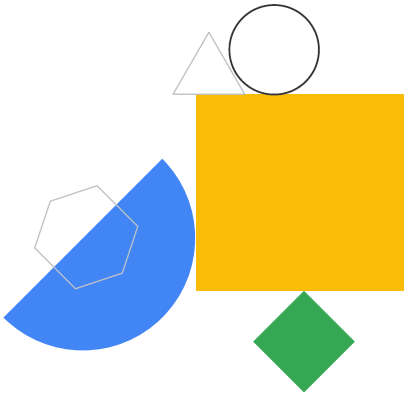
Google Cloud



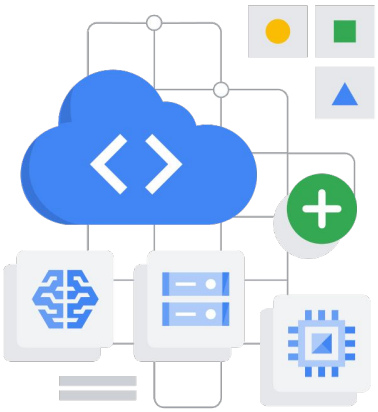
# Google Cloud Core Infrastructure Module 9

On-demand course
March 2022


Congratulations on completing the Google Cloud Core Infrastructure course!

Before you go, let’s take a few minutes to review what we’ve covered.

## Module 01



01 Google Cloud and cloud computing

02 Managed infrastructure and services with IaaS and PaaS

03 The Google Cloud network

04 Security throughout the infrastructure

05 Open source

06 Pricing structure and billing tools

In module 1, you were introduced to Google Cloud and cloud computing.

Specifically, you explored:

- The concept of managed infrastructure and managed services, through IaaS, or infrastructure as a service, and PaaS, or platform as a service.
- The Google Cloud network.
- Google Cloud's focus on security throughout our infrastructure.
- How Google publishes key elements of technology using open source licenses.
- And Google Cloud's pricing structure and billing tools.
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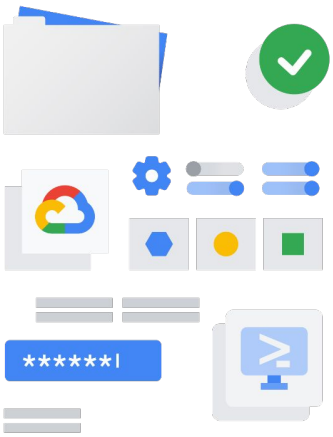
## Module 02




01 Google Cloud Resource Hierarchy:
- Resources
- Projects
- Folders
- Organization node

02 Policies

03 Identity and Access Management (IAM)

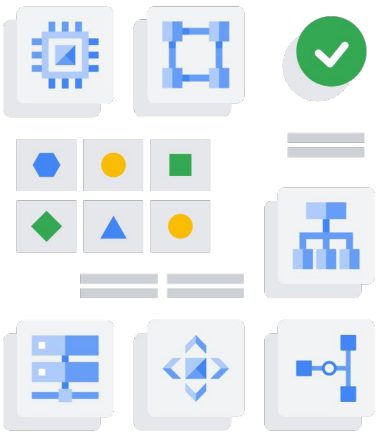
04 Ways to access and interact with Google Cloud:
- Google Cloud console
- Cloud SDK and Cloud Shell
- APIs
- Google Cloud console Mobile App

In module 2, you learned about the Google Cloud Resource Hierarchy, which is made up of four levels: **resources**, **projects**, **folders**, and an **organization node**.

You also learned about:

- Defining policies and their downward inheritance.
- When to use Identity and Access Management, or IAM,
- And the four ways to access and interact with Google Cloud: through the **Google Cloud console**, the **Cloud SDK** and **Cloud Shell**, **APIs**, and the **Google Cloud console Mobile App**.

## Module 03



01 Google Compute Engine

02 Virtual private cloud (VPC)

03 Compute Engine's Autoscaling feature

04 Google Virtual Private Cloud compatibility features: routing tables, firewalls, VPC peering, shared VPC

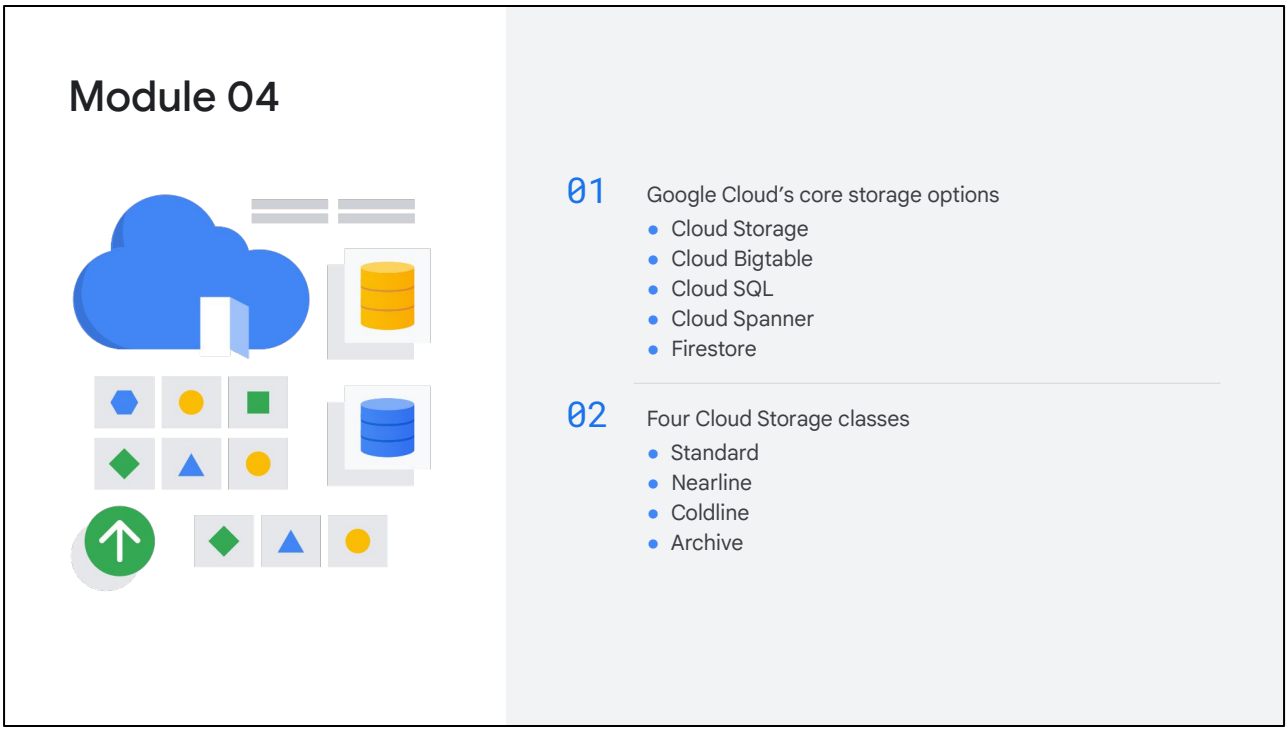
05 Cloud Load Balancing

06 Google Cloud interconnect

In module 3, you explored how Compute Engine works, with a focus on virtual machines and virtual networking.

You were introduced to:

- The VPC, or **virtual private cloud**.
- Compute Engine's **Autoscaling** feature.
- And important Google Virtual Private Cloud compatibility features, like **routing tables**, **firewalls**, **VPC peering** and **shared VPC**, all of which result in the need for less network management.
- You also explored **Cloud Load Balancing**, a fully distributed, software-defined, managed service for all your traffic.
- Finally, you compared how on-premises or other-cloud networks can be **interconnected** with a Google VPC.

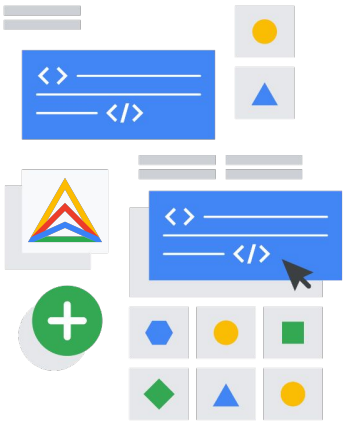



In module 4, you explored Google Cloud's five core storage options: Cloud Storage, Cloud Bigtable, Cloud SQL, Cloud Spanner, and Firestore.

You also examined the four storage classes that make up Cloud Storage:

- **Standard Storage**, which is used for frequently accessed *hot data*,
- **Nearline Storage and Coldline Storage**, which are used for less-frequently accessed *cool data*,
- and **Archive Storage**.

## Module 05



01 Containers

02 Kubernetes

03 Google Kubernetes Engine (GKE)

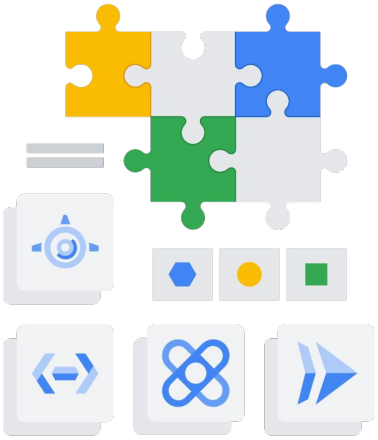
04 Anthos

In module 5, you learned about **containers**, which are invisible boxes around your code and its dependencies.

You were introduced to three container-based products:

- **Kubernetes**, an open-source platform for managing containerized workloads and services.
- **Google Kubernetes Engine** (GKE), a Google-hosted managed Kubernetes service in the cloud.
- And **Anthos**, Google's answer to modern hybrid and multi-cloud distributed systems and services management.

## Module 06



01 Developing applications in the cloud

02 Google App Engine:
- Standard environment
- Flexible environment

03 API management tools:
- Cloud Endpoints
- API Gateway
- Apigee Edge

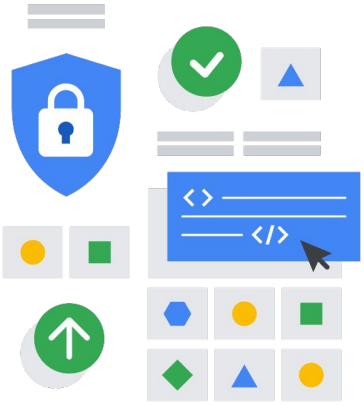
04 Cloud Run

In module 6, the focus was on developing applications in the cloud.

You explored:

- **App Engine**, a fully managed, serverless platform for developing and hosting web applications at scale, and the two of App Engine environments: **standard** and **flexible**.
- Three API management tools provided by Google Cloud: **Cloud Endpoints**, **API Gateway,** and **Apigee Edge**.
- And **Cloud Run**, a managed compute platform that lets you run stateless containers via web requests or Pub/Sub events.

## Module 07



01 Developing and deploying in the cloud

02 Cloud Source Repositories

03 Cloud Functions

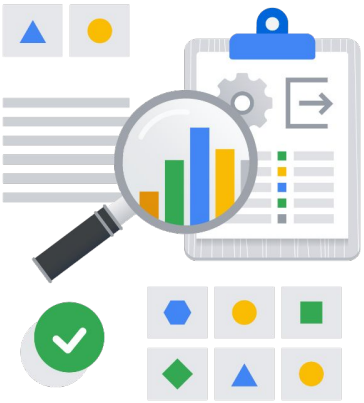
04 Terraform

The focus for module 7 was developing and deploying in the cloud.

You learned about:

- **Cloud Source Repositories**, which are full-featured Git repositories hosted on Google Cloud.
- **Cloud Functions**, a lightweight, event-based, asynchronous compute solution to create single-purpose functions.
- And **Terraform**, which lets you use a template to write the specifications for your application environment in the same way you'd write a configuration file.

## Module 08



01 Logging and monitoring on Google Cloud

02 Four golden signals:
- Latency
- Traffic
- Saturation
- Errors

03 Service Level Indicators (SLIs), Service Level Objectives (SLOs), and Service Level Agreements (SLAs)

04 Integrated observability tools

And in the final module, you focused on logging and monitoring on Google Cloud.

- The “Four Golden Signals” that measure a system’s performance and reliability: **latency**, **traffic**, **saturation**, and **errors**.
- **Service level indicators (SLIs)**, **service level objectives** (**SLOs),** and **service level agreements** (**SLAs)**, which are all types of targets set for a system’s Four Golden Signal metrics.
- And finally, Google’s integrated **observability tools,** which include Cloud Monitoring, Cloud Logging, Error Reporting, Cloud Trace, and Cloud Profiler.

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We hope that this course is just the beginning of your Google Cloud journey.

For more training and hands-on practice, explore the different learning paths available at cloud.google.com/training.

## Google Cloud Certified

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And if you're interested in validating your expertise and showcasing your ability to transform businesses with Google Cloud technology, you might consider working toward a Google Cloud certification.

You can learn more about Google Cloud's certification offerings at cloud.google.com/certification.


Thanks for completing this course.

We'll see you next time!