

Updated 03/15/2024

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Karpenter training: Deploy Kubernetes workloads

2 days (14 hours)

Presentation

Our Karpenter training course is aimed at system administrators and developers who want to optimize their Kubernetes infrastructure and their use of cloud resources by deploying workloads elastically using Auto-Scaling Pools. Karpenter is an open source solution for deploying Kubernetes workloads on cloud resources such as AWS, GCP and Azure, optimizing their use through auto-scaling.

Karpenter makes it easy to configure [Auto-Scaling Pools](#) to optimize the use of cloud resources according to workload needs. It also offers enhanced security with automated audits and secure use of Kubernetes secrets.

In this training course, you will learn how to install Karpenter, configure Pools Auto-Scaling for your Kubernetes workloads and manage them at large scale. You'll also learn how to use Karpenter's integrated security features to protect your workloads.

This course is based on the latest version: [v0.3](#)

Objectives

- Installing and configuring Karpenter
- Configuring Auto-Scaling Pools for Kubernetes workloads
- Managing large-scale Auto-Scaling Pools
- Use Karpenter's built-in security features to protect workloads

Target audience

- System administrators
- Developers

Prerequisites

Knowledge of Kubernetes.

Karpenter training program

Introduction to Karpenter

- Introduction to Karpenter and its role in Kubernetes cluster management
- Installing and configuring Karpenter
- The benefits
- The differences between Karpenter and other cluster management solutions
- Key concepts
 - Nodes
 - Capacities
 - Constraints
- The different types of workloads supported by Karpenter
- Auto-scaling pools
- Prerequisites for using Karpenter
- Best practices for using Karpenter

Using Karpenter for cluster management

- Cluster creation options
- Automatic deployment features
- Different deployment strategies
- Node scaling management
- Load balancing strategies
- Cluster performance optimization
- Cluster monitoring

Application development with Karpenter

- Application deployment options
- Using Kubernetes
- Configuration options
- Application deployment and update management
- Resource management
- Monitoring tools
- Best practices for application development

Safety and reliability of Karpenter clusters

- Safety measures for Karpenter clusters
- Access and authorization management
- Setting up high availability
- Options
 - Backup
 - Catering
- Error and failure management

Continuous deployment with Karpenter

- Options for implementing continuous deployment with Karpenter
- Version management tools for continuous deployment
- Test management
- Continuous integration tools supported by Karpenter

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.

