



Google Cloud Fundamentals: Core Infrastructure

This course uses lectures and labs to give you an overview of Google Cloud products and services. You learn the value of Google Cloud and how to incorporate cloud-based solutions into your business strategies.

 **DURATION**
One day

 **LEVEL**
Introductory

 **FORMAT**
ILT or On-demand

What you'll learn

- Identify the purpose and value of Google Cloud products and services.
- Define how infrastructure is organized and controlled in Google Cloud.
- Explain how to create basic infrastructure in Google Cloud.
- Select and use Google Cloud storage options.
- Describe the purpose and value of Google Kubernetes Engine.
- Identify the use cases for serverless Google Cloud services.



Overview	9 modules · 35 videos · 4 labs · 11 classroom activities
Who this course is for	• Individuals planning to deploy applications and create application environments on Google Cloud. • Developers, systems operations professionals, and solution architects starting with Google Cloud. • Executives and business decision makers evaluating Google Cloud's potential to address their business needs.
Products	• Identity and Access Management (IAM) • Cloud Marketplace • Compute Engine • Cloud Storage • Bigtable • Cloud SQL • Spanner • Firestore • Google Kubernetes Engine • Cloud Source Repositories • Cloud Functions • Cloud Run
Prerequisites	Familiarity with application development, systems operations, Linux operating systems, and data analytics or machine learning is helpful in understanding the technologies covered.
Not covered	• App Engine • SRE concepts • SRE best practices



Module 0 Introduction to the course

Topics	The course introduction explains the course goals and previews each section.
Objectives	Introduce course objectives and preview each section of the course.

Module 01 Introduction to Google Cloud

Topics	• Cloud computing overview • IaaS and PaaS • The Google Cloud network • Environmental impact • Security • Open-source ecosystems • Pricing and billing
Objectives	• Identify the Google Cloud's benefits. • Define the components of the Google network infrastructure, including points of presence, data centers, regions, and zones. • Identify the difference between infrastructure as a service (IaaS) and platform as a service (PaaS).
Activities	Quiz: Module quiz

Module 02 Resources and Access in the Cloud

Topics	• Google Cloud resource hierarchy • IAM • IAM roles • Service accounts • Cloud Identity • Interacting with Google Cloud
Objectives	• Identify the purpose of projects on Google Cloud. • Define the purpose of and use cases for IAM. • List interaction methods with Google Cloud. • Use Cloud Marketplace to interact with Google Cloud.
Activities	• Lab: Getting Started with Cloud Marketplace • Quiz: Module quiz



Module 03 Virtual machines and networks in the Cloud

Topics	• Virtual Private Cloud networking • Compute Engine • Scaling virtual machines • Important VPC compatibilities • Cloud Load Balancing • Cloud DNS and Cloud CDN • Connection of networks to Google VPC
Objectives	• Explore the basics of networking in Google Cloud. • Identify the purpose of and use cases for Compute Engine. • Outline how Compute Engine can scale. • Detail important VPC compatibilities including routing tables, firewalls, and VPC peering. • Explore how Cloud Load Balancing functions in Google Cloud. • Deploy a basic infrastructure to Google Cloud.
Activities	• Lab: Getting Started with VPC Networking and Google Compute Engine • Quiz: Module quiz

Module 04 Storage in the Cloud

Topics	• Cloud Storage • Cloud SQL • Spanner • Firestore • Bigtable • Comparison of storage options
Objectives	• Identify the purpose of and use cases for Cloud Storage. • Distinguish between Cloud Storage classes. • Distinguish between Google Cloud's database storage options. • Deploy an application that uses Cloud SQL and Cloud Storage.
Activities	• Lab: Getting Started with Cloud Storage and Cloud SQL • Quiz: Module quiz



Module 05 Containers in the Cloud

Topics	• Introduction to containers • Kubernetes • Google Kubernetes Engine
Objectives	• Define the concept of a container and identify uses for containers. • Identify the purpose of and use cases for Kubernetes and Google Kubernetes Engine.
Activities	Quiz: Module quiz

Module 06 Applications in the Cloud

Topics	• Cloud Run • Cloud Functions
Objectives	• Identify the purpose and use cases for Cloud Run. • Describe how Cloud Functions can support application development on Google Cloud. • Deploy a containerized application on Cloud Run.
Activities	• Lab: Hello Cloud Run • Quiz: Module quiz

Module 07 Course summary

Topics	The course summary recaps the major concepts learners were introduced to during the course.
Objectives	Summarize the content covered in each section of the course.

