Google Cloud

Associate Cloud Engineer Renewal

This is the current version of the Associate Cloud Engineer renewal exam guide. If you plan to take the Associate Cloud Engineer renewal exam before July 30, review this exam guide. **If you plan to take the Associate Cloud Engineer renewal exam in English on or after July 31, review the <u>new version</u>.**

This renewal exam guide is a streamlined version of the standard Associate Cloud Engineer exam guide, focusing on key areas critical to the job role. The renewal exam is available to certified individuals who want to renew their active Associate Cloud Engineer certification and are within their renewal eligibility period.

Section and objective numbers in this renewal exam guide are aligned to the standard Associate Cloud Engineer exam guide. Omitted objectives are not assessed in the renewal exam.

Certification renewal exam guide

An Associate Cloud Engineer deploys and secures applications, services, and infrastructure, monitors operations of multiple projects, and maintains enterprise solutions to ensure that they meet target performance metrics. This individual has experience working with public clouds and on-premises solutions. They are able to perform common platform-based tasks to maintain and scale one or more deployed solutions that leverage Google-managed or self-managed services on Google Cloud.

Section 1: Setting up a cloud solution environment (not included in renewal exam)

Section 2: Planning and configuring a cloud solution (~30% of renewal exam)

2.1 Planning and configuring compute resources. Considerations include:

- Selecting appropriate compute choices for a given workload (e.g., Compute Engine, Google Kubernetes Engine, Cloud Run, Cloud Run functions)
- Using Spot VM instances and custom machine types as appropriate

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2.2 Planning and configuring data storage options. Considerations include:

- Product choice (e.g., Cloud SQL, BigQuery, Firestore, Spanner, Bigtable)
- Choosing storage options (e.g., zonal Persistent Disk, regional Persistent Disk, Standard, Nearline, Coldline, Archive)

2.3 Planning and configuring network resources. Considerations include:

- Load balancing
- Availability of resource locations in a network
- Network Service Tiers

Section 3: Deploying and implementing a cloud solution (~35% of renewal exam)

3.2 Deploying and implementing Google Kubernetes Engine resources. Considerations include:

- Installing and configuring the command line interface (CLI) for Kubernetes (kubectl)
- Deploying a Google Kubernetes Engine cluster with different configurations (e.g., Autopilot, regional clusters, private clusters, GKE Enterprise)
- Deploying a containerized application to Google Kubernetes Engine

3.3 Deploying and implementing Cloud Run and Cloud Run functions resources. Considerations include:

- Deploying an application
- Deploying an application for receiving Google Cloud events (e.g., Pub/Sub events, Cloud Storage object change notification events, Eventarc)
- Determining where to deploy an application by using Cloud Run or Cloud Run functions

3.4 Deploying and implementing data solutions. Considerations include:

- Deploying data products (e.g., Cloud SQL, Firestore, BigQuery, Spanner, Pub/Sub, Dataflow, Cloud Storage, AlloyDB)
- Loading data (e.g., command line upload, load data from Cloud Storage, Storage Transfer Service)

Section 4: Ensuring successful operation of a cloud solution (~15% of renewal exam)

4.6 Monitoring and logging. Considerations include:

- Creating Cloud Monitoring alerts based on resource metrics
- Creating and ingesting Cloud Monitoring custom metrics (e.g., from applications or logs)
- Exporting logs to external systems (e.g., on-premises, BigQuery)
- Configuring log buckets, log analytics, and log routers
- Viewing and filtering logs in Cloud Logging
- Viewing specific log message details in Cloud Logging
- Using cloud diagnostics to research an application issue
- Viewing Google Cloud status
- Configuring and deploying Ops Agent
- Deploying Managed Service for Prometheus
- Configuring audit logs

Section 5: Configuring access and security (~20% of renewal exam)

5.1 Managing Identity and Access Management (IAM). Considerations include:

- Viewing and creating IAM policies
- Managing the various role types and defining custom IAM roles (e.g., basic, predefined, custom)

5.2 Managing service accounts. Considerations include:

- Creating service accounts
- Using service accounts in IAM policies with minimum permissions
- Assigning service accounts to resources
- Managing IAM of a service account
- Managing service account impersonation
- Creating and managing short-lived service account credentials