

VMware Tanzu Kubernetes Grid : Install, Configure, Manage **(V2.0)**

Course Outline

1. Course Introduction

- Introductions and course logistics
- Course objectives

2. Introducing Tanzu Kubernetes Grid

- Overview of Tanzu Kubernetes Grid
- VMware vSphere® with VMware Tanzu®
- VMware Tanzu® Mission Control™
- VMware Tanzu® for Kubernetes Operations
- Tanzu Kubernetes Grid components
- Bootstrapping multiple instances
- vSphere Namespaces
- Benefits of VMware Tanzu Mission Control registration

3. CLI Tools and Cluster API

- Tanzu CLI and plug-ins
- Kubernetes CLI Tools for vSphere
- Carvel tool set
- Overview of Cluster API
- Infrastructure providers and controllers
- Cluster API custom resource definitions

4. Authentication

- Kubernetes roles and RBAC API
- Pinniped and OpenID Connect
- Dex and LDAP authentication
- vCenter® Single Sign-On integration
- Management cluster authentication components
- Pinniped workflow in management clusters
- vSphere Namespace permissions and roles
- Authentication options for kubectl and Tanzu CLI

5. Load Balancers

- Load balancing in Tanzu Kubernetes Grid
- Integration with different load balancers
- Public cloud load balancing
- Components of VMware NSX® Advanced Load Balancer™
- Integration with NSX Advanced Load Balancer

6. VMware Tanzu Kubernetes Grid on vSphere

- Requirements for deploying a supervisor cluster

- Deployment options for the supervisor cluster
- Licensing requirements
- Installation steps and status retrieval
- Applying a full license to the supervisor cluster
- Management cluster requirements
- Bootstrap machine requirements
- Internet-restricted environment requirements
- OVA version relation to Tanzu Kubernetes Grid version
- Optional configurations for management cluster deployment
- Steps for installing a management cluster
- Registering management clusters with VMware Tanzu Mission Control

7. VMware Tanzu Kubernetes Grid on Public Clouds

- Requirements for management clusters on AWS and Azure
- Process for creating management clusters on public clouds

8. Tanzu Kubernetes Grid Workload Clusters

- Options for deploying workload clusters
- Types of workload clusters
- Creation process for Tanzu Kubernetes Grid clusters
- Components of a workload cluster
- Difference between machine images and custom images
- Available customizations and building custom images
- Commands for working with workload clusters
- Scaling workload clusters and machine health checks

9. Tanzu Kubernetes Grid Packages

- Usage of packages in Tanzu Kubernetes Grid
- Different package repositories and types
- Auto-managed and CLI-managed packages
- Installation and configuration of packages using the Tanzu CLI

10. Configuring and Managing Tanzu Kubernetes Grid Networking Packages

- Overview of cert-manager and installation
- Contour ingress controller and installation
- Service discovery and ExternalDNS configuration
- Installation of Multus and Whereabouts

11. Configuring and Managing Tanzu Kubernetes Grid Operation and Analytics Packages

- Overview of Fluent Bit and logs collection
- Installation of Fluent Bit, Prometheus, Grafana, and Harbor
- Harbor vulnerability scanning

12. Tanzu Kubernetes Grid Day 2 Operations

- Authenticating workload clusters
- Role-based access within workload clusters

- NSX Advanced Load Balancer integration for ingress
- VMware Tanzu® Application Platform™ installation steps
- Upgrading and updating Tanzu Kubernetes Grid instances
- Velero Plugin for vSphere and workload cluster backup/restore

13. Troubleshooting Tanzu Kubernetes Grid

- Overview of Tanzu Kubernetes Grid logs
- Reviewing Cluster API controller logs
- Troubleshooting package installation errors

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