

Learning Guide for Associate Cloud Engineer Certification

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Get Trained

- ❑ Review the [exam guide](#) and take the [practice exam](#) to understand the scope of the certification exam and technical areas to focus.
- ❑ Complete the Cloud Infrastructure track trainings either through Coursera or Classroom Instructor-Led offerings. The training curriculum and content is the same across on-demand and instructor-led offerings.

On-Demand (Coursera)

Complete the first 5 courses of [Architecting with Google Cloud Platform Specialization](#) (listed below):

1. [Google Cloud Platform Fundamentals: Core Infrastructure](#)
2. [Essential Cloud Infrastructure: Foundation](#)
3. [Essential Cloud Infrastructure: Core Services](#)
4. [Elastic Cloud Infrastructure: Scaling and Automation](#)
5. [Elastic Cloud Infrastructure: Containers and Services](#)

or

Classroom Instructor-Led

Attend the following 2 classroom offerings:

1. [Google Cloud Platform Fundamentals: Core Infrastructure](#)
 2. [Architecting with Google Cloud Platform: Infrastructure](#)
- ❑ For those with an AWS background, review the [Google Cloud Platform for AWS Professionals](#). Similarly review the [Google Cloud Platform for Azure Professionals](#) for those familiar with Azure.

Acquire Hands-On Experience

- ❑ Complete a set of self-paced labs around Cloud Infrastructure to gain hands-on experience.

Qwiklabs Quests

Complete the following quests:

1. Fundamental: [Cloud Architecture Quest](#) (10 labs)
2. Introductory: [Deploying Applications](#) (10 labs)
3. Fundamental: [Security & Identity Fundamentals](#) (8 labs)
4. Fundamental: [Stackdriver](#) (10 labs)
5. Fundamental: [Networking in the Google Cloud](#) (7 labs)
6. Advanced: [Kubernetes in the Google Cloud](#) (10 labs)
7. Advanced: [Network Performance and Optimization](#) (7 labs)
8. Advanced: [Deployment Manager](#) (10 labs)

Completion of the following expert-level quests are highly recommended:

1. Expert: [Kubernetes Solutions](#) (9 labs)
2. Expert: [Google Cloud Solutions I: Scaling Your Infrastructure](#) (10 labs)

Gain Solution Design and Development Experience

- ❑ Review the cloud infrastructure solutions at [Google Cloud Solutions](#) under the following categories of compute, storage, networking, etc.

A. Compute

- [Using Clusters for Large-scale Technical Computing in the Cloud](#)
- [Designing Robust Systems](#)
- [Image Management Best Practices](#)
- [Deploying MongoDB on Google Compute Engine](#)
- [Using Firebase for Real-time Events on App Engine](#)
- [Setting Up LAMP on Compute Engine](#)
- [Running Windows Server Failover Clustering](#)
- [Choosing a Computing Option](#)

B. Storage

- [Transferring Big Data Sets to Cloud Platform](#)
- [Automating the Classification of Data Uploaded to Cloud Storage](#)
- [Building Scalable Web Applications with Cloud Datastore](#)
- [Choosing the Right Architecture for Global Data Distribution](#)
- [Loading, Storing, and Archiving Time Series Data](#)
- [Choosing a Storage Option](#)

C. Networking

- [Application Capacity Optimizations with Global Load Balancing](#)
- [Hybrid Connectivity Using Your Own Public IP Addresses on Compute Engine](#)
- [Best Practices for Floating IP Addresses](#)
- [Building High-throughput VPNs](#)
- [Build high availability and high bandwidth NAT gateways](#)

D. Security & IAM

- [Best Practices for DDoS Protection and Mitigation on Google Cloud Platform](#)
- [Securing your Cloud Platform Account with Security Keys](#)
- [Scenarios for Exporting Stackdriver Logging: Security and Access Analytics](#)
- [Designing GCP Policies for Customers](#)
- [Securing Rendering Workloads](#)
- [Authentication in HTTP Cloud Functions](#)
- [Securely Connecting to VM Instances](#)
- [Deploying a Fault-Tolerant Microsoft Active Directory Environment](#)

E. Deployment

- [Best Practices for Using Deployment Manager](#)
- [Automated Network Deployment: Startup](#)
- [Creating a Shared VPC with Deployment Manager](#)
- [Compute Engine Management with Puppet, Chef, Salt, and Ansible](#)

F. Logging, Monitoring

- [Design Patterns for Exporting Stackdriver Logging](#)
- [Customizing Stackdriver Logs for Kubernetes Engine with Fluentd](#)
- [Autoscaling an Instance Group with Stackdriver Custom Metrics](#)
- [Using Stackdriver Uptime Checks for Triggering Cloud Functions on a Schedule](#)

G. CI/CD, Development & Test

- [Continuous Deployment to Kubernetes Engine using Jenkins](#)
- [Continuous Deployment on Compute Engine Using Ansible with Spinnaker](#)
- [Continuous Delivery Pipelines with Spinnaker and Kubernetes Engine](#)
- [Using Jenkins for Distributed Builds on Compute Engine](#)

H. Microservices & Containers

- [Preparing a Kubernetes Engine Environment for Production](#)
- [Heterogeneous Deployment Patterns with Kubernetes](#)
- [Best Practices for Operating Containers](#)
- [Deploying Memcached on Kubernetes Engine](#)
- [Architecture: Scalable Commerce Workloads using Microservices](#)
- [Running Dedicated Game Servers in Kubernetes Engine](#)

I. Mobile Apps

- [Mobile App Backend Services](#)
- [Build an Android App Using Firebase and the App Engine Flexible Environment](#)

J. Open Source

- [Google Cloud Platform for OpenStack Users](#)

K. Migration

- [Best Practices for Migrating Virtual Machines to Compute Engine](#)
- [Best Practices for App Engine Standard Environment Memcache](#)
- [Migrating On-Premises Hadoop Infrastructure to Google Cloud Platform](#)
- [Migrating HDFS Data from On-Premises to Google Cloud Platform](#)

Review Documentation, Blogs and Whitepapers

- ☐ Review the [Pricing Calculator](#), [Product Pricing](#), [Cost Comparison Calculator](#) and the [Always Free Usage Limits](#).
- ☐ Read the Google Cloud Platform [security](#) whitepapers. For example: [Infrastructure Security](#) and [Encryption at Rest](#).
- ☐ Read the [Site Reliability Engineering Book](#), especially the Chapter 2 (The Production Environment at Google, from the Viewpoint of an SRE), Chapter 6 (Monitoring Distributed Systems) and Chapter 17 (Testing for Reliability).
- ☐ Explore the current [Google Cloud Platform Marketplace](#) solution offerings.
- ☐ View the short videos at [Cloud Performance Atlas](#), that dive into the intricacies of App Engine, GCE, GKE, and Networking.
- ☐ In general, review the [Google Cloud Platform Documentation](#) and the [Google Cloud Platform Blogs](#).

Get Ready for the Exam

- ☐ Re-take the [practice exam](#)