Nutanix Kubernetes Platform Administration (NKPA)

Duration: 2 days

Description

The Nutanix Kubernetes Platform Administration (NKPA) course teaches you how to deploy, configure, and manage the Nutanix Kubernetes Platform (NKP), a fully turnkey solution built on pure upstream Cloud Native Computing Foundation (CNCF) conformant Kubernetes.

You will learn:

- What NKP is, key terms and concepts, how to install NKP in an air-gapped and non-air-gapped environment, and how to license an NKP cluster.
- Various lifecycle management operations for a Kubernetes cluster, including configuring infrastructure; using workspaces; creating, attaching, and scaling clusters; creating projects; and upgrading NKP.
- How to configure and manage access control, by configuring identity providers, creating identity provider groups, configuring workspace and project roles, and binding roles.
- What platform applications are, the categories of platform applications that NKP provides out-of-the-box (monitoring, logging, security, and so on), and how to deploy platform applications.
- How to protect and restore NKP clusters and the applications running on those clusters.
- About the NKP logging stack, how to enable, customize, and scale the logging stack applications, how to restrict logging to specific namespaces, and how to view logs.
- About NKP's monitoring capabilities, including which components gather metrics, which metrics are exposed, cost monitoring, visualizations using Grafana, and how to configure alert rules and alert notifications.

Prerequisites

- Certified Kubernetes Application Developer (CKAD) training, certification, or equivalent knowledge and/or experience

Related Courses

The following courses are also available:

- Certified Kubernetes Administrator (CKA) Exam Prep

- Certified Kubernetes Application Developer (CKAD) Exam Prep

- Securing Kubernetes (CKS)

Audience

- IT administrators and similar job roles who manage Nutanix clusters in the datacenter
- DevOps engineers, Kubernetes administrators, and similar jobs roles who manage Kubernetes clusters in their organizations
- Anyone seeking the Nutanix Certified Professional - Cloud Native (NCP-CN) certification

Course Outline

1: Getting Started with NKP

- Introduction to NKP
- NKP Concepts, Terms, and Components
- Installation Prerequisites
- Installing NKP in an Air-Gapped Nutanix Environment
- Licensing an NKP Cluster

Hands-on-Labs

- Validating NKP Bootstrap Host Configuration
- Adding NKP Images to a Local Registry
- Creating a Bootstrap Kubernetes-in-Docker (KIND) Cluster
- Building a Machine Image Using NIB
- Creating a Management Cluster
- Applying a License

2: Muti-cluster Lifecycle Management

- Configuring Infrastructure
- Using Workspaces
- Creating and Managing Workload Clusters with NKP
- Working with Projects
- Upgrading NKP

Hands-on Labs

- Creating a Workspace
- Creating a Workload Cluster Using the UI
- Creating a Project
- Implementing Continuous Deployment
- Creating a Workload Cluster Using the CLI

- Attaching, Detaching, and Deleting Clusters
- Scaling Clusters

3: Configuring and Managing Access Control

- Working with Identity Providers
- Using Access Control

Hands-on Labs

- Adding an Identity Provider
- Configuring Identity Provider Groups
- Creating Role Bindings
- Creating a Dedicated Login URL and Testing UI Access
- Configuring and Testing CLI Access

4: Working with Platform Applications

- Understanding Platform Applications
- Dependencies and Requirements
- Reviewing Deployed Platform Applications
- Deploying Platform Applications

Hands-on Labs

- Reviewing Deployed Platform Applications
- Using the CLI to Deploy Platform Applications
- Using the UI to Deploy Platform Applications
- Customizing Platform Application Deployments

5: Protecting Clusters and Applications

- Using Velero for Backup and Recovery
- Checking the Status of the Velero Service
- Installing the Velero CLI
- Creating a Backup Schedule
- Creating an On-Demand Backup
- Restoring a Cluster from a Backup

Hands-on Labs

- Installing the Velero CLI
- Reviewing Backups
- Creating a Backup
- Restoring from a Backup

6: Configuring and Managing Cluster Storage

- Logging in NKP
- Logging Architecture
- Enabling the Logging Stack
- Customizing the Logging Stack
- Viewing Cluster-level Log Data
- Admin-level Logs

Hands-on Labs

- Enabling Logging Stack Applications
- Viewing Logs
- Restricting Logging to Specific Namespaces
- Scaling the Logging Stack
- Creating a Support Bundle

7: Monitoring and Alerts

- Metrics
- Cost Monitoring
- Alerts

Hands-on Labs

- Viewing Metrics
- Adding a Custom Dashboard
- Configuring Alerts
- Monitoring Applications