














Professional Cloud Developer v1.0 (Professional Cloud Developer) - Full Access

Question 201 (Single Topic)	
<p>Your company uses Cloud Logging to manage large volumes of log data. You need to build a real-time log analysis architecture that pushes logs to a third-party application for processing. What should you do?</p> <p>A. Create a Cloud Logging log export to Pub/Sub. B. Create a Cloud Logging log export to BigQuery. C. Create a Cloud Logging log export to Cloud Storage. D. Create a Cloud Function to read Cloud Logging log entries and send them to the third-party application.</p> <p>Answer :  A</p>	
Question 202 (Single Topic)	
<p>You are developing a new public-facing application that needs to retrieve specific properties in the metadata of users' objects in their respective Cloud Storage buckets. Due to privacy and data residency requirements, you must retrieve only the metadata and not the object data. You want to maximize the performance of the retrieval process. How should you retrieve the metadata?</p> <p>A. Use the patch method. B. Use the compose method. C. Use the copy method. D. Use the fields request parameter.</p> <p>Answer : D</p>	
Question 203 (Single Topic)	
<p>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:</p> <ul style="list-style-type: none">• Scales automatically during popular events and maintains high availability• Is resilient in the event of hardware failures <p>How should you configure the deployment parameters? (Choose two.)</p> <p>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 nodes. Configure autoscaling rules for the managed instance group. E. Create alerting policies in Cloud Monitoring based on GKE CPU and memory utilization. Ask an on-duty engineer to scale the workload by executing a script when CPU and memory usage exceed predefined thresholds.</p> <p>Answer :  CE AC</p>	
Question 204 (Single Topic)	
<p>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.</p> <p>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?</p> <p>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.</p> <p>Answer : A</p>	
Question 205 (Single Topic)	
<p>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?</p> <p>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.</p> <p>Answer : C</p>	

Question 206 (Single Topic)	
<p>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?</p> <p>A. Deploy a Fluent Bit daemonset on the GKE cluster to log data in Cloud Logging. Analyze the logs to get insights into your application code’s performance. B. Create a custom dashboard in Cloud Monitoring to evaluate the CPU performance metrics of your application. C. Connect to your GKE nodes using SSH. Run the top command on the shell to extract the CPU utilization of your application. D. Modify your Go application to capture profiling data. Analyze the CPU metrics of your application in flame graphs in Profiler.</p> <p>Answer : D</p>	
Question 207 (Single Topic)	
<p>Your team manages a Google Kubernetes Engine (GKE) cluster where an application is running. A different team is planning to integrate with this application. Before they start the integration, you need to ensure that the other team cannot make changes to your application, but they can deploy the integration on GKE. What should you do?</p> <p>A. Using Identity and Access Management (IAM), grant the Viewer IAM role on the cluster project to the other team. B. Create a new GKE cluster. Using Identity and Access Management (IAM), grant the Editor role on the cluster project to the other team. C. Create a new namespace in the existing cluster. Using Identity and Access Management (IAM), grant the Editor role on the cluster project to the other team. D. Create a new namespace in the existing cluster. Using Kubernetes role-based access control (RBAC), grant the Admin role on the new namespace to the other team.</p> <p>Answer : D</p>	
Question 208 (Single Topic)	
<p>You have recently instrumented a new application with OpenTelemetry, and you want to check the latency of your application requests in Trace. You want to ensure that a specific request is always traced. What should you do?</p> <p>A. Wait 10 minutes, then verify that Trace captures those types of requests automatically. B. Write a custom script that sends this type of request repeatedly from your dev project. C. Use the Trace API to apply custom attributes to the trace. D. Add the X-Cloud-Trace-Context header to the request with the appropriate parameters.</p> <p>Answer : D</p>	
Question 209 (Single Topic)	
<p>You are trying to connect to your Google Kubernetes Engine (GKE) cluster using kubectl from Cloud Shell. You have deployed your GKE cluster with a public endpoint. From Cloud Shell, you run the following command:</p> <pre>gcloud container clusters get-credentials <cluster-name> \ --zone <zone> --project <project-name> \</pre> <p>You notice that the kubectl commands time out without returning an error message. What is the most likely cause of this issue?</p> <p>A. Your user account does not have privileges to interact with the cluster using kubectl. B. Your Cloud Shell external IP address is not part of the authorized networks of the cluster. C. The Cloud Shell is not part of the same VPC as the GKE cluster. D. A VPC firewall is blocking access to the cluster’s endpoint.</p> <p>Answer : <input checked="" type="radio"/> D <input type="radio"/> B</p>	
Question 210 (Single Topic)	
<p>You are developing a web application that contains private images and videos stored in a Cloud Storage bucket. Your users are anonymous and do not have Google Accounts. You want to use your application-specific logic to control access to the images and videos. How should you configure access?</p> <p>A. Cache each web application user's IP address to create a named IP table using Google Cloud Armor. Create a Google Cloud Armor security policy that allows users to access the backend bucket. B. Grant the Storage Object Viewer IAM role to allUsers. Allow users to access the bucket after authenticating through your web application. C. Configure Identity-Aware Proxy (IAP) to authenticate users into the web application. Allow users to access the bucket after authenticating through IAP. D. Generate a signed URL that grants read access to the bucket. Allow users to access the URL after authenticating through your web application.</p> <p>Answer : D</p>	
Question 211 (Single Topic)	

You need to configure a Deployment on Google Kubernetes Engine (GKE). You want to include a check that verifies that the containers can connect to the database. If the Pod is failing to connect, you want a script on the container to run to complete a graceful shutdown. How should you configure the Deployment?

- A. Create two jobs: one that checks whether the container can connect to the database, and another that runs the shutdown script if the Pod is failing.
- B. Create the Deployment with a livenessProbe for the container that will fail if the container can't connect to the database. Configure a Prestop lifecycle handler that runs the shutdown script if the container is failing.
- C. Create the Deployment with a PostStart lifecycle handler that checks the service availability. Configure a PreStop lifecycle handler that runs the shutdown script if the container is failing.
- D. Create the Deployment with an initContainer that checks the service availability. Configure a Prestop lifecycle handler that runs the shutdown script if the Pod is failing.

Answer : ☒ B

Question 212 (Single Topic)



You are responsible for deploying a new API. That API will have three different URL paths:

- https://yourcompany.com/students
- https://yourcompany.com/teachers
- https://yourcompany.com/classes

You need to configure each API URL path to invoke a different function in your code. What should you do?

- A. Create one Cloud Function as a backend service exposed using an HTTPS load balancer.
- B. Create three Cloud Functions exposed directly.
- C. Create one Cloud Function exposed directly.
- D. Create three Cloud Functions as three backend services exposed using an HTTPS load balancer.

Answer : ☒ B

Question 213 (Single Topic)



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 images. Review the vulnerability results before each deployment.
- B. Enable Container Analysis, and upload new container images to Artifact Registry. Review the vulnerability results before each deployment.
- C. Enable Container Analysis, and upload new container images to Artifact Registry. Review the critical vulnerability results before each deployment.
- D. Use the Container Analysis REST API to call Container Analysis to scan new container images. Review the vulnerability results before each deployment.

Answer : ☒ C

Question 214 (Single Topic)



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

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

Answer : D

Question 215 (Single Topic)



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

Question 216 (Single Topic)



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

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

Answer : ☒ D

Question 217 (Single Topic)



Your team detected a spike of errors in an application running on Cloud Run in your production project. The application is configured to read messages from Pub/Sub topic A, process the messages, and write the messages to topic B. You want to conduct tests to identify the cause of the errors. You can use a set of mock messages for testing. What should you do?

- A. Deploy the Pub/Sub and Cloud Run emulators on your local machine. Deploy the application locally, and change the logging level in the application to DEBUG or INFO. Write mock messages to topic A, and then analyze the logs.
- B. Use the gcloud CLI to write mock messages to topic A. Change the logging level in the application to DEBUG or INFO, and then analyze the logs.
- C. Deploy the Pub/Sub emulator on your local machine. Point the production application to your local Pub/Sub topics. Write mock messages to topic A, and then analyze the logs.
- D. Use the Google Cloud console to write mock messages to topic A. Change the logging level in the application to DEBUG or INFO, and then analyze the logs.

Answer : ☒ A

Question 218 (Single Topic)



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

Question 219 (Single Topic)



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 : ☒ ☒ AB

Question 220 (Single Topic)



You work for an organization that manages an online ecommerce website. Your company plans to expand across the world; however, the estore currently serves one specific region. You need to select a SQL database and configure a schema that will scale as your organization grows. You want to create a table that stores all customer transactions and ensure that the customer (CustomerId) and the transaction (TransactionId) are unique. What should you do?

- A. Create a Cloud SQL table that has TransactionId and CustomerId configured as primary keys. Use an incremental number for the TransactionId.
- B. Create a Cloud SQL table that has TransactionId and CustomerId configured as primary keys. Use a random string (UUID) for the Transactionid.
- C. Create a Cloud Spanner table that has TransactionId and CustomerId configured as primary keys. Use a random string (UUID) for the TransactionId.
- D. Create a Cloud Spanner table that has TransactionId and CustomerId configured as primary keys. Use an incremental number for the TransactionId.

Answer : ☒ C

Question 221 (Single Topic)



You are monitoring a web application that is written in Go and deployed in Google Kubernetes Engine. You notice an increase in CPU and memory utilization. You need to determine which source code is consuming the most CPU and memory resources. What should you do?

- A. Download, install, and start the Snapshot Debugger agent in your VM. Take debug snapshots of the functions that take the longest time. Review the call stack frame, and identify the local variables at that level in the stack.
- B. Import the Cloud Profiler package into your application, and initialize the Profiler agent. Review the generated flame graph in the Google Cloud console to identify time-intensive functions.
- C. Import OpenTelemetry and Trace export packages into your application, and create the trace provider. Review the latency data for your application on the Trace overview page, and identify where bottlenecks are occurring.

D. Create a Cloud Logging query that gathers the web application's logs. Write a Python script that calculates the difference between the timestamps from the beginning and the end of the application's longest functions to identity time-intensive functions.

Answer : B

Question 222 (Single Topic)



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 : ☒ A

Question 223 (Single Topic)



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

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

Answer : ☒ A

Question 224 (Single Topic)



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

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

Answer : ☒ A

Question 225 (Single Topic)



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

What should you do?

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

Answer : B

Question 226 (Single Topic)



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

Question 227 (Single Topic)



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 : ☒ D ☐ A

Question 228 (Single Topic)



You are developing a new web application using Cloud Run and committing code to Cloud Source Repositories. You want to deploy new code in the most efficient way possible. You have already created a Cloud Build YAML file that builds a container and runs the following command: gcloud run deploy. What should you do next?

- A. Create a Pub/Sub topic to be notified when code is pushed to the repository. Create a Pub/Sub trigger that runs the build file when an event is published to the topic.
- B. Create a build trigger that runs the build file in response to a repository code being pushed to the development branch.
- C. Create a webhook build trigger that runs the build file in response to HTTP POST calls to the webhook URL.
- D. Create a Cron job that runs the following command every 24 hours: gcloud builds submit.

Answer : B

Question 229 (Single Topic)



You are a developer at a large organization. You are deploying a web application to Google Kubernetes Engine (GKE). The DevOps team has built a CI/CD pipeline that uses Cloud Deploy to deploy the application to Dev, Test, and Prod clusters in GKE. After Cloud Deploy successfully deploys the application to the Dev cluster, you want to automatically promote it to the Test cluster. How should you configure this process following Google-recommended best practices?

- A. 1. Create a Cloud Build trigger that listens for SUCCEEDED Pub/Sub messages from the clouddeploy-operations topic.
- 2. Configure Cloud Build to include a step that promotes the application to the Test cluster.
- B. 1. Create a Cloud Function that calls the Google Cloud Deploy API to promote the application to the Test cluster.
- 2. Configure this function to be triggered by SUCCEEDED Pub/Sub messages from the cloud-builds topic.
- C. 1. Create a Cloud Function that calls the Google Cloud Deploy API to promote the application to the Test cluster.
- 2. Configure this function to be triggered by SUCCEEDED Pub/Sub messages from the clouddeploy-operations topic.
- D. 1. Create a Cloud Build pipeline that uses the gke-deploy builder.
- 2. Create a Cloud Build trigger that listens for SUCCEEDED Pub/Sub messages from the cloud-builds topic.
- 3. Configure this pipeline to run a deployment step to the Test cluster.

Answer : ☒ D ☐ C

Question 230 (Single Topic)



Your application is running as a container in a Google Kubernetes Engine cluster. You need to add a secret to your application using a secure approach. What should you do?

- A. Create a Kubernetes Secret, and pass the Secret as an environment variable to the container.
- B. Enable Application-layer Secret Encryption on the cluster using a Cloud Key Management Service (KMS) key.
- C. Store the credential in Cloud KMS. Create a Google service account (GSA) to read the credential from Cloud KMS. Export the GSA as a .json file, and pass the .json file to the container as a volume which can read the credential from Cloud KMS.
- D. Store the credential in Secret Manager. Create a Google service account (GSA) to read the credential from Secret Manager. Create a Kubernetes service account (KSA) to run the container. Use Workload Identity to configure your KSA to act as a GSA.

Answer : ☐ A ☒ D

Question 231 (Single Topic)



You are a developer at a financial institution. You use Cloud Shell to interact with Google Cloud services. User data is currently stored on an ephemeral disk; however, a recently passed regulation mandates that you can no longer store sensitive information on an ephemeral disk. You need to implement a new storage solution for your user data. You want to minimize code changes. Where should you store your user data?

- A. Store user data on a Cloud Shell home disk, and log in at least every 120 days to prevent its deletion.
- B. Store user data on a persistent disk in a Compute Engine instance.
- C. Store user data in a Cloud Storage bucket.
- D. Store user data in BigQuery tables.

Answer : ☐ B

Question 232 (Single Topic)



You recently developed a web application to transfer log data to a Cloud Storage bucket daily. Authenticated users will regularly review logs from the prior two weeks for critical events. After that, logs will be reviewed once annually by an external auditor. Data must be stored for a period of no less than 7 years. You want to propose a storage solution that meets these requirements and minimizes costs. What should you do? (Choose two.)

- A. Use the Bucket Lock feature to set the retention policy on the data.
- B. Run a scheduled job to set the storage class to Coldline for objects older than 14 days.
- C. Create a JSON Web Token (JWT) for users needing access to the Coldline storage buckets.
- D. Create a lifecycle management policy to set the storage class to Coldline for objects older than 14 days.
- E. Create a lifecycle management policy to set the storage class to Nearline for objects older than 14 days.

Answer : ☒ B ☒ D ☐ A ☐ E

Question 233 (Single Topic)



Your team is developing a Cloud Function triggered by Cloud Storage events. You want to accelerate testing and development of your Cloud Function while following Google-recommended best practices. What should you do?

- A. Create a new Cloud Function that is triggered when Cloud Audit Logs detects the cloudfunctions.functions.sourceCodeSet operation in the original Cloud Function. Send mock requests to the new function to evaluate the functionality.
- B. Make a copy of the Cloud Function, and rewrite the code to be HTTP-triggered. Edit and test the new version by triggering the HTTP endpoint. Send mock requests to the new function to evaluate the functionality.
- C. Install the Functions Frameworks library, and configure the Cloud Function on localhost. Make a copy of the function, and make edits to the new version. Test the new version using curl.
- D. Make a copy of the Cloud Function in the Google Cloud console. Use the Cloud console's in-line editor to make source code changes to the new function. Modify your web application to call the new function, and test the new version in production

Answer : ☐ B ☒ C

Question 234 (Single Topic)



Your team is setting up a build pipeline for an application that will run in Google Kubernetes Engine (GKE). For security reasons, you only want images produced by the pipeline to be deployed to your GKE cluster. Which combination of Google Cloud services should you use?

- A. Cloud Build, Cloud Storage, and Binary Authorization
- B. Google Cloud Deploy, Cloud Storage, and Google Cloud Armor
- C. Google Cloud Deploy, Artifact Registry, and Google Cloud Armor
- D. Cloud Build, Artifact Registry, and Binary Authorization

Answer : ☐ C ☒ D

Question 235 (Single Topic)



You are supporting a business-critical application in production deployed on Cloud Run. The application is reporting HTTP 500 errors that are affecting the usability of the application. You want to be alerted when the number of errors exceeds 15% of the requests within a specific time window. What should you do?

- A. Create a Cloud Function that consumes the Cloud Monitoring API. Use Cloud Scheduler to trigger the Cloud Function daily and alert you if the number of errors is above the defined threshold.
- B. Navigate to the Cloud Run page in the Google Cloud console, and select the service from the services list. Use the Metrics tab to visualize the number of errors for that revision, and refresh the page daily.
- C. Create an alerting policy in Cloud Monitoring that alerts you if the number of errors is above the defined threshold.
- D. Create a Cloud Function that consumes the Cloud Monitoring API. Use Cloud Composer to trigger the Cloud Function daily and alert you if the number of errors is above the defined threshold.

Answer : ☒ A ☐ C

Question 236 (Single Topic)



You need to build a public API that authenticates, enforces quotas, and reports metrics for API callers. Which tool should you use to complete this architecture?



- A. App Engine
- B. Cloud Endpoints
- C. Identity-Aware Proxy
- D. GKE Ingress for HTTP(S) Load Balancing

Answer : ☒ B

Question 237 (Single Topic)



You noticed that your application was forcefully shut down during a Deployment update in Google Kubernetes Engine. Your application didn’t close the database connection before it was terminated. You want to update your application to make sure that it completes a graceful shutdown. What should you do?

- A. Update your code to process a received SIGTERM signal to gracefully disconnect from the database.
- B. Configure a PodDisruptionBudget to prevent the Pod from being forcefully shut down.
- C. Increase the terminationGracePeriodSeconds for your application.
- D. Configure a PreStop hook to shut down your application.

Answer : ☒ A

Question 238 (Single Topic)



You are a lead developer working on a new retail system that runs on Cloud Run and Firestore in Datastore mode. A web UI requirement is for the system to display a list of available products when users access the system and for the user to be able to browse through all products. You have implemented this requirement in the minimum viable product (MVP) phase by returning a list of all available products stored in Firestore.

A few months after go-live, you notice that Cloud Run instances are terminated with HTTP 500: Container instances are exceeding memory limits errors during busy times. This error coincides with spikes in the number of Datastore entity reads. You need to prevent Cloud Run from crashing and decrease the number of Datastore entity reads. You want to use a solution that optimizes system performance. What should you do?

- A. Modify the query that returns the product list using integer offsets.
- B. Modify the query that returns the product list using limits.
- C. Modify the Cloud Run configuration to increase the memory limits.
- D. Modify the query that returns the product list using cursors.

Answer : ☒ D

Question 239 (Single Topic)



You need to deploy an internet-facing microservices application to Google Kubernetes Engine (GKE). You want to validate new features using the A/B testing method. You have the following requirements for deploying new container image releases:

- There is no downtime when new container images are deployed.
- New production releases are tested and verified using a subset of production users.

What should you do?

- A. 1. Configure your CI/CD pipeline to update the Deployment manifest file by replacing the container version with the latest version.
2. Recreate the Pods in your cluster by applying the Deployment manifest file.
3. Validate the application's performance by comparing its functionality with the previous release version, and roll back if an issue arises.
- B. 1. Create a second namespace on GKE for the new release version.
2. Create a Deployment configuration for the second namespace with the desired number of Pods.
3. Deploy new container versions in the second namespace.
4. Update the Ingress configuration to route traffic to the namespace with the new container versions.
- C. 1. Install the Anthos Service Mesh on your GKE cluster.
2. Create two Deployments on the GKE cluster, and label them with different version names.
3. Implement an Istio routing rule to send a small percentage of traffic to the Deployment that references the new version of the application.
- D. 1. Implement a rolling update pattern by replacing the Pods gradually with the new release version.
2. Validate the application's performance for the new subset of users during the rollout, and roll back if an issue arises.

Answer : ☒ C

Question 240 (Single Topic)



Your team manages a large Google Kubernetes Engine (GKE) cluster. Several application teams currently use the same namespace to develop microservices for the cluster. Your organization plans to onboard additional teams to create microservices. You need to configure multiple environments while ensuring the security and optimal performance of each team’s work. You want to minimize cost and follow Google-recommended best practices. What should you do?

- A. Create new role-based access controls (RBAC) for each team in the existing cluster, and define resource quotas.
- B. Create a new namespace for each environment in the existing cluster, and define resource quotas.
- C. Create a new GKE cluster for each team.
- D. Create a new namespace for each team in the existing cluster, and define resource quotas.

Answer : ☒ D

Question 241 (Single Topic)



You have deployed a Java application to Cloud Run. Your application requires access to a database hosted on Cloud SQL. Due to regulatory requirements, your connection to the Cloud SQL instance must use its internal IP address. How should you configure the connectivity while following Google-recommended best practices?

- A. Configure your Cloud Run service with a Cloud SQL connection.
- B. Configure your Cloud Run service to use a Serverless VPC Access connector.
- C. Configure your application to use the Cloud SQL Java connector.
- D. Configure your application to connect to an instance of the Cloud SQL Auth proxy.

Answer : ☒ B

Question 242 (Single Topic)



Your application stores customers’ content in a Cloud Storage bucket, with each object being encrypted with the customer's encryption key. The key for each object in Cloud Storage is entered into your application by the customer. You discover that your application is receiving an HTTP 4xx error when reading the object from Cloud Storage. What is a possible cause of this error?

- A. You attempted the read operation on the object with the customer's base64-encoded key.
- B. You attempted the read operation without the base64-encoded SHA256 hash of the encryption key.
- C. You entered the same encryption algorithm specified by the customer when attempting the read operation.
- D. You attempted the read operation on the object with the base64-encoded SHA256 hash of the customer's key.

Answer : ☒ B

Question 243 (Single Topic)



You have two Google Cloud projects, named Project A and Project B. You need to create a Cloud Function in Project A that saves the output in a Cloud Storage bucket in Project B. You want to follow the principle of least privilege. What should you do?

- A. 1. Create a Google service account in Project B.
2. Deploy the Cloud Function with the service account in Project A.
3. Assign this service account the roles/storage.objectCreator role on the storage bucket residing in Project B.
- B. 1. Create a Google service account in Project A
2. Deploy the Cloud Function with the service account in Project A.
3. Assign this service account the roles/storage.objectCreator role on the storage bucket residing in Project B.
- C. 1. Determine the default App Engine service account (PROJECT_ID@appspot.gserviceaccount.com) in Project A.
2. Deploy the Cloud Function with the default App Engine service account in Project A.
3. Assign the default App Engine service account the roles/storage.objectCreator role on the storage bucket residing in Project B.
- D. 1. Determine the default App Engine service account (PROJECT_ID@appspot.gserviceaccount.com) in Project B.
2. Deploy the Cloud Function with the default App Engine service account in Project A.
3. Assign the default App Engine service account the roles/storage.objectCreator role on the storage bucket residing in Project B.

Answer : ☒ B

Question 244 (Single Topic)



A governmental regulation was recently passed that affects your application. For compliance purposes, you are now required to send a duplicate of specific application logs from your application’s project to a project that is restricted to the security team. What should you do?

- A. Create user-defined log buckets in the security team’s project. Configure a Cloud Logging sink to route your application’s logs to log buckets in the security team’s project.
- B. Create a job that copies the logs from the _Required log bucket into the security team's log bucket in their project.
- C. Modify the _Default log bucket sink rules to reroute the logs into the security team’s log bucket.
- D. Create a job that copies the System Event logs from the _Required log bucket into the security team’s log bucket in their project.

Answer : ☒ A

Question 245 (Single Topic)



You plan to deploy a new Go application to Cloud Run. The source code is stored in Cloud Source Repositories. You need to configure a fully managed, automated, continuous deployment pipeline that runs when a source code commit is made. You want to use the simplest deployment solution. What should you do?

- A. Configure a cron job on your workstations to periodically run gcloud run deploy --source in the working directory.
- B. Configure a Jenkins trigger to run the container build and deploy process for each source code commit to Cloud Source Repositories.
- C. Configure continuous deployment of new revisions from a source repository for Cloud Run using buildpacks.
- D. Use Cloud Build with a trigger configured to run the container build and deploy process for each source code commit to Cloud Source Repositories.

Answer : D

Question 246 (Single Topic)



Your team has created an application that is hosted on a Google Kubernetes Engine (GKE) cluster. You need to connect the application to a legacy REST service that is deployed in two GKE clusters in two different regions. You want to connect your application to the target service in a way that is resilient. You also want to be able to run health checks on the legacy service on a separate port. How should you set up the connection? (Choose two.)

- A. Use Traffic Director with a sidecar proxy to connect the application to the service.
- B. Use a proxyless Traffic Director configuration to connect the application to the service.
- C. Configure the legacy service's firewall to allow health checks originating from the proxy.
- D. Configure the legacy service's firewall to allow health checks originating from the application.
- E. Configure the legacy service's firewall to allow health checks originating from the Traffic Director control plane.

Answer : AC

Question 247 (Single Topic)



You have an application running in a production Google Kubernetes Engine (GKE) cluster. You use Cloud Deploy to automatically deploy your application to your production GKE cluster. As part of your development process, you are planning to make frequent changes to the application’s source code and need to select the tools to test the changes before pushing them to your remote source code repository. Your toolset must meet the following requirements:

- Test frequent local changes automatically.
- Local deployment emulates production deployment.

Which tools should you use to test building and running a container on your laptop using minimal resources?

- A. Docker Compose and dockerd
- B. Terraform and kubeadm
- C. Minikube and Skaffold
- D. kaniko and Tekton

Answer : C

Question 248 (Single Topic)



You are deploying a Python application to Cloud Run using Cloud Source Repositories and Cloud Build. The Cloud Build pipeline is shown below:

```
steps:
- name: python
  entrypoint: pip
  args: ["install", "-r", "requirements.txt", "--user"]

- name: 'gcr.io/cloud-builders/docker'
  args: ['build', '-t',
        'us-centrall-docker.pkg.dev/${PROJECT_ID}/${_REPO_NAME}/myimage:${SHORT_SHA}',
        '.']

- name: 'gcr.io/cloud-builders/docker'
  args: ['push', 'us-centrall-docker.pkg.dev/${PROJECT_ID}/${_REPO_NAME}/myimage:${SHORT_SHA}']

- name: google/cloud-sdk
  args: ['gcloud', 'run', 'deploy', 'helloworld-${SHORT_SHA}',
        '--image=us-centrall-docker.pkg.dev/${PROJECT_ID}/${_REPO_NAME}/myimage:${SHORT_SHA}',
        '--region', 'us-centrall', '--platform', 'managed',
        '--allow-unauthenticated']
```

You want to optimize deployment times and avoid unnecessary steps. What should you do?

- A. Remove the step that pushes the container to Artifact Registry.
- B. Deploy a new Docker registry in a VPC, and use Cloud Build worker pools inside the VPC to run the build pipeline.
- C. Store image artifacts in a Cloud Storage bucket in the same region as the Cloud Run instance.
- D. Add the --cache-from argument to the Docker build step in your build config file.

Answer : D

Question 249 (Single Topic)



You are developing an event-driven application. You have created a topic to receive messages sent to Pub/Sub. You want those messages to be processed in real time. You need the application to be independent from any other system and only incur costs when new messages arrive. How should you configure the architecture?

- A. Deploy the application on Compute Engine. Use a Pub/Sub push subscription to process new messages in the topic.
- B. Deploy your code on Cloud Functions. Use a Pub/Sub trigger to invoke the Cloud Function. Use the Pub/Sub API to create a pull subscription to the Pub/Sub topic and read messages from it.
- C. Deploy the application on Google Kubernetes Engine. Use the Pub/Sub API to create a pull subscription to the Pub/Sub topic and read messages from it.
- D. Deploy your code on Cloud Functions. Use a Pub/Sub trigger to handle new messages in the topic.

Answer : **D**

Question 250 (Single Topic)



You have an application running on Google Kubernetes Engine (GKE). The application is currently using a logging library and is outputting to standard output. You need to export the logs to Cloud Logging, and you need the logs to include metadata about each request. You want to use the simplest method to accomplish this. What should you do?

- A. Change your application’s logging library to the Cloud Logging library, and configure your application to export logs to Cloud Logging.
- B. Update your application to output logs in JSON format, and add the necessary metadata to the JSON.
- C. Update your application to output logs in CSV format, and add the necessary metadata to the CSV.
- D. Install the Fluent Bit agent on each of your GKE nodes, and have the agent export all logs from /var/log.

Answer : ☐ B

Question 251 (Single Topic)



You are working on a new application that is deployed on Cloud Run and uses Cloud Functions. Each time new features are added, new Cloud Functions and Cloud Run services are deployed. You use ENV variables to keep track of the services and enable interservice communication, but the maintenance of the ENV variables has become difficult. You want to implement dynamic discovery in a scalable way. What should you do?

- A. Configure your microservices to use the Cloud Run Admin and Cloud Functions APIs to query for deployed Cloud Run services and Cloud Functions in the Google Cloud project.
- B. Create a Service Directory namespace. Use API calls to register the services during deployment, and query during runtime.
- C. Rename the Cloud Functions and Cloud Run services endpoint is using a well-documented naming convention.
- D. Deploy Hashicorp Consul on a single Compute Engine instance. Register the services with Consul during deployment, and query during runtime.

Answer : ☐ B

Question 252 (Single Topic)



You work for a financial services company that has a container-first approach. Your team develops microservices applications. A Cloud Build pipeline creates the container image, runs regression tests, and publishes the image to Artifact Registry. You need to ensure that only containers that have passed the regression tests are deployed to Google Kubernetes Engine (GKE) clusters. You have already enabled Binary Authorization on the GKE clusters. What should you do next?

- A. Create an attestor and a policy. After a container image has successfully passed the regression tests, use Cloud Build to run Kritis Signer to create an attestation for the container image.
- B. Deploy Voucher Server and Voucher Client components. After a container image has successfully passed the regression tests, run Voucher Client as a step in the Cloud Build pipeline.
- C. Set the Pod Security Standard level to Restricted for the relevant namespaces. Use Cloud Build to digitally sign the container images that have passed the regression tests.
- D. Create an attestor and a policy. Create an attestation for the container images that have passed the regression tests as a step in the Cloud Build pipeline.

Answer : A

Question 253 (Single Topic)



You are reviewing and updating your Cloud Build steps to adhere to best practices. Currently, your build steps include:

- 1. Pull the source code from a source repository.
- 2. Build a container image
- 3. Upload the built image to Artifact Registry.

You need to add a step to perform a vulnerability scan of the built container image, and you want the results of the scan to be available to your deployment pipeline running in Google Cloud. You want to minimize changes that could disrupt other teams’ processes. What should you do?

- A. Enable Binary Authorization, and configure it to attest that no vulnerabilities exist in a container image.
- B. Upload the built container images to your Docker Hub instance, and scan them for vulnerabilities.
- C. Enable the Container Scanning API in Artifact Registry, and scan the built container images for vulnerabilities.
- D. Add Artifact Registry to your Aqua Security instance, and scan the built container images for vulnerabilities.

Answer : ☐ C

Question 254 (Single Topic)



You are developing an online gaming platform as a microservices application on Google Kubernetes Engine (GKE). Users on social media are complaining about long loading times for certain URL requests to the application. You need to investigate performance bottlenecks in the application and identify which HTTP requests have a significantly high latency span in user requests. What should you do?

- A. Configure GKE workload metrics using kubectl. Select all Pods to send their metrics to Cloud Monitoring. Create a custom dashboard of application metrics in Cloud Monitoring to determine performance bottlenecks of your GKE cluster.
- B. Update your microservices to log HTTP request methods and URL paths to STDOUT. Use the logs router to send container logs to Cloud Logging. Create filters in Cloud Logging to evaluate the latency of user requests across different methods and URL paths.
- C. Instrument your microservices by installing the OpenTelemetry tracing package. Update your application code to send traces to Trace for inspection and analysis. Create an analysis report on Trace to analyze user requests.
- D. Install tcpdump on your GKE nodes. Run tcpdump to capture network traffic over an extended period of time to collect data. Analyze the data files using Wireshark to determine the cause of high latency.

Answer : ☐ C

Question 255 (Single Topic)



You need to load-test a set of REST API endpoints that are deployed to Cloud Run. The API responds to HTTP POST requests. Your load tests must meet the following requirements:

- Load is initiated from multiple parallel threads.
- User traffic to the API originates from multiple source IP addresses.
- Load can be scaled up using additional test instances.

You want to follow Google-recommended best practices. How should you configure the load testing?

- A. Create an image that has cURL installed, and configure cURL to run a test plan. Deploy the image in a managed instance group, and run one instance of the image for each VM.
- B. Create an image that has cURL installed, and configure cURL to run a test plan. Deploy the image in an unmanaged instance group, and run one instance of the image for each VM.
- C. Deploy a distributed load testing framework on a private Google Kubernetes Engine cluster. Deploy additional Pods as needed to initiate more traffic and support the number of concurrent users.
- D. Download the container image of a distributed load testing framework on Cloud Shell. Sequentially start several instances of the container on Cloud Shell to increase the load on the API.

Answer :

D

C

Question 256 (Single Topic)



Your team is creating a serverless web application on Cloud Run. The application needs to access images stored in a private Cloud Storage bucket. You want to give the application Identity and Access Management (IAM) permission to access the images in the bucket, while also securing the services using Google-recommended best practices. What should you do?

- A. Enforce signed URLs for the desired bucket. Grant the Storage Object Viewer IAM role on the bucket to the Compute Engine default service account.
- B. Enforce public access prevention for the desired bucket. Grant the Storage Object Viewer IAM role on the bucket to the Compute Engine default service account.
- C. Enforce signed URLs for the desired bucket. Create and update the Cloud Run service to use a user-managed service account. Grant the Storage Object Viewer IAM role on the bucket to the service account.
- D. Enforce public access prevention for the desired bucket. Create and update the Cloud Run service to use a user-managed service account. Grant the Storage Object Viewer IAM role on the bucket to the service account.

Answer :

B

C

Question 257 (Single Topic)



You are using Cloud Run to host a global ecommerce web application. Your company’s design team is creating a new color scheme for the web app. You have been tasked with determining whether the new color scheme will increase sales. You want to conduct testing on live production traffic. How should you design the study?

- A. Use an external HTTP(S) load balancer to route a predetermined percentage of traffic to two different color schemes of your application. Analyze the results to determine whether there is a statistically significant difference in sales.
- B. Use an external HTTP(S) load balancer to route traffic to the original color scheme while the new deployment is created and tested. After testing is complete, reroute all traffic to the new color scheme. Analyze the results to determine whether there is a statistically significant difference in sales.
- C. Use an external HTTP(S) load balancer to mirror traffic to the new version of your application. Analyze the results to determine whether there is a statistically significant difference in sales.
- D. Enable a feature flag that displays the new color scheme to half of all users. Monitor sales to see whether they increase for this group of users.

Answer :

C

A

Question 258 (Single Topic)



You are a developer at a large corporation. You manage three Google Kubernetes Engine clusters on Google Cloud. Your team’s developers need to switch from one cluster to another regularly without losing access to their preferred development tools. You want to configure access to these multiple clusters while following Google-recommended best practices. What should you do?

- A. Ask the developers to use Cloud Shell and run gcloud container clusters get-credential to switch to another cluster.
- B. In a configuration file, define the clusters, users, and contexts. Share the file with the developers and ask them to use kubect1 contig to add cluster, user, and context details.
- C. Ask the developers to install the gcloud CLI on their workstation and run gcloud container clusters get-credentials to switch to another cluster.
- D. Ask the developers to open three terminals on their workstation and use kubect1 config to configure access to each cluster.

Answer :

C

B

Question 259 (Single Topic)



You are a lead developer working on a new retail system that runs on Cloud Run and Firestore. A web UI requirement is for the user to be able to browse through all products. A few months after go-live, you notice that Cloud Run instances are terminated with HTTP 500: Container instances are exceeding memory limits errors during busy times. This error coincides with spikes in the number of Firestore queries.

You need to prevent Cloud Run from crashing and decrease the number of Firestore queries. You want to use a solution that optimizes system performance. What should you do?

- A. Modify the query that returns the product list using cursors with limits.
- B. Create a custom index over the products.
- C. Modify the query that returns the product list using integer offsets.
- D. Modify the Cloud Run configuration to increase the memory limits.

Answer :

C

A

Question 260 (Single Topic)



You are a developer at a large organization. Your team uses Git for source code management (SCM). You want to ensure that your team follows Google-recommended best practices to manage code to drive higher rates of software delivery. Which SCM process should your team use?

- A. Each developer commits their code to the main branch before each product release, conducts testing, and rolls back if integration issues are detected.
- B. Each group of developers copies the repository, commits their changes to their repository, and merges their code into the main repository before each product release.
- C. Each developer creates a branch for their own work, commits their changes to their branch, and merges their code into the main branch daily.
- D. Each group of developers creates a feature branch from the main branch for their work, commits their changes to their branch, and merges their code into the main branch after the change advisory board approves it.

Answer : ☐ D

Question 261 (Single Topic)



You have a web application that publishes messages to Pub/Sub. You plan to build new versions of the application locally and want to quickly test Pub/Sub integration for each new build. How should you configure local testing?

A. Install Cloud Code on the integrated development environment (IDE). Navigate to Cloud APIs, and enable Pub/Sub against a valid Google Project ID. When developing locally, configure your application to call pubsub.googleapis.com.

B. Install the Pub/Sub emulator using gcloud, and start the emulator with a valid Google Project ID. When developing locally, configure your application to use the local emulator with `{gcloud beta emulators pubsub env-init}`.

C. In the Google Cloud console, navigate to the API Library, and enable the Pub/Sub API. When developing locally, configure your application to call pubsub.googleapis.com.

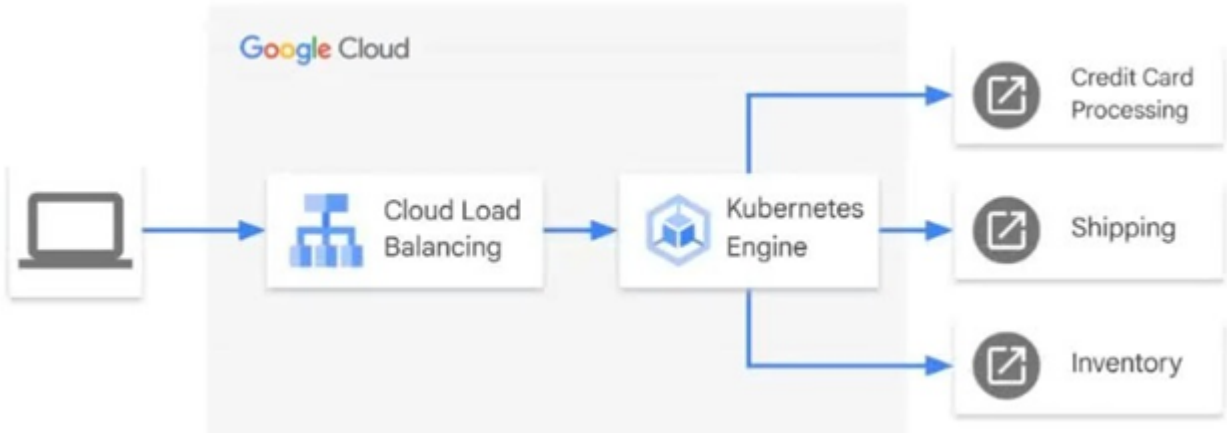
D. Install the Pub/Sub emulator using gcloud, and start the emulator with a valid Google Project ID. When developing locally, configure your application to use the local emulator by exporting the PUBSUB_EMULATOR_HOST variable.

Answer : ☒ B

Question 262 (Single Topic)



Your ecommerce application receives external requests and forwards them to third-party API services for credit card processing, shipping, and inventory management as shown in the diagram.



Your customers are reporting that your application is running slowly at unpredictable times. The application doesn't report any metrics. You need to determine the cause of the inconsistent performance. What should you do?

A. Install the OpenTelemetry library for your respective language, and instrument your application.

B. Install the Ops Agent inside your container and configure it to gather application metrics.

C. Modify your application to read and forward the X-Cloud-Trace-Context header when it calls the downstream services.

D. Enable Managed Service for Prometheus on the Google Kubernetes Engine cluster to gather application metrics.

Answer : C

Question 263 (Single Topic)



You are developing a new application. You want the application to be triggered only when a given file is updated in your Cloud Storage bucket. Your trigger might change, so your process must support different types of triggers. You want the configuration to be simple so that multiple team members can update the triggers in the future. What should you do?

A. Configure Cloud Storage events to be sent to Pub/Sub, and use Pub/Sub events to trigger a Cloud Build job that executes your application.

B. Create an Eventarc trigger that monitors your Cloud Storage bucket for a specific filename, and set the target as Cloud Run.

C. Configure a Cloud Function that executes your application and is triggered when an object is updated in Cloud Storage.

D. Configure a Firebase function that executes your application and is triggered when an object is updated in Cloud Storage.

Answer : ☐ B

Question 264 (Single Topic)



You are defining your system tests for an application running in Cloud Run in a Google Cloud project. You need to create a testing environment that is isolated from the production environment. You want to fully automate the creation of the testing environment with the least amount of effort and execute automated tests. What should you do?

A. Using Cloud Build, execute Terraform scripts to create a new Google Cloud project and a Cloud Run instance of your application in the Google Cloud project.

B. Using Cloud Build, execute a Terraform script to deploy a new Cloud Run revision in the existing Google Cloud project. Use traffic splitting to send traffic to your test environment.

C. Using Cloud Build, execute gcloud commands to create a new Google Cloud project and a Cloud Run instance of your application in the Google Cloud project.

D. Using Cloud Build, execute gcloud commands to deploy a new Cloud Run revision in the existing Google Cloud project. Use traffic splitting to send traffic to your test environment.

Answer : ☐ A

Question 265 (Single Topic)



You are a cluster administrator for Google Kubernetes Engine (GKE). Your organization’s clusters are enrolled in a release channel. You need to be informed of relevant events that affect your GKE clusters, such as available upgrades and security bulletins. What should you do?

- A. Configure cluster notifications to be sent to a Pub/Sub topic.
- B. Execute a scheduled query against the google_cloud_release_notes BigQuery dataset.
- C. Query the GKE API for available versions.
- D. Create an RSS subscription to receive a daily summary of the GKE release notes.

Answer : ~~B~~ **A**

Question 266 (Single Topic)



You are tasked with using C++ to build and deploy a microservice for an application hosted on Google Cloud. The code needs to be containerized and use several custom software libraries that your team has built. You do not want to maintain the underlying infrastructure of the application. How should you deploy the microservice?

- A. Use Cloud Functions to deploy the microservice.
- B. Use Cloud Build to create the container, and deploy it on Cloud Run.
- C. Use Cloud Shell to containerize your microservice, and deploy it on a Container-Optimized OS Compute Engine instance.
- D. Use Cloud Shell to containerize your microservice, and deploy it on standard Google Kubernetes Engine.

Answer : ~~D~~ **B**

Question 267 (Single Topic)



You need to containerize a web application that will be hosted on Google Cloud behind a global load balancer with SSL certificates. You don’t have the time to develop authentication at the application level, and you want to offload SSL encryption and management from your application. You want to configure the architecture using managed services where possible. What should you do?

- A. Host the application on Google Kubernetes Engine, and deploy an NGINX Ingress Controller to handle authentication.
- B. Host the application on Google Kubernetes Engine, and deploy cert-manager to manage SSL certificates.
- C. Host the application on Compute Engine, and configure Cloud Endpoints for your application.
- D. Host the application on Google Kubernetes Engine, and use Identity-Aware Proxy (IAP) with Cloud Load Balancing and Google-managed certificates.

Answer : ~~B~~ **D**

Question 268 (Single Topic)



You manage a system that runs on stateless Compute Engine VMs and Cloud Run instances. Cloud Run is connected to a VPC, and the ingress setting is set to Internal. You want to schedule tasks on Cloud Run. You create a service account and grant it the roles/run.invoker Identity and Access Management (IAM) role. When you create a schedule and test it, a 403 Permission Denied error is returned in Cloud Logging. What should you do?

- A. Grant the service account the roles/run.developer IAM role.
- B. Configure a cron job on the Compute Engine VMs to trigger Cloud Run on schedule.
- C. Change the Cloud Run ingress setting to 'Internal and Cloud Load Balancing.'
- D. Use Cloud Scheduler with Pub/Sub to invoke Cloud Run.

Answer : ~~A~~ **D**

Question 269 (Single Topic)



You work on an application that relies on Cloud Spanner as its main datastore. New application features have occasionally caused performance regressions. You want to prevent performance issues by running an automated performance test with Cloud Build for each commit made. If multiple commits are made at the same time, the tests might run concurrently. What should you do?

- A. Create a new project with a random name for every build. Load the required data. Delete the project after the test is run.
- B. Create a new Cloud Spanner instance for every build. Load the required data. Delete the Cloud Spanner instance after the test is run.
- C. Create a project with a Cloud Spanner instance and the required data. Adjust the Cloud Build build file to automatically restore the data to its previous state after the test is run.
- D. Start the Cloud Spanner emulator locally. Load the required data. Shut down the emulator after the test is run.

Answer : B

Question 270 (Single Topic)



Your company's security team uses Identity and Access Management (IAM) to track which users have access to which resources. You need to create a version control system that can integrate with your security team's processes. You want your solution to support fast release cycles and frequent merges to your main branch to minimize merge conflicts. What should you do?

- A. Create a Cloud Source Repositories repository, and use trunk-based development.
- B. Create a Cloud Source Repositories repository, and use feature-based development.
- C. Create a GitHub repository, mirror it to a Cloud Source Repositories repository, and use trunk-based development.
- D. Create a GitHub repository, mirror it to a Cloud Source Repositories repository, and use feature-based development.

Answer : ☒ A

Question 271 (Single Topic)



You recently developed an application that monitors a large number of stock prices. You need to configure Pub/Sub to receive messages and update the current stock price in an in-memory database. A downstream service needs the most up-to-date prices in the in-memory database to perform stock trading transactions. Each message contains three pieces of information:

- Stock symbol
- Stock price
- Timestamp for the update

How should you set up your Pub/Sub subscription?

- A. Create a push subscription with exactly-once delivery enabled.
- B. Create a pull subscription with both ordering and exactly-once delivery turned off.
- C. Create a pull subscription with ordering enabled, using the stock symbol as the ordering key.
- D. Create a push subscription with both ordering and exactly-once delivery turned off.

Answer : ☒ C

Question 272 (Single Topic)



You are a developer at a social media company. The company runs their social media website on-premises and uses MySQL as a backend to store user profiles and user posts. Your company plans to migrate to Google Cloud, and your learn will migrate user profile information to Firestore. You are tasked with designing the Firestore collections. What should you do?

- A. Create one root collection for user profiles, and create one root collection for user posts.
- B. Create one root collection for user profiles, and create one subcollection for each user's posts.
- C. Create one root collection for user profiles, and store each user's post as a nested list in the user profile document.
- D. Create one root collection for user posts, and create one subcollection for each user's profile.

Answer : B

Question 273 (Single Topic)



Your team recently deployed an application on Google Kubernetes Engine (GKE). You are monitoring your application and want to be alerted when the average memory consumption of your containers is under 20% or above 80%. How should you configure the alerts?

- A. Create a Cloud Function that consumes the Monitoring API. Create a schedule to trigger the Cloud Function hourly and alert you if the average memory consumption is outside the defined range.
- B. In Cloud Monitoring, create an alerting policy to notify you if the average memory consumption is outside the defined range.
- C. Create a Cloud Function that runs on a schedule, executes kubectl top on all the workloads on the cluster, and sends an email alert if the average memory consumption is outside the defined range.
- D. Write a script that pulls the memory consumption of the instance at the OS level and sends an email alert if the average memory consumption is outside the defined range.

Answer : ☒ B

Question 274 (Single Topic)



You manage a microservice-based ecommerce platform on Google Cloud that sends confirmation emails to a third-party email service provider using a Cloud Function. Your company just launched a marketing campaign, and some customers are reporting that they have not received order confirmation emails. You discover that the services triggering the Cloud Function are receiving HTTP 500 errors. You need to change the way emails are handled to minimize email loss. What should you do?

- A. Increase the Cloud Function's timeout to nine minutes.
- B. Configure the sender application to publish the outgoing emails in a message to a Pub/Sub topic. Update the Cloud Function configuration to consume the Pub/Sub queue.
- C. Configure the sender application to write emails to Memorystore and then trigger the Cloud Function. When the function is triggered, it reads the email details from Memorystore and sends them to the email service.
- D. Configure the sender application to retry the execution of the Cloud Function every one second if a request fails.

Answer : ☒ B