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Sign up

Terraform with AWS training: Automate your infrastructure

3 days (21 hours)

Presentation

Our Terraform training course will enable you to manage your infrastructure efficiently, automate routine tasks and guarantee the consistency of your environment. You'll gain a better understanding of the challenges facing infrastructure engineers, and be able to find effective solutions to these problems.

We'll start by covering the fundamental concepts of Terraform, such as state definition and resource creation using configuration files.

We'll look at how to use modules to organize your code and how to create resources in different cloud providers, such as AWS, Azure and Google Cloud Platform.

In this course, you'll learn how to automate common tasks using scripts and integrate Terraform with configuration tools.

As with all our training courses, this one will introduce you to the latest version of Terraform, which at the time of writing is [Terraform 1.4](#).

Objectives

- Understand the different services offered by Terraform
- Using Terraform to deploy an infrastructure on AWS
- Master HCL, remote storage and providers

Target audience

- Developers
- Infrastructure engineer
- DevOps

Prerequisites

- AWS basics
- Basic knowledge of GIT

SOFTWARE REQUIREMENTS

- A terminal
- A text editor (Visual Code...)
- The right to install the Terraform binary
- AWS CLI installed (this last option may be added during training)

RECOMMENDATIONS FOR PRE- AND POST-COURSE READING

- The [HashiCorp blog](#), with detailed information on the latest versions of Terraform and tips on how to use it.
- Scott Winkler's [Terraform in Action](#) provides a comprehensive introduction to the principles of Terraform with code examples
- The [Gruntwork blog](#), with tips and code examples for infrastructure as code with Terraform
- Terraform developer forums for chatting with other users and asking questions. questions about the tool

Terraform training program

Day 1

Introducing Terraform

- The principle of an infrastructure-as-code tool
- The different providers

Terraform installation

- Installing the package

- Installation check

Building an AWS infrastructure

- AWS provider configuration
- Definition of target infrastructure
- Initializing the Terraform configuration
- Creating the infrastructure
- Importing existing resources into Terraform
- Removing resources from Terraform without destroying them
- Infrastructure modification
- Infrastructure redeployment
- Destruction of infrastructure

Day 2

HCL language

- Expression types and values
- Using input variables (variable)
- Using output values
- Using locals
- Implicit dependencies between resources
- Explicit dependencies between resources
- Resource lifecycles
- Integrated functions
- Templates
- Conditional expressions
- Creation of several identical resources (count and for_each)
- Dynamic blocks

The modules

- Presentation of the module principle
- The different types of source
- Module versions
- Using a terraform register module
- Creating terraform modules

Day 3

Terraform update

- Binary update
- Provider updates
- Updating modules
- Version restrictions

Remote state storage

- The different backends
- The lock system
- Remote states

Advanced

- Working with multiple versions of Terraform
- Multiple provider definition
- Workspaces

Complementary module (+1 day) : Preparing for the Terraform Associate exam

Infrastructure as Code (IaC)

- What is IaC?
- Why use IaC?
- The benefits of multi-cloud and vendor agnostics

Terraform CLI and the Terraform workflow

- The different scenarios on the test
- Terraform flow presentation
- Cycle control (Write, Plan and Apply)

Advanced configuration

- Read, modify and generate a configuration
- Best practices in secure secret injection
- Create and differentiate resource and data configuration
- Create and maintain state

- Secret management in state files

Strategy and method for exam success

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.