



**Google**

## **Exam Questions Professional-Cloud-Developer**

Google Certified Professional - Cloud Developer

#### NEW QUESTION 1

- (Exam Topic 1)

In order to meet their business requirements, how should HipLocal store their application state?

- A. Use local SSDs to store state.
- B. Put a memcache layer in front of MySQL.
- C. Move the state storage to Cloud Spanner.
- D. Replace the MySQL instance with Cloud SQL.

**Answer:** B

#### NEW QUESTION 2

- (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 3

- (Exam Topic 1)

For this question, refer to the HipLocal case study.

Which Google Cloud product addresses HipLocal's business requirements for service level indicators and objectives?

- A. Cloud Profiler
- B. Cloud Monitoring
- C. Cloud Trace
- D. Cloud Logging

**Answer:** B

#### Explanation:

<https://cloud.google.com/stackdriver/docs/solutions/slo-monitoring#defn-sli>

#### NEW QUESTION 4

- (Exam Topic 1)

For this question, refer to the HipLocal case study.

HipLocal's application uses Cloud Client Libraries to interact with Google Cloud. HipLocal needs to configure authentication and authorization in the Cloud Client Libraries to implement least privileged access for the application. What should they do?

- A. Create an API key
- B. Use the API key to interact with Google Cloud.
- C. Use the default compute service account to interact with Google Cloud.
- D. Create a service account for the application
- E. Export and deploy the private key for the application
- F. Use the service account to interact with Google Cloud.
- G. Create a service account for the application and for each Google Cloud API used by the application. Export and deploy the private keys used by the application
- H. Use the service account with one Google Cloud API to interact with Google Cloud.

**Answer:** A

#### NEW QUESTION 5

- (Exam Topic 1)

For this question, refer to the HipLocal case study.

HipLocal is expanding into new locations. They must capture additional data each time the application is launched in a new European country. This is causing delays in the development process due to constant schema changes and a lack of environments for conducting testing on the application changes. How should they resolve the issue while meeting the business requirements?

- A. Create new Cloud SQL instances in Europe and North America for testing and deployment
- B. Provide developers with local MySQL instances to conduct testing on the application changes.
- C. Migrate data to Bigtable
- D. Instruct the development teams to use the Cloud SDK to emulate a local Bigtable development environment.
- E. Move from Cloud SQL to MySQL hosted on Compute Engine
- F. Replicate hosts across regions in the Americas and Europe
- G. Provide developers with local MySQL instances to conduct testing on the application changes.
- H. Migrate data to Firestore in Native mode and set up instances

**Answer:** B

#### NEW QUESTION 6

- (Exam Topic 1)

HipLocal's data science team wants to analyze user reviews. How should they prepare the data?

- A. Use the Cloud Data Loss Prevention API for redaction of the review dataset.
- B. Use the Cloud Data Loss Prevention API for de-identification of the review dataset.
- C. Use the Cloud Natural Language Processing API for redaction of the review dataset.
- D. Use the Cloud Natural Language Processing API for de-identification of the review dataset.

**Answer:** B

**Explanation:**

<https://cloud.google.com/dlp/docs/deidentify-sensitive-data>

**NEW QUESTION 7**

- (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 ke
- 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 ke
- 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 rol
- F. Impersonate as this account and authenticate using the Cloud SQL Proxy.
- G. Grant the roles/secretmanager.secretAccessor role to the Compute Engine service accoun
- 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 8**

- (Exam Topic 1)

For this question, refer to the HipLocal case study.

How should HipLocal increase their API development speed while continuing to provide the QA team with a stable testing environment that meets feature requirements?

- A. Include unit tests in their code, and prevent deployments to QA until all tests have a passing status.
- B. Include performance tests in their code, and prevent deployments to QA until all tests have a passing status.
- C. Create health checks for the QA environment, and redeploy the APIs at a later time if the environment is unhealthy.
- D. Redeploy the APIs to App Engine using Traffic Splittin
- E. Do not move QA traffic to the new versions if errors are found.

**Answer:** B

**NEW QUESTION 9**

- (Exam Topic 1)

HipLocal's .net-based auth service fails under intermittent load. What should they do?

- A. Use App Engine for autoscaling.
- B. Use Cloud Functions for autoscaling.
- C. Use a Compute Engine cluster for the service.
- D. Use a dedicated Compute Engine virtual machine instance for the service.

**Answer:** D

**Explanation:**

Reference: <https://www.qwiklabs.com/focuses/611?parent=catalog>

**NEW QUESTION 10**

- (Exam Topic 1)

HipLocal wants to reduce the number of on-call engineers and eliminate manual scaling. Which two services should they choose? (Choose two.)

- A. Use Google App Engine services.
- B. Use serverless Google Cloud Functions.
- C. Use Knative to build and deploy serverless applications.
- D. Use Google Kubernetes Engine for automated deployments.
- E. Use a large Google Compute Engine cluster for deployments.

**Answer:** BC

**NEW QUESTION 10**

- (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 14

- (Exam Topic 2)

You support an application that uses the Cloud Storage API. You review the logs and discover multiple HTTP 503 Service Unavailable error responses from the API. Your application logs the error and does not take any further action. You want to implement Google-recommended retry logic to improve success rates. Which approach should you take?

- A. Retry the failures in batch after a set number of failures is logged.
- B. Retry each failure at a set time interval up to a maximum number of times.
- C. Retry each failure at increasing time intervals up to a maximum number of tries.
- D. Retry each failure at decreasing time intervals up to a maximum number of tries.

**Answer:** C

#### Explanation:

<https://cloud.google.com/storage/docs/retry-strategy>

#### NEW QUESTION 18

- (Exam Topic 2)

You work for an organization that manages an ecommerce site. Your application is deployed behind a global HTTP(S) load balancer. You need to test a new product recommendation algorithm. You plan to use A/B testing to determine the new algorithm's effect on sales in a randomized way. How should you test this feature?

- A. Split traffic between versions using weights.
- B. Enable the new recommendation feature flag on a single instance.
- C. Mirror traffic to the new version of your application.
- D. Use HTTP header-based routing.

**Answer:** A

#### Explanation:

[https://cloud.google.com/load-balancing/docs/https/traffic-management-global#traffic\\_actions\\_weight-based\\_tra](https://cloud.google.com/load-balancing/docs/https/traffic-management-global#traffic_actions_weight-based_tra) Deploying a new version of an existing production service generally incurs some risk. Even if your tests pass in staging, you probably don't want to subject 100% of your users to the new version immediately. With traffic management, you can define percentage-based traffic splits across multiple backend services.

For example, you can send 95% of the traffic to the previous version of your service and 5% to the new version of your service. After you've validated that the new production version works as expected, you can gradually shift the percentages until 100% of the traffic reaches the new version of your service. Traffic splitting is typically used for deploying new versions, A/B testing, service migration, and similar processes.

[https://cloud.google.com/traffic-director/docs/advanced-traffic-management#weight-based\\_traffic\\_splitting\\_for\\_](https://cloud.google.com/traffic-director/docs/advanced-traffic-management#weight-based_traffic_splitting_for_) [https://cloud.google.com/architecture/implementing-deployment-and-testing-strategies-on-gke#split\\_the\\_traffic\\_](https://cloud.google.com/architecture/implementing-deployment-and-testing-strategies-on-gke#split_the_traffic_) [https://cloud.google.com/load-balancing/docs/https/traffic-management-global#traffic\\_actions\\_weight-based\\_tra](https://cloud.google.com/load-balancing/docs/https/traffic-management-global#traffic_actions_weight-based_tra)

#### NEW QUESTION 21

- (Exam Topic 2)

You have written a Cloud Function that accesses other Google Cloud resources. You want to secure the environment using the principle of least privilege. What should you do?

- A. Create a new service account that has Editor authority to access the resource
- B. The deployer is given permission to get the access token.
- C. Create a new service account that has a custom IAM role to access the resource
- D. The deployer is given permission to get the access token.
- E. Create a new service account that has Editor authority to access the resource
- F. The deployer is given permission to act as the new service account.
- G. Create a new service account that has a custom IAM role to access the resource
- H. The deployer is given permission to act as the new service account.

**Answer:** D

#### Explanation:

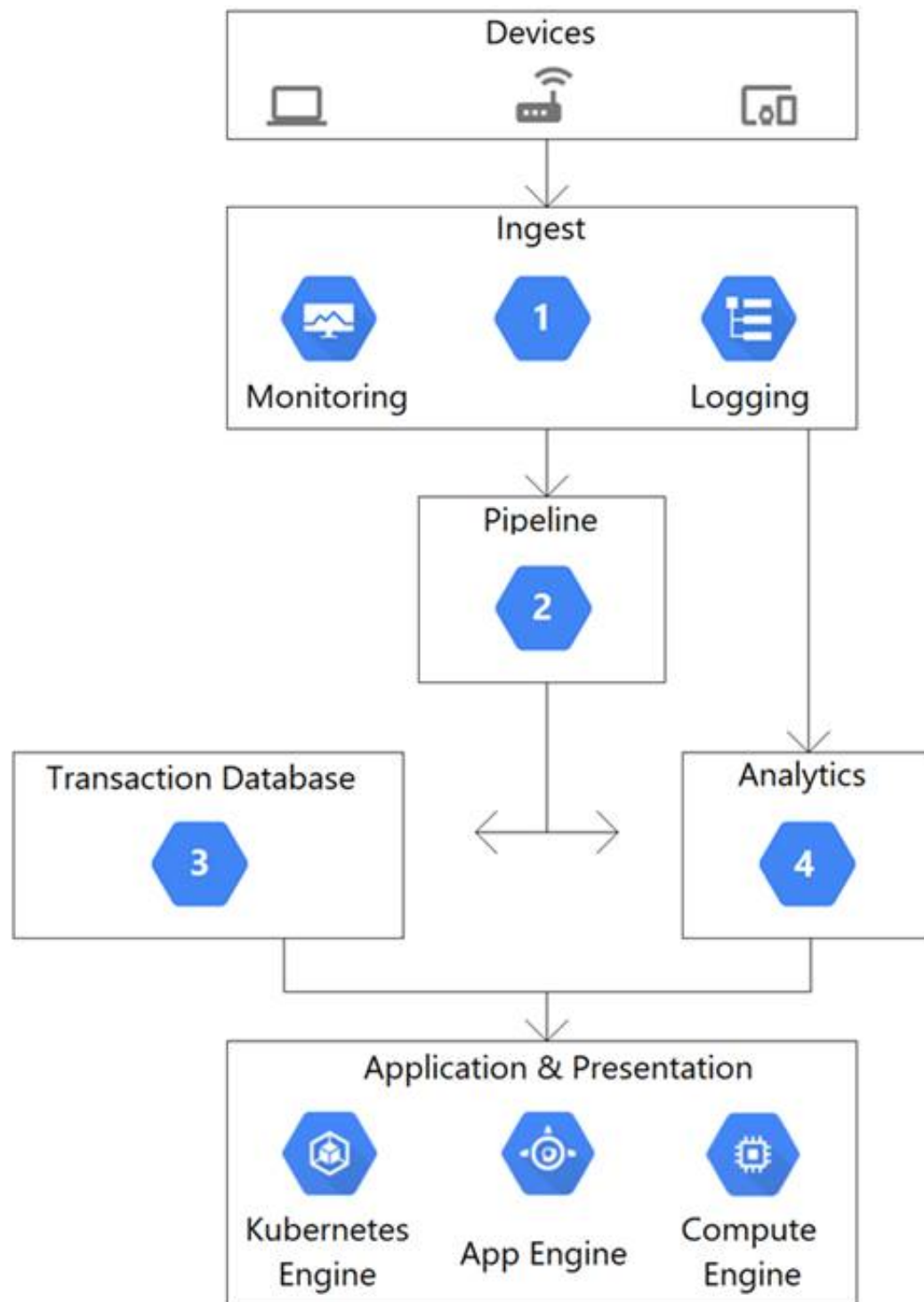
Reference:

<https://cloud.google.com/blog/products/application-development/least-privilege-for-cloud-functions-using-cloud>

#### NEW QUESTION 24

- (Exam Topic 2)

This architectural diagram depicts a system that streams data from thousands of devices. You want to ingest data into a pipeline, store the data, and analyze the data using SQL statements. Which Google Cloud services should you use for steps 1, 2, 3, and 4?



- A. 1) App Engine2) Pub/Sub3) BigQuery4) Firestore  
 B. 1) Dataflow2) Pub/Sub3) Firestore4) BigQuery  
 C. 1) Pub/Sub2) Dataflow3) BigQuery4) Firestore  
 D. 1) Pub/Sub2) Dataflow3) Firestore4) BigQuery

**Answer: D**

#### NEW QUESTION 25

- (Exam Topic 2)

Your team is developing a new application using a PostgreSQL database and Cloud Run. You are responsible for ensuring that all traffic is kept private on Google Cloud. You want to use managed services and follow Google-recommended best practices. What should you do?

- A. 1) Enable Cloud SQL and Cloud Run in the same project.2) Configure a private IP address for Cloud SQ  
 B. Enable private services access.3) Create a Serverless VPC Access connector.4) Configure Cloud Run to use the connector to connect to Cloud SQL.  
 C. 1) Install PostgreSQL on a Compute Engine virtual machine (VM), and enable Cloud Run in the same project.2) Configure a private IP address for the V  
 D. Enable private services access.3) Create a Serverless VPC Access connector.4) Configure Cloud Run to use the connector to connect to the VM hosting PostgreSQL.  
 E. 1) Use Cloud SQL and Cloud Run in different projects.2) Configure a private IP address for Cloud SQ  
 F. Enable private services access.3) Create a Serverless VPC Access connector.4) Set up a VPN connection between the two project  
 G. Configure Cloud Run to use the connector to connect to Cloud SQL.  
 H. 1) Install PostgreSQL on a Compute Engine VM, and enable Cloud Run in different projects.2) Configure a private IP address for the V  
 I. Enable private services access.3) Create a Serverless VPC Access connector.4) Set up a VPN connection between the two project  
 J. Configure Cloud Run to use the connector to access the VM hosting PostgreSQL

**Answer: A**

#### Explanation:

<https://cloud.google.com/sql/docs/postgres/connect-run#private-ip>

#### NEW QUESTION 28

- (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 32**

- (Exam Topic 2)

You are developing a microservice-based application that will be deployed on a Google Kubernetes Engine cluster. The application needs to read and write to a Spanner database. You want to follow security best practices while minimizing code changes. How should you configure your application to retrieve Spanner credentials?

- A. Configure the appropriate service accounts, and use Workload Identity to run the pods.
- B. Store the application credentials as Kubernetes Secrets, and expose them as environment variables.
- C. Configure the appropriate routing rules, and use a VPC-native cluster to directly connect to the database.
- D. Store the application credentials using Cloud Key Management Service, and retrieve them whenever a database connection is made.

**Answer:** A

**Explanation:**

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

**NEW QUESTION 37**

- (Exam Topic 2)

Your existing application keeps user state information in a single MySQL database. This state information is very user-specific and depends heavily on how long a user has been using an application. The MySQL database is causing challenges to maintain and enhance the schema for various users. Which storage option should you choose?

- A. Cloud SQL
- B. Cloud Storage
- C. Cloud Spanner
- D. Cloud Datastore/Firestore

**Answer:** A

**Explanation:**

Reference: <https://cloud.google.com/solutions/migrating-mysql-to-cloudsql-concept>

**NEW QUESTION 42**

- (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 47**

- (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 51**

- (Exam Topic 2)

Your company's corporate policy states that there must be a copyright comment at the very beginning of all source files. You want to write a custom step in Cloud Build that is triggered by each source commit. You need the trigger to validate that the source contains a copyright and add one for subsequent steps if not there. What should you do?

- A. Build a new Docker container that examines the files in /workspace and then checks and adds a copyright for each source file
- B. Changed files are explicitly committed back to the source repository.
- C. Build a new Docker container that examines the files in /workspace and then checks and adds a copyright for each source file
- D. Changed files do not need to be committed back to the source repository.
- E. Build a new Docker container that examines the files in a Cloud Storage bucket and then checks and adds a copyright for each source file
- F. Changed files are written back to the Cloud Storage bucket.
- G. Build a new Docker container that examines the files in a Cloud Storage bucket and then checks and adds a copyright for each source file
- H. Changed files are explicitly committed back to the source repository.

**Answer:** A

**Explanation:**

[https://cloud.google.com/build/docs/configuring-builds/pass-data-between-steps#passing\\_data\\_using\\_workspace](https://cloud.google.com/build/docs/configuring-builds/pass-data-between-steps#passing_data_using_workspace) To pass data between build steps, store the assets produced by the build step in /workspace and these assets will be available to any subsequent build steps.

**NEW QUESTION 55**

- (Exam Topic 2)

You migrated your applications to Google Cloud Platform and kept your existing monitoring platform. You now find that your notification system is too slow for time critical problems. What should you do?

- A. Replace your entire monitoring platform with Stackdriver.
- B. Install the Stackdriver agents on your Compute Engine instances.
- C. Use Stackdriver to capture and alert on logs, then ship them to your existing platform.
- D. Migrate some traffic back to your old platform and perform AB testing on the two platforms concurrently.

**Answer:** B

**Explanation:**

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

**NEW QUESTION 57**

- (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 58**

- (Exam Topic 2)

You are running an application on App Engine that you inherited. You want to find out whether the application is using insecure binaries or is vulnerable to XSS attacks. Which service should you use?

- A. Cloud Armor
- B. Stackdriver Debugger
- C. Cloud Security Scanner
- D. Stackdriver Error Reporting

**Answer:** C

**Explanation:**

Reference: <https://cloud.google.com/security-scanner>

**NEW QUESTION 60**

- (Exam Topic 2)

Your team manages a Google Kubernetes Engine (GKE) cluster where an application is running. A different team is planning to integrate with this application. Before they start the integration, you need to ensure that the other team cannot make changes to your application, but they can deploy the integration on GKE. What should you do?

- A. Using Identity and Access Management (IAM), grant the Viewer IAM role on the cluster project to the other team.
- B. Create a new GKE cluster
- C. Using Identity and Access Management (IAM), grant the Editor role on the cluster project to the other team.
- D. Create a new namespace in the existing cluster
- E. Using Identity and Access Management (IAM), grant the Editor role on the cluster project to the other team.
- F. Create a new namespace in the existing cluster
- G. Using Kubernetes role-based access control (RBAC), grant the Admin role on the new namespace to the other team.

**Answer:** D

#### NEW QUESTION 61

- (Exam Topic 2)

You are developing an application that needs to store files belonging to users in Cloud Storage. You want each user to have their own subdirectory in Cloud Storage. When a new user is created, the corresponding empty subdirectory should also be created. What should you do?

- A. Create an object with the name of the subdirectory ending with a trailing slash ('/') that is zero bytes in length.
- B. Create an object with the name of the subdirectory, and then immediately delete the object within that subdirectory.
- C. Create an object with the name of the subdirectory that is zero bytes in length and has WRITER access control list permission.
- D. Create an object with the name of the subdirectory that is zero bytes in length.
- E. Set the Content-Type metadata to CLOUDSTORAGE\_FOLDER.

**Answer:** A

#### Explanation:

<https://cloud.google.com/storage/docs/folders>

If you create an empty folder using the Google Cloud console, Cloud Storage creates a zero-byte object as a placeholder. For example, if you create a folder called folder in a bucket called my-bucket, a zero-byte object called gs://my-bucket/folder/ is created. This placeholder is discoverable by other tools when listing the objects in the bucket, for example when using the gsutil ls command.

#### NEW QUESTION 65

- (Exam Topic 2)

You are designing a schema for a table that will be moved from MySQL to Cloud Bigtable. The MySQL table is as follows:

```
AccountActivity
(
  Account_id int,
  Event_timestamp datetime,
  Transaction_type string,
  Amount numeric(18, 4)
) primary key (Account_id, Event_timestamp)
```

How should you design a row key for Cloud Bigtable for this table?

- A. Set Account\_id as a key.
- B. Set Account\_id\_Event\_timestamp as a key.
- C. Set Event\_timestamp\_Account\_id as a key.
- D. Set Event\_timestamp as a key.

**Answer:** C

#### NEW QUESTION 69

- (Exam Topic 2)

You are using the Cloud Client Library to upload an image in your application to Cloud Storage. Users of the application report that occasionally the upload does not complete and the client library reports an HTTP 504 Gateway Timeout error. You want to make the application more resilient to errors. What changes to the application should you make?

- A. Write an exponential backoff process around the client library call.
- B. Write a one-second wait time backoff process around the client library call.
- C. Design a retry button in the application and ask users to click if the error occurs.
- D. Create a queue for the object and inform the users that the application will try again in 10 minutes.

**Answer:** A

#### NEW QUESTION 71

- (Exam Topic 2)

You are porting an existing Apache/MySQL/PHP application stack from a single machine to Google Kubernetes Engine. You need to determine how to containerize the application. Your approach should follow Google-recommended best practices for availability. What should you do?

- A. Package each component in a separate container.
- B. Implement readiness and liveness probes.
- C. Package the application in a single container.
- D. Use a process management tool to manage each component.
- E. Package each component in a separate container.
- F. Use a script to orchestrate the launch of the components.
- G. Package the application in a single container.
- H. Use a bash script as an entrypoint to the container, and then spawn each component as a background job.

**Answer:** A

#### Explanation:

<https://cloud.google.com/blog/products/containers-kubernetes/7-best-practices-for-building-containers> <https://cloud.google.com/architecture/best-practices-for-building-containers>

"classic Apache/MySQL/PHP stack: you might be tempted to run all the components in a single container. However, the best practice is to use two or three different containers: one for Apache, one for MySQL, and potentially one for PHP if you are running PHP-FPM."

#### NEW QUESTION 75

- (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 76

- (Exam Topic 2)

Your security team is auditing all deployed applications running in Google Kubernetes Engine. After completing the audit, your team discovers that some of the applications send traffic within the cluster in clear text. You need to ensure that all application traffic is encrypted as quickly as possible while minimizing changes to your applications and maintaining support from Google. What should you do?

- A. Use Network Policies to block traffic between applications.
- B. Install Istio, enable proxy injection on your application namespace, and then enable mTLS.
- C. Define Trusted Network ranges within the application, and configure the applications to allow traffic only from those networks.
- D. Use an automated process to request SSL Certificates for your applications from Let's Encrypt and add them to your applications.

**Answer:** D

#### NEW QUESTION 77

- (Exam Topic 2)

You are writing from a Go application to a Cloud Spanner database. You want to optimize your application's performance using Google-recommended best practices. What should you do?

- A. Write to Cloud Spanner using Cloud Client Libraries.
- B. Write to Cloud Spanner using Google API Client Libraries
- C. Write to Cloud Spanner using a custom gRPC client library.
- D. Write to Cloud Spanner using a third-party HTTP client library.

**Answer:** A

#### Explanation:

<https://cloud.google.com/apis/docs/cloud-client-libraries>

"Cloud Client Libraries are the recommended option for accessing Cloud APIs programmatically, where available. Cloud Client Libraries use the latest client library models"

<https://cloud.google.com/apis/docs/client-libraries-explained> <https://cloud.google.com/go/docs/reference>

#### NEW QUESTION 81

- (Exam Topic 2)

You are deploying your application to a Compute Engine virtual machine instance. Your application is configured to write its log files to disk. You want to view the logs in Stackdriver Logging without changing the application code. What should you do?

- A. Install the Stackdriver Logging Agent and configure it to send the application logs.
- B. Use a Stackdriver Logging Library to log directly from the application to Stackdriver Logging.
- C. Provide the log file folder path in the metadata of the instance to configure it to send the application logs.
- D. Change the application to log to /var/log so that its logs are automatically sent to Stackdriver Logging.

**Answer:** A

#### NEW QUESTION 82

- (Exam Topic 2)

Your team is responsible for maintaining an application that aggregates news articles from many different sources. Your monitoring dashboard contains publicly accessible real-time reports and runs on a Compute Engine instance as a web application. External stakeholders and analysts need to access these reports via a secure channel without authentication. How should you configure this secure channel?

- A. Add a public IP address to the instanc
- B. Use the service account key of the instance to encrypt the traffic.
- C. Use Cloud Scheduler to trigger Cloud Build every hour to create an export from the report
- D. Store the reports in a public Cloud Storage bucket.
- E. Add an HTTP(S) load balancer in front of the monitoring dashboar
- F. Configure Identity-Aware Proxy to secure the communication channel.
- G. Add an HTTP(S) load balancer in front of the monitoring dashboar
- H. Set up a Google-managed SSL certificate on the load balancer for traffic encryption.

**Answer:** D

#### Explanation:

<https://cloud.google.com/load-balancing/docs/ssl-certificates/google-managed-certs>

#### NEW QUESTION 84

- (Exam Topic 2)

You recently developed an application. You need to call the Cloud Storage API from a Compute Engine instance that doesn't have a public IP address. What should you do?

- A. Use Carrier Peering
- B. Use VPC Network Peering

- C. Use Shared VPC networks
- D. Use Private Google Access

**Answer:** D

**Explanation:**

<https://cloud.google.com/vpc/docs/private-google-access>

#### NEW QUESTION 88

- (Exam Topic 2)

Your team develops stateless services that run on Google Kubernetes Engine (GKE). You need to deploy a new service that will only be accessed by other services running in the GKE cluster. The service will need to scale as quickly as possible to respond to changing load. What should you do?

- A. Use a Vertical Pod Autoscaler to scale the containers, and expose them via a ClusterIP Service.
- B. Use a Vertical Pod Autoscaler to scale the containers, and expose them via a NodePort Service.
- C. Use a Horizontal Pod Autoscaler to scale the containers, and expose them via a ClusterIP Service.
- D. Use a Horizontal Pod Autoscaler to scale the containers, and expose them via a NodePort Service.

**Answer:** C

**Explanation:**

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

#### NEW QUESTION 89

- (Exam Topic 2)

You want to notify on-call engineers about a service degradation in production while minimizing development time. What should you do?

- A. Use Cloud Function to monitor resources and raise alerts.
- B. Use Cloud Pub/Sub to monitor resources and raise alerts.
- C. Use Stackdriver Error Reporting to capture errors and raise alerts.
- D. Use Stackdriver Monitoring to monitor resources and raise alerts.

**Answer:** A

#### NEW QUESTION 90

- (Exam Topic 2)

You are building a mobile application that will store hierarchical data structures in a database. The application will enable users working offline to sync changes when they are back online. A backend service will enrich the data in the database using a service account. The application is expected to be very popular and needs to scale seamlessly and securely. Which database and IAM role should you use?

- A. Use Cloud SQL, and assign the roles/cloudsql.editor role to the service account.
- B. Use Bigtable, and assign the roles/bigtable.viewer role to the service account.
- C. Use Firestore in Native mode and assign the roles/datastore.user role to the service account.
- D. Use Firestore in Datastore mode and assign the roles/datastore.viewer role to the service account.

**Answer:** C

**Explanation:**

<https://firebase.google.com/docs/firestore/manage-data/enable-offline>

Cloud Firestore supports offline data persistence. This feature caches a copy of the Cloud Firestore data that your app is actively using, so your app can access the data when the device is offline. You can write, read, listen to, and query the cached data. When the device comes back online, Cloud Firestore synchronizes any local changes made by your app to the Cloud Firestore backend.

#### NEW QUESTION 95

- (Exam Topic 2)

Before promoting your new application code to production, you want to conduct testing across a variety of different users. Although this plan is risky, you want to test the new version of the application with production users and you want to control which users are forwarded to the new version of the application based on their operating system. If bugs are discovered in the new version, you want to roll back the newly deployed version of the application as quickly as possible. What should you do?

- A. Deploy your application on Cloud Run
- B. Use traffic splitting to direct a subset of user traffic to the new version based on the revision tag.
- C. Deploy your application on Google Kubernetes Engine with Anthos Service Mesh
- D. Use traffic splitting to direct a subset of user traffic to the new version based on the user-agent header.
- E. Deploy your application on App Engine
- F. Use traffic splitting to direct a subset of user traffic to the new version based on the IP address.
- G. Deploy your application on Compute Engine
- H. Use Traffic Director to direct a subset of user traffic to the new version based on predefined weights.

**Answer:** B

#### NEW QUESTION 100

- (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 101**

- (Exam Topic 2)

You have an application that uses an HTTP Cloud Function to process user activity from both desktop browser and mobile application clients. This function will serve as the endpoint for all metric submissions using HTTP POST.

Due to legacy restrictions, the function must be mapped to a domain that is separate from the domain requested by users on web or mobile sessions. The domain for the Cloud Function is <https://fn.example.com>. Desktop and mobile clients use the domain <https://www.example.com>. You need to add a header to the function's HTTP response so that only those browser and mobile sessions can submit metrics to the Cloud Function. Which response header should you add?

- A. Access-Control-Allow-Origin: \*
- B. Access-Control-Allow-Origin: [https://\\*.example.com](https://*.example.com)
- C. Access-Control-Allow-Origin: <https://fn.example.com>
- D. Access-Control-Allow-origin: <https://www.example.com>

**Answer:** D

**NEW QUESTION 105**

- (Exam Topic 2)

You have two tables in an ANSI-SQL compliant database with identical columns that you need to quickly combine into a single table, removing duplicate rows from the result set.

What should you do?

- A. Use the JOIN operator in SQL to combine the tables.
- B. Use nested WITH statements to combine the tables.
- C. Use the UNION operator in SQL to combine the tables.
- D. Use the UNION ALL operator in SQL to combine the tables.

**Answer:** C

**Explanation:**

Reference: [https://www.techonthenet.com/sql/union\\_all.php](https://www.techonthenet.com/sql/union_all.php)

**NEW QUESTION 106**

- (Exam Topic 2)

Your web application is deployed to the corporate intranet. You need to migrate the web application to Google Cloud. The web application must be available only to company employees and accessible to employees as they travel. You need to ensure the security and accessibility of the web application while minimizing application changes. What should you do?

- A. Configure the application to check authentication credentials for each HTTP(S) request to the application.
- B. Configure Identity-Aware Proxy to allow employees to access the application through its public IP address.
- C. Configure a Compute Engine instance that requests users to log in to their corporate account
- D. Change the web application DNS to point to the proxy Compute Engine instance
- E. After authenticating, the Compute Engine instance forwards requests to and from the web application.
- F. Configure a Compute Engine instance that requests users to log in to their corporate account
- G. Change the web application DNS to point to the proxy Compute Engine instance
- H. After authenticating, the Compute Engine issues an HTTP redirect to a public IP address hosting the web application.

**Answer:** B

**NEW QUESTION 109**

- (Exam Topic 2)

You are designing an application that consists of several microservices. Each microservice has its own RESTful API and will be deployed as a separate Kubernetes Service. You want to ensure that the consumers of these APIs aren't impacted when there is a change to your API, and also ensure that third-party systems aren't interrupted when new versions of the API are released. How should you configure the connection to the application following Google-recommended best practices?

- A. Use an Ingress that uses the API's URL to route requests to the appropriate backend.
- B. Leverage a Service Discovery system, and connect to the backend specified by the request.
- C. Use multiple clusters, and use DNS entries to route requests to separate versioned backends.
- D. Combine multiple versions in the same service, and then specify the API version in the POST request.

**Answer:** A

**NEW QUESTION 112**

- (Exam Topic 2)

You are deploying a microservices application to Google Kubernetes Engine (GKE). The application will receive daily updates. You expect to deploy a large number of distinct containers that will run on the Linux operating system (OS). You want to be alerted to any known OS vulnerabilities in the new containers. You want to follow Google-recommended best practices. What should you do?

- A. Use the gcloud CLI to call Container Analysis to scan new container image
- B. Review the vulnerability results before each deployment.
- C. Enable Container Analysis, and upload new container images to Artifact Registry
- D. Review the vulnerability results before each deployment.
- E. Enable Container Analysis, and upload new container images to Artifact Registry
- F. Review the critical vulnerability results before each deployment.
- G. Use the Container Analysis REST API to call Container Analysis to scan new container image
- H. Review the vulnerability results before each deployment.

**Answer:** B

**Explanation:**

<https://cloud.google.com/container-analysis/docs/automated-scanning-howto> <https://cloud.google.com/container-analysis/docs/os-overview> says: The Container Scanning API allows you to automate OS vulnerability detection, scanning each time you push an image to Container Registry or Artifact Registry. Enabling this API also triggers language package scans for Go and Java vulnerabilities (Preview).

**NEW QUESTION 116**

- (Exam Topic 2)

You are deploying your application on a Compute Engine instance that communicates with Cloud SQL. You will use Cloud SQL Proxy to allow your application to communicate to the database using the service account associated with the application's instance. You want to follow the Google-recommended best practice of providing minimum access for the role assigned to the service account. What should you do?

- A. Assign the Project Editor role.
- B. Assign the Project Owner role.
- C. Assign the Cloud SQL Client role.
- D. Assign the Cloud SQL Editor role.

**Answer:** C

**Explanation:**

Reference: <https://cloud.google.com/sql/docs/mysql/sql-proxy>

**NEW QUESTION 119**

- (Exam Topic 2)

You need to migrate an internal file upload API with an enforced 500-MB file size limit to App Engine. What should you do?

- A. Use FTP to upload files.
- B. Use CPanel to upload files.
- C. Use signed URLs to upload files.
- D. Change the API to be a multipart file upload API.

**Answer:** C

**Explanation:**

Reference: [https://wiki.christophchamp.com/index.php?title=Google\\_Cloud\\_Platform](https://wiki.christophchamp.com/index.php?title=Google_Cloud_Platform)

**NEW QUESTION 121**

- (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 acces
- 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 acces
- 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 acces
- 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 accoun
- 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](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 125**

- (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 127**

- (Exam Topic 2)

Your teammate has asked you to review the code below, which is adding a credit to an account balance in Cloud Datastore. Which improvement should you suggest your teammate make?

```
public Entity creditAccount(long accountId, long
creditAmount) {
    Entity account = datastore.get
(keyFactory.newKey(accountId));
    account = Entity.builder(account).set(
        "balance", account.getLong("balance")
+ creditAmount).build();
    datastore.put(account);
    return account;
}
```

- A. Get the entity with an ancestor query.
- B. Get and put the entity in a transaction.
- C. Use a strongly consistent transactional database.
- D. Don't return the account entity from the function.

**Answer:** A

**NEW QUESTION 131**

- (Exam Topic 2)

You have recently instrumented a new application with OpenTelemetry, and you want to check the latency of your application requests in Trace. You want to ensure that a specific request is always traced. What should you do?

- A. Wait 10 minutes, then verify that Trace captures those types of requests automatically.
- B. Write a custom script that sends this type of request repeatedly from your dev project.
- C. Use the Trace API to apply custom attributes to the trace.
- D. Add the `X-Cloud-Trace-Context` header to the request with the appropriate parameters.

**Answer:** D

**Explanation:**

<https://cloud.google.com/trace/docs/setup#force-trace>

Cloud Trace doesn't sample every request. To force a specific request to be traced, add an `X-Cloud-Trace-Context` header to the request.

**NEW QUESTION 133**

- (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 `/workspace`.
- C. Read from the same `/workspace` file in the subsequent build step.
- D. Use `gsutil` to output the file contents to a Cloud Storage object.
- 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 137**

- (Exam Topic 2)

You are developing an ecommerce application that stores customer, order, and inventory data as relational tables inside Cloud Spanner. During a recent load test, you discover that Spanner performance is not scaling linearly as expected. Which of the following is the cause?

- A. The use of 64-bit numeric types for 32-bit numbers.
- B. The use of the STRING data type for arbitrary-precision values.
- C. The use of Version 1 UUIDs as primary keys that increase monotonically.
- D. The use of LIKE instead of STARTS\_WITH keyword for parameterized SQL queries.

**Answer:** C

**NEW QUESTION 139**

- (Exam Topic 2)

One of your deployed applications in Google Kubernetes Engine (GKE) is having intermittent performance issues. Your team uses a third-party logging solution. You want to install this solution on each node in your GKE cluster so you can view the logs. What should you do?

- A. Deploy the third-party solution as a DaemonSet
- B. Modify your container image to include the monitoring software
- C. Use SSH to connect to the GKE node, and install the software manually
- D. Deploy the third-party solution using Terraform and deploy the logging Pod as a Kubernetes Deployment

**Answer:** A

**Explanation:**

[https://cloud.google.com/kubernetes-engine/docs/concepts/daemonset#usage\\_patterns](https://cloud.google.com/kubernetes-engine/docs/concepts/daemonset#usage_patterns) DaemonSets are useful for deploying ongoing background tasks that you need to run on all or certain nodes, and which do not require user intervention. Examples of such tasks include storage daemons like ceph, log collection daemons like fluent-bit, and node monitoring daemons like collectd.

**NEW QUESTION 142**

- (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 146**

- (Exam Topic 2)

You are running a web application on Google Kubernetes Engine that you inherited. You want to determine whether the application is using libraries with known vulnerabilities or is vulnerable to XSS attacks. Which service should you use?

- A. Google Cloud Armor
- B. Debugger
- C. Web Security Scanner
- D. Error Reporting

**Answer:** C

**Explanation:**

<https://cloud.google.com/security-command-center/docs/concepts-web-security-scanner-overview>

Web Security Scanner identifies security vulnerabilities in your App Engine, Google Kubernetes Engine (GKE), and Compute Engine web applications. It crawls your application, following all links within the scope of your starting URLs, and attempts to exercise as many user inputs and event handlers as possible.

#### NEW QUESTION 150

- (Exam Topic 2)

Your application is deployed in a Google Kubernetes Engine (GKE) cluster. You want to expose this application publicly behind a Cloud Load Balancing HTTP(S) load balancer. What should you do?

- A. Configure a GKE Ingress resource.
- B. Configure a GKE Service resource.
- C. Configure a GKE Ingress resource with type: LoadBalancer.
- D. Configure a GKE Service resource with type: LoadBalancer.

**Answer:** A

#### Explanation:

Reference: <https://cloud.google.com/kubernetes-engine/docs/concepts/ingress>

#### NEW QUESTION 155

- (Exam Topic 2)

Your application is running on Compute Engine and is showing sustained failures for a small number of requests. You have narrowed the cause down to a single Compute Engine instance, but the instance is unresponsive to SSH. What should you do next?

- A. Reboot the machine.
- B. Enable and check the serial port output.
- C. Delete the machine and create a new one.
- D. Take a snapshot of the disk and attach it to a new machine.

**Answer:** A

#### NEW QUESTION 156

- (Exam Topic 2)

Your team develops services that run on Google Cloud. You want to process messages sent to a Pub/Sub topic, and then store them. Each message must be processed exactly once to avoid duplication of data and any data conflicts. You need to use the cheapest and most simple solution. What should you do?

- A. Process the messages with a Dataproc job, and write the output to storage.
- B. Process the messages with a Dataflow streaming pipeline using Apache Beam's PubSubIO package, and write the output to storage.
- C. Process the messages with a Cloud Function, and write the results to a BigQuery location where you can run a job to deduplicate the data.
- D. Retrieve the messages with a Dataflow streaming pipeline, store them in Cloud Bigtable, and use another Dataflow streaming pipeline to deduplicate messages.

**Answer:** B

#### Explanation:

<https://cloud.google.com/dataflow/docs/concepts/streaming-with-cloud-pubsub>

#### NEW QUESTION 161

- (Exam Topic 2)

You are working on a social media application. You plan to add a feature that allows users to upload images. These images will be 2 MB – 1 GB in size. You want to minimize their infrastructure operations overhead for this feature. What should you do?

- A. Change the application to accept images directly and store them in the database that stores other user information.
- B. Change the application to create signed URLs for Cloud Storage
- C. Transfer these signed URLs to the client application to upload images to Cloud Storage.
- D. Set up a web server on GCP to accept user images and create a file store to keep uploaded file
- E. Change the application to retrieve images from the file store.
- F. Create a separate bucket for each user in Cloud Storage
- G. Assign a separate service account to allow write access on each bucket
- H. Transfer service account credentials to the client application based on user information
- I. The application uses this service account to upload images to Cloud Storage.

**Answer:** B

#### Explanation:

Reference:

<https://cloud.google.com/blog/products/storage-data-transfer/uploading-images-directly-to-cloud-storage-by-user>

#### NEW QUESTION 165

- (Exam Topic 2)

You are developing a corporate tool on Compute Engine for the finance department, which needs to authenticate users and verify that they are in the finance department. All company employees use G Suite. What should you do?

- A. Enable Cloud Identity-Aware Proxy on the HTTP(s) load balancer and restrict access to a Google Group containing users in the finance department
- B. Verify the provided JSON Web Token within the application.
- C. Enable Cloud Identity-Aware Proxy on the HTTP(s) load balancer and restrict access to a Google Group containing users in the finance department
- D. Issue client-side certificates to everybody in the finance team and verify the certificates in the application.
- E. Configure Cloud Armor Security Policies to restrict access to only corporate IP address range
- F. Verify the provided JSON Web Token within the application.
- G. Configure Cloud Armor Security Policies to restrict access to only corporate IP address range
- H. Issue client side certificates to everybody in the finance team and verify the certificates in the application.

**Answer:** A

**Explanation:**

[https://cloud.google.com/iap/docs/signed-headers-howto#securing\\_iap\\_headers](https://cloud.google.com/iap/docs/signed-headers-howto#securing_iap_headers) (<https://cloud.google.com/endpoints/docs/openapi/authenticating-users-google-id>).  
<https://cloud.google.com/armor/docs/security-policy-overview#:~:text=Google%20Cloud%20Armor%20securit> "Google Cloud Armor security policies protect your application by providing Layer 7 filtering and by scrubbing incoming requests for common web attacks or other Layer 7 attributes to potentially block traffic before it reaches your load balanced backend services or backend buckets"

**NEW QUESTION 169**

- (Exam Topic 2)

You are developing an application that will store and access sensitive unstructured data objects in a Cloud Storage bucket. To comply with regulatory requirements, you need to ensure that all data objects are available for at least 7 years after their initial creation. Objects created more than 3 years ago are accessed very infrequently (less than once a year). You need to configure object storage while ensuring that storage cost is optimized. What should you do? (Choose two.)

- A. Set a retention policy on the bucket with a period of 7 years.
- B. Use IAM Conditions to provide access to objects 7 years after the object creation date.
- C. Enable Object Versioning to prevent objects from being accidentally deleted for 7 years after object creation.
- D. Create an object lifecycle policy on the bucket that moves objects from Standard Storage to Archive Storage after 3 years.
- E. Implement a Cloud Function that checks the age of each object in the bucket and moves the objects older than 3 years to a second bucket with the Archive Storage class
- F. Use Cloud Scheduler to trigger the Cloud Function on a daily schedule.

**Answer:** AD

**Explanation:**

<https://cloud.google.com/storage/docs/bucket-lock>

This page discusses the Bucket Lock feature, which allows you to configure a data retention policy for a Cloud Storage bucket that governs how long objects in the bucket must be retained. The feature also allows you to lock the data retention policy, permanently preventing the policy from being reduced or removed.

<https://cloud.google.com/storage/docs/storage-classes#archive>

Archive storage is the lowest-cost, highly durable storage service for data archiving, online backup, and disaster recovery. Unlike the "coldest" storage services offered by other Cloud providers, your data is available within milliseconds, not hours or days.

Archive storage is the best choice for data that you plan to access less than once a year.

**NEW QUESTION 173**

- (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 174**

- (Exam Topic 2)

You want to migrate an on-premises container running in Knative to Google Cloud. You need to make sure that the migration doesn't affect your application's deployment strategy, and you want to use a fully managed service. Which Google Cloud service should you use to deploy your container?

- A. Cloud Run
- B. Compute Engine
- C. Google Kubernetes Engine
- D. App Engine flexible environment

**Answer:** A

**Explanation:**

<https://cloud.google.com/blog/products/serverless/knative-based-cloud-run-services-are-ga>

**NEW QUESTION 175**

- (Exam Topic 2)

You are in the final stage of migrating an on-premises data center to Google Cloud. You are quickly approaching your deadline, and discover that a web API is running on a server slated for decommissioning. You need to recommend a solution to modernize this API while migrating to Google Cloud. The modernized web API must meet the following requirements:

- Autoscales during high traffic periods at the end of each month
  - Written in Python 3.x
  - Developers must be able to rapidly deploy new versions in response to frequent code changes
- You want to minimize cost, effort, and operational overhead of this migration. What should you do?

- A. Modernize and deploy the code on App Engine flexible environment.
- B. Modernize and deploy the code on App Engine standard environment.
- C. Deploy the modernized application to an n1-standard-1 Compute Engine instance.
- D. Ask the development team to re-write the application to run as a Docker container on Google Kubernetes Engine.

**Answer:** B

**Explanation:**

<https://cloud.google.com/appengine/docs/standard>

**NEW QUESTION 178**

- (Exam Topic 2)

Your company's development teams want to use Cloud Build in their projects to build and push Docker images to Container Registry. The operations team requires all Docker images to be published to a centralized, securely managed Docker registry that the operations team manages. What should you do?

- A. Use Container Registry to create a registry in each development team's projec
- B. Configure the Cloud Build build to push the Docker image to the project's registr
- C. Grant the operations team access to each development team's registry.
- D. Create a separate project for the operations team that has Container Registry configure
- E. Assign appropriate permissions to the Cloud Build service account in each developer team's project to allow access to the operation team's registry.
- F. Create a separate project for the operations team that has Container Registry configure
- G. Create a Service Account for each development team and assign the appropriate permissions to allow it access to the operations team's registr
- H. Store the service account key file in the source code repository and use it to authenticate against the operations team's registry.
- I. Create a separate project for the operations team that has the open source Docker Registry deployed on a Compute Engine virtual machine instanc
- J. Create a username and password for each development tea
- K. Store the username and password in the source code repository and use it to authenticate against the operations team's Docker registry.

**Answer: A**

**Explanation:**

Reference: <https://cloud.google.com/container-registry/>

**NEW QUESTION 180**

- (Exam Topic 2)

You are a developer working on an internal application for payroll processing. You are building a component of the application that allows an employee to submit a timesheet, which then initiates several steps:

- An email is sent to the employee and manager, notifying them that the timesheet was submitted.
- A timesheet is sent to payroll processing for the vendor's API.
- A timesheet is sent to the data warehouse for headcount planning.

These steps are not dependent on each other and can be completed in any order. New steps are being considered and will be implemented by different development teams. Each development team will implement the error handling specific to their step. What should you do?

- A. Deploy a Cloud Function for each step that calls the corresponding downstream system to complete the required action.
- B. Create a Pub/Sub topic for each ste
- C. Create a subscription for each downstream development team to subscribe to their step's topic.
- D. Create a Pub/Sub topic for timesheet submission
- E. Create a subscription for each downstream development team to subscribe to the topic.
- F. Create a timesheet microservice deployed to Google Kubernetes Engin
- G. The microservice calls each downstream step and waits for a successful response before calling the next step.

**Answer: C**

**NEW QUESTION 185**

- (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 190**

- (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 194**



- (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 employeeesthe 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 199

- (Exam Topic 2)

You are load testing your server application. During the first 30 seconds, you observe that a previously inactive Cloud Storage bucket is now servicing 2000 write requests per second and 7500 read requests per second. Your application is now receiving intermittent 5xx and 429 HTTP responses from the Cloud Storage JSON API as the demand escalates. You want to decrease the failed responses from the Cloud Storage API. What should you do?

- A. Distribute the uploads across a large number of individual storage buckets.
- B. Use the XML API instead of the JSON API for interfacing with Cloud Storage.
- C. Pass the HTTP response codes back to clients that are invoking the uploads from your application.
- D. Limit the upload rate from your application clients so that the dormant bucket's peak request rate is reached more gradually.

**Answer:** A

#### Explanation:

Reference: <https://cloud.google.com/storage/docs/request-rate>

#### NEW QUESTION 203

- (Exam Topic 2)

You recently migrated an on-premises monolithic application to a microservices application on Google Kubernetes Engine (GKE). The application has dependencies on backend services on-premises, including a CRM system and a MySQL database that contains personally identifiable information (PII). The backend services must remain on-premises to meet regulatory requirements.

You established a Cloud VPN connection between your on-premises data center and Google Cloud. You notice that some requests from your microservices application on GKE to the backend services are failing due to latency issues caused by fluctuating bandwidth, which is causing the application to crash. How should you address the latency issues?

- A. Use Memorystore to cache frequently accessed PII data from the on-premises MySQL database
- B. Use Istio to create a service mesh that includes the microservices on GKE and the on-premises services
- C. Increase the number of Cloud VPN tunnels for the connection between Google Cloud and the on-premises services
- D. Decrease the network layer packet size by decreasing the Maximum Transmission Unit (MTU) value from its default value on Cloud VPN

**Answer:** C

#### Explanation:

<https://cloud.google.com/network-connectivity/docs/vpn/concepts/choosing-networks-routing#route-alignment>

#### NEW QUESTION 208

- (Exam Topic 2)

You are developing a web application that will be accessible over both HTTP and HTTPS and will run on Compute Engine instances. On occasion, you will need to SSH from your remote laptop into one of the Compute Engine instances to conduct maintenance on the app. How should you configure the instances while following Google-recommended best practices?

- A. Set up a backend with Compute Engine web server instances with a private IP address behind a TCP proxy load balancer.
- B. Configure the firewall rules to allow all ingress traffic to connect to the Compute Engine web servers, with each server having a unique external IP address.
- C. Configure Cloud Identity-Aware Proxy API for SSH acces
- D. Then configure the Compute Engine servers with private IP addresses behind an HTTP(s) load balancer for the application web traffic.
- E. Set up a backend with Compute Engine web server instances with a private IP address behind an HTTP(S) load balance
- F. Set up a bastion host with a public IP address and open firewall port
- G. Connect to the web instances using the bastion host.

**Answer:** C

#### Explanation:

Reference: [https://cloud.google.com/compute/docs/instances/connecting-advanced#cloud\\_iap](https://cloud.google.com/compute/docs/instances/connecting-advanced#cloud_iap) [https://cloud.google.com/solutions/connecting-securely#storing\\_host\\_keys\\_by\\_enabling\\_guest\\_attributes](https://cloud.google.com/solutions/connecting-securely#storing_host_keys_by_enabling_guest_attributes)

#### NEW QUESTION 211

- (Exam Topic 2)



You need to copy directory local-scripts and all of its contents from your local workstation to a Compute Engine virtual machine instance. Which command should you use?

- A. gsutil cp --project "my-gcp-project" -r ~/local-scripts/ gcp-instance-name:~/ server-scripts/ --zone "us-east1-b"
- B. gsutil cp --project "my-gcp-project" -R ~/local-scripts/ gcp-instance-name:~/ server-scripts/ --zone "us-east1-b"
- C. gcloud compute scp --project "my-gcp-project" --recurse ~/local-scripts/ gcpinstance- name:~/server-scripts/ --zone "us-east1-b"
- D. gcloud compute mv --project "my-gcp-project" --recurse ~/local-scripts/ gcpinstance- name:~/server-scripts/ --zone "us-east1-b"

**Answer: C**

**Explanation:**

Reference: <https://cloud.google.com/sdk/gcloud/reference/compute/copy-files>

**NEW QUESTION 212**

- (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 Logging
- 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 dat
- 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 216**

- (Exam Topic 2)

You have an application deployed in production. When a new version is deployed, you want to ensure that all production traffic is routed to the new version of your application. You also want to keep the previous version deployed so that you can revert to it if there is an issue with the new version. Which deployment strategy should you use?

- A. Blue/green deployment
- B. Canary deployment
- C. Rolling deployment
- D. Recreate deployment

**Answer: A**

**NEW QUESTION 221**

- (Exam Topic 2)

You have an HTTP Cloud Function that is called via POST. Each submission's request body has a flat, unnested JSON structure containing numeric and text data. After the Cloud Function completes, the collected data should be immediately available for ongoing and complex analytics by many users in parallel. How should you persist the submissions?

- A. Directly persist each POST request's JSON data into Datastore.
- B. Transform the POST request's JSON data, and stream it into BigQuery.
- C. Transform the POST request's JSON data, and store it in a regional Cloud SQL cluster.
- D. Persist each POST request's JSON data as an individual file within Cloud Storage, with the file name containing the request identifier.

**Answer: D**

**NEW QUESTION 224**

- (Exam Topic 2)

You work at a rapidly growing financial technology startup. You manage the payment processing application written in Go and hosted on Cloud Run in the Singapore region (asia-southeast1). The payment processing application processes data stored in a Cloud Storage bucket that is also located in the Singapore region.

The startup plans to expand further into the Asia Pacific region. You plan to deploy the Payment Gateway in Jakarta, Hong Kong, and Taiwan over the next six months. Each location has data residency requirements that require customer data to reside in the country where the transaction was made. You want to minimize the cost of these deployments. What should you do?

- A. Create a Cloud Storage bucket in each region, and create a Cloud Run service of the payment processing application in each region.
- B. Create a Cloud Storage bucket in each region, and create three Cloud Run services of the payment processing application in the Singapore region.
- C. Create three Cloud Storage buckets in the Asia multi-region, and create three Cloud Run services of the payment processing application in the Singapore region.
- D. Create three Cloud Storage buckets in the Asia multi-region, and create three Cloud Run revisions of the payment processing application in the Singapore region.

**Answer: A**

#### NEW QUESTION 228

- (Exam Topic 2)

Your code is running on Cloud Functions in project A. It is supposed to write an object in a Cloud Storage bucket owned by project B. However, the write call is failing with the error "403 Forbidden".

What should you do to correct the problem?

- A. Grant your user account the roles/storage.objectCreator role for the Cloud Storage bucket.
- B. Grant your user account the roles/iam.serviceAccountUser role for the service-PROJECTA@gcf-adminrobot.iam.gserviceaccount.com service account.
- C. Grant the service-PROJECTA@gcf-admin-robot.iam.gserviceaccount.com service account the roles/ storage.objectCreator role for the Cloud Storage bucket.
- D. Enable the Cloud Storage API in project B.

**Answer:** B

#### NEW QUESTION 233

- (Exam Topic 2)

You recently joined a new team that has a Cloud Spanner database instance running in production. Your manager has asked you to optimize the Spanner instance to reduce cost while maintaining high reliability and availability of the database. What should you do?

- A. Use Cloud Logging to check for error logs, and reduce Spanner processing units by small increments until you find the minimum capacity required.
- B. Use Cloud Trace to monitor the requests per sec of incoming requests to Spanner, and reduce Spanner processing units by small increments until you find the minimum capacity required.
- C. Use Cloud Monitoring to monitor the CPU utilization, and reduce Spanner processing units by small increments until you find the minimum capacity required.
- D. Use Snapshot Debugger to check for application errors, and reduce Spanner processing units by small increments until you find the minimum capacity required.

**Answer:** C

#### Explanation:

[https://cloud.google.com/spanner/docs/compute-capacity#increasing\\_and\\_decreasing\\_compute\\_capacity](https://cloud.google.com/spanner/docs/compute-capacity#increasing_and_decreasing_compute_capacity)

#### NEW QUESTION 234

- (Exam Topic 2)

You plan to deploy a new application revision with a Deployment resource to Google Kubernetes Engine (GKE) in production. The container might not work correctly. You want to minimize risk in case there are issues after deploying the revision. You want to follow Google-recommended best practices. What should you do?

- A. Perform a rolling update with a PodDisruptionBudget of 80%.
- B. Perform a rolling update with a HorizontalPodAutoscaler scale-down policy value of 0.
- C. Convert the Deployment to a StatefulSet, and perform a rolling update with a PodDisruptionBudget of 80%.
- D. Convert the Deployment to a StatefulSet, and perform a rolling update with a HorizontalPodAutoscaler scale-down policy value of 0.

**Answer:** A

#### Explanation:

<https://cloud.google.com/blog/products/containers-kubernetes/ensuring-reliability-and-uptime-for-your-gke-clus> Setting PodDisruptionBudget ensures that your workloads have a sufficient number of replicas, even during maintenance. Using the PDB, you can define a number (or percentage) of pods that can be terminated, even if terminating them brings the current replica count below the desired value. With PDB configured, Kubernetes will drain a node following the configured disruption schedule. New pods will be deployed on other available nodes. This approach ensures Kubernetes schedules workloads in an optimal way while controlling the disruption based on the PDB configuration.

<https://blog.knoldus.com/how-to-avoid-outages-in-your-kubernetes-cluster-using-pdb/>

#### NEW QUESTION 239

- (Exam Topic 2)

Your company has created an application that uploads a report to a Cloud Storage bucket. When the report is uploaded to the bucket, you want to publish a message to a Cloud Pub/Sub topic. You want to implement a solution that will take a small amount to effort to implement. What should you do?

- A. Configure the Cloud Storage bucket to trigger Cloud Pub/Sub notifications when objects are modified.
- B. Create an App Engine application to receive the file; when it is received, publish a message to the Cloud Pub/Sub topic.
- C. Create a Cloud Function that is triggered by the Cloud Storage bucket
- D. In the Cloud Function, publish a message to the Cloud Pub/Sub topic.
- E. Create an application deployed in a Google Kubernetes Engine cluster to receive the file; when it is received, publish a message to the Cloud Pub/Sub topic.

**Answer:** C

#### Explanation:

<https://cloud.google.com/storage/docs/pubsub-notifications>

#### NEW QUESTION 240

- (Exam Topic 2)

You recently deployed your application in Google Kubernetes Engine, and now need to release a new version of your application. You need the ability to instantly roll back to the previous version in case there are issues with the new version. Which deployment model should you use?

- A. Perform a rolling deployment, and test your new application after the deployment is complete.
- B. Perform A/B testing, and test your application periodically after the new tests are implemented.
- C. Perform a blue/green deployment, and test your new application after the deployment i
- D. complete.
- E. Perform a canary deployment, and test your new application periodically after the new version is deployed.

**Answer:** C

#### NEW QUESTION 241

- (Exam Topic 2)

Your organization has recently begun an initiative to replatform their legacy applications onto Google Kubernetes Engine. You need to decompose a monolithic application into microservices. Multiple instances have read and write access to a configuration file, which is stored on a shared file system. You want to minimize the effort required to manage this transition, and you want to avoid rewriting the application code. What should you do?

- A. Create a new Cloud Storage bucket, and mount it via FUSE in the container.
- B. Create a new persistent disk, and mount the volume as a shared PersistentVolume.
- C. Create a new Filestore instance, and mount the volume as an NFS PersistentVolume.
- D. Create a new ConfigMap and volumeMount to store the contents of the configuration file.

**Answer:** D

#### Explanation:

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

ConfigMaps bind non-sensitive configuration artifacts such as configuration files, command-line arguments, and environment variables to your Pod containers and system components at runtime.

A ConfigMap separates your configurations from your Pod and components, which helps keep your workloads portable. This makes their configurations easier to change and manage, and prevents hardcoding configuration data to Pod specifications.

#### NEW QUESTION 245

- (Exam Topic 2)

You are deploying your applications on Compute Engine. One of your Compute Engine instances failed to launch. What should you do? (Choose two.)

- A. Determine whether your file system is corrupted.
- B. Access Compute Engine as a different SSH user.
- C. Troubleshoot firewall rules or routes on an instance.
- D. Check whether your instance boot disk is completely full.
- E. Check whether network traffic to or from your instance is being dropped.

**Answer:** AD

#### Explanation:

<https://cloud.google.com/compute/docs/troubleshooting/vm-startup>

#### NEW QUESTION 250

- (Exam Topic 2)

You are deploying your application to a Compute Engine virtual machine instance with the Stackdriver Monitoring Agent installed. Your application is a unix process on the instance. You want to be alerted if the unix process has not run for at least 5 minutes. You are not able to change the application to generate metrics or logs. Which alert condition should you configure?

- A. Uptime check
- B. Process health
- C. Metric absence
- D. Metric threshold

**Answer:** B

#### Explanation:

Reference: <https://cloud.google.com/monitoring/alerts/concepts-indepth>

#### NEW QUESTION 252

- (Exam Topic 2)

You are developing an ecommerce web application that uses App Engine standard environment and Memorystore for Redis. When a user logs into the app, the application caches the user's information (e.g., session, name, address, preferences), which is stored for quick retrieval during checkout.

While testing your application in a browser, you get a 502 Bad Gateway error. You have determined that the application is not connecting to Memorystore. What is the reason for this error?

- A. Your Memorystore for Redis instance was deployed without a public IP address.
- B. You configured your Serverless VPC Access connector in a different region than your App Engine instance.
- C. The firewall rule allowing a connection between App Engine and Memorystore was removed during an infrastructure update by the DevOps team.
- D. You configured your application to use a Serverless VPC Access connector on a different subnet in a different availability zone than your App Engine instance.

**Answer:** A

#### Explanation:

Reference: <https://cloud.google.com/endpoints/docs/openapi/troubleshoot-response-errors>

#### NEW QUESTION 254

- (Exam Topic 2)

Your application is controlled by a managed instance group. You want to share a large read-only data set between all the instances in the managed instance group. You want to ensure that each instance can start quickly and can access the data set via its filesystem with very low latency. You also want to minimize the Total cost of the solution. What should you do?

- A. Move the data to a Cloud Storage bucket, and mount the bucket on the filesystem using Cloud Storage FUSE.
- B. Move the data to a Cloud Storage bucket, and copy the data to the boot disk of the instance via a startup script.
- C. Move the data to a Compute Engine persistent disk, and attach the disk in read-only mode to multiple Compute Engine virtual machine instances.

D. Move the data to a Compute Engine persistent disk, take a snapshot, create multiple disks from the snapshot, and attach each disk to its own instance.

**Answer:** C

#### NEW QUESTION 257

- (Exam Topic 2)

Your application is deployed on hundreds of Compute Engine instances in a managed instance group (MIG) in multiple zones. You need to deploy a new instance template to fix a critical vulnerability immediately but must avoid impact to your service. What setting should be made to the MIG after updating the instance template?

- A. Set the Max Surge to 100%.
- B. Set the Update mode to Opportunistic.
- C. Set the Maximum Unavailable to 100%.
- D. Set the Minimum Wait time to 0 seconds.

**Answer:** B

#### Explanation:

<https://cloud.google.com/compute/docs/instance-groups/rolling-out-updates-to-managed-instance-groups#type> Alternatively, if an automated update is potentially too disruptive, you can choose to perform an opportunistic update. The MIG applies an opportunistic update only when you manually initiate the update on selected instances or when new instances are created. New instances can be created when you or another service, such as an autoscaler, resizes the MIG. Compute Engine does not actively initiate requests to apply opportunistic updates on existing instances.

#### NEW QUESTION 262

- (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 267

- (Exam Topic 2)

Your team develops services that run on Google Kubernetes Engine. You need to standardize their log data using Google-recommended practices and make the data more useful in the fewest number of steps. What should you do? (Choose two.)

- A. Create aggregated exports on application logs to BigQuery to facilitate log analytics.
- B. Create aggregated exports on application logs to Cloud Storage to facilitate log analytics.
- C. Write log output to standard output (stdout) as single-line JSON to be ingested into Cloud Logging as structured logs.
- D. Mandate the use of the Logging API in the application code to write structured logs to Cloud Logging.
- E. Mandate the use of the Pub/Sub API to write structured data to Pub/Sub and create a Dataflow streaming pipeline to normalize logs and write them to BigQuery for analytics.

**Answer:** AC

#### Explanation:

[https://cloud.google.com/stackdriver/docs/solutions/gke/managing-logs#best\\_practices](https://cloud.google.com/stackdriver/docs/solutions/gke/managing-logs#best_practices)

#### NEW QUESTION 270

- (Exam Topic 2)

Your application is built as a custom machine image. You have multiple unique deployments of the machine image. Each deployment is a separate managed instance group with its own template. Each deployment requires a unique set of configuration values. You want to provide these unique values to each deployment but use the same custom machine image in all deployments. You want to use out-of-the-box features of Compute Engine. What should you do?

- A. Place the unique configuration values in the persistent disk.
- B. Place the unique configuration values in a Cloud Bigtable table.
- C. Place the unique configuration values in the instance template startup script.
- D. Place the unique configuration values in the instance template instance metadata.

**Answer:** A

#### Explanation:

Reference: <https://cloud.google.com/compute/docs/instance-groups>

#### NEW QUESTION 274

- (Exam Topic 2)

You deployed a new application to Google Kubernetes Engine and are experiencing some performance degradation. Your logs are being written to Cloud Logging, and you are using a Prometheus sidecar model for capturing metrics. You need to correlate the metrics and data from the logs to troubleshoot the performance issue and send real-time alerts while minimizing costs. What should you do?



- A. Create custom metrics from the Cloud Logging logs, and use Prometheus to import the results using the Cloud Monitoring REST API.
- B. Export the Cloud Logging logs and the Prometheus metrics to Cloud Bigtable.
- C. Run a query to join the results, and analyze in Google Data Studio.
- D. Export the Cloud Logging logs and stream the Prometheus metrics to BigQuery.
- E. Run a recurring query to join the results, and send notifications using Cloud Tasks.
- F. Export the Prometheus metrics and use Cloud Monitoring to view them as external metric.
- G. Configure Cloud Monitoring to create log-based metrics from the logs, and correlate them with the Prometheus data.

**Answer:** D

**Explanation:**

Reference:

<https://cloud.google.com/blog/products/operations/troubleshoot-gke-faster-with-monitoring-data-in-your-logs>

**NEW QUESTION 275**

- (Exam Topic 2)

You are building a CI/CD pipeline that consists of a version control system, Cloud Build, and Container Registry. Each time a new tag is pushed to the repository, a Cloud Build job is triggered, which runs unit tests on the new code builds a new Docker container image, and pushes it into Container Registry. The last step of your pipeline should deploy the new container to your production Google Kubernetes Engine (GKE) cluster. You need to select a tool and deployment strategy that meets the following requirements:

- Zero downtime is incurred
  - Testing is fully automated
  - Allows for testing before being rolled out to users
  - Can quickly rollback if needed
- What should you do?

- A. Trigger a Spinnaker pipeline configured as an A/B test of your new code and, if it is successful, deploy the container to production.
- B. Trigger a Spinnaker pipeline configured as a canary test of your new code and, if it is successful, deploy the container to production.
- C. Trigger another Cloud Build job that uses the Kubernetes CLI tools to deploy your new container to your GKE cluster, where you can perform a canary test.
- D. Trigger another Cloud Build job that uses the Kubernetes CLI tools to deploy your new container to your GKE cluster, where you can perform a shadow test.

**Answer:** D

**Explanation:**

[https://cloud.google.com/architecture/implementing-deployment-and-testing-strategies-on-gke#perform\\_a\\_shadow\\_test](https://cloud.google.com/architecture/implementing-deployment-and-testing-strategies-on-gke#perform_a_shadow_test) With a shadow test, you test the new version of your application by mirroring user traffic from the current application version without impacting the user requests.

**NEW QUESTION 278**

- (Exam Topic 2)

Your operations team has asked you to create a script that lists the Cloud Bigtable, Memorystore, and Cloud SQL databases running within a project. The script should allow users to submit a filter expression to limit the results presented. How should you retrieve the data?

- A. Use the HBase API, Redis API, and MySQL connection to retrieve database list
- B. Combine the results, and then apply the filter to display the results
- C. Use the HBase API, Redis API, and MySQL connection to retrieve database list
- D. Filter the results individually, and then combine them to display the results
- E. Run `gcloud bigtable instances list`, `gcloud redis instances list`, and `gcloud sql databases list`
- F. Use a filter within the application, and then display the results
- G. Run `gcloud bigtable instances list`, `gcloud redis instances list`, and `gcloud sql databases list`
- H. Use `--filter` flag with each command, and then display the results

**Answer:** D

**Explanation:**

<https://cloud.google.com/sdk/gcloud/reference/topic/filters>

Most `gcloud` commands return a list of resources on success. By default they are pretty-printed on the standard output. The

`--format=NAME[ATTRIBUTES](PROJECTION)` and `--filter=EXPRESSION` flags along with projections can be used to format and change the default output to a more meaningful result. Use the `--format` flag to change the default output format of a command. For details run `$ gcloud topic formats`.

**NEW QUESTION 282**

- (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 284**

- (Exam Topic 2)

You have an on-premises application that authenticates to the Cloud Storage API using a user-managed service account with a user-managed key. The application connects to Cloud Storage using Private Google Access over a Dedicated Interconnect link. You discover that requests from the application to access



objects in the Cloud Storage bucket are failing with a 403 Permission Denied error code. What is the likely cause of this issue?

- A. The folder structure inside the bucket and object paths have changed.
- B. The permissions of the service account's predefined role have changed.
- C. The service account key has been rotated but not updated on the application server.
- D. The Interconnect link from the on-premises data center to Google Cloud is experiencing a temporary outage.

**Answer:** C

#### NEW QUESTION 287

- (Exam Topic 2)

Your company stores their source code in a Cloud Source Repositories repository. Your company wants to build and test their code on each source code commit to the repository and requires a solution that is managed and has minimal operations overhead.

Which method should they use?

- A. Use Cloud Build with a trigger configured for each source code commit.
- B. Use Jenkins deployed via the Google Cloud Platform Marketplace, configured to watch for source code commits.
- C. Use a Compute Engine virtual machine instance with an open source continuous integration tool, configured to watch for source code commits.
- D. Use a source code commit trigger to push a message to a Cloud Pub/Sub topic that triggers an App Engine service to build the source code.

**Answer:** A

#### Explanation:

[https://cloud.google.com/build/docs/automating-builds/create-manage-triggers#:~:text=A%20Cloud%20Build%](https://cloud.google.com/build/docs/automating-builds/create-manage-triggers#:~:text=A%20Cloud%20Build%20)

#### NEW QUESTION 291

- (Exam Topic 2)

You manage your company's ecommerce platform's payment system, which runs on Google Cloud. Your company must retain user logs for 1 year for internal auditing purposes and for 3 years to meet compliance requirements. You need to store new user logs on Google Cloud to minimize on-premises storage usage and ensure that they are easily searchable. You want to minimize effort while ensuring that the logs are stored correctly. What should you do?

- A. Store the logs in a Cloud Storage bucket with bucket lock turned on.
- B. Store the logs in a Cloud Storage bucket with a 3-year retention period.
- C. Store the logs in Cloud Logging as custom logs with a custom retention period.
- D. Store the logs in a Cloud Storage bucket with a 1-year retention period.
- E. After 1 year, move the logs to another bucket with a 2-year retention period.

**Answer:** C

#### Explanation:

<https://cloud.google.com/logging/docs/buckets#custom-retention>

#### NEW QUESTION 292

- (Exam Topic 2)

You are developing a JPEG image-resizing API hosted on Google Kubernetes Engine (GKE). Callers of the service will exist within the same GKE cluster. You want clients to be able to get the IP address of the service.

What should you do?

- A. Define a GKE Service
- B. Clients should use the name of the A record in Cloud DNS to find the service's cluster IP address.
- C. Define a GKE Service
- D. Clients should use the service name in the URL to connect to the service.
- E. Define a GKE Endpoint
- F. Clients should get the endpoint name from the appropriate environment variable in the client container.
- G. Define a GKE Endpoint
- H. Clients should get the endpoint name from Cloud DNS.

**Answer:** C

#### NEW QUESTION 294

- (Exam Topic 2)

You have containerized a legacy application that stores its configuration on an NFS share. You need to deploy this application to Google Kubernetes Engine (GKE) and do not want the application serving traffic until after the configuration has been retrieved. What should you do?

- A. Use the gsutil utility to copy files from within the Docker container at startup, and start the service using an ENTRYPOINT script.
- B. Create a PersistentVolumeClaim on the GKE cluster
- C. Access the configuration files from the volume, and start the service using an ENTRYPOINT script.
- D. Use the COPY statement in the Dockerfile to load the configuration into the container image
- E. Verify that the configuration is available, and start the service using an ENTRYPOINT script.
- F. Add a startup script to the GKE instance group to mount the NFS share at node startup
- G. Copy the configuration files into the container, and start the service using an ENTRYPOINT script.

**Answer:** D

#### Explanation:

Reference: <https://cloud.google.com/compute/docs/instances/startup-scripts/linux>

#### NEW QUESTION 295

- (Exam Topic 2)

Your company's development teams want to use various open source operating systems in their Docker builds. When images are created in published containers in your company's environment, you need to scan them for Common Vulnerabilities and Exposures (CVEs). The scanning process must not impact software development agility. You want to use managed services where possible. What should you do?

- A. Enable the Vulnerability scanning setting in the Container Registry.
- B. Create a Cloud Function that is triggered on a code check-in and scan the code for CVEs.
- C. Disallow the use of non-commercially supported base images in your development environment.
- D. Use Cloud Monitoring to review the output of Cloud Build to determine whether a vulnerable version has been used.

**Answer:** A

**Explanation:**

<https://cloud.google.com/container-analysis/docs/os-overview>

#### NEW QUESTION 296

- (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 297

- (Exam Topic 2)

You are developing an application that will allow users to read and post comments on news articles. You want to configure your application to store and display user-submitted comments using Firestore. How should you design the schema to support an unknown number of comments and articles?

- A. Store each comment in a subcollection of the article.
- B. Add each comment to an array property on the article.
- C. Store each comment in a document, and add the comment's key to an array property on the article.
- D. Store each comment in a document, and add the comment's key to an array property on the user profile.

**Answer:** D

#### NEW QUESTION 302

- (Exam Topic 2)

You are using Cloud Build to build a Docker image. You need to modify the build to execute unit and run integration tests. When there is a failure, you want the build history to clearly display the stage at which the build failed. What should you do?

- A. Add RUN commands in the Dockerfile to execute unit and integration tests.
- B. Create a Cloud Build build config file with a single build step to compile unit and integration tests.
- C. Create a Cloud Build build config file that will spawn a separate cloud build pipeline for unit and integration tests.
- D. Create a Cloud Build build config file with separate cloud builder steps to compile and execute unit and integration tests.

**Answer:** D

#### NEW QUESTION 305

- (Exam Topic 2)

You are trying to connect to your Google Kubernetes Engine (GKE) cluster using kubectl from Cloud Shell. You have deployed your GKE cluster with a public endpoint. From Cloud Shell, you run the following command:

```
gcloud container clusters get-credentials <cluster-name> \
  --zone <zone> --project <project-name> \
```

You notice that the kubectl commands time out without returning an error message. What is the most likely cause of this issue?

- A. Your user account does not have privileges to interact with the cluster using kubectl.
- B. Your Cloud Shell external IP address is not part of the authorized networks of the cluster.
- C. The Cloud Shell is not part of the same VPC as the GKE cluster.
- D. A VPC firewall is blocking access to the cluster's endpoint.

**Answer:** B

**Explanation:**

[https://cloud.google.com/kubernetes-engine/docs/how-to/private-clusters#cloud\\_shell](https://cloud.google.com/kubernetes-engine/docs/how-to/private-clusters#cloud_shell)

If you want to use Cloud Shell to access the cluster, you must add the public IP address of your Cloud Shell to the cluster's list of authorized networks.

#### NEW QUESTION 306

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