Training: Google Cloud

Getting Started with Terraform for Google Cloud

TRANING TERMS

2025-09-26 | 1 day | Kraków / Virtual Classroom
2025-10-24 | 1 day | Warszawa / Virtual Classroom

TRAINING GOALS:

This course provides an introduction to using Terraform for Google Cloud. It enables learners to describe how Terraform can be used to implement infrastructure as a code and to apply some of its key features and functionalities to create and manage Google Cloud infrastructure. Learners will get hands-on practice building Google Cloud resources using Terraform.

What you'll learn

- Define the business need for infrastructure as code and the benefits of using it in your environment.
- Explain the features and functionalities of Terraform.
- Use Terraform resources, variables, and output values to create Google Cloud infrastructure resources.
- Use Terraform modules to build reusable configurations.
- Explain Terraform state and its importance.

Audience

Cloud engineers, DevOps engineers, and individuals who want to start using Terraform to automate infrastructure provisioning with a focus on Google Cloud Platform

CONSPECT:

- Module 1 - Introduction to Terraform for Google Cloud
  - Topics
    - Introduction to IaC
      - What is infrastructure as code (IaC)?

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        - Problems IaC can solve
        - Benefits of IaC
        - Provisioning versus configuration
        - Imperative versus declarative approach
    - Introduction to Terraform
        - Terraform overview
        - Terraform features
        - IaC configuration workflow
        - Terraform use cases
    - Using Terraform
        - How to use Terraform
        - Running Terraform in production
        - Installing Terraform
        - Authentication for Google Cloud
- Objectives
    - Define infrastructure as code.
    - Explain the features and benefits of using Terraform.
    - Explain the use case of Terraform for Google Cloud.
    - Describe how to use Terraform for Google Cloud.
- Activities
    - 1 quiz

- Module 2 - Terms and concepts
    - Topics
        - The Author phase
            - Terraform Directory structure
            - Introduction to HCL syntax
            - Resources
            - Variables
            - State
            - Modules
        - Terraform commands
            - terraform init
            - terraform plan
            - terraform apply
            - terraform fmt
            - terraform destroy

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- Terraform Validator tool
  - Introduction
  - Why use the Terraform Validator tool
  - Validation workflow
  - Terraform Validator use cases
- Objectives
  - Explain the Terraform workflow.
  - Create basic configuration files within Terraform.
  - Explain the purpose of a few Terraform commands.
  - Describe the Terraform Validator tool.
  - Create, update, and destroy Google Cloud resources using Terraform.
- Activities
  - 1 lab
  - 1 quiz

- Module 3 - Writing Infrastructure Code for Google Cloud
  - Topics
    - Introduction to Resources
      - Resources overview
      - Syntax
      - Example
      - Refer a resource attribute
    - Considerations to define a resource block
    - Meta-arguments for resources
    - Resource dependencies
      - Implicit dependency
      - Explicit dependency
    - Introduction to Variables
      - Overview
      - Syntax to declare a variable
      - Syntax to reference and assign a value to a variable
      - Variables best practices
    - Introduction to output values
      - Output values overview
      - Best practices
    - Terraform Registry and CFT
      - Introduction to Terraform Registry

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        - Introduction to CFT
    - Objectives
        - Declare the resources within Terraform.
        - Explain implicit and explicit resource dependencies.
        - Use variables and output values within the root configuration.
        - Explain Terraform Registry and Cloud Foundation Toolkit.
    - Activities
        - 1 lab
        - 1 quiz
- Module 4 - Organizing and Reusing Configuration with Terraform Modules
    - Topics
        - Introduction to modules:
            - Why are modules needed
            - What is a module?
            - Example
        - Reusing configurations by using modules
            - Module sources
            - Calling a module into the source configuration
        - Using variables to parameterize your configuration
        - Pass resource attributes using output variables
        - Module use cases, benefits, and best practices
    - Objectives
        - Define Terraform modules.
        - Use modules to reuse configurations.
        - Use modules from the public registry.
        - Use input variables to parameterize configurations.
        - Use output values to access resource attributes outside the module.
    - Activities
        - 1 lab
        - 1 quiz
- Module 5 - Introduction to Terraform State
    - Topics
        - Introduction to Terraform state
            - How information is stored in a Terraform state file
        - Ways to save a state file
        - Storing a state file in a Cloud Storage bucket

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        - Issues when storing the Terraform state locally
        - Benefits of storing a state file in a Cloud Storage bucket
        - Process of storing a Terraform state file remotely in a Cloud Storage bucket
    - Terraform state best practices
- Objectives
    - Define Terraform state.
    - List the benefits of storing the state file remotely.
    - Explain how to store the Terraform state in a Cloud Storage bucket.
    - Explain Terraform state best practices.
- Activities
    - 1 lab
    - 1 quiz

REQUIREMENTS:

To get the most out of this course, participants should:

- Complete Google Cloud Fundamentals: Core Infrastructure
- Have basic programming skills and familiarity with using CLI
- Have general familiarity with Google Cloud

Difficulty level

CERTIFICATE:

The participants will obtain certificates signed by Google Cloud Platform.

TRAINER:

Authorized Google Cloud Platform Trainer.

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