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# Terraform training with AWS

3 days (21 hours)

## Presentation

Our Terraform training course will teach you how to automate and efficiently manage cloud infrastructures using Infrastructure as Code (IaC).

You'll learn the fundamental concepts of Terraform, such as how state and create resources using configuration files.

During the course, you'll also learn how to use HashiCorp Configuration (HCL) to describe resources, and how to deploy environments on platforms such as :

- AWS
- Azure
- GCP

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 1.10](#).

## Objectives

- Understand the different services offered by Terraform
- Structuring and organizing projects
- Master HCL, remote storage and providers
- Automate deployment of cloud resources

## Target audience

- Developers
- Infrastructure engineer
- DevOps

# Prerequisites

- Basic knowledge of AWS, Azure, GCP
- Basic knowledge of GIT
- [Test My Knowledge](#)

## SOFTWARE REQUIREMENTS

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

- Package installation
- Installation verification 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 lifecycle
- Integrated functions
- Templates
- Conditional expressions
- Creation of several identical resources (count and for\_each)
- Dynamic blocks

### Modules

- Presentation of the module principle
- The different types of sources
- Module versions
- Using a Terraform registry 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
- Advanced

remote states

- 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 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 on entry to training complies with Qualiopi quality criteria. As soon as

On final registration, 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 forthcoming course, 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, 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.

Training organization registered under number 11 75 54743 75. This registration does not imply government approval.

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