

# Google

## Exam Questions Professional-Cloud-Developer

Google Certified Professional - Cloud Developer



#### NEW QUESTION 1

- (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 2

- (Exam Topic 1)

For this question refer to the HipLocal case study.

HipLocal wants to reduce the latency of their services for users in global locations. They have created read replicas of their database in locations where their users reside and configured their service to read traffic using those replicas. How should they further reduce latency for all database interactions with the least amount of effort?

- A. Migrate the database to Bigtable and use it to serve all global user traffic.
- B. Migrate the database to Cloud Spanner and use it to serve all global user traffic.
- C. Migrate the database to Firestore in Datastore mode and use it to serve all global user traffic.
- D. Migrate the services to Google Kubernetes Engine and use a load balancer service to better scale the application.

**Answer: D**

#### NEW QUESTION 3

- (Exam Topic 1)

For this question, refer to the HipLocal case study.

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

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

**Answer: D**

#### NEW QUESTION 4

- (Exam Topic 1)

HipLocal is configuring their access controls.

Which firewall configuration should they implement?

- A. Block all traffic on port 443.
- B. Allow all traffic into the network.
- C. Allow traffic on port 443 for a specific tag.
- D. Allow all traffic on port 443 into the network.

**Answer: D**

#### NEW QUESTION 5

- (Exam Topic 1)

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

Which IP strategy should they use?

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

**Answer: A**

#### NEW QUESTION 6

- (Exam Topic 1)

Which service should HipLocal use for their public APIs?

- A. Cloud Armor
- B. Cloud Functions

- C. Cloud Endpoints
- D. Shielded Virtual Machines

**Answer:** D

#### NEW QUESTION 7

- (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 8

- (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 9

- (Exam Topic 2)

Users are complaining that your Cloud Run-hosted website responds too slowly during traffic spikes. You want to provide a better user experience during traffic peaks. What should you do?

- A. Read application configuration and static data from the database on application startup.
- B. Package application configuration and static data into the application image during build time.
- C. Perform as much work as possible in the background after the response has been returned to the user.
- D. Ensure that timeout exceptions and errors cause the Cloud Run instance to exit quickly so a replacement instance can be started.

**Answer:** C

#### NEW QUESTION 10

- (Exam Topic 2)

You are developing an application hosted on Google Cloud that uses a MySQL relational database schema. The application will have a large volume of reads and writes to the database and will require backups and ongoing capacity planning. Your team does not have time to fully manage the database but can take on small administrative tasks. How should you host the database?

- A. Configure Cloud SQL to host the database, and import the schema into Cloud SQL.
- B. Deploy MySQL from the Google Cloud Marketplace to the database using a client, and import the schema.
- C. Configure Bigtable to host the database, and import the data into Bigtable.
- D. Configure Cloud Spanner to host the database, and import the schema into Cloud Spanner.
- E. Configure Firestore to host the database, and import the data into Firestore.

**Answer:** A

#### Explanation:

<https://cloud.google.com/spanner/docs/migrating-mysql-to-spanner#migration-process>

Cloud SQL: Cloud SQL is a web service that allows you to create, configure, and use relational databases that live in Google's cloud. It is a fully-managed service that maintains, manages, and administers your databases, allowing you to focus on your applications and services.

<https://cloud.google.com/sql/docs/mysql> Cloud SQL for MySQL is a fully-managed database service that helps you set up, maintain, manage, and administer your MySQL relational databases on Google Cloud Platform.

#### NEW QUESTION 10

- (Exam Topic 2)

You made a typo in a low-level Linux configuration file that prevents your Compute Engine instance from booting to a normal run level. You just created the Compute Engine instance today and have done no other maintenance on it, other than tweaking files. How should you correct this error?

- A. Download the file using scp, change the file, and then upload the modified version
- B. Configure and log in to the Compute Engine instance through SSH, and change the file
- C. Configure and log in to the Compute Engine instance through the serial port, and change the file
- D. Configure and log in to the Compute Engine instance using a remote desktop client, and change the file

**Answer:** C

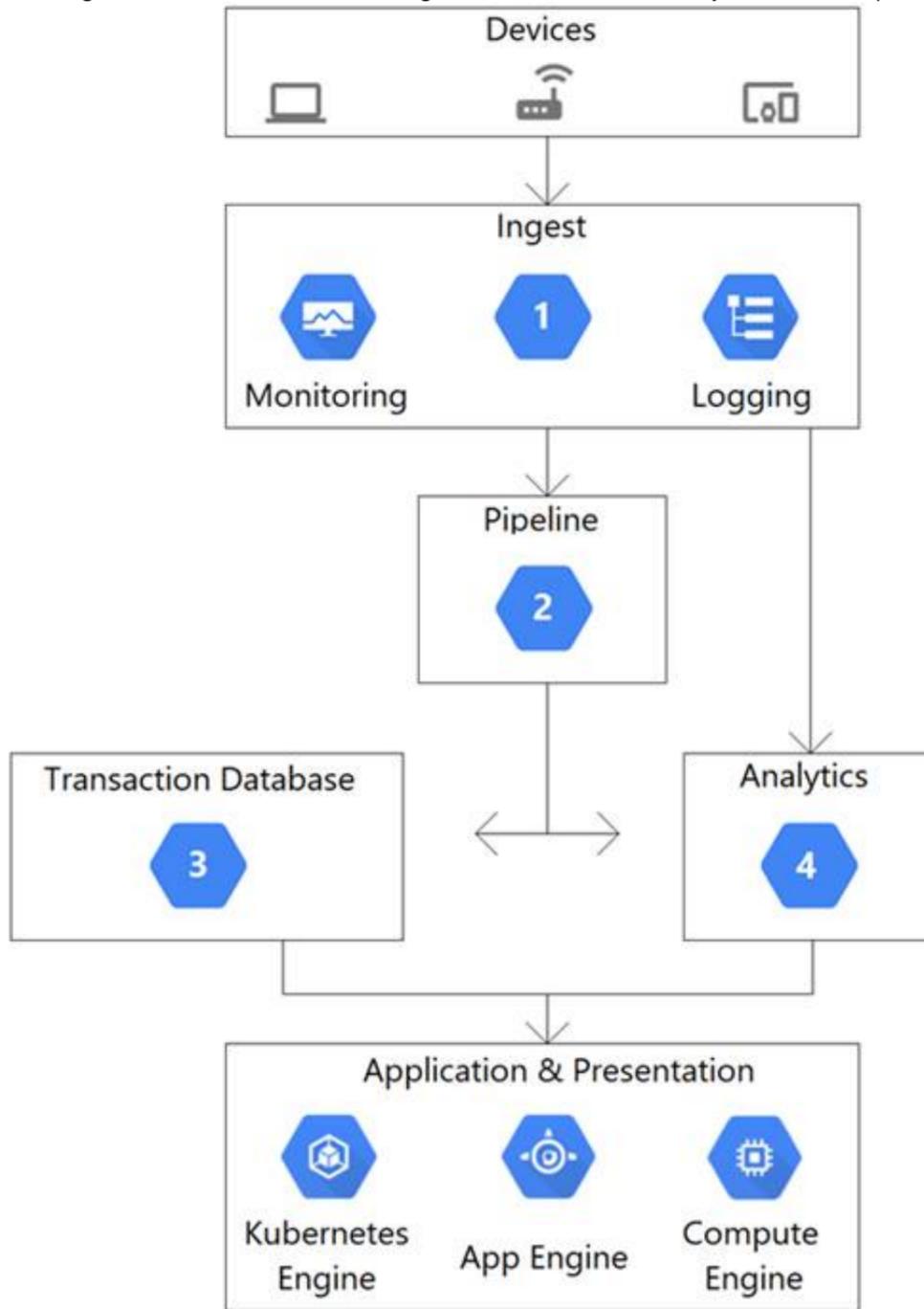
#### Explanation:

<https://cloud.google.com/compute/docs/troubleshooting/troubleshooting-using-serial-console>

**NEW QUESTION 11**

- (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 Engine 2) Pub/Sub 3) BigQuery 4) Firestore
- B. 1) Dataflow 2) Pub/Sub 3) Firestore 4) BigQuery
- C. 1) Pub/Sub 2) Dataflow 3) BigQuery 4) Firestore
- D. 1) Pub/Sub 2) Dataflow 3) Firestore 4) BigQuery

**Answer: D**

**NEW QUESTION 16**

- (Exam Topic 2)

You are planning to add unit tests to your application. You need to be able to assert that published Pub/Sub messages are processed by your subscriber in order. You want the unit tests to be cost-effective and reliable. What should you do?

- A. Implement a mocking framework.
- B. Create a topic and subscription for each tester.
- C. Add a filter by tester to the subscription.
- D. Use the Pub/Sub emulator.

**Answer: D**

**Explanation:**

<https://cloud.google.com/pubsub/docs/emulator>, "Testing apps locally with the emulator".

**NEW QUESTION 20**

- (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 25**

- (Exam Topic 2)

You want to create “fully baked” or “golden” Compute Engine images for your application. You need to bootstrap your application to connect to the appropriate database according to the environment the application is running on (test, staging, production). What should you do?

- A. Embed the appropriate database connection string in the image.
- B. Create a different image for each environment.
- C. When creating the Compute Engine instance, add a tag with the name of the database to be connected. In your application, query the Compute Engine API to pull the tags for the current instance, and use the tag to construct the appropriate database connection string.
- D. When creating the Compute Engine instance, create a metadata item with a key of “DATABASE” and a value for the appropriate database connection string.
- E. In your application, read the “DATABASE” environment variable, and use the value to connect to the appropriate database.
- F. When creating the Compute Engine instance, create a metadata item with a key of “DATABASE” and a value for the appropriate database connection string.
- G. In your application, query the metadata server for the “DATABASE” value, and use the value to connect to the appropriate database.

**Answer:** C

**NEW QUESTION 30**

- (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 31**

- (Exam Topic 2)

You are writing a single-page web application with a user-interface that communicates with a third-party API for content using XMLHttpRequest. The data displayed on the UI by the API results is less critical than other data displayed on the same web page, so it is acceptable for some requests to not have the API data displayed in the UI. However, calls made to the API should not delay rendering of other parts of the user interface. You want your application to perform well when the API response is an error or a timeout. What should you do?

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

**Answer:** A

**NEW QUESTION 33**

- (Exam Topic 2)

You want to re-architect a monolithic application so that it follows a microservices model. You want to accomplish this efficiently while minimizing the impact of this change to the business. Which approach should you take?

- A. Deploy the application to Compute Engine and turn on autoscaling.
- B. Replace the application's features with appropriate microservices in phases.
- C. Refactor the monolithic application with appropriate microservices in a single effort and deploy it.
- D. Build a new application with the appropriate microservices separate from the monolith and replace it when it is complete.

**Answer:** C

**Explanation:**

Reference: <https://cloud.google.com/solutions/migrating-a-monolithic-app-to-microservices-gke>

**NEW QUESTION 37**

- (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 40**

- (Exam Topic 2)

Your application requires service accounts to be authenticated to GCP products via credentials stored on its host Compute Engine virtual machine instances. You want to distribute these credentials to the host instances as securely as possible. What should you do?

- A. Use HTTP signed URLs to securely provide access to the required resources.
- B. Use the instance's service account Application Default Credentials to authenticate to the required resources.
- C. Generate a P12 file from the GCP Console after the instance is deployed, and copy the credentials to the host instance before starting the application.
- D. Commit the credential JSON file into your application's source repository, and have your CI/CD process package it with the software that is deployed to the instance.

**Answer: B**

**Explanation:**

Reference: <https://cloud.google.com/compute/docs/api/how-tos/authorization>

**NEW QUESTION 41**

- (Exam Topic 2)

You work for a web development team at a small startup. Your team is developing a Node.js application using Google Cloud services, including Cloud Storage and Cloud Build. The team uses a Git repository for version control. Your manager calls you over the weekend and instructs you to make an emergency update to one of the company's websites, and you're the only developer available. You need to access Google Cloud to make the update, but you don't have your work laptop. You are not allowed to store source code locally on a non-corporate computer. How should you set up your developer environment?

- A. Use a text editor and the Git command line to send your source code updates as pull requests from a public computer.
- B. Use a text editor and the Git command line to send your source code updates as pull requests from a virtual machine running on a public computer.
- C. Use Cloud Shell and the built-in code editor for development.
- D. Send your source code updates as pull requests.
- E. Use a Cloud Storage bucket to store the source code that you need to edit.
- F. Mount the bucket to a public computer as a drive, and use a code editor to update the code.
- G. Turn on versioning for the bucket, and point it to the team's Git repository.

**Answer: C**

**Explanation:**

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

**NEW QUESTION 46**

- (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 50**

- (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 53**

- (Exam Topic 2)

Your company's product team has a new requirement based on customer demand to autoscale your stateless and distributed service running in a Google

Kubernetes Engine (GKE) cluster. You want to find a solution that minimizes changes because this feature will go live in two weeks. What should you do?

- A. Deploy a Vertical Pod Autoscaler, and scale based on the CPU load.
- B. Deploy a Vertical Pod Autoscaler, and scale based on a custom metric.
- C. Deploy a Horizontal Pod Autoscaler, and scale based on the CPU load.
- D. Deploy a Horizontal Pod Autoscaler, and scale based on a custom metric.

**Answer: C**

**Explanation:**

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

The Horizontal Pod Autoscaler changes the shape of your Kubernetes workload by automatically increasing or decreasing the number of Pods in response to the workload's CPU or memory consumption, or in response to custom metrics reported from within Kubernetes or external metrics from sources outside of your cluster.

**NEW QUESTION 58**

- (Exam Topic 2)

You are designing an application that uses a microservices architecture. You are planning to deploy the application in the cloud and on-premises. You want to make sure the application can scale up on demand and also use managed services as much as possible. What should you do?

- A. Deploy open source Istio in a multi-cluster deployment on multiple Google Kubernetes Engine (GKE) clusters managed by Anthos.
- B. Create a GKE cluster in each environment with Anthos, and use Cloud Run for Anthos to deploy your application to each cluster.
- C. Install a GKE cluster in each environment with Anthos, and use Cloud Build to create a Deployment for your application in each cluster.
- D. Create a GKE cluster in the cloud and install open-source Kubernetes on-premise
- E. Use an external load balancer service to distribute traffic across the two environments.

**Answer: B**

**Explanation:**

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

Integrated with Anthos, Cloud Run for Anthos provides a flexible serverless development platform for hybrid and multicloud environments. Cloud Run for Anthos is Google's managed and fully supported Knative offering, an open source project that enables serverless workloads on Kubernetes.

**NEW QUESTION 61**

- (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 63**

- (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 instance
- 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 dashboard
- F. Configure Identity-Aware Proxy to secure the communication channel.
- G. Add an HTTP(S) load balancer in front of the monitoring dashboard
- 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 65**

- (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 68

- (Exam Topic 2)

You are developing a Java Web Server that needs to interact with Google Cloud services via the Google Cloud API on the user's behalf. Users should be able to authenticate to the Google Cloud API using their Google Cloud identities. Which workflow should you implement in your web application?

- A. 1) When a user arrives at your application, prompt them for their Google username and password.2) Store an SHA password hash in your application's database along with the user's username.3) The application authenticates to the Google Cloud API using HTTPs requests with the user's username and password hash in the Authorization request header.
- B. 1) When a user arrives at your application, prompt them for their Google username and password.2) Forward the user's username and password in an HTTPS request to the Google Cloud authorization server, and request an access token.3) The Google server validates the user's credentials and returns an access token to the application.4) The application uses the access token to call the Google Cloud API.
- C. 1) When a user arrives at your application, route them to a Google Cloud consent screen with a list of requested permissions that prompts the user to sign in with SSO to their Google Account.2) After the user signs in and provides consent, your application receives an authorization code from a Google server.3) The Google server returns the authorization code to the user, which is stored in the browser's cookies.4) The user authenticates to the Google Cloud API using the authorization code in the cookie.
- D. 1) When a user arrives at your application, route them to a Google Cloud consent screen with a list of requested permissions that prompts the user to sign in with SSO to their Google Account.2) After the user signs in and provides consent, your application receives an authorization code from a Google server.3) The application requests a Google Server to exchange the authorization code with an access token.4) The Google server responds with the access token that is used by the application to call the Google Cloud API.

**Answer: D**

#### Explanation:

<https://developers.google.com/identity/protocols/oauth2#webserver>

The Google OAuth 2.0 endpoint supports web server applications that use languages and frameworks such as PHP, Java, Python, Ruby, and ASP.NET. The authorization sequence begins when your application redirects a browser to a Google URL; the URL includes query parameters that indicate the type of access being requested. Google handles the user authentication, session selection, and user consent. The result is an authorization code, which the application can exchange for an access token and a refresh token.

#### NEW QUESTION 71

- (Exam Topic 2)

You recently developed a new service on Cloud Run. The new service authenticates using a custom service and then writes transactional information to a Cloud Spanner database. You need to verify that your application can support up to 5,000 read and 1,000 write transactions per second while identifying any bottlenecks that occur. Your test infrastructure must be able to autoscale. What should you do?

- A. Build a test harness to generate requests and deploy it to Cloud Ru
- B. Analyze the VPC Flow Logs using Cloud Logging.
- C. Create a Google Kubernetes Engine cluster running the Locust or JMeter images to dynamically generate load test
- D. Analyze the results using Cloud Trace.
- E. Create a Cloud Task to generate a test loa
- F. Use Cloud Scheduler to run 60,000 Cloud Task transactions per minute for 10 minute
- G. Analyze the results using Cloud Monitoring.
- H. Create a Compute Engine instance that uses a LAMP stack image from the Marketplace, and use Apache Bench to generate load tests against the servic
- I. Analyze the results using Cloud Trace.

**Answer: B**

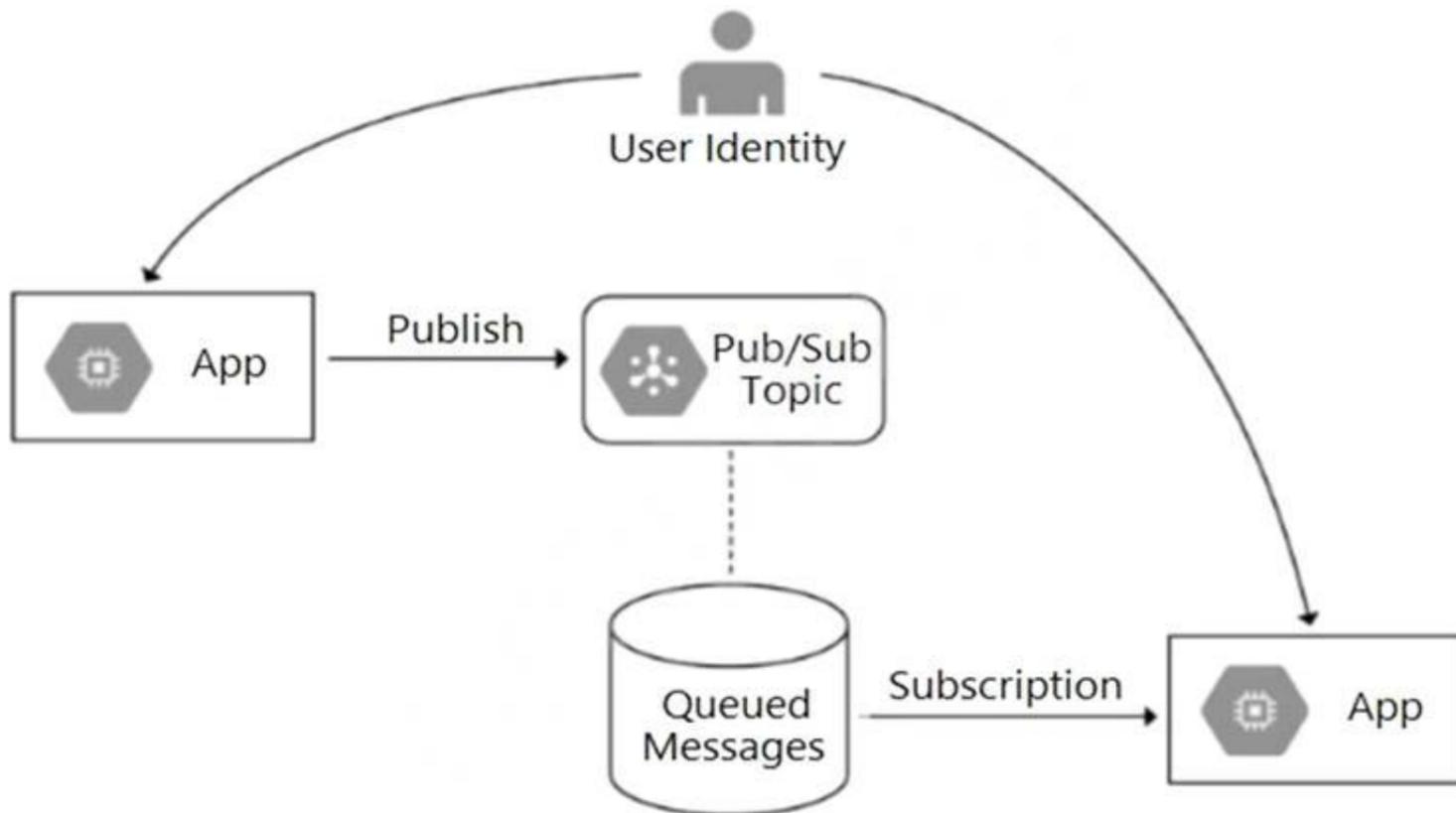
#### Explanation:

<https://cloud.google.com/architecture/distributed-load-testing-using-gke>

#### NEW QUESTION 76

- (Exam Topic 2)

Your team is developing an application in Google Cloud that executes with user identities maintained by Cloud Identity. Each of your application's users will have an associated Pub/Sub topic to which messages are published, and a Pub/Sub subscription where the same user will retrieve published messages. You need to ensure that only authorized users can publish and subscribe to their own specific Pub/Sub topic and subscription. What should you do?



- A. Bind the user identity to the pubsub.publisher and pubsub.subscriber roles at the resource level.
- B. Grant the user identity the pubsub.publisher and pubsub.subscriber roles at the project level.
- C. Grant the user identity a custom role that contains the pubsub.topics.create and pubsub.subscriptions.create permissions.
- D. Configure the application to run as a service account that has the pubsub.publisher and pubsub.subscriber roles.

**Answer: C**

**NEW QUESTION 77**

- (Exam Topic 2)

Your team is writing a backend application to implement the business logic for an interactive voice response (IVR) system that will support a payroll application. The IVR system has the following technical characteristics:

- Each customer phone call is associated with a unique IVR session.
- The IVR system creates a separate persistent gRPC connection to the backend for each session.
- If the connection is interrupted, the IVR system establishes a new connection, causing a slight latency for that call.

You need to determine which compute environment should be used to deploy the backend application. Using current call data, you determine that:

- Call duration ranges from 1 to 30 minutes.
- Calls are typically made during business hours.
- There are significant spikes of calls around certain known dates (e.g., pay days), or when large payroll changes occur.

You want to minimize cost, effort, and operational overhead. Where should you deploy the backend application?

- A. Compute Engine
- B. Google Kubernetes Engine cluster in Standard mode
- C. Cloud Functions
- D. Cloud Run

**Answer: D**

**Explanation:**

This page shows Cloud Run-specific details for developers who want to use gRPC to connect a Cloud Run service with other services, for example, to provide simple, high performance communication between internal microservices. You can use all gRPC types, streaming or unary, with Cloud Run.

Possible use cases include:

Communication between internal microservices.

High loads of data (gRPC uses protocol buffers, which are up to seven times faster than REST calls). Only a simple service definition is needed, you don't want to write a full client library.

Use streaming gRPCs in your gRPC server to build more responsive applications and APIs. <https://cloud.google.com/run/docs/tutorials/secure-services#:~:text=The%20backend%20service%20is%20priva>

**NEW QUESTION 78**

- (Exam Topic 2)

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

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

**Answer: AC**

**Explanation:**

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

### NEW QUESTION 81

- (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 83

- (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 88

- (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 91

- (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 92

- (Exam Topic 2)

You migrated some of your applications to Google Cloud. You are using a legacy monitoring platform deployed on-premises for both on-premises and cloud-deployed applications. You discover that your notification system is responding slowly to time-critical problems in the cloud applications. What should you do?

- A. Replace your monitoring platform with Cloud Monitoring.
- B. Install the Cloud Monitoring agent on your Compute Engine instances.
- C. Migrate some traffic back to your old platform.

- D. Perform A/B testing on the two platforms concurrently.
- E. Use Cloud Logging and Cloud Monitoring to capture logs, monitor, and send alert
- F. Send them to your existing platform.

**Answer:** D

#### NEW QUESTION 93

- (Exam Topic 2)

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

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

**Answer:** B

#### Explanation:

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

#### NEW QUESTION 94

- (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 95

- (Exam Topic 2)

You are evaluating developer tools to help drive Google Kubernetes Engine adoption and integration with your development environment, which includes VS Code and IntelliJ. What should you do?

- A. Use Cloud Code to develop applications.
- B. Use the Cloud Shell integrated Code Editor to edit code and configuration files.
- C. Use a Cloud Notebook instance to ingest and process data and deploy models.
- D. Use Cloud Shell to manage your infrastructure and applications from the command line.

**Answer:** A

#### Explanation:

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

#### NEW QUESTION 98

- (Exam Topic 2)

You are developing a microservice-based application that will run on Google Kubernetes Engine (GKE). Some of the services need to access different Google Cloud APIs. How should you set up authentication of these services in the cluster following Google-recommended best practices? (Choose two.)

- A. Use the service account attached to the GKE node.
- B. Enable Workload Identity in the cluster via the gcloud command-line tool.
- C. Access the Google service account keys from a secret management service.
- D. Store the Google service account keys in a central secret management service.
- E. Use gcloud to bind the Kubernetes service account and the Google service account using roles/iam.workloadIdentity.

**Answer:** BE

#### Explanation:

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

#### NEW QUESTION 100

- (Exam Topic 2)

You are writing a Compute Engine hosted application in project A that needs to securely authenticate to a Cloud Pub/Sub topic in project B. What should you do?

- A. Configure the instances with a service account owned by project
- B. Add the service account as a Cloud Pub/Sub publisher to project A.
- C. Configure the instances with a service account owned by project
- D. Add the service account as a publisher on the topic.
- E. Configure Application Default Credentials to use the private key of a service account owned by project

- F. Add the service account as a Cloud Pub/Sub publisher to project A.
- G. Configure Application Default Credentials to use the private key of a service account owned by project
- H. Add the service account as a publisher on the topic

**Answer:** B

**Explanation:**

<https://cloud.google.com/pubsub/docs/access-control>

"For example, suppose a service account in Cloud Project A wants to publish messages to a topic in Cloud Project B. You could accomplish this by granting the service account Edit permission in Cloud Project B"

**NEW QUESTION 103**

- (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 108**

- (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 112**

- (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 117**

- (Exam Topic 2)

Your company wants to expand their users outside the United States for their popular application. The company wants to ensure 99.999% availability of the database for their application and also wants to minimize the read latency for their users across the globe.

Which two actions should they take? (Choose two.)

- A. Create a multi-regional Cloud Spanner instance with "nam-asia-eur1" configuration.
- B. Create a multi-regional Cloud Spanner instance with "nam3" configuration.
- C. Create a cluster with at least 3 Spanner nodes.
- D. Create a cluster with at least 1 Spanner node.
- E. Create a minimum of two Cloud Spanner instances in separate regions with at least one node.
- F. Create a Cloud Dataflow pipeline to replicate data across different databases.

**Answer:** BF

#### NEW QUESTION 119

- (Exam Topic 2)

Your teammate has asked you to review the code below. Its purpose is to efficiently add a large number of small rows to a BigQuery table.

```
BigQuery service = BigQueryOptions.newBuilder().build().getService();

public void writeToBigQuery(Collection<Map<String, String>> rows){
    for(Map<String, String> row : rows) {
        InsertAllRequest insertRequest = InsertAllRequest.newBuilder(
            "datasetId", "tableId",
            InsertAllRequest.RowToInsert.of(row)).build();
        service.insertAll(insertRequest);
    }
}
```

Which improvement should you suggest your teammate make?

- A. Include multiple rows with each request.
- B. Perform the inserts in parallel by creating multiple threads.
- C. Write each row to a Cloud Storage object, then load into BigQuery.
- D. Write each row to a Cloud Storage object in parallel, then load into BigQuery.

**Answer:** B

#### NEW QUESTION 124

- (Exam Topic 2)

You need to deploy a new European version of a website hosted on Google Kubernetes Engine. The current and new websites must be accessed via the same HTTP(S) load balancer's external IP address, but have different domain names. What should you do?

- A. Define a new Ingress resource with a host rule matching the new domain
- B. Modify the existing Ingress resource with a host rule matching the new domain
- C. Create a new Service of type LoadBalancer specifying the existing IP address as the loadBalancerIP
- D. Generate a new Ingress resource and specify the existing IP address as the kubernetes.io/ingress.global-static-ip-name annotation value

**Answer:** B

#### Explanation:

<https://kubernetes.io/docs/concepts/services-networking/ingress/#name-based-virtual-hosting> Name-based virtual hosts support routing HTTP traffic to multiple host names at the same IP address.

#### NEW QUESTION 126

- (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%20security> "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 131

- (Exam Topic 2)

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

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

**Answer: D**

#### NEW QUESTION 136

- (Exam Topic 2)

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

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

**Answer: D**

#### NEW QUESTION 137

- (Exam Topic 2)

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

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

**Answer: A**

#### Explanation:

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

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

#### NEW QUESTION 140

- (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 141

- (Exam Topic 2)

You are running a containerized application on Google Kubernetes Engine. Your container images are stored in Container Registry. Your team uses CI/CD practices. You need to prevent the deployment of containers with known critical vulnerabilities. What should you do?

- A. • Use Web Security Scanner to automatically crawl your application• Review your application logs for scan results, and provide an attestation that the container is free of known critical vulnerabilities• Use Binary Authorization to implement a policy that forces the attestation to be provided before the container is deployed
- B. • Use Web Security Scanner to automatically crawl your application• Review the scan results in the scan details page in the Cloud Console, and provide an attestation that the container is free of known critical vulnerabilities• Use Binary Authorization to implement a policy that forces the attestation to be provided before the container is deployed
- C. • Enable the Container Scanning API to perform vulnerability scanning• Review vulnerability reporting in Container Registry in the Cloud Console, and provide an attestation that the container is free of known critical vulnerabilities• Use Binary Authorization to implement a policy that forces the attestation to be provided before the container is deployed
- D. • Enable the Container Scanning API to perform vulnerability scanning• Programmatically review vulnerability reporting through the Container Scanning API,

and provide an attestation that the container is free of known critical vulnerabilities• Use Binary Authorization to implement a policy that forces the attestation to be provided before the container is deployed

**Answer:** D

**Explanation:**

<https://cloud.google.com/binary-authorization/docs/creating-attestations-kritis>  
<https://cloud.google.com/container-analysis/docs/os-overview>

#### **NEW QUESTION 145**

- (Exam Topic 2)

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

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

**Answer:** B

**Explanation:**

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

#### **NEW QUESTION 147**

- (Exam Topic 2)

You want to view the memory usage of your application deployed on Compute Engine. What should you do?

- A. Install the Stackdriver Client Library.
- B. Install the Stackdriver Monitoring Agent.
- C. Use the Stackdriver Metrics Explorer.
- D. Use the Google Cloud Platform Console.

**Answer:** C

**Explanation:**

Reference:

<https://stackoverflow.com/questions/43991246/google-cloud-platform-how-to-monitor-memory-usage-of-vm-in>

#### **NEW QUESTION 151**

- (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 step
- 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 Engine
- G. The microservice calls each downstream step and waits for a successful response before calling the next step.

**Answer:** C

#### **NEW QUESTION 153**

- (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 157

- (Exam Topic 2)

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

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

**Answer: B**

#### Explanation:

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

### NEW QUESTION 158

- (Exam Topic 2)

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

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

**Answer: D**

### NEW QUESTION 159

- (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 163

- (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 165

- (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 data
- G. Analyze the CPU metrics of your application in flame graphs in Profiler.

**Answer:** D

**Explanation:**

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

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

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

**NEW QUESTION 167**

- (Exam Topic 2)

You have an application written in Python running in production on Cloud Run. Your application needs to read/write data stored in a Cloud Storage bucket in the same project. You want to grant access to your application following the principle of least privilege. What should you do?

- A. Create a user-managed service account with a custom Identity and Access Management (IAM) role.
- B. Create a user-managed service account with the Storage Admin Identity and Access Management (IAM) role.
- C. Create a user-managed service account with the Project Editor Identity and Access Management (IAM) role.
- D. Use the default service account linked to the Cloud Run revision in production.

**Answer:** A

**Explanation:**

<https://cloud.google.com/iam/docs/understanding-roles#storage.admin>

**NEW QUESTION 171**

- (Exam Topic 2)

The new version of your containerized application has been tested and is ready to deploy to production on Google Kubernetes Engine. You were not able to fully load-test the new version in pre-production environments, and you need to make sure that it does not have performance problems once deployed. Your deployment must be automated. What should you do?

- A. Use Cloud Load Balancing to slowly ramp up traffic between version
- B. Use Cloud Monitoring to look for performance issues.
- C. Deploy the application via a continuous delivery pipeline using canary deployment
- D. Use Cloud Monitoring to look for performance issue
- E. and ramp up traffic as the metrics support it.
- F. Deploy the application via a continuous delivery pipeline using blue/green deployment
- G. Use Cloud Monitoring to look for performance issues, and launch fully when the metrics support it.
- H. Deploy the application using kubectl and set the spec.updateStrategy.type to RollingUpdate
- I. Use Cloud Monitoring to look for performance issues, and run the kubectl rollback command if there are any issues.

**Answer:** C

**Explanation:**

[https://cloud.google.com/architecture/implementing-deployment-and-testing-strategies-on-gke#perform\\_a\\_blueg](https://cloud.google.com/architecture/implementing-deployment-and-testing-strategies-on-gke#perform_a_blueg)

**NEW QUESTION 172**

- (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 173**

- (Exam Topic 2)

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

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

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

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

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

E. Store application source code on Cloud Storage, and configure the pipeline to use gsutil to download the source code.

**Answer:** AC

**Explanation:**

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

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

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

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

**NEW QUESTION 176**

- (Exam Topic 2)

You are creating a Google Kubernetes Engine (GKE) cluster and run this command:

```
> gcloud container clusters create large-cluster --num-nodes 200
```

The command fails with the error:

```
insufficient regional quota to satisfy request: resource "CPUS": request requires '200.0' and is short '176.0'. project has a quota of '24.0' with '24.0' available
```

You want to resolve the issue. What should you do?

- A. Request additional GKE quota in the GCP Console.
- B. Request additional Compute Engine quota in the GCP Console.
- C. Open a support case to request additional GKE quota.
- D. Decouple services in the cluster, and rewrite new clusters to function with fewer cores.

**Answer:** A

**NEW QUESTION 178**

- (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 179**

- (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 182**

- (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 187

- (Exam Topic 2)

Your App Engine standard configuration is as follows: service: production

instance\_class: B1

You want to limit the application to 5 instances. Which code snippet should you include in your configuration?

- A. manual\_scaling:instances: 5min\_pending\_latency: 30ms
- B. manual\_scaling:max\_instances: 5idle\_timeout: 10m
- C. basic\_scaling:instances: 5min\_pending\_latency: 30ms
- D. basic\_scaling:max\_instances: 5idle\_timeout: 10m

**Answer: C**

#### NEW QUESTION 189

- (Exam Topic 2)

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

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

**Answer: D**

#### Explanation:

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

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

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

#### NEW QUESTION 190

- (Exam Topic 2)

You are developing an HTTP API hosted on a Compute Engine virtual machine instance that needs to be invoked by multiple clients within the same Virtual Private Cloud (VPC). You want clients to be able to get

The IP address of the service. What should you do?

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

**Answer: D**

#### NEW QUESTION 194

- (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 195

- (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 of 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 197**

- (Exam Topic 2)

You have deployed an HTTP(s) Load Balancer with the gcloud commands shown below.

```
export NAME=load-balancer

# create network
gcloud compute networks create ${NAME}

# add instance
gcloud compute instances create ${NAME}-backend-instance-1 --subnet ${NAME} --no address

# create the instance group
gcloud compute instance-groups unmanaged create ${NAME}-i
gcloud compute instance-groups unmanaged set-named-ports ${NAME}-i --named-ports http:80
gcloud compute instance-groups unmanaged add-instances ${NAME}-i --instances ${NAME}-instance-1

# configure health checks
gcloud compute health-checks create http ${NAME}-http-hc --port 80

# create backend service
gcloud compute backend-services create ${NAME}-http-bes --health-checks ${NAME}-http-hc --protocol HTTP --port-name http
--global
gcloud compute backend-services add-backend ${NAME}-http-bes --instance-group ${NAME}-i --balancing-mode RATE --max-rate
100000 --capacity-scaler 1.0 --global --instance-group-zone us-east1-d

# create urls maps and forwarding rule
gcloud compute url-maps create ${NAME}-http-urlmap --default-service ${NAME}-http-bes
gcloud compute target-http-proxies create ${NAME}-http-proxy --url-map ${NAME}-http-urlmap
gcloud compute forwarding-rules create ${NAME}-http-fw --global --ip-protocol ICP --target-http-proxy ${NAME}-http-proxy
--ports 80
```

Health checks to port 80 on the Compute Engine virtual machine instance are failing and no traffic is sent to your instances. You want to resolve the problem. Which commands should you run?

- A. gcloud compute instances add-access-config \${NAME}-backend-instance-1
- B. gcloud compute instances add-tags \${NAME}-backend-instance-1 --tags http-server
- C. gcloud compute firewall-rules create allow-lb --network load-balancer --allow tcp --source-ranges 130.211.0.0/22,35.191.0.0/16 --direction INGRESS
- D. gcloud compute firewall-rules create allow-lb --network load-balancer --allow tcp --destination-ranges 130.211.0.0/22,35.191.0.0/16 --direction EGRESS

**Answer: C**

**Explanation:**

Reference: <https://cloud.google.com/vpc/docs/special-configurations>

**NEW QUESTION 199**

- (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 203**

- (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 207**

- (Exam Topic 2)

Your service adds text to images that it reads from Cloud Storage. During busy times of the year, requests to Cloud Storage fail with an HTTP 429 "Too Many Requests" status code.

How should you handle this error?

- A. Add a cache-control header to the objects.
- B. Request a quota increase from the GCP Console.
- C. Retry the request with a truncated exponential backoff strategy.
- D. Change the storage class of the Cloud Storage bucket to Multi-regional.

**Answer:** C

**Explanation:**

Reference: <https://developers.google.com/gmail/api/v1/reference/quota>

**NEW QUESTION 209**

- (Exam Topic 2)

The development teams in your company want to manage resources from their local environments. You have been asked to enable developer access to each team's Google Cloud projects. You want to maximize efficiency while following Google-recommended best practices. What should you do?

- A. Add the users to their projects, assign the relevant roles to the users, and then provide the users with each relevant Project ID.
- B. Add the users to their projects, assign the relevant roles to the users, and then provide the users with each relevant Project Number.
- C. Create groups, add the users to their groups, assign the relevant roles to the groups, and then provide the users with each relevant Project ID.
- D. Create groups, add the users to their groups, assign the relevant roles to the groups, and then provide the users with each relevant Project Number.

**Answer:** C

**NEW QUESTION 213**

- (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 218**

- (Exam Topic 2)

You have an application running in App Engine. Your application is instrumented with Stackdriver Trace. The /product-details request reports details about four known unique products at /sku-details as shown below. You want to reduce the time it takes for the request to complete. What should you do?

**Timeline**



- A. Increase the size of the instance class.
- B. Change the Persistent Disk type to SSD.
- C. Change /product-details to perform the requests in parallel.
- D. Store the /sku-details information in a database, and replace the webservice call with a database query.

**Answer:** C

#### NEW QUESTION 222

- (Exam Topic 2)

You are a SaaS provider deploying dedicated blogging software to customers in your Google Kubernetes Engine (GKE) cluster. You want to configure a secure multi-tenant platform to ensure that each customer has access to only their own blog and can't affect the workloads of other customers. What should you do?

- A. Enable Application-layer Secrets on the GKE cluster to protect the cluster.
- B. Deploy a namespace per tenant and use Network Policies in each blog deployment.
- C. Use GKE Audit Logging to identify malicious containers and delete them on discovery.
- D. Build a custom image of the blogging software and use Binary Authorization to prevent untrusted image deployments.

**Answer: B**

#### Explanation:

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

#### NEW QUESTION 227

- (Exam Topic 2)

You are deploying a microservices application to Google Kubernetes Engine (GKE) that will broadcast livestreams. You expect unpredictable traffic patterns and large variations in the number of concurrent users. Your application must meet the following requirements:

- Scales automatically during popular events and maintains high availability
- Is resilient in the event of hardware failures

How should you configure the deployment parameters? (Choose two.)

- A. Distribute your workload evenly using a multi-zonal node pool.
- B. Distribute your workload evenly using multiple zonal node pools.
- C. Use cluster autoscaler to resize the number of nodes in the node pool, and use a Horizontal Pod Autoscaler to scale the workload.
- D. Create a managed instance group for Compute Engine with the cluster node
- E. Configure autoscaling rules for the managed instance group.
- F. Create alerting policies in Cloud Monitoring based on GKE CPU and memory utilization
- G. Ask an on-duty engineer to scale the workload by executing a script when CPU and memory usage exceed predefined thresholds.

**Answer: AC**

#### NEW QUESTION 231

- (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 236

- (Exam Topic 2)

You are building an API that will be used by Android and iOS apps. The API must:

- Support HTTPs
  - Minimize bandwidth cost
  - Integrate easily with mobile apps
- Which API architecture should you use?

- A. RESTful APIs
- B. MQTT for APIs
- C. gRPC-based APIs
- D. SOAP-based APIs

**Answer: A**

#### Explanation:

Reference: <https://www.devteam.space/blog/how-to-build-restful-api-for-your-mobile-app/>

#### NEW QUESTION 238

- (Exam Topic 2)

You want to use the Stackdriver Logging Agent to send an application's log file to Stackdriver from a Compute Engine virtual machine instance. After installing the Stackdriver Logging Agent, what should you do first?

- A. Enable the Error Reporting API on the project.
- B. Grant the instance full access to all Cloud APIs.

- C. Configure the application log file as a custom source.
- D. Create a Stackdriver Logs Export Sink with a filter that matches the application's log entries.

**Answer: B**

**NEW QUESTION 241**

- (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 244**

- (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 249**

- (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.

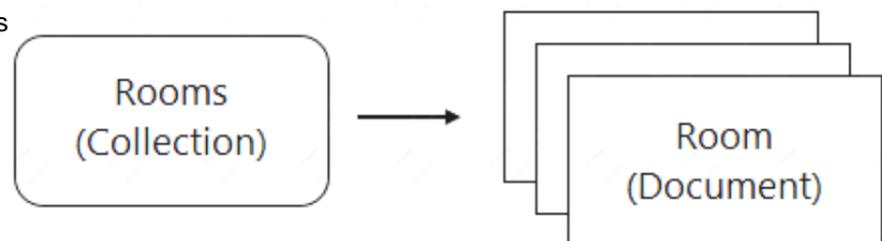
**Answer: C**

**NEW QUESTION 252**

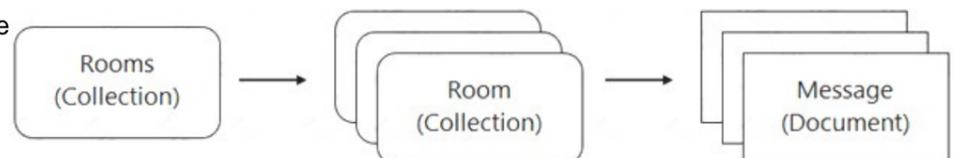
- (Exam Topic 2)

You are designing a chat room application that will host multiple rooms and retain the message history for each room. You have selected Firestore as your database. How should you represent the data in Firestore?

- A. Create a collection for the room
- B. For each room, create a document that lists the contents of the messages

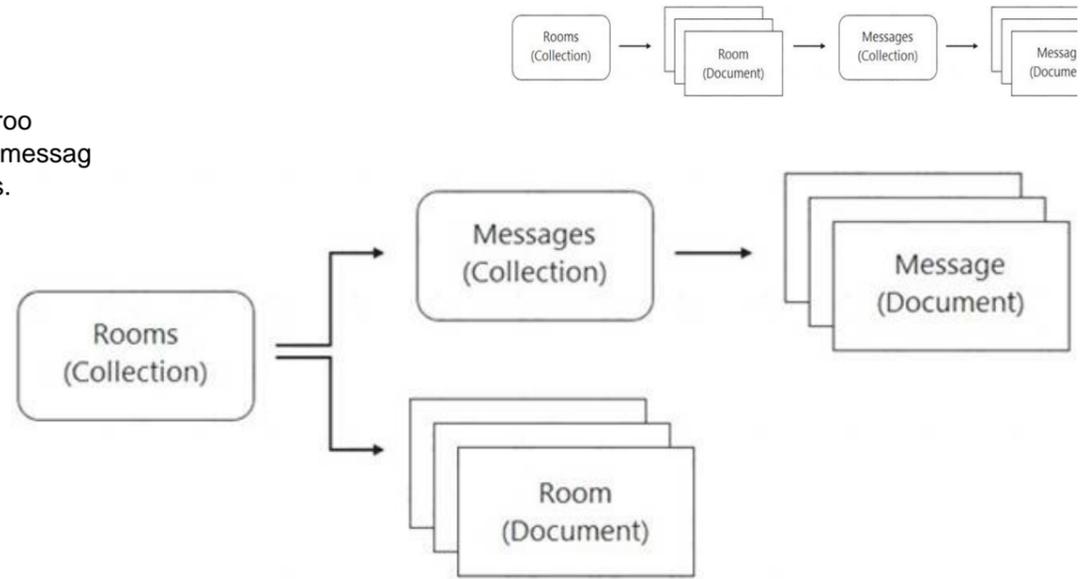


- C. Create a collection for the room
- D. For each room, create a collection that contains a document for each message



- E. Create a collection for the room
- F. For each room, create a document that contains a collection for documents, each of which contains a message.

- G. Create a collection for the rooms, and create a document for each room
- H. Create a separate collection for messages, with one document per message
- I. Each room's document contains a list of references to the messages.



**Answer:** C

**Explanation:**

<https://firebase.google.com/docs/firestore/data-model#hierarchical-data>

**NEW QUESTION 254**

- (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 258**

- (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 259**

- (Exam Topic 2)

You want to upload files from an on-premises virtual machine to Google Cloud Storage as part of a data migration. These files will be consumed by Cloud DataProc Hadoop cluster in a GCP environment. Which command should you use?

- A. `gsutil cp [LOCAL_OBJECT] gs://[DESTINATION_BUCKET_NAME]/`
- B. `gcloud cp [LOCAL_OBJECT] gs://[DESTINATION_BUCKET_NAME]/`
- C. `hadoop fs cp [LOCAL_OBJECT] gs://[DESTINATION_BUCKET_NAME]/`
- D. `gcloud dataproc cp [LOCAL_OBJECT] gs://[DESTINATION_BUCKET_NAME]/`

**Answer:** A

**Explanation:**

The `gsutil cp` command allows you to copy data between your local file storage. boto files generated by running "gsutil config"

**NEW QUESTION 262**

- (Exam Topic 2)

Your API backend is running on multiple cloud providers. You want to generate reports for the network latency of your API. Which two steps should you take? (Choose two.)

- A. Use Zipkin collector to gather data.

- B. Use Fluentd agent to gather data.
- C. Use Stackdriver Trace to generate reports.
- D. Use Stackdriver Debugger to generate report.
- E. Use Stackdriver Profiler to generate report.

**Answer:** AC

**Explanation:**

<https://cloud.google.com/trace/docs/zipkin>

"receive traces from Zipkin clients and forward those traces to Cloud Trace for analysis." [https://cloud.google.com/trace/docs/quickstart#analysis\\_reports\\_window](https://cloud.google.com/trace/docs/quickstart#analysis_reports_window)

**NEW QUESTION 266**

- (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 271**

- (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 274**

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