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Sign Up

VMware TKGi Training: Kubernetes Administration

3 days (21 hours)

Overview

VMware Tanzu Kubernetes Grid Integrated Edition (TKGi), formerly VMware Enterprise PKS, is a platform designed to deploy, manage, and maintain enterprise Kubernetes clusters by automating their lifecycle and integration with the infrastructure.

Our VMware Tanzu Kubernetes Grid Integrated Edition (TKGi) training course will enable you to master the platform's architecture and operations. You'll learn how to use Tanzu Operations Manager and BOSH to configure the environment and manage the lifecycle of TKGi components.

You will be able to create, scale, and maintain Kubernetes clusters using the TKGi API and CLI. You will also learn how to configure their connectivity with Antrea or NSX and provide persistent storage using CSI mechanisms.

The training also covers securing TKGi with UAA, RBAC, and certificates, as well as using Harbor to manage container images. You will explore the backup and restore mechanisms necessary to protect your environments.

Upon completion of this training, you will be able to administer and maintain a TKGi platform, monitor its Kubernetes clusters, diagnose major incidents, and prepare for maintenance and upgrade operations.

Like all our training courses, this one will introduce you to **the latest stable version** of the technology and its new features.

Objectives

- Configure and administer a TKGi platform
- Create and manage the lifecycle of Kubernetes clusters
- Configure the network and persistent storage for clusters
- Secure access with UAA, RBAC, and certificates
- Manage container images with Harbor
- Monitor, troubleshoot, and upgrade TKGi

Target Audience

- Kubernetes Administrators
- Platform Engineers
- DevOps Engineers
- VMware / Tanzu Administrators
- Infrastructure Engineers

Prerequisites

- Good knowledge of Kubernetes or, ideally, completion of our [Kubernetes training](#) or our [Advanced Kubernetes training](#)
- General knowledge of networking and storage
- Basic knowledge of VMware vSphere is recommended

Curriculum for our VMware Tanzu Kubernetes Grid Integrated Edition (TKGi) training course

[Day 1 - Morning]

Understanding the architecture and components of TKGi

- Understanding the evolution from PKS to VMware Tanzu Kubernetes Grid Integrated Edition (TKGi) and its role in the Tanzu ecosystem
- Explore the TKGi architecture and the interactions between its key components
- Understand the role of Tanzu Operations Manager in configuring and managing the platform
- Understand the role of BOSH in the deployment and lifecycle of TKGi components
- Identify the role of the TKGi API, the CLI, and Kubernetes pods
- Hands-on workshop: Explore a TKGi platform, identify its components, and analyze their role in the operation of a Kubernetes cluster.

[Day 1 - Afternoon]

Install and configure a TKGi platform

- Identify the infrastructure prerequisites required for deploying TKGi
- Configure Tanzu Operations Manager and the platform's key settings
- Integrate TKGi with the VMware vSphere infrastructure and configure the necessary resources
- Configure network settings, DNS, NTP, certificates, and compute resources
- Understand how Kubernetes plans and profiles work and tailor their configuration to the teams' needs
- Hands-on workshop: Prepare and configure the TKGi infrastructure, then define a Kubernetes plan tailored for an enterprise environment.

[Day 2 - Morning]

Create and manage the lifecycle of Kubernetes clusters

- Create and manage Kubernetes clusters using the TKGi API and CLI
- Use templates and profiles to standardize cluster configuration
- Manage control plane and worker nodes, as well as resources assigned to clusters
- Perform scaling operations and adapt a cluster's capacity to the needs of workloads
- Understand the role of BOSH in detecting and remediating virtual machine failures
- Hands-on workshop: Create a TKGi cluster, modify its capacity, check its status, and then simulate a lifecycle operation.

[Day 2 - Afternoon]

Administer the network and persistent storage

- Understanding TKGi's network architecture and traffic flows between platform components
- Configure and manage Kubernetes connectivity with Antrea and understand its integration with TKGi
- Understand integration scenarios with VMware NSX and network segmentation mechanisms network
- Implement network policies and control communications between workloads
- Configure persistent storage with CSI and manage the volumes used by Kubernetes clusters
- Hands-on workshop: Configure a cluster's connectivity, apply a network policy, and provision persistent storage via CSI.

[Day 3 - Morning]

Secure TKGi and protect workloads

- Understanding TKGi Authentication with UAA and Its Integration with Identity Services
- Configuring Users, Roles, and Permissions with RBAC
- Managing Certificates and Securing Communications Between Platform Components
- Using Harbor as a private registry to store and manage container images
- Understanding backup and restore policies for the platform and clusters

- Hands-on workshop: Configure access to a cluster using UAA and RBAC, use Harbor, and set up a backup and restore procedure.

[Day 3 - Afternoon]

Upgrade, monitor, and troubleshoot TKGi

- Monitor the status of the TKGi platform and Kubernetes clusters and identify key health metrics
- Use logs, events, and BOSH tools to diagnose incidents
- Prepare and perform upgrades of TKGi and Kubernetes clusters
- Verify compatibility, dependencies, and impacts before a maintenance operation
- Diagnose issues related to nodes, the network, storage, authentication, and the cluster lifecycle
- Hands-on workshop: Diagnose multiple TKGi incidents, check the status of components, and then prepare a procedure for upgrading the platform.

Target Audience

This training is intended for both individuals and companies—large or small—that wish to train their teams in a new, advanced IT technology or to acquire specific business knowledge or modern methods.

Assessment upon enrollment

The pre-training assessment complies with Qualiopi quality standards. Upon final registration, the learner receives a self-assessment questionnaire that allows us to evaluate their estimated proficiency level across various types of technologies, as well as their expectations and personal goals for the upcoming training, within the limits imposed by the selected format. This questionnaire also allows us to anticipate certain connection or internal security issues within the company (intra-company or virtual classroom) that could pose challenges for monitoring and ensuring the smooth operation of the training session.

Teaching Methods

Hands-On Training: 60% Practical, 40% Theoretical. Training materials distributed in digital format to all participants.

Organization

The course alternates between theoretical input from the instructor—supported by examples and reflection sessions—and group work.

Assessment

At the end of the session, a multiple-choice quiz is administered to verify that participants have successfully acquired the skills.

Certification

A certificate will be issued to each trainee who has completed the entire training program.