

VMWA-14 - VMWARE TANZU KUBERNETES GRID: INSTALL, CONFIGURE, MANAGE [V2.5]

Categoria: **VMware**

INFORMAZIONI SUL CORSO



Durata:
4 Giorni



Categoria:
VMware



Qualifica Istruttore:
VMware Certified
Instructor



Dedicato a:
Professionista IT



Produttore:
VMware

OBIETTIVI

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 day 2 operations
- Perform basic troubleshooting

PREREQUISITI

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

CONTENUTI

1 Course Introduction

- Introductions and course logistics
- Course objectives

2 Introducing Tanzu Kubernetes Grid

- Describe Tanzu Kubernetes Grid
- Describe VMware vSphere® with VMware Tanzu®
- Describe VMware Tanzu® Mission Control™
- Describe VMware Tanzu® for Kubernetes Operations
- Describe the Tanzu Kubernetes Grid components
- Discuss bootstrapping multiple Tanzu Kubernetes Grid instances
- Describe vSphere Namespaces
- Describe the benefits of registering with VMware Tanzu Mission Control

3 CLI Tools and Cluster API

- Describe the Tanzu CLI and plug-ins
- Describe the Kubernetes CLI Tools for vSphere
- Describe the Carvel tool set
- Describe Cluster API
- List the infrastructure providers
- Detail the Cluster API controllers
- List the Cluster API custom resource definitions

4 Authentication

- Define Kubernetes roles and RBAC API objects
- Define Pinniped and OpenID Connect
- Define Dex and LDAP authentication
- Define VMware vCenter® Single Sign-On integration with Tanzu Kubernetes Grid
- Identify the management cluster authentication components
- Describe the Pinniped workflow in Tanzu Kubernetes Grid on a management cluster
- Describe vSphere Namespace permissions and roles
- Define authentication using vCenter Single Sign-On
- Define authentication using external identity providers
- Identify the authentication options for kubectl and the Tanzu CLI

5 Load Balancers

- Explain load balancing in Tanzu Kubernetes Grid
- Describe the different load balancers that integrate with Tanzu Kubernetes Grid
- Describe the components of VMware NSX® Advanced Load Balancer™
- Explain how Tanzu Kubernetes Grid integrates with NSX Advanced Load Balancer

6 VMware Tanzu Kubernetes Grid on vSphere

- Outline the requirements for deploying a supervisor cluster in a vSphere environment
- Describe the different options for deploying the supervisor cluster
- Describe the licensing requirements for supervisor clusters
- List the steps to install a Tanzu Kubernetes Grid supervisor cluster and retrieve its status
- Describe how to apply a full license to the supervisor cluster
- List the requirements for deploying a management cluster in a vSphere environment
- List the requirements for a bootstrap machine
- List the requirements for Internet-restricted environments
- Explain how the Tanzu Kubernetes Grid version relates to specific OVA versions
- Describe the optional configuration for deploying a management cluster in a vSphere environment
- List the steps to install a Tanzu Kubernetes Grid management cluster
- Summarize the creation of a management cluster
- Define the commands available for working with management clusters
- List the steps to register Tanzu Kubernetes Grid management clusters with VMware Tanzu Mission Control

7 Tanzu Kubernetes Grid Workload Clusters

- List the options for deploying Tanzu Kubernetes Grid workload clusters
- Describe the different types of Tanzu Kubernetes Grid workload clusters
- Explain how Tanzu Kubernetes Grid clusters are created
- Describe the VMs that are included in a workload cluster
- Describe the components of a workload cluster

- Describe the difference between machine images and custom machine images
- List the available customizations
- Explain how to build custom images
- Describe how to use custom images
- Describe the commands available for working with workload clusters
- Explain how to scale workload clusters
- Describe machine health checks

8 Tanzu Kubernetes Grid Packages

- Explain how Tanzu Kubernetes Grid uses packages
- Identify the different package repositories
- Describe the different types of packages and their dependencies
- Define auto-managed packages
- Identify the auto-managed packages that are installed to every cluster and those that are installed based on configuration
- Explain how auto-managed packages are installed and configured
- Define CLI-managed packages
- Explain how CLI-managed packages are installed and configured
- Use the Tanzu CLI to configure and install optional packages and repositories

9 Configuring and Managing Tanzu Kubernetes Grid Networking Packages

- Describe cert-manager
- Explain how to install cert-manager
- Describe the Contour ingress controller
- Explain how to install Contour
- Describe service discovery
- Describe ExternalDNS
- Detail the configuration options for BIND servers
- Explain how to install ExternalDNS
- Describe Multus
- Describe Multus pod configuration
- Describe Whereabouts
- Explain how to install Multus and Whereabouts

10 Configuring and Managing Tanzu Kubernetes Grid Operation and Analytics Packages

- Describe Fluent Bit
- Detail the logs that Fluent Bit collects
- Describe basic Fluent Bit configuration
- Explain how to install Fluent Bit
- Describe Prometheus
- Describe Grafana
- Describe the Harbor image registry
- Explain Harbor vulnerability scanning

11 Tanzu Kubernetes Grid Day 2 Operations

- Explain the process of authenticating Tanzu Kubernetes Grid workload clusters
- Identify the method of creating restricted role-based access to components inside a workload cluster
- Explain how Tanzu Kubernetes Grid integrates with NSX Advanced Load Balancer for ingress

- Describe VMware Tanzu® Application Platform™
- List the steps to install Tanzu Application Platform on Tanzu Kubernetes Grid workload clusters
- Describe the prerequisites and steps for upgrading Tanzu Kubernetes Grid instances
- Describe the prerequisites and steps for updating Tanzu Kubernetes Grid workload clusters
- Understand how VMware Tanzu Mission Control manages the life cycle of Tanzu Kubernetes Grid
- Define Velero Plugin for vSphere and standalone Velero
- Describe Velero Plugin for vSphere
- Identify the steps to install Velero on workload clusters
- Explain how to back up and restore workload clusters with the Velero CLI and VMware Tanzu Mission Control

12 Troubleshooting Tanzu Kubernetes Grid

- Describe the various Tanzu Kubernetes Grid logs
- Explain how to review the Cluster API controller logs
- Identify the location of the Tanzu Kubernetes Grid logs
- Explain the purpose of Crash Diagnostics
- Describe how to use SSH to connect to Tanzu Kubernetes Grid nodes
- Explain how to troubleshoot package installation errors

INFO

Materiale didattico: Materiale didattico ufficiale VMware in formato digitale

Costo materiale didattico: incluso nel prezzo del corso a Calendario

Natura del corso: Operativo (previsti lab su PC)