Training: SUSE
LHN201 Longhorn Deployment and Operations

TRAINING GOALS:

This course is for system administrators responsible for deploying and managing Longhorn across various Kubernetes cluster distributions with Rancher Manager for Rancher Prime. The course kicks off with an introduction to Longhorn and its architecture, followed by practical lessons on accessing Longhorn through a simple web browser. Students will gain hands-on experience in deploying, managing, and upgrading Longhorn on their Kubernetes clusters. The course delves into volume management, creating volume replicas from persistent volumes using storage classes. It emphasizes the establishment of data replication for enhanced fault tolerance and data redundancy within the existing Kubernetes cluster. Additionally, students will learn the ins and outs of conducting scheduled snapshots, backups, and setting up a Disaster Recovery Volume.

This course prepares students for the SCA in Longhorn Deployment and Operations exam.

Key Objectives

Attendees will be taught the following concepts and skills:

- An Introduction to Longhorn
- Installation of Longhorn via Helm and as a Rancher Application
- Management of nodes by adding or removing them
- Management of Disks and Volume Replicas
- Logging and Monitoring of Clusters
- Backing up and Restoring of Volumes
- Disaster Recovery Volumes
- Upgrading Longhorn Manager and Engine

Audience

This course is designed for system administrators and other persons responsible for provisioning and administering Kubernetes clusters with Rancher Manager for Rancher Prime.

CONSPECT:

- Section 1: Course Introduction
- Section 2: Introduction to Longhorn

Compendium Centrum Edukacyjne Spółka z o.o.
ul. Tatarska 5, 30-103 Kraków, tel.: (12) 298 47 77
ul. Postępu 18B, 02-676 Warszawa, tel.: (22) 417 41 70
BNP Paribas Bank Polska S.A.
EUR: PL 79 1600 1462 1853 6451 3000 0006
USD: PL 52 1600 1462 1853 6451 3000 0007

- Introduction to Longhorn
- High-level Overview of Longhorn Features
- Overview of the Longhorn Architecture

- Section 3: Install Longhorn
  - Installation Requirements
  - Installation with Helm
  - Installation as a Rancher Application
  - Longhorn Web UI Features
- Section 4: Node Management
  - Enable or Disable Nodes
  - Add a new Node in Cluster
  - Node Maintenance
  - Remove a Node from Cluster
- Section 5: Disk and Volumes Management
  - Add Individual Disk Partition
  - Remove Disk Storage
  - Add LVM Storage
  - Create a Volume
  - Use Trim to Reclaim Storage Space
  - Resize Volume
  - Tune Storage Performance by Data Locality
- Section 6: High Availability in Longhorn
  - Define Replica Counts and Location
  - Replica Balancing for even Distribution of Resources
- Section 7: Monitor and Troubleshoot Longhorn
  - Install Prometheus and Grafana for Monitoring Longhorn’s Vital Metrics
  - Integrate Longhorn Metrics with the Rancher Monitoring System
  - Configure Longhorn Alert Rules
  - Recover from Failures
- Section 8: Longhorn Backup and Restore
  - Manually Create a Snapshot of a Volume
  - Restore a Volume from a Snapshot Manually
  - Delete a Volume Snapshot
  - Work with Recurring Volume Snapshot
  - Manually Create a Backup of a Volume
  - Restore a Volume from a Backup

Compendium Centrum Edukacyjne Spółka z o.o.
ul. Tatarska 5, 30-103 Kraków, tel.: (12) 298 47 77
ul. Postępu 18B, 02-676 Warszawa, tel.: (22) 417 41 70

BNP Paribas Bank Polska S.A.
EUR: PL 79 1600 1462 1853 6451 3000 0006
USD: PL 52 1600 1462 1853 6451 3000 0007

- Work with Recurring Volume Backups
- Work with Disaster Recovery Volumes

- Section 9: Upgrade Longhorn
  - Upgrade Longhorn Manager
  - Upgrade Longhorn Engine

REQUIREMENTS:

An understanding of Kubernetes objects and resources is needed for this course. This knowledge can be gained through the KUB201 Kubernetes Administration course. Linux command line experience is helpful.

Difficulty level



CERTIFICATE:

The participants will obtain certificates signed by SUSE.

TRAINER:

Certified SUSE Trainer

Compendium Centrum Edukacyjne Spółka z o.o.
ul. Tatarska 5, 30-103 Kraków, tel.: (12) 298 47 77
ul. Postępu 18B, 02-676 Warszawa, tel.: (22) 417 41 70
BNP Paribas Bank Polska S.A.
EUR: PL 79 1600 1462 1853 6451 3000 0006
USD: PL 52 1600 1462 1853 6451 3000 0007