

GC-TGC

GETTING STARTED WITH TERRAFORM
FOR GOOGLE CLOUD

DURATION	LEVEL	TECHNOLOGY	DELIVERY METHOD	TRAINING CREDITS
1 Day	Introduction	Google Cloud	ILT	NA

INTRODUCTION

This course introduces 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.

AUDIENCE PROFILE

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

PREREQUISITES

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.

COURSE OBJECTIVES

This course teaches participants the following skills:

- 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.

COURSE CONTENT

Lesson 1: Introduction to Terraform for Google Cloud

Topics

Introduction to IaC

- What is infrastructure as code (IaC)?
- 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.

Objectives

Upon completion of this module, the student will be able to:

- 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.

- Installing Terraform.

- Authentication for Google Cloud.

Activities

- 1 Quiz.

Lesson 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.
- Terraform Validator tool**
- Introduction.
 - Why use the Terraform Validator tool.
 - Validation workflow.
 - Terraform Validator use cases.
- Objectives**
Upon completion of this module, the student will be able to:
- 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.
- Lesson 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.
 - Introduction to CFT
- Objectives**
Upon completion of this module, the student will be able to:
- 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.
- Lesson 4: Choosing Storage Solutions**
- Topics**
- Identify the use cases for Spanner.**
- 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**
Upon completion of this module, the student will be able to:
- 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.
- Lesson 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.
 - 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**
Upon completion of this module, the student will be able to:
- 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.

There is no international certification linked to this course currently.