

# Associate Cloud Engineer Sample Questions

The Cloud Engineer sample questions will familiarize you with the format of exam questions and example content that may be covered on the exam.

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☐ Yes

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✗ You are a project owner and need your co-worker to deploy a new version of your application to App Engine. You want to follow Google's recommended practices. Which IAM roles should you grant your co-worker?

- ☒ A. Project Editor
- ☐ B. App Engine Service Admin
- ☐ C. App Engine Deployer
- ☐ D. App Engine Code Viewer

✗

Correct answer

- ☒ C. App Engine Deployer

#### Feedback

*A is not correct because this access is too wide, and Google recommends least-privilege. Also Google recommends predefined roles instead of primitive roles like Project Editor. B is not correct because although it gives write access to module-level and version-level settings, users cannot deploy a new version.*

*\* C is correct because this gives write access only to create a new version. D is not correct because this is read-only access.*



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✓ Your company has reserved a monthly budget for your project. You want to be informed automatically of your project spend so that you can take action when you approach the limit. What should you do?

- ☐ A. Link a credit card with a monthly limit equal to your budget.
- ☒ B. Create a budget alert for 50%, 90%, and 100% of your total monthly budget. ✓
- ☐ C. In App Engine Settings, set a daily budget at the rate of 1/30 of your monthly budget.
- ☐ D. In the GCP Console, configure billing export to BigQuery. Create a saved view that queries your total spend.

#### Feedback

*A is not correct because this will just give you the spend, but will not alert you when you approach the limit.*

*B Is correct because a budget alert will warn you when you reach the limits set.*

*C is not correct because if you exceed the budget, you will still be billed for it. Furthermore there is no alerting when you hit that limit by GCP.*

*D Is not correct because those budgets are only on App Engine, not other GCP resources. Furthermore this makes subsequent requests fail, rather than alert you in time so you can mitigate appropriately.*

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✗ You have a project using BigQuery. You want to list all BigQuery jobs for that project. You want to set this project as the default for the bq command-line tool. What should you do?

- ☐ A. Use "gcloud config set project" to set the default project.
- ☒ B. Use "bq config set project" to set the default project. ✗
- ☐ C. Use "gcloud generate config-url" to generate a URL to the Google Cloud Platform Console to set the default project.
- ☐ D. Use "bq generate config-url" to generate a URL to the Google Cloud Platform Console to set the default project.

Correct answer

- ☒ A. Use "gcloud config set project" to set the default project.

#### Feedback

*A is correct because you need to use gcloud to manage the config/defaults.*

*B is not correct because the bq command-line tool assumes the gcloud configuration settings and can't be set through BigQuery.*

*C is not correct because entering this command will not achieve the desired result and will generate an error.*

*D is not correct because entering this command will not achieve the desired result and will generate an error.*

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- ✓ Your project has all its Compute Engine resources in the europe-west1 region. You want to set europe-west1 as the default region for gcloud commands. What should you do?
- ☐ A. Use Cloud Shell instead of the command line interface of your device. Launch Cloud Shell after you navigate to a resource in the europe-west1 region. The europe-west1 region will automatically become the default region.
  - ☒ B. Use "gcloud config set compute/region europe-west1" to set the default region ✓ for future gcloud commands.
  - ☐ C. Use "gcloud config set compute/zone europe-west1" to set the default region for future gcloud commands.
  - ☐ D. Create a VPN from on-premises to a subnet in europe-west1, and use that connection when executing gcloud commands.

#### Feedback

*A is not correct because Cloud Shell will not default to the location that it's launched from. B is correct because this will ensure that the relevant region is used when not overwritten by a command parameter.*

*C is not correct because this command should be used to set a zone, not a region.*

*D is not correct because a VPN to a specific subnet does not have any effect on the gcloud command region.*

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✗ You developed a new application for App Engine and are ready to deploy it to production. You need to estimate the costs of running your application on Google Cloud Platform as accurately as possible. What should you do?

- ☐ A. Create a YAML file with the expected usage. Pass this file to the "gcloud app estimate" command to get an accurate estimation.
- ☒ B. Multiply the costs of your application when it was in development by the number of expected users to get an accurate estimation. ✗
- ☐ C. Use the pricing calculator for App Engine to get an accurate estimation of the expected charges.
- ☐ D. Create a ticket with Google Cloud Billing Support to get an accurate estimation.

**Correct answer**

- ☒ C. Use the pricing calculator for App Engine to get an accurate estimation of the expected charges.

**Feedback**

*A is not correct because that command will generate an error and not give you an estimation on workloads.*

*B is not correct because this does not result in an accurate estimation.*

*C is correct because this is the proper way to estimate charges.*

*D is not correct because billing support is available to help you set up billing and understand invoices, not to make estimations.*



✓ Your company processes high volumes of IoT data that are time-stamped. The total data volume can be several petabytes. The data needs to be written and changed at a high speed. You want to use the most performant storage option for your data. Which product should you use?

- ☐ A. Cloud Datastore
- ☐ B. Cloud Storage
- ☒ C. Cloud Bigtable
- ☐ D. BigQuery



#### Feedback

*A is not correct because Cloud Bigtable is more performant in frequent writes, and lookup is based on timestamp key.*

*B is not correct because Cloud Storage stores blobs, which cannot be queried.*

*C is correct because Cloud Bigtable is the most performant storage option to work with IoT and time series data.*

*D is not correct because although it can store the data, BigQuery is very slow at changing data.*

<https://cloud.google.com/...>





✓ Your application has a large international audience and runs stateless virtual machines within a managed instance group across multiple locations. One feature of the application lets users upload files and share them with other users. Files must be available for 30 days; after that, they are removed from the system entirely. Which storage solution should you choose?

- ☐ A. A Cloud Datastore database.
- ☒ B. A multi-regional Cloud Storage bucket. ✓
- ☐ C. Persistent SSD on virtual machine instances.
- ☐ D. A managed instance group of Filestore servers.

#### Feedback

*A is not correct because a Datastore database is not designed for file storage*

*B is correct because buckets can be multi-regional and have lifecycle management*

*C is not correct because disks are generally ephemeral for virtual machines in managed instance groups*

*D is not correct because content would be restricted to a single region for all international users*



- ✓ You have a definition for an instance template that contains a web application. You are asked to deploy the application so that it can scale based on the HTTP traffic it receives. What should you do?
- ☐ A. Create a VM from the instance template. Create a custom image from the VM's disk. Export the image to Cloud Storage. Create an HTTP load balancer and add the Cloud Storage bucket as its backend service.
  - ☐ B. Create a VM from the instance template. Create an App Engine application in Automatic Scaling mode that forwards all traffic to the VM.
  - ☒ C. Create a managed instance group based on the instance template. Configure autoscaling based on HTTP traffic and configure the instance group as the backend service of an HTTP load balancer. ✓
  - ☐ D. Create the necessary amount of instances required for peak user traffic based on the instance template. Create an unmanaged instance group and add the instances to that instance group. Configure the instance group as the Backend Service of an HTTP load balancer.

### Feedback

*A Is not correct because the Load Balancer will just load balance access to the uploaded image itself, and not create or autoscale VMs based on that image.*

*B Is not correct because while the App Engine can scale as a proxy, all requests will still end up on the same Compute Engine instance, which needs to scale itself.*

*C is correct because a managed instance group can use an instance template to scale based on HTTP traffic*

*D is not correct because unmanaged instance groups do not offer autoscaling.*

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✗ You are creating a Kubernetes Engine cluster to deploy multiple pods inside the cluster. All container logs must be stored in BigQuery for later analysis. You want to follow Google-recommended practices. Which two approaches can you take?

- ☒ A. Turn on Stackdriver Logging during the Kubernetes Engine cluster creation. ✓
- ☐ B. Turn on Stackdriver Monitoring during the Kubernetes Engine cluster creation.
- ☒ C. Develop a custom add-on that uses Cloud Logging API and BigQuery API. Deploy the add-on to your Kubernetes Engine cluster. ✗
- ☐ D. Use the Stackdriver Logging export feature to create a sink to Cloud Storage. Create a Cloud Dataflow job that imports log files from Cloud Storage to BigQuery.
- ☐ E. Use the Stackdriver Logging export feature to create a sink to BigQuery. Specify a filter expression to export log records related to your Kubernetes Engine cluster only.

#### Correct answer

- ☒ A. Turn on Stackdriver Logging during the Kubernetes Engine cluster creation.
- ☒ E. Use the Stackdriver Logging export feature to create a sink to BigQuery. Specify a filter expression to export log records related to your Kubernetes Engine cluster only.

#### Feedback

A Is correct because creating a cluster with Stackdriver Logging option will enable all the container logs to be stored in Stackdriver Logging.

B Is not correct because creating a cluster with Stackdriver Monitoring option will enable monitoring metrics to be gathered, but it has nothing to do with logging

C is not correct, because even if you can develop a Kubernetes add-on that will send logs to BigQuery, this is not a Google-recommended practice.

D is incorrect because this is not a Google recommended practice.

E Is correct because Stackdriver Logging support exporting logs to BigQuery by creating sinks (documentation)



<https://cloud.google.com/...><https://cloud.google.com/...><https://kubernetes.io/doc...>

✓ You need to create a new Kubernetes Cluster on Google Cloud Platform that can autoscale the number of worker nodes. What should you do?

- ☒ A. Create a cluster on Kubernetes Engine and enable autoscaling on Kubernetes Engine. ✓
- ☐ B. Create a cluster on Kubernetes Engine and enable autoscaling on the instance group of the cluster.
- ☐ C. Configure a Compute Engine instance as a worker and add it to an unmanaged instance group. Add a load balancer to the instance group and rely on the load balancer to create additional Compute Engine instances when needed.
- ☐ D. Create Compute Engine instances for the workers and the master, and install Kubernetes. Rely on Kubernetes to create additional Compute Engine instances when needed.

#### Feedback

*A is correct because this is the way to set up an autoscaling Kubernetes cluster.*

*B is not correct because you should not manage the scaling of Kubernetes through the MIG.*

*C is not correct because an UMIG cannot scale based on a load balancer and this is not the correct way to set up Kubernetes.*

*D is not correct because Kubernetes will not create additional instances when deployed on Compute Engine.*

<https://cloud.google.com/...>

✗ You have an application server running on Compute Engine in the europe-west1-d zone. You need to ensure high availability and replicate the server to the europe-west2-c zone using the fewest steps possible. What should you do?

- ☐ A. Create a snapshot from the disk. Create a disk from the snapshot in the europe-west2-c zone. Create a new VM with that disk.
- ☐ B. Create a snapshot from the disk. Create a disk from the snapshot in the europe-west1-d zone and then move the disk to europe-west2-c. Create a new VM with that disk.
- ☐ C. Use "gcloud" to copy the disk to the europe-west2-c zone. Create a new VM with that disk.
- ☒ D. Use "gcloud compute instances move" with parameter "--destination-zone europe-west2-c" to move the instance to the new zone. ✗

#### Correct answer

- ☒ A. Create a snapshot from the disk. Create a disk from the snapshot in the europe-west2-c zone. Create a new VM with that disk.

#### Feedback

*A is correct because this makes sure the VM gets replicated in the new zone.*

*B is not correct because this takes more steps than A.*

*C is not correct because this will generate an error, because gcloud cannot copy disks.*

*D is not correct because the original VM will be moved, not replicated.*



✗ Your company has a mission-critical application that serves users globally. You need to select a transactional, relational data storage system for this application. Which two products should you choose?

- ☐ A. BigQuery
- ☒ B. Cloud SQL ✓
- ☒ C. Cloud Spanner ✓
- ☐ D. Cloud Bigtable
- ☒ E. Cloud Datastore ✗

Correct answer

- ☒ B. Cloud SQL
- ☒ C. Cloud Spanner

#### Feedback

*A is not correct because BigQuery is not a transactional system.*

*B is correct because Cloud SQL is a relational and transactional database in the list.*

*C is correct because Spanner is a relational and transactional database in the list.*

*D is not correct because Cloud Bigtable provides transactional support but it's not relational.*

*E is not correct because Datastore is not a relational data storage system.*



✓ You have a Kubernetes cluster with 1 node-pool. The cluster receives a lot of traffic and needs to grow. You decide to add a node. What should you do?

- ☒ A. Use "gcloud container clusters resize" with the desired number of nodes. ✓
- ☐ B. Use "kubectl container clusters resize" with the desired number of nodes.
- ☐ C. Edit the managed instance group of the cluster and increase the number of VMs by 1.
- ☐ D. Edit the managed instance group of the cluster and enable autoscaling.

#### Feedback

*A is correct because this resizes the cluster to the desired number of nodes.*

*B is not correct because you need to use gcloud, not kubectl.*

*C is not correct because you should not manually manage the MIG behind a cluster.*

*D is not correct because you should not manually manage the MIG behind a cluster.*



✗ You created an update for your application on App Engine. You want to deploy the update without impacting your users. You want to be able to roll back as quickly as possible if it fails. What should you do?

- ☒ A. Delete the current version of your application. Deploy the update using the same version identifier as the deleted version. ✗
- ☐ B. Notify your users of an upcoming maintenance window. Deploy the update in that maintenance window.
- ☐ C. Deploy the update as the same version that is currently running.
- ☐ D. Deploy the update as a new version. Migrate traffic from the current version to the new version.

#### Correct answer

- ☒ D. Deploy the update as a new version. Migrate traffic from the current version to the new version.

#### Feedback

*And B are not correct because this will make the application temporarily unavailable to users.*

*C is not correct because to roll back, you'll need to redeploy the previous deployment because the app was overwritten with the same version number. Therefore this takes longer than a rollback using method D.*

*D is correct because this makes sure there is no downtime and you can roll back the fastest.*

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✗ You have created a Kubernetes deployment, called Deployment-A, with 3 replicas on your cluster. Another deployment, called Deployment-B, needs access to Deployment-A. You cannot expose Deployment-A outside of the cluster. What should you do?

- ☐ A. Create a Service of type NodePort for Deployment A and an Ingress Resource for that Service. Have Deployment B use the Ingress IP address.
- ☐ B. Create a Service of type LoadBalancer for Deployment A. Have Deployment B use the Service IP address.
- ☒ C. Create a Service of type LoadBalancer for Deployment A and an Ingress Resource for that Service. Have Deployment B use the Ingress IP address. ✗
- ☐ D. Create a Service of type ClusterIP for Deployment A. Have Deployment B use the Service IP address.

#### Correct answer

- ☒ D. Create a Service of type ClusterIP for Deployment A. Have Deployment B use the Service IP address.

#### Feedback

*A is not correct because this exposes Deployment A over the public internet.*

*B is not correct because LoadBalancer will expose the service publicly.*

*C is not correct because this exposes the service externally using a cloud provider's load balancer, and Ingress can work only with nodeport, not clusterIP.*

*D is correct because this exposes the service on a cluster-internal IP address. Choosing this method makes the service reachable only from within the cluster.*

<https://kubernetes.io/doc...>



✗ You need to estimate the annual cost of running a Bigquery query that is scheduled to run nightly. What should you do?

- ☐ A. Use "gcloud query --dry\_run" to determine the number of bytes read by the query. Use this number in the Pricing Calculator.
- ☐ B. Use "bq query --dry\_run" to determine the number of bytes read by the query. Use this number in the Pricing Calculator.
- ☒ C. Use "gcloud estimate" to determine the amount billed for a single query. Multiply this amount by 365. ✗
- ☐ D. Use "bq estimate" to determine the amount billed for a single query. Multiply this amount by 365.

**Correct answer**

- ☒ B. Use "bq query --dry\_run" to determine the number of bytes read by the query. Use this number in the Pricing Calculator.

**Feedback**

*A is not correct because you should use bq, not gcloud, to estimate the amount of bytes read.*

*B is correct because this is the correct way to estimate the yearly BigQuery querying costs.*

*C is not correct because you should use bq, not gcloud, to work with BigQuery.*

*D is not correct because this will not give the amount billed for a query.*



✗ You want to find out who in your organization has Owner access to a project called "my-project".What should you do?

- ☒ A. In the Google Cloud Platform Console, go to the IAM page for your organization and apply the filter "Role:Owner". ✗
- ☐ B. In the Google Cloud Platform Console, go to the IAM page for your project and apply the filter "Role:Owner".
- ☐ C. Use "gcloud iam list-grantable-role --project my-project" from your Terminal.
- ☐ D. Use "gcloud iam list-grantable-role" from Cloud Shell on the project page.

Correct answer

- ☒ B. In the Google Cloud Platform Console, go to the IAM page for your project and apply the filter "Role:Owner".

#### Feedback

*A is not correct because it will give the org-wide owners, but you are interested in the project owners, which could be different.*

*B is correct because this shows you the Owners of the project.*

*C is not correct because this command is to list grantable roles for a resource, but does not return who has a specific role.*

*D is not correct because this command is to list grantable roles for a resource, but does not return who has a specific role.*



✗ You want to create a new role for your colleagues that will apply to all current and future projects created in your organization. The role should have the permissions of the BigQuery Job User and Cloud Bigtable User roles. You want to follow Google's recommended practices. How should you create the new role?

- ☐ A. Use "gcloud iam combine-roles --global" to combine the 2 roles into a new custom role.
- ☒ B. For one of your projects, in the Google Cloud Platform Console under Roles, select both roles and combine them into a new custom role. Use "gcloud iam promote-role" to promote the role from a project role to an organization role. ✗
- ☐ C. For all projects, in the Google Cloud Platform Console under Roles, select both roles and combine them into a new custom role.
- ☐ D. For your organization, in the Google Cloud Platform Console under Roles, select both roles and combine them into a new custom role.

#### Correct answer

- ☒ D. For your organization, in the Google Cloud Platform Console under Roles, select both roles and combine them into a new custom role.

#### Feedback

*A is not correct because this does not create a new role.*

*B is not correct because gcloud cannot promote a role to org level.*

*C is not correct because it's recommended to define the role on the organization level.*

*Also, the role will not be applied on new projects.*

*D is correct because this creates a new role with the combined permissions on the organization level.*



✗ You work in a small company where everyone should be able to view all resources of a specific project. You want to grant them access following Google's recommended practices. What should you do?

- ☐ A. Create a script that uses "gcloud projects add-iam-policy-binding" for all users' email addresses and the Project Viewer role.
- ☒ B. A. Create a script that uses "gcloud iam roles create" for all users' email addresses and the Project Viewer role. ✗
- ☐ C. Create a new Google Group and add all users to the group. Use "gcloud projects add-iam-policy-binding" with the Project Viewer role and Group email address.
- ☐ D. Create a new Google Group and add all members to the group. Use "gcloud iam roles create" with the Project Viewer role and Group email address.

**Correct answer**

- ☒ C. Create a new Google Group and add all users to the group. Use "gcloud projects add-iam-policy-binding" with the Project Viewer role and Group email address.

**Feedback**

*A is not correct because groups are recommended over individual assignments.*

*B is not correct because this command is to create roles, not to assign them.*

*C is correct because Google recommends to use groups where possible.*

*D is not correct because this command is to create roles, not to assign them.*

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✓ You need to verify the assigned permissions in a custom IAM role. What should you do?

- ☒ A. Use the GCP Console, IAM section to view the information. ✓
- ☐ B. Use the "gcloud init" command to view the information.
- ☐ C. Use the GCP Console, Security section to view the information.
- ☐ D. Use the GCP Console, API section to view the information.

#### Feedback

*A is correct because this is the correct console area to view permission assigned to a custom role in a particular project.*

*B is not correct because 'gcloud init' will not provide the information required.*

*C and D are not correct because these are not the correct areas to view this information*

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