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# PKS training: Pivotal Container Services

3 days (21 hours)

## PRESENTATION

**PKS** (Pivotal Container Service), the new containerization service launched by Pivotal, enables operators to provision, operate and manage Kubernetes clusters for enterprises and multi-cloud service providers such as vSphere or Google Cloud Platform. PKS stands out for its high-availability features, monitoring and automated diagnostics. PKS doesn't modify Kubernetes, and doesn't add an overlay or intermediate interface; it fills the gaps left by Kubernetes.

What's more, PKS comes in at a lower price than competitors like OpenShift for an equivalent ecosystem. It considerably simplifies application deployment and implementation.

In this course you will learn how to integrate PKS with Kubernetes and deploy, patch and upgrade all Kubernetes clusters on your system, without downtime. At the end of the course, participants will leave with a clear understanding of the Kubernetes environment using PKS and practical experience of deploying a range of applications and services.

As with all our training courses, this one will introduce you to the latest version of **PKS v1.7**.

## OBJECTIVES

- Setting up PKS containers
- Liaise with Kubernetes
- Cluster creation
- Setting up a cloud application
- Securing Kubernetes via PKS

## TARGET AUDIENCE

Developers, Architects, Systems administrators, DevOps

## PREREQUISITES

Knowledge of Kubernetes or ideally have taken our [Kubernetes](#) or [Kubernetes Advanced](#) training course.

## Our Pivotal PKS training program

### Introduction to the software container

- What is a software container
- Solution Advantages & Disadvantages : State of the art
  - OpenShift
  - Rancher RKE
  - PKS
  - DOCKER

## INTRODUCTION TO THE CONCEPT OF PKS BASES

- PKS cluster management
- PKS API authentication
- Load balancers in PKS
- VM sizing for PKS clusters
- PKS telemetry
- PAS and PKS deployments with Ops Manager
- Sink Architecture

## Setting PKS to your environment

- Installation
  - vSphere
  - vSphere with NSX-T integration
  - GCP
  - AWS
  - Azur
- Update
  - PKS update
  - Updating PKS with NSX-T

## PKS service management

- PKS API access configuration
- Creating and configuring load balancers for PKS clusters
  - Creating and configuring a GCP load balancer for PKS clusters
  - Creating and configuring an AWS Load Balancer for PKS clusters
  - Creating and configuring an Azure Load balancer for PKS clusters
- User management in PKS with UAA
- PKS deployment management with BOSH
- PersistentVolume storage options on vSphere
- Adding custom workloads
- Input controller configuration
- Deleting PKS
- VMware Harbor Registry integration with PK

## CREATING PKS CLUSTERS

- Cluster creation
- Recover cluster credentials and configuration
- Displaying cluster lists
- Display cluster details
- Displaying cluster plans
- Scaling up existing clusters
- Cluster removal

## USING PKS

- Using network profiles (NSX-T only)
- Configuring and using dynamic persistent volumes
- Access the dashboard
- Deployment and access to basic workloads
- Creating SINK resources
- Using Helm with PKS
- Disconnect from PKS environment

## Recording and monitoring PKS

- Displaying usage data
- Download cluster logs
- PKS monitoring with Sink
- Surveillance Monitoring Master/etcd Node VMs

## Backing up and restoring PKS

- BOSH backup and restore installation
- Saving the PKS control plan
- Restore PKS control plan
- Single Master Cluster backup
- Restoring the Single Master Cluster

## Companies concerned

This training course is aimed at both individuals and companies, large or small, wishing to train their teams in a new advanced computer technology, or to acquire specific business knowledge or modern methods.

## Positioning on entry to training

Positioning at the start of training complies with Qualiopi quality criteria. As soon as registration is finalized, the learner receives a self-assessment questionnaire which enables us to assess his or her estimated level of proficiency in different types of technology, as well as his or her expectations and personal objectives for the training to come, within the limits imposed by the selected format. This questionnaire also enables us to anticipate any connection or security difficulties within the company (intra-company or virtual classroom) which could be problematic for the follow-up and smooth running of the training session.

## Teaching methods

Practical course: 60% Practical, 40% Theory. Training material distributed in digital format to all participants.

## Organization

The course alternates theoretical input from the trainer, supported by examples, with brainstorming sessions and group work.

## Validation

At the end of the session, a multiple-choice questionnaire verifies the correct acquisition of skills.

## Sanction

A certificate will be issued to each trainee who completes the course.