Kód kurzu: VMW_TKGICMG

During this four-day course, you focus on installing VMware Tanzu® Kubernetes Grid™ in a VMware vSphere® environment and provisioning and managing Tanzu Kubernetes Grid clusters. The course covers how to install Tanzu Kubernetes Grid packages for image registry, authentication, logging, ingress, multipod network interfaces, service discovery, and monitoring. The concepts learned in this course are transferable for users who must install Tanzu Kubernetes Grid on other supported clouds.

Pre koho je kurz určený

Platform operators who are responsible for deploying and managing Tanzu Kubernetes clusters

Čo Vás naučíme

By the end of the course, you should be able to meet the following objectives:
- Describe how Tanzu Kubernetes Grid fits in the VMware Tanzu® portfolio
- Describe the Tanzu Kubernetes Grid architecture
- Deploy and manage Tanzu Kubernetes Grid management and supervisor clusters
- Deploy and manage Tanzu Kubernetes Grid workload clusters
- Deploy, configure, and manage Tanzu Kubernetes Grid packages
- Perform basic troubleshooting

Požadované vstupné znalosti
- Understanding of Kubernetes and the Kubernetes cluster architecture
- Experience deploying and managing multiple Kubernetes clusters

Študijné materiály

Príručka ku kurzu firmy VMware podľa programu kurzu.

Osnova kurzu

1 Course Introduction
- Introductions and course logistics
- Course objectives

2 Introducing VMware Tanzu Kubernetes Grid
- Identify the VMware Tanzu products responsible for Kubernetes life cycle management and describe the main differences between them
- Explain the core concepts of Tanzu Kubernetes Grid, including bootstrap, Tanzu Kubernetes Grid management, supervisor, and workload clusters
- List the components of a Tanzu Kubernetes Grid instance

3 VMware Tanzu Kubernetes Grid CLI and API
- Illustrate how to use the Tanzu CLI
- Define the Carvel Tool set
- Define Cluster API
- Identify the infrastructure providers
- List the Cluster API controllers
- Identify the Cluster API custom resource definitions

4 Authentication
- Explain how Kubernetes manages authentication with Management clusters

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- Explain how Kubernetes manages authentication with supervisor clusters
- Define Pinniped
- Define Dex
- Describe the Pinniped authentication workflow

5 Load Balancers
- Illustrate how load balancing works for the Kubernetes control plane
- Illustrate how load balancing works for application workload
- Explain how Tanzu Kubernetes Grid integrates with VMware NSX Advanced Load Balancer
- List load balancing options available on public clouds

6 VMware Tanzu Kubernetes Grid on vSphere
- List the requirements for deploying a supervisor cluster
- List the steps to install a Tanzu Kubernetes Grid supervisor cluster
- Summarize the events of a supervisor cluster creation
- List the requirements for deploying a management cluster
- List the steps to install a Tanzu Kubernetes Grid management cluster
- Summarize the events of a management cluster creation
- Demonstrate how to use commands when working with management clusters

7 VMware Tanzu Kubernetes Grid on Public Clouds
- List the requirements for deploying a management cluster on AWS and Microsoft Azure
- List the configuration options to install a Tanzu Kubernetes Grid a management cluster on AWS and Azure

8 Tanzu Kubernetes Workload Clusters
- List the steps to build a custom image
- Describe the available customizations
- Identify the options for deploying Tanzu Kubernetes Grid clusters
- Explain the difference between the v1alpha3 and v1beta1 APIs
- Explain how Tanzu Kubernetes Grid clusters are created
- Discuss which VMs compose a Tanzu Kubernetes Grid cluster
- List the pods that run on a Tanzu Kubernetes Grid cluster
- Describe the Tanzu Kubernetes Grid core add-ons that are installed on a cluster

9 Tanzu Kubernetes Grid Packages
- Define the Tanzu Kubernetes Grid packages
- Explain the difference between Auto-Managed and CLI-Managed packages
- Define packages repositories

10 Configuring and Managing Tanzu Kubernetes Grid Operation and Analytics Packages
- Describe Cert-Manager
- Describe the Harbor Image Registry
- Describe Fluent Bit
- Identify the logs that Fluent Bit collects
- Explain basic Fluent Bit configuration

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- Describe Prometheus and Grafana

11 Configuring and Managing Tanzu Kubernetes Grid Networking Packages
- Describe the Contour ingress controller
- Demonstrate how to install Contour on a Tanzu Kubernetes Grid cluster
- Describe ExternalDNS
- Demonstrate how to install Service Discovery with ExternalDNS
- Describe Multus CNI

12 Tanzu Kubernetes Grid Day 2 Operations
- List the load balancer configuration options in vSphere to load balance applications
- Demonstrate how to configure Ingress with the NodePortLocal Mode
- Explain how to install VMware Tanzu Application Platform
- Describe life cycle management in Tanzu Kubernetes Grid
- Explain how backup and restore are implemented in Tanzu Kubernetes Grid
- Describe Velero and Restic
- List the steps to back up a Workload cluster using Velero and Restic

13 Troubleshooting Tanzu Kubernetes Grid
- Discuss the various Tanzu Kubernetes Grid logs
- Identify the location of Tanzu Kubernetes Grid logs
- Explain the purpose of crash diagnostics
- Demonstrate how to check the health of a Tanzu Kubernetes Grid cluster
- Explain packages cleanup procedures
- Explain management recovery procedures