl configuration
- Admission controllers
- Pod security policies admission controller
- Default admission controllers Scheduling
- CKA objectives covered
- Controlling and tracking resources
- Scheduler operation
- DaemonSet
- Node affinity and anti-affinity
- Pod affinity and anti-affinity
- Taints and tolerations

7. Jobs and CronJobs

- Jobs
- CronJobs

8. Linux Containers

- Application management landscape
- Application isolation
- Resource measurement and control
- Container security
- OverlayFS overview
- Container security
- Open container initiative