



Google

Exam Questions Professional-Cloud-Developer

Google Certified Professional - Cloud Developer

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NEW QUESTION 1

- (Exam Topic 1)

Which database should HipLocal use for storing user activity?

- A. BigQuery
- B. Cloud SQL
- C. Cloud Spanner
- D. Cloud Datastore

Answer: A

NEW QUESTION 2

- (Exam Topic 1)

For this question, refer to the HipLocal case study.

How should HipLocal redesign their architecture to ensure that the application scales to support a large increase in users?

- A. Use Google Kubernetes Engine (GKE) to run the application as a microservice
- B. Run the MySQL database on a dedicated GKE node.
- C. Use multiple Compute Engine instances to run MySQL to store state information
- D. Use a GoogleCloud-managed load balancer to distribute the load between instances
- E. Use managed instance groups for scaling.
- F. Use Memorystore to store session information and CloudSQL to store state information
- G. Use a Google Cloud-managed load balancer to distribute the load between instances
- H. Use managed instance groups for scaling.
- I. Use a Cloud Storage bucket to serve the application as a static website, and use another Cloud Storage bucket to store user state information.

Answer: D

NEW QUESTION 3

- (Exam Topic 1)

HipLocal has connected their Hadoop infrastructure to GCP using Cloud Interconnect in order to query data stored on persistent disks.

Which IP strategy should they use?

- A. Create manual subnets.
- B. Create an auto mode subnet.
- C. Create multiple peered VPCs.
- D. Provision a single instance for NAT.

Answer: A

NEW QUESTION 4

- (Exam Topic 1)

For this question, refer to the HipLocal case study.

A recent security audit discovers that HipLocal's database credentials for their Compute Engine-hosted MySQL databases are stored in plain text on persistent disks. HipLocal needs to reduce the risk of these credentials being stolen. What should they do?

- A. Create a service account and download its key
- B. Use the key to authenticate to Cloud Key Management Service (KMS) to obtain the database credentials.
- C. Create a service account and download its key
- D. Use the key to authenticate to Cloud Key Management Service (KMS) to obtain a key used to decrypt the database credentials.
- E. Create a service account and grant it the roles/iam.serviceAccountUser role
- F. Impersonate as this account and authenticate using the Cloud SQL Proxy.
- G. Grant the roles/secretmanager.secretAccessor role to the Compute Engine service account
- H. Store and access the database credentials with the Secret Manager API.

Answer: D

Explanation:

<https://cloud.google.com/secret-manager/docs/overview>

NEW QUESTION 5

- (Exam Topic 1)

Which service should HipLocal use for their public APIs?

- A. Cloud Armor
- B. Cloud Functions
- C. Cloud Endpoints
- D. Shielded Virtual Machines

Answer: D

NEW QUESTION 6

- (Exam Topic 2)

You are developing a single-player mobile game backend that has unpredictable traffic patterns as users interact with the game throughout the day and night. You want to optimize costs by ensuring that you have enough resources to handle requests, but minimize over-provisioning. You also want the system to handle traffic spikes efficiently. Which compute platform should you use?

- A. Cloud Run
- B. Compute Engine with managed instance groups
- C. Compute Engine with unmanaged instance groups
- D. Google Kubernetes Engine using cluster autoscaling

Answer: A

NEW QUESTION 7

- (Exam Topic 2)

Your company has deployed a new API to App Engine Standard environment. During testing, the API is not behaving as expected. You want to monitor the application over time to diagnose the problem within the application code without redeploying the application.

Which tool should you use?

- A. Stackdriver Trace
- B. Stackdriver Monitoring
- C. Stackdriver Debug Snapshots
- D. Stackdriver Debug Logpoints

Answer: B

Explanation:

Reference: <https://rominirani.com/gcp-stackdriver-tutorial-debug-snapshots-traces-logging-and-logpoints-1ba49e4780e6>

NEW QUESTION 8

- (Exam Topic 2)

Your website is deployed on Compute Engine. Your marketing team wants to test conversion rates between 3 different website designs.

Which approach should you use?

- A. Deploy the website on App Engine and use traffic splitting.
- B. Deploy the website on App Engine as three separate services.
- C. Deploy the website on Cloud Functions and use traffic splitting.
- D. Deploy the website on Cloud Functions as three separate functions.

Answer: A

Explanation:

Reference: <https://cloud.google.com/appengine/docs/standard/python/splitting-traffic>

NEW QUESTION 9

- (Exam Topic 2)

You are developing a marquee stateless web application that will run on Google Cloud. The rate of the incoming user traffic is expected to be unpredictable, with no traffic on some days and large spikes on other days. You need the application to automatically scale up and down, and you need to minimize the cost associated with running the application. What should you do?

- A. Build the application in Python with Firestore as the database
- B. Deploy the application to Cloud Run.
- C. Build the application in C# with Firestore as the database
- D. Deploy the application to App Engine flexible environment.
- E. Build the application in Python with CloudSQL as the database
- F. Deploy the application to App Engine standard environment.
- G. Build the application in Python with Firestore as the database
- H. Deploy the application to a Compute Engine managed instance group with autoscaling.

Answer: A

NEW QUESTION 10

- (Exam Topic 2)

Your application takes an input from a user and publishes it to the user's contacts. This input is stored in a table in Cloud Spanner. Your application is more sensitive to latency and less sensitive to consistency. How should you perform reads from Cloud Spanner for this application?

- A. Perform Read-Only transactions.
- B. Perform stale reads using single-read methods.
- C. Perform strong reads using single-read methods.
- D. Perform stale reads using read-write transactions.

Answer: D

Explanation:

Reference: <https://cloud.google.com/solutions/best-practices-cloud-spanner-gaming-database>

NEW QUESTION 10

- (Exam Topic 2)

You are writing a single-page web application with a user-interface that communicates with a third-party API for content using XMLHttpRequest. The data displayed on the UI by the API results is less critical than other data displayed on the same web page, so it is acceptable for some requests to not have the API data

displayed in the UI. However, calls made to the API should not delay rendering of other parts of the user interface. You want your application to perform well when the API response is an error or a timeout. What should you do?

- A. Set the asynchronous option for your requests to the API to false and omit the widget displaying the API results when a timeout or error is encountered.
- B. Set the asynchronous option for your request to the API to true and omit the widget displaying the API results when a timeout or error is encountered.
- C. Catch timeout or error exceptions from the API call and keep trying with exponential backoff until the API response is successful.
- D. Catch timeout or error exceptions from the API call and display the error response in the UI widget.

Answer: A

NEW QUESTION 12

- (Exam Topic 2)

Your company is planning to migrate their on-premises Hadoop environment to the cloud. Increasing storage cost and maintenance of data stored in HDFS is a major concern for your company. You also want to make minimal changes to existing data analytics jobs and existing architecture. How should you proceed with the migration?

- A. Migrate your data stored in Hadoop to BigQuery
- B. Change your jobs to source their information from BigQuery instead of the on-premises Hadoop environment.
- C. Create Compute Engine instances with HDD instead of SSD to save cost
- D. Then perform a full migration of your existing environment into the new one in Compute Engine instances.
- E. Create a Cloud Dataproc cluster on Google Cloud Platform, and then migrate your Hadoop environment to the new Cloud Dataproc cluster
- F. Move your HDFS data into larger HDD disks to save on storage costs.
- G. Create a Cloud Dataproc cluster on Google Cloud Platform, and then migrate your Hadoop code objects to the new cluster
- H. Move your data to Cloud Storage and leverage the Cloud Dataproc connector to run jobs on that data.

Answer: D

NEW QUESTION 14

- (Exam Topic 2)

You recently migrated a monolithic application to Google Cloud by breaking it down into microservices. One of the microservices is deployed using Cloud Functions. As you modernize the application, you make a change to the API of the service that is backward-incompatible. You need to support both existing callers who use the original API and new callers who use the new API. What should you do?

- A. Leave the original Cloud Function as-is and deploy a second Cloud Function with the new API
- B. Use a load balancer to distribute calls between the versions.
- C. Leave the original Cloud Function as-is and deploy a second Cloud Function that includes only the changed API
- D. Calls are automatically routed to the correct function.
- E. Leave the original Cloud Function as-is and deploy a second Cloud Function with the new API
- F. Use Cloud Endpoints to provide an API gateway that exposes a versioned API.
- G. Re-deploy the Cloud Function after making code changes to support the new API
- H. Requests for both versions of the API are fulfilled based on a version identifier included in the call.

Answer: D

Explanation:

Reference: <https://cloud.google.com/endpoints/docs/openapi/versioning-an-api>

NEW QUESTION 18

- (Exam Topic 2)

You are building a new API. You want to minimize the cost of storing and reduce the latency of serving images. Which architecture should you use?

- A. App Engine backed by Cloud Storage
- B. Compute Engine backed by Persistent Disk
- C. Transfer Appliance backed by Cloud Filestore
- D. Cloud Content Delivery Network (CDN) backed by Cloud Storage

Answer: B

NEW QUESTION 21

- (Exam Topic 2)

You need to migrate a standalone Java application running in an on-premises Linux virtual machine (VM) to Google Cloud in a cost-effective manner. You decide not to take the lift-and-shift approach, and instead you plan to modernize the application by converting it to a container. How should you accomplish this task?

- A. Use Migrate for Anthos to migrate the VM to your Google Kubernetes Engine (GKE) cluster as a container.
- B. Export the VM as a raw disk and import it as an image
- C. Create a Compute Engine instance from the Imported image.
- D. Use Migrate for Compute Engine to migrate the VM to a Compute Engine instance, and use Cloud Build to convert it to a container.
- E. Use Jib to build a Docker image from your source code, and upload it to Artifact Registry
- F. Deploy the application in a GKE cluster, and test the application.

Answer: D

Explanation:

<https://cloud.google.com/blog/products/application-development/introducing-jib-build-java-docker-images-better>

NEW QUESTION 25

- (Exam Topic 2)

You recently developed a new application. You want to deploy the application on Cloud Run without a Dockerfile. Your organization requires that all container images are pushed to a centrally managed container repository. How should you build your container using Google Cloud services? (Choose two.)

- A. Push your source code to Artifact Registry.
- B. Submit a Cloud Build job to push the image.
- C. Use the pack build command with pack CLI.
- D. Include the --source flag with the gcloud run deploy CLI command.
- E. Include the --platform=kubernetes flag with the gcloud run deploy CLI command.

Answer: AC

Explanation:

<https://cloud.google.com/run/docs/deploying#images> <https://cloud.google.com/blog/products/containers-kubernetes/google-cloud-now-supports-buildpacks>

NEW QUESTION 28

- (Exam Topic 2)

You have a container deployed on Google Kubernetes Engine. The container can sometimes be slow to launch, so you have implemented a liveness probe. You notice that the liveness probe occasionally fails on launch. What should you do?

- A. Add a startup probe.
- B. Increase the initial delay for the liveness probe.
- C. Increase the CPU limit for the container.
- D. Add a readiness probe.

Answer: B

Explanation:

<https://kubernetes.io/docs/tasks/configure-pod-container/configure-liveness-readiness-startup-probes/#configure>

NEW QUESTION 33

- (Exam Topic 2)

You are a developer at a large organization. You have an application written in Go running in a production Google Kubernetes Engine (GKE) cluster. You need to add a new feature that requires access to BigQuery. You want to grant BigQuery access to your GKE cluster following Google-recommended best practices. What should you do?

- A. Create a Google service account with BigQuery access
- B. Add the JSON key to Secret Manager, and use the Go client library to access the JSON key.
- C. Create a Google service account with BigQuery access
- D. Add the Google service account JSON key as a Kubernetes secret, and configure the application to use this secret.
- E. Create a Google service account with BigQuery access
- F. Add the Google service account JSON key to Secret Manager, and use an init container to access the secret for the application to use.
- G. Create a Google service account and a Kubernetes service account
- H. Configure Workload Identity on the GKE cluster, and reference the Kubernetes service account on the application Deployment.

Answer: D

Explanation:

https://cloud.google.com/kubernetes-engine/docs/concepts/workload-identity#what_is

Applications running on GKE might need access to Google Cloud APIs such as Compute Engine API, BigQuery Storage API, or Machine Learning APIs. Workload Identity allows a Kubernetes service account in your GKE cluster to act as an IAM service account. Pods that use the configured Kubernetes service account automatically authenticate as the IAM service account when accessing Google Cloud APIs. Using Workload Identity allows you to assign distinct, fine-grained identities and authorization for each application in your cluster.

NEW QUESTION 35

- (Exam Topic 2)

You need to deploy resources from your laptop to Google Cloud using Terraform. Resources in your Google Cloud environment must be created using a service account. Your Cloud Identity has the roles/iam.serviceAccountTokenCreator Identity and Access Management (IAM) role and the necessary permissions to deploy the resources using Terraform. You want to set up your development environment to deploy the desired resources following Google-recommended best practices. What should you do?

- A. 1) Download the service account's key file in JSON format, and store it locally on your laptop.2) Set the GOOGLE_APPLICATION_CREDENTIALS environment variable to the path of your downloaded key file.
- B. 1) Run the following command from a command line: gcloud config set auth/impersonate_service_account service-account-name@project.iam.gserviceaccount.com.2) Set the GOOGLE_OAUTH_ACCESS_TOKEN environment variable to the value that is returned by the gcloud auth print-access-token command.
- C. 1) Run the following command from a command line: gcloud auth application-default login.2) In the browser window that opens, authenticate using your personal credentials.
- D. 1) Store the service account's key file in JSON format in Hashicorp Vault.2) Integrate Terraform with Vault to retrieve the key file dynamically, and authenticate to Vault using a short-lived access token.

Answer: D

Explanation:

<https://cloud.google.com/iam/docs/best-practices-for-managing-service-account-keys#file-system> Whenever possible, avoid storing service account keys on a file system. If you can't avoid storing keys on

disk, make sure to restrict access to the key file, configure file access auditing, and encrypt the underlying disk.

<https://cloud.google.com/iam/docs/best-practices-for-managing-service-account-keys#software-keystore> In situations where using a hardware-based key store isn't viable, use a software-based key store to manage

service account keys. Similar to hardware-based options, a software-based key store lets users or applications

use service account keys without revealing the private key. Software-based key store solutions can help you control key access in a fine-grained manner and can also ensure that each key access is logged.

NEW QUESTION 40

- (Exam Topic 2)

You are using Cloud Build for your CI/CD pipeline to complete several tasks, including copying certain files to Compute Engine virtual machines. Your pipeline requires a flat file that is generated in one builder in the pipeline to be accessible by subsequent builders in the same pipeline. How should you store the file so that all the builders in the pipeline can access it?

- A. Store and retrieve the file contents using Compute Engine instance metadata.
- B. Output the file contents to a file in /workspac
- C. Read from the same /workspace file in the subsequent build step.
- D. Use gsutil to output the file contents to a Cloud Storage objec
- E. Read from the same object in the subsequent build step.
- F. Add a build argument that runs an HTTP POST via curl to a separate web server to persist the value in one build
- G. Use an HTTP GET via curl from the subsequent build step to read the value.

Answer: B

Explanation:

<https://cloud.google.com/build/docs/build-config-file-schema>

NEW QUESTION 41

- (Exam Topic 2)

Your team develops services that run on Google Cloud. You need to build a data processing service and will use Cloud Functions. The data to be processed by the function is sensitive. You need to ensure that invocations can only happen from authorized services and follow Google-recommended best practices for securing functions. What should you do?

- A. Enable Identity-Aware Proxy in your projec
- B. Secure function access using its permissions.
- C. Create a service account with the Cloud Functions Viewer rol
- D. Use that service account to invoke the function.
- E. Create a service account with the Cloud Functions Invoker rol
- F. Use that service account to invoke the function.
- G. Create an OAuth 2.0 client ID for your calling service in the same project as the function you want to secur
- H. Use those credentials to invoke the function.

Answer: C

Explanation:

Reference:

<https://medium.com/google-cloud/how-to-securely-invoke-a-cloud-function-from-google-kubernetes-engine-run>

NEW QUESTION 45

- (Exam Topic 2)

Your company has a new security initiative that requires all data stored in Google Cloud to be encrypted by customer-managed encryption keys. You plan to use Cloud Key Management Service (KMS) to configure access to the keys. You need to follow the "separation of duties" principle and Google-recommended best practices. What should you do? (Choose two.)

- A. Provision Cloud KMS in its own project.
- B. Do not assign an owner to the Cloud KMS project.
- C. Provision Cloud KMS in the project where the keys are being used.
- D. Grant the roles/cloudkms.admin role to the owner of the project where the keys from Cloud KMS are being used.
- E. Grant an owner role for the Cloud KMS project to a different user than the owner of the project where the keys from Cloud KMS are being used.

Answer: AB

Explanation:

https://cloud.google.com/kms/docs/separation-of-duties#using_separate_project

NEW QUESTION 50

- (Exam Topic 2)

You are designing an application that will subscribe to and receive messages from a single Pub/Sub topic and insert corresponding rows into a database. Your application runs on Linux and leverages preemptible virtual machines to reduce costs. You need to create a shutdown script that will initiate a graceful shutdown. What should you do?

- A. Write a shutdown script that uses inter-process signals to notify the application process to disconnect from the database.
- B. Write a shutdown script that broadcasts a message to all signed-in users that the Compute Engine instance is going down and instructs them to save current work and sign out.
- C. Write a shutdown script that writes a file in a location that is being polled by the application once every five minute
- D. After the file is read, the application disconnects from the database.
- E. Write a shutdown script that publishes a message to the Pub/Sub topic announcing that a shutdown is in progres
- F. After the application reads the message, it disconnects from the database.

Answer: D

NEW QUESTION 54

- (Exam Topic 2)

Your development team is using Cloud Build to promote a Node.js application built on App Engine from your staging environment to production. The application relies on several directories of photos stored in a Cloud Storage bucket named webphotos-staging in the staging environment. After the promotion, these photos must be available in a Cloud Storage bucket named webphotos-prod in the production environment. You want to automate the process where possible. What should you do?

- A) Manually copy the photos to webphotos-prod.
B) Add a startup script in the application's app.yaml file to move the photos from webphotos-staging to webphotos-prod.
C) Add a build step in the cloudbuild.yaml file before the promotion step with the arguments:
- ```
- name: gcr.io/cloud-builders/gsutil
 args: ['cp', '-r', 'gs://webphotos-staging',
 'gs://webphotos-prod']
 waitFor: ['-']
```

D) Add a build step in the cloudbuild.yaml file before the promotion step with the arguments:

```
- name: gcr.io/cloud-builders/gcloud
 args: ['cp', '-A', 'gs://webphotos-staging',
 'gs://webphotos-prod']
 waitFor: ['-']
```

- A. Option A  
B. Option B  
C. Option C  
D. Option D

**Answer: C**

**Explanation:**

<https://cloud.google.com/storage/docs/gsutil/commands/cp>

#### NEW QUESTION 58

- (Exam Topic 2)

You plan to make a simple HTML application available on the internet. This site keeps information about FAQs for your application. The application is static and contains images, HTML, CSS, and Javascript. You want to make this application available on the internet with as few steps as possible. What should you do?

- A. Upload your application to Cloud Storage.  
B. Upload your application to an App Engine environment.  
C. Create a Compute Engine instance with Apache web server installed.  
D. Configure Apache web server to host the application.  
E. Containerize your application first.  
F. Deploy this container to Google Kubernetes Engine (GKE) and assign an external IP address to the GKE pod hosting the application.

**Answer: A**

**Explanation:**

Reference: <https://cloud.google.com/storage/docs/hosting-static-website>

#### NEW QUESTION 59

- (Exam Topic 2)

Your application is logging to Stackdriver. You want to get the count of all requests on all /api/alpha/\* endpoints. What should you do?

- A. Add a Stackdriver counter metric for path:/api/alpha/.  
B. Add a Stackdriver counter metric for endpoint:/api/alpha/\*.  
C. Export the logs to Cloud Storage and count lines matching /api/alpha.  
D. Export the logs to Cloud Pub/Sub and count lines matching /api/alpha.

**Answer: C**

#### NEW QUESTION 61

- (Exam Topic 2)

You are using Cloud Build build to promote a Docker image to Development, Test, and Production environments. You need to ensure that the same Docker image is deployed to each of these environments. How should you identify the Docker image in your build?

- A. Use the latest Docker image tag.  
B. Use a unique Docker image name.  
C. Use the digest of the Docker image.  
D. Use a semantic version Docker image tag.

**Answer: D**

#### NEW QUESTION 64

- (Exam Topic 2)

You manage an application that runs in a Compute Engine instance. You also have multiple backend services executing in stand-alone Docker containers running in Compute Engine instances. The Compute Engine instances supporting the backend services are scaled by managed instance groups in multiple regions. You want your calling application to be loosely coupled. You need to be able to invoke distinct service implementations that are chosen based on the value of an HTTP header found in the request. Which Google Cloud feature should you use to invoke the backend services?

- A. Traffic Director  
B. Service Directory  
C. Anthos Service Mesh  
D. Internal HTTP(S) Load Balancing

**Answer:** D

#### NEW QUESTION 66

- (Exam Topic 2)

You are designing a deployment technique for your new applications on Google Cloud. As part of your deployment planning, you want to use live traffic to gather performance metrics for both new and existing applications. You need to test against the full production load prior to launch. What should you do?

- A. Use canary deployment
- B. Use blue/green deployment
- C. Use rolling updates deployment
- D. Use A/B testing with traffic mirroring during deployment

**Answer:** A

#### Explanation:

Reference: <https://cloud.google.com/architecture/application-deployment-and-testing-strategies>

#### NEW QUESTION 69

- (Exam Topic 2)

You have an application deployed in Google Kubernetes Engine (GKE). You need to update the application to make authorized requests to Google Cloud managed services. You want this to be a one-time setup, and you need to follow security best practices of auto-rotating your security keys and storing them in an encrypted store. You already created a service account with appropriate access to the Google Cloud service. What should you do next?

- A. Assign the Google Cloud service account to your GKE Pod using Workload Identity.
- B. Export the Google Cloud service account, and share it with the Pod as a Kubernetes Secret.
- C. Export the Google Cloud service account, and embed it in the source code of the application.
- D. Export the Google Cloud service account, and upload it to HashiCorp Vault to generate a dynamic service account for your application.

**Answer:** A

#### Explanation:

<https://cloud.google.com/kubernetes-engine/docs/concepts/workload-identity>

Applications running on GKE might need access to Google Cloud APIs such as Compute Engine API, BigQuery Storage API, or Machine Learning APIs. Workload Identity allows a Kubernetes service account in your GKE cluster to act as an IAM service account. Pods that use the configured Kubernetes service account automatically authenticate as the IAM service account when accessing Google Cloud APIs. Using Workload Identity allows you to assign distinct, fine-grained identities and authorization for each application in your cluster.

#### NEW QUESTION 71

- (Exam Topic 2)

You are developing an internal application that will allow employees to organize community events within your company. You deployed your application on a single Compute Engine instance. Your company uses Google Workspace (formerly G Suite), and you need to ensure that the company employees can authenticate to the application from anywhere. What should you do?

- A. Add a public IP address to your instance, and restrict access to the instance using firewall rule
- B. Allow your company's proxy as the only source IP address.
- C. Add an HTTP(S) load balancer in front of the instance, and set up Identity-Aware Proxy (IAP). Configure the IAP settings to allow your company domain to access the website.
- D. Set up a VPN tunnel between your company network and your instance's VPC location on Google Cloud
- E. Configure the required firewall rules and routing information to both the on-premises and Google Cloud networks.
- F. Add a public IP address to your instance, and allow traffic from the internet
- G. Generate a random hash, and create a subdomain that includes this hash and points to your instance
- H. Distribute this DNS address to your company's employees.

**Answer:** B

#### Explanation:

<https://cloud.google.com/blog/topics/developers-practitioners/control-access-your-web-sites-identity-aware-proxy>

#### NEW QUESTION 75

- (Exam Topic 2)

You are developing an application that will handle requests from end users. You need to secure a Cloud Function called by the application to allow authorized end users to authenticate to the function via the application while restricting access to unauthorized users. You will integrate Google Sign-In as part of the solution and want to follow Google-recommended best practices. What should you do?

- A. Deploy from a source code repository and grant users the roles/cloudfunctions.viewer role.
- B. Deploy from a source code repository and grant users the roles/cloudfunctions.invoker role
- C. Deploy from your local machine using gcloud and grant users the roles/cloudfunctions.admin role
- D. Deploy from your local machine using gcloud and grant users the roles/cloudfunctions.developer role

**Answer:** C

#### NEW QUESTION 79

- (Exam Topic 2)

Your company has a data warehouse that keeps your application information in BigQuery. The BigQuery data warehouse keeps 2 PBs of user data. Recently, your company expanded your user base to include EU users and needs to comply with these requirements:

Your company must be able to delete all user account information upon user request. All EU user data must be stored in a single region specifically for EU users. Which two actions should you take? (Choose two.)

- A. Use BigQuery federated queries to query data from Cloud Storage.
- B. Create a dataset in the EU region that will keep information about EU users only.
- C. Create a Cloud Storage bucket in the EU region to store information for EU users only.
- D. Re-upload your data using to a Cloud Dataflow pipeline by filtering your user records out.
- E. Use DML statements in BigQuery to update/delete user records based on their requests.

**Answer:** CE

**Explanation:**

Reference: <https://cloud.google.com/solutions/bigquery-data-warehouse>

**NEW QUESTION 82**

- (Exam Topic 2)

Your company has a BigQuery dataset named "Master" that keeps information about employee travel and expenses. This information is organized by employee department. That means employees should only be able to view information for their department. You want to apply a security framework to enforce this requirement with the minimum number of steps.

What should you do?

- A. Create a separate dataset for each departmen
- B. Create a view with an appropriate WHERE clause to select records from a particular dataset for the specific departmen
- C. Authorize this view to access records from your Master datase
- D. Give employees the permission to this department-specific dataset.
- E. Create a separate dataset for each departmen
- F. Create a data pipeline for each department to copyappropriate information from the Master dataset to the specific dataset for the departmen
- G. Give employeesthe permission to this department-specific dataset.
- H. Create a dataset named Master datase
- I. Create a separate view for each department in the Master datase
- J. Give employees access to the specific view for their department.
- K. Create a dataset named Master datase
- L. Create a separate table for each department in the Master datase
- M. Give employees access to the specific table for their department.

**Answer:** B

**NEW QUESTION 86**

- (Exam Topic 2)

Your development team has been tasked with maintaining a .NET legacy application. The application incurs occasional changes and was recently updated. Your goal is to ensure that the application provides consistent results while moving through the CI/CD pipeline from environment to environment. You want to minimize the cost of deployment while making sure that external factors and dependencies between hosting environments are not problematic. Containers are not yet approved in your organization. What should you do?

- A. Rewrite the application using .NET Core, and deploy to Cloud Ru
- B. Use revisions to separate the environments.
- C. Use Cloud Build to deploy the application as a new Compute Engine image for each buil
- D. Use this image in each environment.
- E. Deploy the application using MS Web Deploy, and make sure to always use the latest, patched MS Windows Server base image in Compute Engine.
- F. Use Cloud Build to package the application, and deploy to a Google Kubernetes Engine cluste
- G. Use namespaces to separate the environments.

**Answer:** B

**Explanation:**

[https://cloud.google.com/architecture/modernization-path-dotnet-applications-google-cloud#phase\\_1\\_rehost\\_in\\_](https://cloud.google.com/architecture/modernization-path-dotnet-applications-google-cloud#phase_1_rehost_in_)  
<https://cloud.google.com/architecture/modernization-path-dotnet-applications-google-cloud>

**NEW QUESTION 87**

- (Exam Topic 2)

You are developing an application that reads credit card data from a Pub/Sub subscription. You have written code and completed unit testing. You need to test the Pub/Sub integration before deploying to Google Cloud. What should you do?

- A. Create a service to publish messages, and deploy the Pub/Sub emulato
- B. Generate random content in the publishing service, and publish to the emulator.
- C. Create a service to publish messages to your applicatio
- D. Collect the messages from Pub/Sub in production, and replay them through the publishing service.
- E. Create a service to publish messages, and deploy the Pub/Sub emulato
- F. Collect the messages from Pub/Sub in production, and publish them to the emulator.
- G. Create a service to publish messages, and deploy the Pub/Sub emulato
- H. Publish a standard set of testing messages from the publishing service to the emulator.

**Answer:** D

**NEW QUESTION 89**

- (Exam Topic 2)

You recently deployed a Go application on Google Kubernetes Engine (GKE). The operations team has noticed that the application's CPU usage is high even when there is low production traffic. The operations team has asked you to optimize your application's CPU resource consumption. You want to determine which Go functions consume the largest amount of CPU. What should you do?

- A. Deploy a Fluent Bit daemonset on the GKE cluster to log data in Cloud Loggin
- B. Analyze the logs to get insights into your application code's performance.

- C. Create a custom dashboard in Cloud Monitoring to evaluate the CPU performance metrics of your application.
- D. Connect to your GKE nodes using SS
- E. Run the top command on the shell to extract the CPU utilization of your application.
- F. Modify your Go application to capture profiling data
- G. Analyze the CPU metrics of your application in flame graphs in Profiler.

**Answer:** D

**Explanation:**

<https://cloud.google.com/profiler/docs/about-profiler>

Cloud Profiler is a statistical, low-overhead profiler that continuously gathers CPU usage and memory-allocation information from your production applications. It attributes that information to the source code that generated it, helping you identify the parts of your application that are consuming the most resources, and otherwise illuminating your applications performance characteristics.

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

**NEW QUESTION 90**

- (Exam Topic 2)

You are configuring a continuous integration pipeline using Cloud Build to automate the deployment of new container images to Google Kubernetes Engine (GKE). The pipeline builds the application from its source code, runs unit and integration tests in separate steps, and pushes the container to Container Registry. The application runs on a Python web server.

The Dockerfile is as follows: FROM python:3.7-alpine - COPY ./app WORKDIR /app

RUN pip install -r requirements.txt CMD [ "gunicorn", "-w 4", "main:app" ]

You notice that Cloud Build runs are taking longer than expected to complete. You want to decrease the build time. What should you do? (Choose two.)

- A. Select a virtual machine (VM) size with higher CPU for Cloud Build runs.
- B. Deploy a Container Registry on a Compute Engine VM in a VPC, and use it to store the final images.
- C. Cache the Docker image for subsequent builds using the -- cache-from argument in your build config file.
- D. Change the base image in the Dockerfile to ubuntu:latest, and install Python 3.7 using a package manager utility.
- E. Store application source code on Cloud Storage, and configure the pipeline to use gsutil to download the source code.

**Answer:** AC

**Explanation:**

<https://cloud.google.com/build/docs/optimize-builds/increase-vcpu-for-builds>

By default, Cloud Build runs your builds on a standard virtual machine (VM). In addition to the standard VM, Cloud Build provides several high-CPU VM types to run builds. To increase the speed of your build, select a machine with a higher vCPU to run builds. Keep in mind that although selecting a high vCPU machine increases your build speed, it may also increase the startup time of your build as Cloud Build only starts non-standard machines on demand.

[https://cloud.google.com/build/docs/optimize-builds/speeding-up-builds#using\\_a\\_cached\\_docker\\_image](https://cloud.google.com/build/docs/optimize-builds/speeding-up-builds#using_a_cached_docker_image)

The easiest way to increase the speed of your Docker image build is by specifying a cached image that can be used for subsequent builds. You can specify the cached image by adding the --cache-from argument in your build config file, which will instruct Docker to build using that image as a cache source.

**NEW QUESTION 92**

- (Exam Topic 2)

You are developing an application that consists of several microservices running in a Google Kubernetes Engine cluster. One microservice needs to connect to a third-party database running on-premises. You need to store credentials to the database and ensure that these credentials can be rotated while following security best practices. What should you do?

- A. Store the credentials in a sidecar container proxy, and use it to connect to the third-party database.
- B. Configure a service mesh to allow or restrict traffic from the Pods in your microservice to the database.
- C. Store the credentials in an encrypted volume mount, and associate a Persistent Volume Claim with the client Pod.
- D. Store the credentials as a Kubernetes Secret, and use the Cloud Key Management Service plugin to handle encryption and decryption.

**Answer:** D

**Explanation:**

<https://cloud.google.com/kubernetes-engine/docs/how-to/encrypting-secrets>

By default, Google Kubernetes Engine (GKE) encrypts customer content stored at rest, including Secrets. GKE handles and manages this default encryption for you without any additional action on your part.

Application-layer secrets encryption provides an additional layer of security for sensitive data, such as Secrets, stored in etcd. Using this functionality, you can use a key managed with Cloud KMS to encrypt data at the application layer. This encryption protects against attackers who gain access to an offline copy of etcd.

**NEW QUESTION 94**

- (Exam Topic 2)

You are developing an HTTP API hosted on a Compute Engine virtual machine instance that needs to be invoked by multiple clients within the same Virtual Private Cloud (VPC). You want clients to be able to get the IP address of the service. What should you do?

- A. Reserve a static external IP address and assign it to an HTTP(S) load balancing service's forwarding rule. Clients should use this IP address to connect to the service.
- B. Reserve a static external IP address and assign it to an HTTP(S) load balancing service's forwarding rule. Then, define an A record in Cloud DNS
- C. Clients should use the name of the A record to connect to the service.
- D. Ensure that clients use Compute Engine internal DNS by connecting to the instance name with the url [https://\[INSTANCE\\_NAME\].\[ZONE\].c.\[PROJECT\\_ID\].internal/](https://[INSTANCE_NAME].[ZONE].c.[PROJECT_ID].internal/).
- E. Ensure that clients use Compute Engine internal DNS by connecting to the instance name with the url [https://\[API\\_NAME\]/\[API\\_VERSION\]/](https://[API_NAME]/[API_VERSION]/).

**Answer:** D

**NEW QUESTION 96**

- (Exam Topic 2)

You are designing a schema for a Cloud Spanner customer database. You want to store a phone number array field in a customer table. You also want to allow users to search customers by phone number. How should you design this schema?

- A. Create a table named Customer
- B. Add an Array field in a table that will hold phone numbers for the customer.
- C. Create a table named Customer
- D. Create a table named Phone
- E. Add a CustomerId field in the Phones table to find the CustomerId from a phone number.
- F. Create a table named Customer
- G. Add an Array field in a table that will hold phone numbers for the customer
- H. Create a secondary index on the Array field.
- I. Create a table named Customers as a parent table
- J. Create a table named Phones, and interleave this table into the Customer table
- K. Create an index on the phone number field in the Phones table.

**Answer: C**

#### NEW QUESTION 97

- (Exam Topic 2)

Your development team has built several Cloud Functions using Java along with corresponding integration and service tests. You are building and deploying the functions and launching the tests using Cloud Build. Your Cloud Build job is reporting deployment failures immediately after successfully validating the code. What should you do?

- A. Check the maximum number of Cloud Function instances.
- B. Verify that your Cloud Build trigger has the correct build parameters.
- C. Retry the tests using the truncated exponential backoff polling strategy.
- D. Verify that the Cloud Build service account is assigned the Cloud Functions Developer role.

**Answer: D**

#### Explanation:

<https://cloud.google.com/build/docs/securing-builds/configure-access-for-cloud-build-service-account>

#### NEW QUESTION 102

- (Exam Topic 2)

You are developing an application using different microservices that should remain internal to the cluster. You want to be able to configure each microservice with a specific number of replicas. You also want to be able to address a specific microservice from any other microservice in a uniform way, regardless of the number of replicas the microservice scales to. You need to implement this solution on Google Kubernetes Engine. What should you do?

- A. Deploy each microservice as a Deployment
- B. Expose the Deployment in the cluster using a Service, and use the Service DNS name to address it from other microservices within the cluster.
- C. Deploy each microservice as a Deployment
- D. Expose the Deployment in the cluster using an Ingress, and use the Ingress IP address to address the Deployment from other microservices within the cluster.
- E. Deploy each microservice as a Pod
- F. Expose the Pod in the cluster using a Service, and use the Service DNS name to address the microservice from other microservices within the cluster.
- G. Deploy each microservice as a Pod
- H. Expose the Pod in the cluster using an Ingress, and use the Ingress IP address name to address the Pod from other microservices within the cluster.

**Answer: A**

#### NEW QUESTION 106

- (Exam Topic 2)

You have an analytics application that runs hundreds of queries on BigQuery every few minutes using BigQuery API. You want to find out how much time these queries take to execute. What should you do?

- A. Use Stackdriver Monitoring to plot slot usage.
- B. Use Stackdriver Trace to plot API execution time.
- C. Use Stackdriver Trace to plot query execution time.
- D. Use Stackdriver Monitoring to plot query execution times.

**Answer: D**

#### NEW QUESTION 107

- (Exam Topic 2)

You are planning to migrate a MySQL database to the managed Cloud SQL database for Google Cloud. You have Compute Engine virtual machine instances that will connect with this Cloud SQL instance. You do not want to whitelist IPs for the Compute Engine instances to be able to access Cloud SQL. What should you do?

- A. Enable private IP for the Cloud SQL instance.
- B. Whitelist a project to access Cloud SQL, and add Compute Engine instances in the whitelisted project.
- C. Create a role in Cloud SQL that allows access to the database from external instances, and assign the Compute Engine instances to that role.
- D. Create a CloudSQL instance on one project
- E. Create Compute engine instances in a different project. Create a VPN between these two projects to allow internal access to CloudSQL.

**Answer: C**

#### Explanation:

Reference: <https://cloud.google.com/sql/docs/mysql/connect-external-app>

**NEW QUESTION 110**

- (Exam Topic 2)

Your team is developing unit tests for Cloud Function code. The code is stored in a Cloud Source Repositories repository. You are responsible for implementing the tests. Only a specific service account has the necessary permissions to deploy the code to Cloud Functions. You want to ensure that the code cannot be deployed without first passing the tests. How should you configure the unit testing process?

- A. Configure Cloud Build to deploy the Cloud Function
- B. If the code passes the tests, a deployment approval is sent to you.
- C. Configure Cloud Build to deploy the Cloud Function, using the specific service account as the build agent
- D. Run the unit tests after successful deployment.
- E. Configure Cloud Build to run the unit test
- F. If the code passes the tests, the developer deploys the Cloud Function.
- G. Configure Cloud Build to run the unit tests, using the specific service account as the build agent
- H. If the code passes the tests, Cloud Build deploys the Cloud Function.

**Answer: D**

**NEW QUESTION 112**

- (Exam Topic 2)

Your analytics system executes queries against a BigQuery dataset. The SQL query is executed in batch and passes the contents of a SQL file to the BigQuery CLI. Then it redirects the BigQuery CLI output to another process. However, you are getting a permission error from the BigQuery CLI when the queries are executed. You want to resolve the issue. What should you do?

- A. Grant the service account BigQuery Data Viewer and BigQuery Job User roles.
- B. Grant the service account BigQuery Data Editor and BigQuery Data Viewer roles.
- C. Create a view in BigQuery from the SQL query and SELECT\* from the view in the CLI.
- D. Create a new dataset in BigQuery, and copy the source table to the new dataset. Query the new dataset and table from the CLI.

**Answer: B**

**NEW QUESTION 116**

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