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About CertyIQ

We here at CertyIQ eventually got enough of the industry's greedy exam paid for. Our team of IT professionals comes with years of experience in the IT industry Prior to training CertyIQ we worked in test areas where we observed the horrors of the paywall exam preparation system.

The misuse of the preparation system has left our team disillusioned. And for that reason, we decided it was time to make a difference. We had to make In this way, CertyIQ was created to provide quality materials without stealing from everyday people who are trying to make a living.

Doubt Support

We have developed a very scalable solution using which we are able to solve 400+ doubts every single day with an average rating of 4.8 out of 5.

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John

October 19, 2022



Thanks you so much for your help. I scored 972 in my exam today. More than 90% were from your PDFs!

October 22, 2022



Passed my exam today with 891 marks. Out of 52 questions, 51 were from certyiq PDFs including Contoso case study. Thank You certyiq team!

Dana

September 04, 2022



Thanks a lot for this updated AZ-900 Q&A. I just passed my exam and got 974, I followed both of your Az-900 videos and the 6 PDF, the PDFs are very much valid, all answers are correct. Could you please create a similar video/PDF for DP900, your content/PDF's is really awesome. The team did a really good job. Thank You 😊.

Henry Rome

2 months ago



These questions are real and 100 % valid. Thank you so much for your efforts, also your 4 PDFs are awesome, I passed the DP900 exam on 1 Sept. With 968 marks. Thanks a lot, buddy!

Esmaria

2 months ago



Simple easy to understand explanations. To anyone out there wanting to write AZ900, I highly recommend 6 PDF's. Thank you so much, appreciate all your hard work in having such great content. Passed my exam Today - 3 September with 942 score.

Ahamed Shibly

2 months ago



Customer support is realy fast and helpful, I just finished my exam and this video along with the 6 PDF helped me pass! Definitely recommend getting the PDFs. Thank you!



(Professional Cloud Developer)

Professional Cloud Developer

Total: **286 Questions**

Link: <https://certiq.com/papers?provider=google&exam=professional-cloud-developer>

Question: 1

CertyIQ

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"

Question: 2

CertyIQ

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

What should you do?

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

Answer: C

Explanation:

If you have problems with notifications, option C allows you to use stackdriver to send alerts immediately and straight away after sending all this data to your on-prem monitoring platform.

Think twice. You have working an expensive monitoring system i.e Splunk and you have the problem with unacceptable delay time between incident and notification. You need to fix this problem, not doing a revolution (changing monitoring system). You can leverage GCP Monitoring with alerting system which is out-of-the-box with no huge effort, because if you want or not logs are in cloud logging. Simply implement alerts and push logs to Splunk. Simples.

Question: 3

CertyIQ

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. Create Compute engine instances in a different project. Create a VPN between these two projects to allow internal access to CloudSQL.

Answer: A

Explanation:

The question is about "connection". Role assignment gives a set of permission to compute engine but doesn't allow connection.

CertyIQ

Question: 4

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 url 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 TCP --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:

The source IP ranges for health checks (including legacy health checks if used for HTTP(S) Load Balancing) are: 35.191.0.0/16, 130.211.0.0/22. Furthermore, it should be direction INGRESS since the health-check (ping) is coming into the load balancer/instance.

Reference:

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

Question: 5

CertyIQ

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:**

A is correct because it allows routing traffic to a single domain and split traffic based on IP or Cookie. B is not correct because the domain name will change based on the service.

Reference:

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

Question: 6

CertyIQ

You need to copy directory local-scripts and all of its contents from your local workstation to a Compute Engine virtual machine instance.

Which command should you use?

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

Answer: C**Explanation:**

Reference:

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

Question: 7

CertyIQ

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

Which alert condition should you configure?

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

Answer: B**Explanation:**

"An uptime check is a request sent to a resource to see if it responds" A is wrong Metric absence and threshold don't make sense Process health is correct for sure so answer is B

Reference:

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

CertyIQ**Question: 8**

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:**

C is correct answer here. The only difference between Union and Union All is that Union All will not remove duplicate rows or records, instead, it just selects all the rows from all the tables which meets the conditions of your specific query and combines them into the result table.

Reference:

https://www.techonthenet.com/sql/union_all.php

CertyIQ**Question: 9**

You have an application deployed in production. When a new version is deployed, some issues don't arise until the application receives traffic from users in production. You want to reduce both the impact and the number of users affected.

Which deployment strategy should you use?

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

Answer: B**Explanation:**

Answer is B to reduce impact on users because it's a progressive release

Blue/Green is 100% users to Green, Canary is progressive. B.

Question: 10

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: AC**Explanation:**

99.999% availability and reduce latency Option A gives us 99.999% availability (think its typo in region name) Option C is about compute capacity, more nodes -> less latency

<https://cloud.google.com/spanner/docs/instances#compute-capacity> B - there is no such multi-region configuration nam3D - its better to create cluster with 3 nodes, not 1E,F - overengineering

A - global and provides 99.999% availability C - more nodes - less latency

Question: 11

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

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

Answer: C**Explanation:**

Reference:

https://wiki.christophchamp.com/index.php?title=Google_Cloud_Platform

Question: 12

You are planning to deploy your application in a Google Kubernetes Engine (GKE) cluster. The application exposes an HTTP-based health check at /healthz. You want to use this health check endpoint to determine whether traffic should be routed to the pod by the load balancer.

Which code snippet should you include in your Pod configuration?

A.

A.
`livenessProbe:`
 `httpGet:`
 `path: /healthz`
 `port: 80`

B.
`readinessProbe:`
 `httpGet:`
 `path: /healthz`
 `port: 80`

C.
`loadbalancerHealthCheck:`
 `httpGet:`
 `path: /healthz`
 `port: 80`

D.
`healthCheck:`
 `httpGet:`
 `path: /healthz`
 `port: 80`

Answer: B

Explanation:

For the GKE ingress controller to use your readinessProbes as health checks, the Pods for an Ingress must exist at the time of Ingress creation. If your replicas are scaled to 0, the default health check will apply.

Question: 13

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: A

Explanation:

i'd choose A. for me it's same as batch insert/update recommended

A. Include multiple rows with each request.Batch inserts are more efficient than individual inserts and will increase write performance by reducing the overhead of creating and sending individual requests for each row. Parallel inserts could potentially lead to conflicting writes or cause resource exhaustion, and adding a step of writing to Cloud Storage and then loading into BigQuery can add additional overhead and complexity.

Question: 14

CertyIQ

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

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

Answer: B

Explanation:

both A and B are validOption A, DNS A record maps service FQDN to IP address, fqdn like service-name.default.svc.cluster.localB is more easier, just use http://service-name

answer is B because client are in the same cluster so service name can be used.

Question: 15

CertyIQ

You are using Cloud Build to build and test application source code stored in Cloud Source Repositories. The build process requires a build tool not available in the Cloud Build environment.
What should you do?

- A.Download the binary from the internet during the build process.
- B.Build a custom cloud builder image and reference the image in your build steps.
- C.Include the binary in your Cloud Source Repositories repository and reference it in your build scripts.
- D.Ask to have the binary added to the Cloud Build environment by filing a feature request against the Cloud Build public Issue Tracker.

Answer: B

Explanation:

B is correct answer

https://cloud.google.com/cloud-build/docs/configuring-builds/use-community-and-custom-builders#creating_a_custom_builder

Question: 16

CertyIQ

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

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

Answer: A

Explanation:

<https://cloud.google.com/logging/docs/agent/logging/installation>:

The Logging agent streams logs from your VM instances and from selected third-party software packages to Cloud Logging."A is correct

Question: 17

CertyIQ

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:

"A Cloud Storage JSON API usage limit was exceeded. If your application tries to use more than its limit, additional requests will fail. Throttle your client's requests, and/or use truncated exponential backoff."C is correct

Reference:

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

CertyIQ**Question: 18**

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: C**Explanation:**

<https://www.imaginarycloud.com/blog/grpc-vs-rest/> gRPC architectural style has promising features that can (and should) be explored. It is an excellent option for working with multi-language systems, real-time streaming, and for instance, when operating an IoT system that requires light-weight message transmission such as the serialized Protobuf messages allow. Moreover, gRPC should also be considered for mobile applications since they do not need a browser and can benefit from smaller messages, preserving mobiles' processors' speed.

CertyIQ**Question: 19**

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: B**Explanation:**

<https://cloud.google.com/spanner/docs/reference/rest/v1/TransactionOptions> read-write transaction type has no options, and there is no way to make stale reads with this transaction type, so D) is definitely wrong. In the question, low latency is more critical than consistency, so C) is not an option. Read-Only transactions can do stale reads as well as Single Read methods, but in the documentation

https://cloud.google.com/spanner/docs/transactions#read-only_transactions, they encourage to use SingleRead methods where possible. My vote is B)

Question: 20

CertyIQ

Your application is deployed in a Google Kubernetes Engine (GKE) cluster. When a new version of your application is released, your CI/CD tool updates the spec.template.spec.containers[0].image value to reference the Docker image of your new application version. When the Deployment object applies the change, you want to deploy at least 1 replica of the new version and maintain the previous replicas until the new replica is healthy. Which change should you make to the GKE Deployment object shown below?

```
apiVersion: apps/v1
kind: Deployment
metadata:
  name: ecommerce-frontend-deployment
spec:
  replicas: 3
  selector:
    matchLabels:
      app: ecommerce-frontend
  template:
    metadata:
      labels:
        app: ecommerce-frontend
    spec:
      containers:
        - name: ecommerce-frontend-webapp
          image: ecommerce-frontend-webapp:1.7.9
      ports:
        - containerPort: 80
```

- A. Set the Deployment strategy to RollingUpdate with maxSurge set to 0, maxUnavailable set to 1.
- B. Set the Deployment strategy to RollingUpdate with maxSurge set to 1, maxUnavailable set to 0.
- C. Set the Deployment strategy to Recreate with maxSurge set to 0, maxUnavailable set to 1.
- D. Set the Deployment strategy to Recreate with maxSurge set to 1, maxUnavailable set to 0.

Answer: B

Explanation:

"The simplest way to take advantage of surge upgrade is to configure maxSurge=1 maxUnavailable=0. This means that only 1 surge node can be added to the node pool during an upgrade so only 1 node will be upgraded at a time. This setting is superior to the existing upgrade configuration (maxSurge=0

maxUnavailable=1) because it speeds up Pod restarts during upgrades while progressing conservatively."Answer is B

Reference:

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

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Question: 21

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

What should you do?

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

Answer: A

Explanation:

A, if its static then quickest way is via cloud storage.

Reference:

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

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Question: 22

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

Which tool should you use?

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

Answer: D

Explanation:

i think this question will become obsolete since Cloud debugger will be deprecated: Cloud Debugger is deprecated and will be shutdown May 31, 2023. See the deprecations page and release notes for more information. Cloud Debugger is deprecated and is scheduled for shutdown on May 31 2023. For an alternative, use the open source CLI tool, Snapshot Debugger.<https://cloud.google.com/debugger/docs/release-notes>

" You want to monitor the application over time to diagnose the problem within the application code"If it's only

for monitoring it's B, but it mentions "within the code" so it should be D

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Question: 23

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: C

Explanation:

answer should be C unless your application log is in the default log directory

<https://cloud.google.com/logging/docs/agent/configuration>

Question: 24

CertyIQ

Your company has a BigQuery data mart that provides analytics information to hundreds of employees. One user wants to run jobs without interrupting important workloads. This user isn't concerned about the time it takes to run these jobs. You want to fulfill this request while minimizing cost to the company and the effort required on your part.

What should you do?

- A. Ask the user to run the jobs as batch jobs.
- B. Create a separate project for the user to run jobs.
- C. Add the user as a job.user role in the existing project.
- D. Allow the user to run jobs when important workloads are not running.

Answer: A

Explanation:

Option A makes the most sense
B is wrong since it will incur more costs which is not what the question wants
C is definitely out as creating roles is not what the question is asking for
D is wrong as it would not minimise effort

Question: 25

CertyIQ

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

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

Answer: D**Explanation:**

DError Reporting is not about service degradation, more, Error Reporting uses Monitoring to send alerts.<https://cloud.google.com/error-reporting/docs/notifications>

D is correct for monitoring.I'm baffled by the "correct" answers given by the site, 80% of the time they are wrong.

CertyIQ**Question: 26**

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: B**Explanation:**

Answer is B.Api should not delay rendering: asynchronousApplication perform well when Api error or timeout: omit the widget

Understanding the question correctly, the answer should be B

CertyIQ**Question: 27**

You are creating a web application that runs in a Compute Engine instance and writes a file to any user's Google Drive. You need to configure the application to authenticate to the Google Drive API. What should you do?

- A.Use an OAuth Client ID that uses the <https://www.googleapis.com/auth/drive.file> scope to obtain an access token for each user.
- B.Use an OAuth Client ID with delegated domain-wide authority.
- C.Use the App Engine service account and <https://www.googleapis.com/auth/drive.file> scope to generate a signed JSON Web Token (JWT).
- D.Use the App Engine service account with delegated domain-wide authority.

Answer: A**Explanation:**

A Because need to allow all users so not link to a domain

Question: 28

CertyIQ

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: B**Explanation:**

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

"A cluster typically has one or more nodes, which are the worker machines that run your containerized applications and other workloads. The individual machines are Compute Engine VM instances that GKE creates on your behalf when you create a cluster." Error message mentions "CPU" so this would refer to Compute Engine VMs

Answer is B

Question: 29

CertyIQ

You are parsing a log file that contains three columns: a timestamp, an account number (a string), and a transaction amount (a number). You want to calculate the sum of all transaction amounts for each unique account number efficiently.

Which data structure should you use?

- A.A linked list
- B.A hash table
- C.A two-dimensional array
- D.A comma-delimited string

Answer: B**Explanation:**

Hash table with the account number as the key, the timestamp is useless for this question, so we can safely discard it.

Answer is B

Question: 30

CertyIQ

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

minimum number of steps.
What should you do?

- A.Create a separate dataset for each department. Create a view with an appropriate WHERE clause to select records from a particular dataset for the specific department. Authorize this view to access records from your Master dataset. Give employees the permission to this department-specific dataset.
- B.Create a separate dataset for each department. Create a data pipeline for each department to copy appropriate information from the Master dataset to the specific dataset for the department. Give employees the permission to this department-specific dataset.
- C.Create a dataset named Master dataset. Create a separate view for each department in the Master dataset. Give employees access to the specific view for their department.
- D.Create a dataset named Master dataset. Create a separate table for each department in the Master dataset. Give employees access to the specific table for their department.

Answer: C

Explanation:

correct answer c. the view answer the need of access A is eliminated because create dataset by department is more steps.

Question: 31

CertyIQ

You have an application in production. It is deployed on Compute Engine virtual machine instances controlled by a managed instance group. Traffic is routed to the instances via a HTTP(s) load balancer. Your users are unable to access your application. You want to implement a monitoring technique to alert you when the application is unavailable.

Which technique should you choose?

- A.Smoke tests
- B.Stackdriver uptime checks
- C.Cloud Load Balancing - health checks
- D.Managed instance group - health checks

Answer: B

Explanation:

B is correct answer, Uptime provide you a mechanism to do health check on URL.

Reference:

<https://medium.com/google-cloud/stackdriver-monitoring-automation-part-3-upptime-checks-476b8507f59c>

Question: 32

CertyIQ

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: D

Explanation:

Limit the upload rate from your application clients so that the dormant bucket's peak request rate is reached more gradually.

<https://cloud.google.com/storage/docs/request-rate#ramp-up>

Question: 33

CertyIQ

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

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

Answer: C

Explanation:

<https://cloud.google.com/compute/docs/disks/sharing-disks-between-vms#use-multi-instances> Share a disk in read-only mode between multiple VMs Sharing static data between multiple VMs from one persistent disk is "less expensive" than replicating your data to unique disks for individual instances.

https://cloud.google.com/compute/docs/disks/gcs-buckets#mount_bucket Mounting a bucket as a file system You can use the Cloud Storage FUSE tool to mount a Cloud Storage bucket to your Compute Engine instance. The mounted bucket behaves similarly to a persistent disk even though Cloud Storage buckets are object storage. <https://github.com/GoogleCloudPlatform/gcsfuse> Cloud Storage FUSE performance issues: Latency, Rate limit

Question: 34

CertyIQ

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. Clients should use the name of the A record to connect to the service.
- C.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/)

D. 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: C

Explanation:

answer C)"Virtual Private Cloud networks on Google Cloud have an internal DNS service that lets instances in the same network access each other by using internal DNS names" This name can be used for access: [INSTANCE_NAME].[ZONE].c.[PROJECT_ID].internal https://cloud.google.com/compute/docs/internal-dns#access_by_internal_DNS

Question: 35

CertyIQ

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

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

Answer: B

Explanation:

submiting just to confirm community response.

Question: 36

CertyIQ

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: B

Explanation:

Migrating a monolithic service is best when done feature by feature.

Question: 37

CertyIQ

Your existing application keeps user state information in a single MySQL database. This state information is very user-specific and depends heavily on how long a user has been using an application. The MySQL database is

causing challenges to maintain and enhance the schema for various users.
Which storage option should you choose?

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

Answer: D

Explanation:

The question is a bit misleading. If it's asking to keep a MySQL storage option then Cloud SQL or Spanner are the only options. However, assuming that they want to move away from schema and also the need for stateful DB I would go for Datastore/Firebase.

https://cloud.google.com/datastore/docs/concepts/overview#what_its_good_for -> "User profiles that deliver a customized experience based on the user's past activities and preferences". Answer is D.

Question: 38

CertyIQ

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: D

Explanation:

D. Cloud Content Delivery Network (CDN) backed by Cloud Storage. A Cloud CDN is a content delivery network that uses Google's globally distributed edge points of presence to accelerate content delivery for websites and applications served out of Google Cloud. Cloud CDN stores and serves content from Google Cloud Storage, which allows for efficient and low-cost storage of images, as well as low latency in serving the images. The other options do not mention low latency or cost-effective storage as their primary benefits.

Question: 39

CertyIQ

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

What should you do?

- A.Use Container Registry to create a registry in each development team's project. Configure the Cloud Build build to push the Docker image to the project's registry. Grant the operations team access to each development team's registry.
- B.Create a separate project for the operations team that has Container Registry configured. Assign appropriate permissions to the Cloud Build service account in each developer team's project to allow access to the operation team's registry.
- C.Create a separate project for the operations team that has Container Registry configured. Create a Service

Account for each development team and assign the appropriate permissions to allow it access to the operations team's registry. Store the service account key file in the source code repository and use it to authenticate against the operations team's registry.

D.Create a separate project for the operations team that has the open source Docker Registry deployed on a Compute Engine virtual machine instance. Create a username and password for each development team. Store the username and password in the source code repository and use it to authenticate against the operations team's Docker registry.

Answer: B

Explanation:

The correct answer is B Container Registry is a good choice to store containers in a secure manageable way. It is possible to have ContainerRegistry in One project and push to it from Cloud Build of another project by adding appropriate service account as a member of a Cloud Storage Bucket used to host containers with the role Cloud Build Service Account.

CertyIQ

Question: 40

You are planning to deploy your application in a Google Kubernetes Engine (GKE) cluster. Your application can scale horizontally, and each instance of your application needs to have a stable network identity and its own persistent disk.

Which GKE object should you use?

- A.Deployment
- B.StatefulSet
- C.ReplicaSet
- D.ReplicaController

Answer: B

Explanation:

Once created, the StatefulSet ensures that the desired number of Pods are running and available at all times. The StatefulSet automatically replaces Pods that fail or are evicted from their nodes, and automatically associates new Pods with the storage resources, resource requests and limits, and other configurations defined in the StatefulSet's Pod specification

Reference:

<https://livebook.manning.com/book/kubernetes-in-action/chapter-10/46>

CertyIQ

Question: 41

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

Explanation:

Create a Cloud Build build config file with separate cloud builder steps to compile and execute unit and integration tests. This is the best option because it allows you to clearly specify and separate the different stages of the build process (compiling unit tests, executing unit tests, compiling integration tests, executing integration tests). This makes it easier to understand the build history and identify any failures that may occur. In addition, using separate build steps allows you to specify different properties (such as timeout values or environment variables) for each stage of the build process.

Question: 42

CertyIQ

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 account.
- C.Grant the service account the roles/storage.objectCreator role for the Cloud Storage bucket.
- D.Enable the Cloud Storage API in project B.

Answer: C

Explanation:

The answer is C : the default service account used by cloud function is (cf. https://cloud.google.com/functions/docs/concepts/iam#troubleshooting_permission_errors)

Question: 43

CertyIQ

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We are the number one local community app; it's time to take our local community services global. Our venture capital investors want to see rapid growth and the same great experience for new local and virtual communities that come online, whether their members are 10 or 10000 miles away from each other.

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HipLocal wants to expand their existing service, with updated functionality, in new regions to better serve their global customers. They want to hire and train a new team to support these regions in their time zones. They will need to ensure that the application scales smoothly and provides clear uptime data.

Existing Technical Environment -

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Business Requirements -

HipLocal's investors want to expand their footprint and support the increase in demand they are seeing. Their requirements are:

- * Expand availability of the application to new regions.
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Technical Requirements -

- * The application and backend must provide usage metrics and monitoring.
- * APIs require strong authentication and authorization.
- * Logging must be increased, and data should be stored in a cloud analytics platform.
- * Move to serverless architecture to facilitate elastic scaling.
- * Provide authorized access to internal apps in a secure manner.

HipLocal's .net-based auth service fails under intermittent load.

What should they do?

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

Answer: A

Explanation:

Use App Engine for autoscaling.

Question: 44

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HipLocal's APIs are having occasional application failures. They want to collect application information specifically to troubleshoot the issue. What should they do?

- A.Take frequent snapshots of the virtual machines.
- B.Install the Cloud Logging agent on the virtual machines.
- C.Install the Cloud Monitoring agent on the virtual machines.
- D.Use Cloud Trace to look for performance bottlenecks.

Answer: B

Explanation:

They don't have logging so need to add logging agent so we can have logs to study. Tracr is for latency issue and it's not the issue here.

they don't have any logging so it should be B

Question: 45

CertyIQ

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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?

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

Answer: A

Explanation:

A - Need to take control of the IP assignment thru manual subnet especially when establishing the connectivity between on-prem/cloud

Question: 46

CertyIQ

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Which service should HipLocal use to enable access to internal apps?

- A.Cloud VPN
- B.Cloud Armor
- C.Virtual Private Cloud
- D.Cloud Identity-Aware Proxy

Answer: D

Explanation:

Reference:

<https://cloud.google.com/iap/docs/cloud-iap-for-on-prem-apps-overview>

Question: 47

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- * Adopt the Google-recommended practices for cloud computing.

Technical Requirements -

- * The application and backend must provide usage metrics and monitoring.
- * APIs require strong authentication and authorization.
- * Logging must be increased, and data should be stored in a cloud analytics platform.
- * Move to serverless architecture to facilitate elastic scaling.
- * Provide authorized access to internal apps in a secure manner.

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: AB

Explanation:

- A. Use Google App Engine services.

Question: 48**Case study -**

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Executive Statement -

We are the number one local community app; it's time to take our local community services global. Our venture capital investors want to see rapid growth and the same great experience for new local and virtual communities that come online, whether their members are 10 or 10000 miles away from each other.

Solution Concept -

HipLocal wants to expand their existing service, with updated functionality, in new regions to better serve their global customers. They want to hire and train a new team to support these regions in their time zones. They will need to ensure that the application scales smoothly and provides clear uptime data.

Existing Technical Environment -

HipLocal's environment is a mix of on-premises hardware and infrastructure running in Google Cloud Platform. The HipLocal team understands their application well, but has limited experience in global scale applications. Their existing technical environment is as follows:

- * Existing APIs run on Compute Engine virtual machine instances hosted in GCP.
- * State is stored in a single instance MySQL database in GCP.
- * Data is exported to an on-premises Teradata/Vertica data warehouse.
- * Data analytics is performed in an on-premises Hadoop environment.
- * The application has no logging.
- * There are basic indicators of uptime; alerts are frequently fired when the APIs are unresponsive.

Business Requirements -

HipLocal's investors want to expand their footprint and support the increase in demand they are seeing. Their requirements are:

- * Expand availability of the application to new regions.
- * Increase the number of concurrent users that can be supported.
- * Ensure a consistent experience for users when they travel to different regions.
- * Obtain user activity metrics to better understand how to monetize their product.
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- * APIs require strong authentication and authorization.
 - * Logging must be increased, and data should be stored in a cloud analytics platform.
 - * Move to serverless architecture to facilitate elastic scaling.
 - * Provide authorized access to internal apps in a secure manner.
- In order to meet their business requirements, how should HipLocal store their application state?

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

Answer: C

Explanation:

the answer is C. A is not valid because local SSD is volatile memory. B and D is bad solution because it don't reduce latency in world wide but they are a regional location.

Question: 49

CertyIQ

Case study -

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Which service should HipLocal use for their public APIs?

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

Answer: C

Explanation:

Cloud Endpoints is a correct answer.

Question: 50

CertyIQ

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HipLocal wants to improve the resilience of their MySQL deployment, while also meeting their business and technical requirements.

Which configuration should they choose?

- A.Use the current single instance MySQL on Compute Engine and several read-only MySQL servers on Compute Engine.
- B.Use the current single instance MySQL on Compute Engine, and replicate the data to Cloud SQL in an external master configuration.
- C.Replace the current single instance MySQL instance with Cloud SQL, and configure high availability.
- D.Replace the current single instance MySQL instance with Cloud SQL, and Google provides redundancy without further configuration.

Answer: C

Explanation:

Replace the current single instance MySQL instance with Cloud SQL, and configure high availability.

Question: 51

CertyIQ

Your application is running in multiple Google Kubernetes Engine clusters. It is managed by a Deployment in each cluster. The Deployment has created multiple replicas of your Pod in each cluster. You want to view the logs sent

to stdout for all of the replicas in your Deployment in all clusters.

Which command should you use?

- A.kubectl logs [PARAM]
- B.gcloud logging read [PARAM]
- C.kubectl exec "it [PARAM] journalctl
- D.gcloud compute ssh [PARAM] "-command= sudo journalctl

Answer: B

Explanation:

B: gcloud logging readUsing the "gcloud logging read" command, select the appropriate cluster, node, pod, and container logs.https://cloud.google.com/stackdriver/docs/solutions/gke/using-logs#accessing_your_logsHowever if you use "kubectl logs" to see logs on CLI, logs won't be seen readable. It prints each line as a JSON object. <https://medium.com/google-cloud/display-gke-logs-in-a-text-format-with-kubectl-db0169be0282>

Question: 52

CertyIQ

You are using Cloud Build to create a new Docker image on each source code commit to a Cloud Source Repositories repository. Your application is built on every commit to the master branch. You want to release specific commits made to the master branch in an automated method.

What should you do?

- A.Manually trigger the build for new releases.
- B.Create a build trigger on a Git tag pattern. Use a Git tag convention for new releases.
- C.Create a build trigger on a Git branch name pattern. Use a Git branch naming convention for new releases.
- D.Commit your source code to a second Cloud Source Repositories repository with a second Cloud Build trigger. Use this repository for new releases only.

Answer: B

Explanation:

B is correct

I don't know why people are selecting C , the qustion says commit to master . C literally does not make sense how commit to a feature branch can trigger a master build.

Question: 53

CertyIQ

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: B

Explanation:

<https://cloud.google.com/bigtable/docs/schema-design#row-keys> It's B because :"Row keys that start with a timestamp. This pattern causes sequential writes to be pushed onto a single node, creating a hotspot. If you put a timestamp in a row key, precede it with a high-cardinality value like a user ID to avoid hotspotting."

Question: 54

CertyIQ

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: B

Explanation:

Option-B is correct. https://cloud.google.com/monitoring/api/metrics_agent#agent-memory (By default Memory metrics is not collected). To double confirm. Just goto Console->Operations->Monitoring->Dashboards->VM Instances->Memory Tab (Assume you have VM running already). You will see a info message saying that No agents detected. Monitoring agents collect memory metrics, disk metrics, and more. Learn more about agents and how to manage them across multiple VMs.

Question: 55

CertyIQ

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

- A.Use Stackdriver Monitoring to plot slot usage.

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

Answer: D

Explanation:

Use Stackdriver Monitoring to plot query execution times.

<https://cloud.google.com/bigquery/docs/monitoring>

CertyIQ

Question: 56

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

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

Answer: D

Explanation:

The correct answer is D. You should create a table named Customers as a parent table and a table named Phones, and interleave this table into the Customer table. You should also create an index on the phone number field in the Phones table. This allows you to store the phone number array field in the Customers table and search for customers by phone number using the index on the Phones table.

CertyIQ

Question: 57

You are deploying a single website on App Engine that needs to be accessible via the URL <http://www.altostrat.com/>.
What should you do?

- A.Verify domain ownership with Webmaster Central. Create a DNS CNAME record to point to the App Engine canonical name ghs.googlehosted.com.
- B.Verify domain ownership with Webmaster Central. Define an A record pointing to the single global App Engine IP address.
- C.Define a mapping in dispatch.yaml to point the domain www.altostrat.com to your App Engine service. Create a DNS CNAME record to point to the App Engine canonical name ghs.googlehosted.com.
- D.Define a mapping in dispatch.yaml to point the domain www.altostrat.com to your App Engine service. Define an A record pointing to the single global App Engine IP address.

Answer: A

Explanation:

Reference:

<https://cloud.google.com/appengine/docs/flexible/dotnet/mapping-custom-domains?hl=fa>

CertyIQ

Question: 58

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

Answer: C

Explanation:

<https://cloud.google.com/appengine/docs/standard/python/application-security>: "The Google Cloud Web Security Scanner discovers vulnerabilities by crawling your App Engine app, following all the links within the scope of your starting URLs, and attempting to exercise as many user inputs and event handlers as possible." <https://cloud.google.com/security-command-center/docs/concepts-web-security-scanner-overview>: "Web Security Scanner custom scans provide granular information about application vulnerability findings, like outdated libraries, cross-site scripting, or use of mixed content" C is correct

Reference:

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

CertyIQ

Question: 59

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

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

Answer: B

Explanation:

Reference:

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

Question: 60

CertyIQ

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: D**Explanation:**

Option D is the correct answer. Instance metadata is metadata that is associated with a Compute Engine instance and can be used to pass configuration values to the instance at startup. It can be accessed from within the instance itself, allowing you to use the same custom machine image in all deployments and still provide unique configuration values to each deployment. Option A is not a good solution because the persistent disk is not automatically attached to the instance at startup and is not intended for storing configuration values. Option B is not a good solution because Cloud Bigtable is a NoSQL database, which is not well-suited for storing configuration values. Option C is not a good solution because the startup script is executed after the instance has started, so it cannot be used to pass configuration values to the instance at startup.

Question: 61

CertyIQ

Your application performs well when tested locally, but it runs significantly slower after you deploy it to a Compute Engine instance. You need to diagnose the problem. What should you do?
What should you do?

- A.File a ticket with Cloud Support indicating that the application performs faster locally.
- B.Use Cloud Debugger snapshots to look at a point-in-time execution of the application.
- C.Use Cloud Profiler to determine which functions within the application take the longest amount of time.
- D.Add logging commands to the application and use Cloud Logging to check where the latency problem occurs.

Answer: C**Explanation:**

A is incorrect because the argument “it worked on my machine” but doesn’t work on Google Cloud is never valid.B is incorrect because Debugger snapshots only lets us review the application at a single point in time.C is correct because it provides latency per function and historical latency information.D is incorrect because while it works it requires a lot of work and is not the clear, optimal choice.

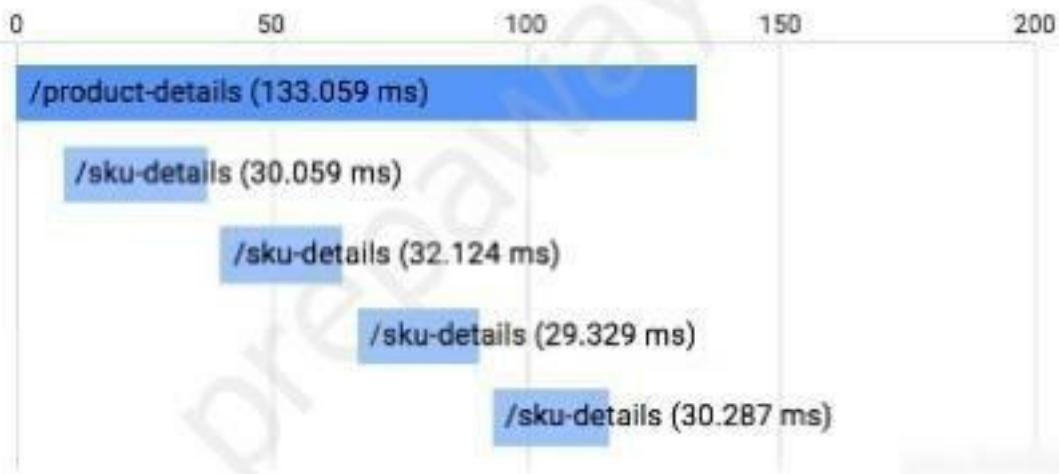
Question: 62

CertyIQ

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

Explanation:

Option C is the correct answer. By changing /product-details to perform the requests in parallel, you can reduce the time it takes for the request to complete by making multiple requests at the same time rather than sequentially. This will allow you to retrieve the information for all four products more quickly. Option A is not a good solution because increasing the size of the instance class may not necessarily reduce the time it takes for the request to complete. Option B is not a good solution because changing the Persistent Disk type to SSD will not have any impact on the time it takes for the request to complete. Option D is not a good solution because storing the /sku-details information in a database and replacing the webservice call with a database query will not necessarily reduce the time it takes for the request to complete, and it will add unnecessary complexity to the application.

Question: 63

CertyIQ

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

- ⇒ Your company must be able to delete all user account information upon user request.
- ⇒ All EU user data must be stored in a single region specifically for EU users.

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

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

Answer: BE

Explanation:

B & E. Data is already stored in BigQuery, I do not see any reason to have anything to do with Cloud Storage. Also, BigQuery allows DML to do updates and deletes. So I would choose B & E

CertyIQ**Question: 64**

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: 5 min_pending_latency: 30ms
- B.manual_scaling: max_instances: 5 idle_timeout: 10m
- C.basic_scaling: instances: 5 min_pending_latency: 30ms
- D.basic_scaling: max_instances: 5 idle_timeout: 10m

Answer: D**Explanation:**

D is correct

https://cloud.google.com/appengine/docs/legacy/standard/python/how-instances-are-managed#scaling_types

CertyIQ**Question: 65**

Your analytics system executes queries against a BigQuery dataset. The SQL query is executed in batch and passes the contents of a SQL file to the BigQuery

CLI. Then it redirects the BigQuery CLI output to another process. However, you are getting a permission error from the BigQuery CLI when the queries are executed.

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

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

Answer: A**Explanation:**

The correct answer is Option A. In order to allow the analytics system to execute queries against the BigQuery dataset, the service account must be granted the BigQuery Data Viewer and BigQuery Job User roles. The BigQuery Data Viewer role allows the service account to read data from tables, and the BigQuery Job User role allows the service account to run jobs, which includes executing queries. Option B is not a good solution because the BigQuery Data Editor role allows the service account to modify data in tables, which is not necessary to execute queries. Option C is not a good solution because creating a view in BigQuery and selecting from the view in the CLI will not resolve the permission issue. Option D is not a good solution because creating a new dataset and copying the source table to the new dataset will not resolve the

permission issue.

CertyIQ

Question: 66

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

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

Answer: B

Explanation:

Option B is correct. According to Google Cloud documentation, if a Compute Engine instance is unresponsive to SSH and you have narrowed the cause down to a single instance, you should enable and check the serial port output. The serial port output is a log of system messages and can help you diagnose the issue causing the instance to become unresponsive. To enable and check the serial port output, you can access the serial console as the root user from your local workstation using a browser. This will allow you to review the logs and potentially identify the cause of the problem.

Question: 67

CertyIQ

You configured your Compute Engine instance group to scale automatically according to overall CPU usage. However, your application's response latency increases sharply before the cluster has finished adding up instances. You want to provide a more consistent latency experience for your end users by changing the configuration of the instance group autoscaler.

Which two configuration changes should you make? (Choose two.)

- A.Add the label AUTOSCALE to the instance group template.
- B.Decrease the cool-down period for instances added to the group.
- C.Increase the target CPU usage for the instance group autoscaler.
- D.Decrease the target CPU usage for the instance group autoscaler.
- E.Remove the health-check for individual VMs in the instance group.

Answer: BD

Explanation:

Adding label won't solve the issue so A is wrong for sure
Removing health check is not recommended so E is wrong as well
Increase CPU target is wrong since scaling will take place at a higher usage which is not what we want
B and D are the correct options

Question: 68

CertyIQ

You have an application controlled by a managed instance group. When you deploy a new version of the

application, costs should be minimized and the number of instances should not increase. You want to ensure that, when each new instance is created, the deployment only continues if the new instance is healthy. What should you do?

- A.Perform a rolling-action with maxSurge set to 1, maxUnavailable set to 0.
- B.Perform a rolling-action with maxSurge set to 0, maxUnavailable set to 1
- C.Perform a rolling-action with maxHealthy set to 1, maxUnhealthy set to 0.
- D.Perform a rolling-action with maxHealthy set to 0, maxUnhealthy set to 1.

Answer: B

Explanation:

As others suggested, B is the correct option.I am adding this to highlight the community choice.

Question: 69

CertyIQ

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:

Use the instance's service account Application Default Credentials to authenticate to the required resources.Using the instance's service account Application Default Credentials is the most secure method for distributing credentials to the host instances. This method allows the instance to automatically authenticate with the required resources using the instance's built-in service account, without requiring the credentials to be stored on the instance or transmitted over the network. This eliminates the risk of the credentials being compromised or exposed. Additionally, this method is the most convenient, as it requires no manual steps to set up the credentials on the instance.

Reference:

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

Question: 70

CertyIQ

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:

Ingress for HTTP(S) Load Balancing This page provides a general overview of what Ingress for HTTP(S) Load Balancing is and how it works. Google Kubernetes Engine (GKE) provides a built-in and managed Ingress controller called GKE Ingress. This controller implements Ingress resources as Google Cloud load balancers for HTTP(S) workloads in GKE.

Reference:

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

CertyIQ

Question: 71

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

How should you proceed with the migration?

A.Migrate your data stored in Hadoop to BigQuery. Change your jobs to source their information from BigQuery instead of the on-premises Hadoop environment.

B.Create Compute Engine instances with HDD instead of SSD to save costs. Then perform a full migration of your existing environment into the new one in Compute Engine instances.

C.Create a Cloud Dataproc cluster on Google Cloud Platform, and then migrate your Hadoop environment to the new Cloud Dataproc cluster. Move your HDFS data into larger HDD disks to save on storage costs.

D.Create a Cloud Dataproc cluster on Google Cloud Platform, and then migrate your Hadoop code objects to the new cluster. Move your data to Cloud Storage and leverage the Cloud Dataproc connector to run jobs on that data.

Answer: D

Explanation:

Keeping your data in a persistent HDFS cluster using Dataproc is more expensive than storing your data in Cloud Storage, which is what we recommend, as explained later. Keeping data in an HDFS cluster also limits your ability to use your data with other Google Cloud products."Google Cloud includes Dataproc, which is a managed Hadoop and Spark environment. You can use Dataproc to run most of your existing jobs with minimal alteration, so you don't need to move away from all of the Hadoop tools you already know"D is the answer

Reference:

<https://cloud.google.com/architecture/hadoop/hadoop-gcp-migration-overview>

CertyIQ

Question: 72

Your data is stored in Cloud Storage buckets. Fellow developers have reported that data downloaded from Cloud Storage is resulting in slow API performance.

You want to research the issue to provide details to the GCP support team.

Which command should you run?

- A.gsutil test "o output.json gs://my-bucket
- B.gsutil perfdiag "o output.json gs://my-bucket
- C.gcloud compute scp example-instance:~/test-data "o output.json gs://my-bucket
- D.gcloud services test "o output.json gs://my-bucket

Answer: B

Explanation:

gsutil perfdiag -o output.json gs://my-bucketThe gsutil perfdiag command is used to diagnose performance issues with Cloud Storage. It can be used to perform various tests such as download, upload, and metadata operations. By using the -o flag, you can specify an output file where the results of the tests will be stored in JSON format. This output file can then be provided to the GCP support team to help them investigate the issue.

Reference:

<https://groups.google.com/forum/#topic/gce-discussion/xBl9Jq5HDsY>

CertyIQ

Question: 73

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: C

Explanation:

C. Use the digest of the Docker image.Using the digest of the Docker image is the most reliable way to ensure that the exact same Docker image is deployed to each environment. The digest is a hash of the image content and metadata, which is unique to each image. This means that even if the image is tagged with different versions or names, the digest will remain the same as long as the content and metadata are identical.On the other hand, using the latest Docker image tag or a semantic version tag may not guarantee that the exact same image is deployed to each environment. These tags are mutable and can be overwritten or updated, which could result in different images being deployed to different environments.Using a unique Docker image name could work, but it may be more difficult to manage and track multiple images with different names, especially if there are many environments or frequent updates.

Anser C because nees to be sure that the same image for the 3 envs. A tag version can be change between the deployment of the env.

CertyIQ

Question: 74

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

What should you do?

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

Explanation:

Answer A takes least effort to implement the solution

Option-A required least amount of effort to implement.

<https://cloud.google.com/storage/docs/reporting-changes#enabling>

Question: 75

CertyIQ

Your teammate has asked you to review the code below, which is adding a credit to an account balance in Cloud Datastore.

Which improvement should you suggest your teammate make?

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

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

Answer: B

Explanation:

https://cloud.google.com/datastore/docs/concepts/transactions#uses_for_transactions: "This requires a transaction because the value of balance in an entity may be updated by another user after this code fetches the object, but before it saves the modified object. Without a transaction, the user's request uses the value of balance prior to the other user's update, and the save overwrites the new value. With a transaction, the application is told about the other user's update." B is the answer

Question: 76

CertyIQ

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

Which method should they use?

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

Answer: A**Explanation:**

Use Cloud Build with a trigger configured for each source code commit. Cloud Build is a fully managed service for building, testing, and deploying software quickly. It integrates with Cloud Source Repositories and can be triggered by source code commits, which makes it an ideal solution for building and testing code on each commit. It requires minimal operations overhead as it is fully managed by Google Cloud.

Question: 77

CertyIQ

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

Question: 78

CertyIQ

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. Verify the provided JSON Web Token within the application.

B.Enable Cloud Identity-Aware Proxy on the HTTP(s) load balancer and restrict access to a Google Group containing users in the finance department. Issue client-side certificates to everybody in the finance team and verify the certificates in the application.

C.Configure Cloud Armor Security Policies to restrict access to only corporate IP address ranges. Verify the provided JSON Web Token within the application.

D.Configure Cloud Armor Security Policies to restrict access to only corporate IP address ranges. Issue client side certificates to everybody in the finance team and verify the certificates in the application.

Answer: A

Explanation:

A should be the answer -- IAP x G-Suite

Question: 79

CertyIQ

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:

The two steps you should take to generate reports for the network latency of your API running on multiple cloud providers are:
A. Use Zipkin collector to gather data: Zipkin is a distributed tracing system that helps you gather data about the latency of requests made to your API. It allows you to trace requests as they flow through your system, and provides insight into the performance of your services. You can use Zipkin collectors to collect data from multiple cloud providers, and then generate reports to analyze the latency of your API.
C. Use Stackdriver Trace to generate reports: Stackdriver Trace is a distributed tracing system that helps you trace requests across multiple services and provides detailed performance data about your applications. It allows you to visualize and analyze the performance of your API and its dependencies. You can use Stackdriver Trace to generate reports about the network latency of your API running on multiple cloud providers. Therefore, the correct options are A and C.

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

Question: 80

CertyIQ

Case study -

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Company Overview -

HipLocal is a community application designed to facilitate communication between people in close proximity. It is used for event planning and organizing sporting events, and for businesses to connect with their local communities. HipLocal launched recently in a few neighborhoods in Dallas and is rapidly growing into a global phenomenon. Its unique style of hyper-local community communication and business outreach is in demand around the world.

Executive Statement -

We are the number one local community app; it's time to take our local community services global. Our venture capital investors want to see rapid growth and the same great experience for new local and virtual communities that come online, whether their members are 10 or 10000 miles away from each other.

Solution Concept -

HipLocal wants to expand their existing service, with updated functionality, in new regions to better serve their global customers. They want to hire and train a new team to support these regions in their time zones. They will need to ensure that the application scales smoothly and provides clear uptime data.

Existing Technical Environment -

HipLocal's environment is a mix of on-premises hardware and infrastructure running in Google Cloud Platform. The HipLocal team understands their application well, but has limited experience in global scale applications. Their existing technical environment is as follows:

- * Existing APIs run on Compute Engine virtual machine instances hosted in GCP.
- * State is stored in a single instance MySQL database in GCP.
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- * The application has no logging.
- * There are basic indicators of uptime; alerts are frequently fired when the APIs are unresponsive.

Business Requirements -

HipLocal's investors want to expand their footprint and support the increase in demand they are seeing. Their requirements are:

- * Expand availability of the application to new regions.
- * Increase the number of concurrent users that can be supported.
- * Ensure a consistent experience for users when they travel to different regions.
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- * Ensure compliance with regulations in the new regions (for example, GDPR).
- * Reduce infrastructure management time and cost.
- * Adopt the Google-recommended practices for cloud computing.

Technical Requirements -

- * The application and backend must provide usage metrics and monitoring.
- * APIs require strong authentication and authorization.
- * Logging must be increased, and data should be stored in a cloud analytics platform.
- * Move to serverless architecture to facilitate elastic scaling.
- * Provide authorized access to internal apps in a secure manner.

Which database should HipLocal use for storing user activity?

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

Answer: A

Explanation:

In the case study is stated: "Obtain user activity metrics to better understand how to monetize their product", which means that they'll need to analyse the user activity, so... I'll go with answer A (BigQuery)

Bigquery for user activity analysis . And also the user activity is kind of raw data which being used to segment user or according age , choice etc so Bigquery fits best fr this use cases

CertyIQ

Question: 81

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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: C

Explanation:

Allow traffic on port 443 for a specific tag.

Question: 82

CertyIQ

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HipLocal's data science team wants to analyze user reviews.

How should they prepare the data?

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

Answer: B

Explanation:

Answer is B . Data loss prevention api is used for de-identification not natural language api

Question: 83

CertyIQ

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- * Provide authorized access to internal apps in a secure manner.

In order for HipLocal to store application state and meet their stated business requirements, which database service should they migrate to?

- A.Cloud Spanner
- B.Cloud Datastore
- C.Cloud Memorystore as a cache
- D.Separate Cloud SQL clusters for each region

Answer: A

Explanation:

<https://cloud.google.com/blog/products/databases/spanner-relational-database-for-all-size-applications-faqs>
https://cloud.google.com/architecture/best-practices-cloud-spanner-gaming-database#select_a_data_locality_to_meet_compliance_requirements
<https://cloud.google.com/blog/products/gcp-cloud-spanner-a-global-database-service-for-mission-critical-applications>

A. Cloud Spanner- global service - supports durably store application data - supports GDPR, to meet data locality

Question: 84

CertyIQ

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

Explanation:

Definitely Blue/Green Deployment

The difference between canary deployment and blue/green deployment is the presence or absence of a testing process. <https://www.sedesign.co.jp/dxinsight/what-is-canary-release> Since there is no testing process in the question, I vote for Blue/Green Deployment. For more information on each development, please click here.<https://garafu.blogspot.com/2018/11/release-strategy.html> It is in Japanese, so please translate and read it.

Question: 85

CertyIQ

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

What should you do?

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

Answer: A

Explanation:

A is the answer.https://cloud.google.com/architecture/best-practices-for-building-containers#package_a_single_app_per_container When you start working with containers, it's a common mistake to treat them as virtual machines that can run many different things simultaneously. A container can work this way, but doing so reduces most of the advantages of the container model. For example, take a classic Apache/MySQL/PHP stack: you might be tempted to run all the components in a single container. However, the best practice is to use two or three different containers: one for Apache, one for MySQL, and potentially one for PHP if you are running PHP-FPM.

Question: 86

CertyIQ

You are developing an application that will be launched on Compute Engine instances into multiple distinct projects, each corresponding to the environments in your software development process (development, QA, staging, and production). The instances in each project have the same application code but a different configuration. During deployment, each instance should receive the application's configuration based on the environment it serves. You want to minimize the number of steps to configure this flow. What should you do?

- A.When creating your instances, configure a startup script using the gcloud command to determine the project name that indicates the correct environment.
- B.In each project, configure a metadata key environment whose value is the environment it serves. Use your deployment tool to query the instance metadata and configure the application based on the environment value.
- C.Deploy your chosen deployment tool on an instance in each project. Use a deployment job to retrieve the appropriate configuration file from your version control system, and apply the configuration when deploying the application on each instance.
- D.During each instance launch, configure an instance custom-metadata key named environment whose value is the environment the instance serves. Use your deployment tool to query the instance metadata, and configure the application based on the environment value.

Answer: B**Explanation:**

Answer is B. You can configure a metadata key named "environment" in each project, with a value corresponding to the environment it serves (development, QA, staging, or production). Then, you can use your deployment tool to query the instance metadata and configure the application based on the "environment" value. This allows you to minimize the number of steps to configure the flow, as you only need to set the "environment" value in each project and use your deployment tool to query the metadata.

<https://cloud.google.com/compute/docs/metadata/setting-custom-metadata#set-custom>

Question: 87

CertyIQ

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**Explanation:**

C is the answer. <https://cloud.google.com/spanner/docs/schema-design#primary-key-prevent-hotspots>
Schema design best practice #1: Do not choose a column whose value monotonically increases or decreases as the first key part for a high write rate table.

Question: 88

CertyIQ

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

Answer: D

Explanation:

Create a service to publish messages, and deploy the Pub/Sub emulator. Publish a standard set of testing messages from the publishing service to the emulator.

Question: 89

CertyIQ

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

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

Answer: A

Explanation:

It's A To handle the preemption notice and initiate a graceful shutdown, you should write a shutdown script that uses inter-process signals to notify the application process to disconnect from the database. The application can then initiate a graceful shutdown by completing any in-progress tasks and disconnecting from the database, ensuring that data is not lost or corrupted during the shutdown process. This is the most reliable method for initiating a graceful shutdown in response to a preemption notice, as it allows the application to respond directly to the signal and initiate the shutdown process.

Question: 90

CertyIQ

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. Send your source code updates as pull requests.
- D.Use a Cloud Storage bucket to store the source code that you need to edit. Mount the bucket to a public computer as a drive, and use a code editor to update the code. Turn on versioning for the bucket, and point it to the team's Git repository.

Answer: C

Explanation:

C is the answer.<https://cloud.google.com/shell/docs> Cloud Shell is an interactive shell environment for Google Cloud that lets you learn and experiment with Google Cloud and manage your projects and resources from your web browser. With Cloud Shell, the Google Cloud CLI and other utilities you need are pre-installed, fully authenticated, up-to-date, and always available when you need them. Cloud Shell comes with a built-in code editor with an integrated Cloud Code experience, allowing you to develop, build, debug, and deploy your cloud-based apps entirely in the cloud.

Question: 91

CertyIQ

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

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

Answer: AC

Explanation:

fewest number of steps A &C

fewest number of steps -> i believe this sentence is the key. option D would take time.also:
https://cloud.google.com/stackdriver/docs/solutions/gke/managing-logs#best_practices

Question: 92

CertyIQ

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

- A.Use canary deployment

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

Answer: D

Explanation:

You need to test against the full production load prior to launch" It's impossible with canary. "A/B testing with traffic mirroring during deployment" is the only one possibility we have to test the entire traffic before the roll out.

Question: 93

CertyIQ

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

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

Answer: C

Explanation:

C is the answer.<https://cloud.google.com/storage/docs/retry-strategy#exponential-backoffTruncated>
exponential backoff is a standard error handling strategy for network applications in which a client periodically retries a failed request with increasing delays between requests. An exponential backoff algorithm retries requests exponentially, increasing the waiting time between retries up to a maximum backoff time.

Question: 94

CertyIQ

You need to redesign the ingestion of audit events from your authentication service to allow it to handle a large increase in traffic. Currently, the audit service and the authentication system run in the same Compute Engine virtual machine. You plan to use the following Google Cloud tools in the new architecture:

- ⇒ Multiple Compute Engine machines, each running an instance of the authentication service
- ⇒ Multiple Compute Engine machines, each running an instance of the audit service
- ⇒ Pub/Sub to send the events from the authentication services.

How should you set up the topics and subscriptions to ensure that the system can handle a large volume of messages and can scale efficiently?

- A.Create one Pub/Sub topic. Create one pull subscription to allow the audit services to share the messages.
- B.Create one Pub/Sub topic. Create one pull subscription per audit service instance to allow the services to share the messages.
- C.Create one Pub/Sub topic. Create one push subscription with the endpoint pointing to a load balancer in front of the audit services.
- D.Create one Pub/Sub topic per authentication service. Create one pull subscription per topic to be used by one audit service.

E.Create one Pub/Sub topic per authentication service. Create one push subscription per topic, with the endpoint pointing to one audit service.

Answer: A

Explanation:

A is correct. This is the most flexible way to scale, allowing the authentication and audit services to be sized independently according to load.B is incorrect. This will cause messages to be duplicated, one copy per subscription.C is incorrect. This will allow the system to scale, but push subscriptions are less suited to handle large volumes of messages.D is incorrect. This will allow the system to scale, however each audit service will listen to all subscriptions.E. is incorrect. This will allow the system to scale, however it will require each audit service to listen to all subscriptions. Also push subscriptions are less suited to handle large volumes of messages.

Question: 95

CertyIQ

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

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

Answer: A

Explanation:

I agree with A as it is the only one fits for scale up and down =

Both Cloud Run and App Engine Standard Environment allow scaling to zero (which minimize the cost), but Cloud SQL can't be minimized to zero while firestore is measured based on CPU usage.So from the cost point of view, A is the answer

Question: 96

CertyIQ

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

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

Answer: D

Explanation:

Reference:

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

CertyIQ

Question: 97

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:

multi-tenancy Although Kubernetes cannot guarantee perfectly secure isolation between tenants, it does offer features that may be sufficient for specific use cases. You can separate each tenant and their Kubernetes resources into their own namespaces. You can then use policies to enforce tenant isolation. Policies are usually scoped by namespace and can be used to restrict API access, to constrain resource usage, and to restrict what containers are allowed to do.

Reference:

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

CertyIQ

Question: 98

You have decided to migrate your Compute Engine application to Google Kubernetes Engine. You need to build a container image and push it to Artifact Registry using Cloud Build. What should you do? (Choose two.)

- A.Run gcloud builds submit in the directory that contains the application source code.
- B.Run gcloud run deploy app-name --image gcr.io/\$PROJECT_ID/app-name in the directory that contains the application source code.
- C.Run gcloud container images add-tag gcr.io/\$PROJECT_ID/app-name gcr.io/\$PROJECT_ID/app-name:latest in the directory that contains the application source code.
- D.In the application source directory, create a file named cloudbuild.yaml that contains the following contents:
steps:
 - name: 'gcr.io/cloud-builders/docker'
args: ['build', '-t', 'gcr.io/\$PROJECT_ID/app-name', '.']
 - name: 'gcr.io/cloud-builders/docker'
args: ['push', 'gcr.io/\$PROJECT_ID/app-name']
- E.In the application source directory, create a file named cloudbuild.yaml that contains the following contents:

steps:

```
- name: 'gcr.io/cloud-builders/gcloud'
  args: ['app', 'deploy']
  timeout: '1600s'
```

Answer: AD**Explanation:**

AD is the answer

[.https://cloud.google.com/build/docs/building/build-containers#store-images](https://cloud.google.com/build/docs/building/build-containers#store-images)

CertyIQ**Question: 99**

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 rules. Allow your company's proxy as the only source IP address.
- B.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.
- C.Set up a VPN tunnel between your company network and your instance's VPC location on Google Cloud. Configure the required firewall rules and routing information to both the on-premises and Google Cloud networks.
- D.Add a public IP address to your instance, and allow traffic from the internet. Generate a random hash, and create a subdomain that includes this hash and points to your instance. Distribute this DNS address to your company's employees.

Answer: B**Explanation:**

B is the answer.https://cloud.google.com/iap/docs/concepts-overview#how_iap_worksWhen an application or resource is protected by IAP, it can only be accessed through the proxy by principals, also known as users, who have the correct Identity and Access Management (IAM) role. When you grant a user access to an application or resource by IAP, they're subject to the fine-grained access controls implemented by the product in use without requiring a VPN. When a user tries to access an IAP-secured resource, IAP performs authentication and authorization checks.

CertyIQ**Question: 100**

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: ['-' ]
```

Answer: C

Explanation:

C.Add a build step in the cloudbuild.yaml file before the promotion step with the arguments:-name: gcr.io/cloud-builders/gsutilargs: ['cp', '-r', 'gs://webphotos-staging', 'gs://webphotos-prod']waitFor: ['-']You should add a build step in the cloudbuild.yaml file before the promotion step with the arguments shown above. This build step will use the gsutil tool to copy the photos from the webphotos-staging bucket to the webphotos-prod bucket. The -r flag tells gsutil to copy all files in the bucket recursively, and the waitFor parameter tells Cloud Build to wait for this step to complete before continuing with the promotion step.

CertyIQ

Question: 101

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

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

Answer: C

Explanation:

Reference:

https://cloud.google.com/compute/docs/instances/connecting-advanced#cloud_iap

CertyIQ

Question: 102

You have a mixture of packaged and internally developed applications hosted on a Compute Engine instance that is running Linux. These applications write log records as text in local files. You want the logs to be written to Cloud

Logging. What should you do?

- A.Pipe the content of the files to the Linux Syslog daemon.
- B.Install a Google version of fluentd on the Compute Engine instance.
- C.Install a Google version of collectd on the Compute Engine instance.
- D.Using cron, schedule a job to copy the log files to Cloud Storage once a day.

Answer: B

Explanation:

Collectd is used for Monitoring agents Fluentd is for cloud logging agent

Reference:

<https://cloud.google.com/logging/docs/agent/logging/configuration>

Question: 103

CertyIQ

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. Create a different image for each environment.
- B.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.
- C.When creating the Compute Engine instance, create a metadata item with a key of DATABASE and a value for the appropriate database connection string. In your application, read the DATABASE environment variable, and use the value to connect to the appropriate database.
- 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. In your application, query the metadata server for the DATABASE value, and use the value to connect to the appropriate database.

Answer: D

Explanation:

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. In your application, query the metadata server for the "DATABASE" value, and use the value to connect to the appropriate database. This approach allows you to create a single golden image that is agnostic to the environment it is running in, while still allowing the appropriate database connection to be set at runtime. The metadata item is stored with the instance, so it can be read by your application at any time. This method allows you to avoid creating different images for different environments, and to use the same image for all environments. You can create metadata item by using the gcloud command line tool or the API to set metadata for a Compute Engine instance. Once set, the metadata can be easily accessed by your application via the instance metadata server.

Question: 104

CertyIQ

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

configure your application to retrieve Spanner credentials?

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

Answer: A

Explanation:

<https://cloud.google.com/blog/products/containers-kubernetes/introducing-workload-identity-better-authentication-for-your-gke-applications>

A Cloud IAM service account is an identity that an application can use to make requests to Google APIs. As an application developer, you could generate individual IAM service accounts for each application, and then download and store the keys as a Kubernetes secret that you manually rotate. Not only is this process burdensome, but service account keys only expire every 10 years (or until you manually rotate them). In the case of a breach or compromise, an unaccounted-for key could mean prolonged access for an attacker. This potential blind spot, plus the management overhead of key inventory and rotation, makes using service account keys as secrets a less than ideal method for authenticating GKE workloads.

Google recommends using service accounts and work load identity whenever possible

Question: 105

CertyIQ

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

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

Answer: C

Explanation:

C. Assign the Cloud SQL Client role.The Cloud SQL Client role has the minimal set of permissions required to access Cloud SQL instances. This role includes permissions to connect to and use a Cloud SQL instance, but it doesn't include permissions to create, delete or manage the instance itself. This role should be granted to the service account associated with your Compute Engine instance, in order to allow your application to connect to the Cloud SQL instance using the Cloud SQL Proxy.You can assign the Cloud SQL Client role to a service account by using the Cloud Console, the gcloud command-line tool, or the Cloud Identity and Access Management (IAM) API. Once the role is assigned, your application will be able to authenticate to Cloud SQL using the service account and the Cloud SQL Proxy.It is important to note that the permissions granted by this role should be limited to the specific Cloud SQL instance that the application needs to connect to and not the entire project, to minimize the access and follow the principle of least privilege.

Reference:

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

Question: 106**CertyIQ**

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

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

Answer: C**Explanation:**

C. Use a Horizontal Pod Autoscaler to scale the containers, and expose them via a ClusterIP Service. When dealing with services that are only accessed by other services in the same GKE cluster, it's usually best to use a ClusterIP Service. This type of service allows pods to be accessed by other pods within the cluster using their IP address, but doesn't expose them to the outside world.

Question: 107**CertyIQ**

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

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

Answer: C**Explanation:**

When you make changes to your API that breaks your customers' client code, as a best practice, increment the major version number of your API. Endpoints can run more than one major version of an API concurrently. By providing both versions of the API, your customers can pick which version they want to use and control when they migrate to the new version.

Reference:

<https://cloud.google.com/endpoints/docs/openapi/get-started-cloud-functions>

Question: 108

CertyIQ

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

Explanation:

Agree with D. An use case of the application is to display user submitted comments. What happen if you don't choose D? You'll need to iterate through all articles and each comment inside the article and filter for user ID, this will be complex for an unknown number of articles and comments.

Question: 109

CertyIQ

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

- A.Use Carrier Peering
- B.Use VPC Network Peering
- C.Use Shared VPC networks
- D.Use Private Google Access

Answer: D

Explanation:

A is not correct because Carrier Peering enables you to access Google applications, such as Google Workspace, by using a service provider to obtain enterprise-grade network services that connect your infrastructure to Google. B is not correct because VPC Network Peering enables you to peer VPC networks so that workloads in different VPC networks can communicate in a private RFC 1918 space. Traffic stays within Google's network and doesn't traverse the public internet. C is not correct because Shared VPC allows an organization to connect resources from multiple projects to a common VPC network so that they can communicate with each other securely and efficiently using internal IPs from that network. D is correct because Private Google Access is an option available for each subnetwork. When it is enabled, instances in the subnetwork can communicate with public Google API endpoints even if the instances don't have external IP addresses.

D is the answer. <https://cloud.google.com/vpc/docs/private-google-access> VM instances that only have internal IP addresses (no external IP addresses) can use Private Google Access. They can reach the external IP addresses of Google APIs and services. The source IP address of the packet can be the primary internal IP address of the network interface or an address in an alias IP range that is assigned to the interface. If you disable Private Google Access, the VM instances can no longer reach Google APIs and services; they can only send traffic within the VPC network.

Question: 110

CertyIQ

You are a developer working with the CI/CD team to troubleshoot a new feature that your team introduced. The CI/CD team used HashiCorp Packer to create a new Compute Engine image from your development branch. The image was successfully built, but is not booting up. You need to investigate the issue with the CI/CD team. What should you do?

- A.Create a new feature branch, and ask the build team to rebuild the image.
- B.Shut down the deployed virtual machine, export the disk, and then mount the disk locally to access the boot logs.
- C.Install Packer locally, build the Compute Engine image locally, and then run it in your personal Google Cloud project.
- D.Check Compute Engine OS logs using the serial port, and check the Cloud Logging logs to confirm access to the serial port.

Answer: D**Explanation:**

Answer is D If the Compute Engine image is not booting up, one of the first steps to troubleshoot the issue would be to check the OS logs to see what might be causing the problem. Compute Engine provides access to the serial console logs of a virtual machine, which can be accessed through the Cloud Console or the gcloud command-line tool. This will allow you to see the output of the virtual machine's boot process and identify any errors or issues that might be preventing it from starting up. Additionally, you should also check the Cloud Logging logs to confirm that you have access to the serial port. It may be possible that the firewall rules or IAM permissions are blocking access to the serial port and causing the image not to boot. So, you should check the logs for any errors related to access or firewall rules. By checking the OS logs and the Cloud Logging logs, you and the CI/CD team can get a better understanding of what might be causing the issue and take steps to fix it.

D is the answer.https://cloud.google.com/compute/docs/troubleshooting/vm-startup#identify_the_reason_why_the_boot_disk_isnt_booting Identify the reason why the boot disk isn't booting- Examine your virtual machine instance's serial port output. An instance's BIOS, bootloader, and kernel prints their debug messages into the instance's serial port output, providing valuable information about any errors or issues that the instance experienced. If you enable serial port output logging to Cloud Logging, you can access this information even when your instance is not running.

Question: 111

CertyIQ

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: A**Explanation:**

https://cloud.google.com/traffic-director/docs/overview#traffic_management Advanced traffic management, including routing and request manipulation (based on hostname, path, headers, cookies, and more), enables you to determine how traffic flows between your services. You can also apply actions like retries, redirects, and weight-based traffic splitting for canary deployments. Advanced patterns like fault injection, traffic mirroring, and outlier detection enable DevOps use cases that improve your resiliency.

A: <https://cloud.google.com/traffic-director/docs/set-up-gce-vms>

Question: 112

CertyIQ

Your team is developing an ecommerce platform for your company. Users will log in to the website and add items to their shopping cart. Users will be automatically logged out after 30 minutes of inactivity. When users log back in, their shopping cart should be saved. How should you store users' session and shopping cart information while following Google-recommended best practices?

- A.Store the session information in Pub/Sub, and store the shopping cart information in Cloud SQL.
- B.Store the shopping cart information in a file on Cloud Storage where the filename is the SESSION ID.
- C.Store the session and shopping cart information in a MySQL database running on multiple Compute Engine instances.
- D.Store the session information in Memorystore for Redis or Memorystore for Memcached, and store the shopping cart information in Firestore.

Answer: D

Explanation:

A is not correct because local memory is lost on process termination, so you would lose the cart information.B is not correct because accessing a Cloud Storage bucket is slow and expensive for session information. This is not a Google Cloud best practice.C is not correct because BigQuery wouldn't be able to handle the frequent updates made to carts and sessions.D is correct because Memorystore is fast and a standard solution to store session information, and Firestore is ideal for small structured data such as a shopping cart. The user will be mapped to the shopping cart with a new session, if required.

Question: 113

CertyIQ

You are designing a resource-sharing policy for applications used by different teams in a Google Kubernetes Engine cluster. You need to ensure that all applications can access the resources needed to run. What should you do? (Choose two.)

- A.Specify the resource limits and requests in the object specifications.
- B.Create a namespace for each team, and attach resource quotas to each namespace.
- C.Create a LimitRange to specify the default compute resource requirements for each namespace.
- D.Create a Kubernetes service account (KSA) for each application, and assign each KSA to the namespace.
- E.Use the Anthos Policy Controller to enforce label annotations on all namespaces. Use taints and tolerations to allow resource sharing for namespaces.

Answer: BC

Explanation:

In the context of the problem statement, B and C are appropriate solution for ensuring that all applications can access the resources needed to run:B. Create a namespace for each team, and attach resource quotas to

each namespace. This way, you can set limits on the resources that a team can consume, so that one team does not consume all the resources of the cluster, and that resources are shared among all teams in a fair way.C. Create a LimitRange to specify the default compute resource requirements for each namespace. LimitRanges allow you to set default limits and requests for all the pods in a specific namespace, it also ensure that pods in that namespace can never consume more resources than the LimitRange defined.You can use a combination of resource limits, quotas, and limit ranges to prevent a single team or application from consuming too many resources, as well as to ensure that all teams and applications have access to the resources they need to run.

BC is the answer.<https://kubernetes.io/docs/concepts/policy/resource-quotas/>A resource quota, defined by a ResourceQuota object, provides constraints that limit aggregate resource consumption per namespace. It can limit the quantity of objects that can be created in a namespace by type, as well as the total amount of compute resources that may be consumed by resources in that namespace.<https://kubernetes.io/docs/concepts/policy/limit-range/>A LimitRange is a policy to constrain the resource allocations (limits and requests) that you can specify for each applicable object kind (such as Pod or PersistentVolumeClaim) in a namespace.

Question: 114

CertyIQ

You are developing a new application that has the following design requirements:

- ⇒ Creation and changes to the application infrastructure are versioned and auditable.
- ⇒ The application and deployment infrastructure uses Google-managed services as much as possible.
- ⇒ The application runs on a serverless compute platform.

How should you design the application's architecture?

- A.1. Store the application and infrastructure source code in a Git repository. 2. Use Cloud Build to deploy the application infrastructure with Terraform. 3. Deploy the application to a Cloud Function as a pipeline step.
- B.1. Deploy Jenkins from the Google Cloud Marketplace, and define a continuous integration pipeline in Jenkins. 2. Configure a pipeline step to pull the application source code from a Git repository. 3. Deploy the application source code to App Engine as a pipeline step.
- C.1. Create a continuous integration pipeline on Cloud Build, and configure the pipeline to deploy the application infrastructure using Deployment Manager templates. 2. Configure a pipeline step to create a container with the latest application source code. 3. Deploy the container to a Compute Engine instance as a pipeline step.
- D.1. Deploy the application infrastructure using gcloud commands. 2. Use Cloud Build to define a continuous integration pipeline for changes to the application source code. 3. Configure a pipeline step to pull the application source code from a Git repository, and create a containerized application. 4. Deploy the new container on Cloud Run as a pipeline step.

Answer: A

Explanation:

It is definitely A vs. B, though.I still think the deciding factor is "Creation and changes to the application infrastructure are versioned and auditable".Whether to deploy to Cloud Run or Cloud Functions is irrelevant because we don't know the contents of the application.Both are serverless.

Question: 115

CertyIQ

You are creating and running containers across different projects in Google Cloud. The application you are developing needs to access Google Cloud services from within Google Kubernetes Engine (GKE). What should you do?

- A.Assign a Google service account to the GKE nodes.

- B.Use a Google service account to run the Pod with Workload Identity.
- C.Store the Google service account credentials as a Kubernetes Secret.
- D.Use a Google service account with GKE role-based access control (RBAC).

Answer: B

Explanation:

In summary, using Workload Identity allows you to authenticate your application to Google Cloud services using the same identity that runs the application, this makes it simple to manage the access and permissions to resources, and also ensures that your application only has the necessary permissions to access the services.

B is the answer.https://cloud.google.com/kubernetes-engine/docs/concepts/workload-identity#what_isApplications 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.

Question: 116

CertyIQ

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

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

Answer: B

Explanation:

B and D are the main candidate answers. Option B: allows the application to be stateless and have no dependencies on the filesystem of the host. D: is a good solution since it allows the application to access its configuration as soon as the application starts, without having to copy the configuration files into the container. But the best option is B, because it allows the application to be stateless and have no dependencies on the filesystem of the host. This approach is more flexible, makes it easy to update the configuration files, and reduces the size of the container image.

B is correct using default tools

Question: 117

CertyIQ

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

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

Answer: A

Explanation:

By using Cloud SQL and Cloud Run in the same project, you can take advantage of the built-in security features and managed services provided by Google Cloud. By configuring a private IP address for Cloud SQL and enabling private services access, you can ensure that all traffic is kept private. You can also create a Serverless VPC Access connector and configure Cloud Run to use this connector to connect to Cloud SQL. This configuration will allow your application to connect to the database securely and privately, following Google-recommended best practices.

A is the answer.<https://cloud.google.com/vpc/docs/serverless-vpc-access> Serverless VPC Access makes it possible for you to connect directly to your Virtual Private Cloud network from serverless environments such as Cloud Run, App Engine, or Cloud Functions. Configuring Serverless VPC Access allows your serverless environment to send requests to your VPC network using internal DNS and internal IP addresses (as defined by RFC 1918 and RFC 6598). The responses to these requests also use your internal network.

Question: 118

CertyIQ

You are developing an application that will allow clients to download a file from your website for a specific period of time. How should you design the application to complete this task while following Google-recommended best practices?

- A.Configure the application to send the file to the client as an email attachment.
- B.Generate and assign a Cloud Storage-signed URL for the file. Make the URL available for the client to download.
- C.Create a temporary Cloud Storage bucket with time expiration specified, and give download permissions to the bucket. Copy the file, and send it to the client.
- D.Generate the HTTP cookies with time expiration specified. If the time is valid, copy the file from the Cloud Storage bucket, and make the file available for the client to download.

Answer: B

Explanation:

B. Generate and assign a Cloud Storage-signed URL for the file. Make the URL available for the client to download. The best approach is to use a Cloud Storage signed URL, which allows you to give time-limited read access to a specific file in your bucket. Once the URL is generated, it can be shared with the client to

download the file. This approach provides an easy way to control access to your files, and allows you to revoke access at any time by simply invalidating the URL. It also ensures that the file is stored and served securely via Cloud Storage and is durable, highly available and performant way to serve files.

Question: 119

CertyIQ

Your development team has been asked to refactor an existing monolithic application into a set of composable microservices. Which design aspects should you implement for the new application? (Choose two.)

- A.Develop the microservice code in the same programming language used by the microservice caller.
- B.Create an API contract agreement between the microservice implementation and microservice caller.
- C.Require asynchronous communications between all microservice implementations and microservice callers.
- D.Ensure that sufficient instances of the microservice are running to accommodate the performance requirements.
- E.Implement a versioning scheme to permit future changes that could be incompatible with the current interface.

Answer: B

Explanation:

B. Guarantees that the two parties are communicating in a well-defined way, which makes the microservices more flexible, composable, and easy to understand.E. Allows to make changes to the service's API while still maintaining backward compatibility. With versioning, new and old consumers can continue to use the service without interruption as new features are added.On the other hand, developing the microservice code in the same programming language as the microservice caller does not promote loose coupling, and it may also increase the complexity of the system as it will depend on language-specific features. Asynchronous communications are also not always necessary and depend on the use case and requirement. Ensuring sufficient instances of the microservice are running can be done by using a scalability strategy such as Auto-scaling, and this is not a specific design aspect.

Question: 120

CertyIQ

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

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

Answer: D

Explanation:

This option allows you to use Cloud Monitoring to view the Prometheus metrics and create log-based metrics

from the logs. This allows you to correlate the metrics and logs in one place. By using Cloud Monitoring, you can also set up alerting rules and dashboards which can help you to identify and troubleshoot the performance issues in real-time and with low costs. It's not necessary to export the data to another storage to perform the correlation and to set up notifications, it can all be done directly in the Cloud Monitoring, taking advantage of its features.

Reference:

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

Question: 121

CertyIQ

You have been tasked with planning the migration of your company's application from on-premises to Google Cloud. Your company's monolithic application is an ecommerce website. The application will be migrated to microservices deployed on Google Cloud in stages. The majority of your company's revenue is generated through online sales, so it is important to minimize risk during the migration. You need to prioritize features and select the first functionality to migrate. What should you do?

- A. Migrate the Product catalog, which has integrations to the frontend and product database.
- B. Migrate Payment processing, which has integrations to the frontend, order database, and third-party payment vendor.
- C. Migrate Order fulfillment, which has integrations to the order database, inventory system, and third-party shipping vendor.
- D. Migrate the Shopping cart, which has integrations to the frontend, cart database, inventory system, and payment processing system.

Answer: A

Explanation:

Agree Option A , in order to keep the disruption as minimum as possible by migrating minimum features

Question: 122

CertyIQ

Your team develops services that run on Google Kubernetes Engine. Your team's code is stored in Cloud Source Repositories. You need to quickly identify bugs in the code before it is deployed to production. You want to invest in automation to improve developer feedback and make the process as efficient as possible. What should you do?

- A. Use Spinnaker to automate building container images from code based on Git tags.
- B. Use Cloud Build to automate building container images from code based on Git tags.
- C. Use Spinnaker to automate deploying container images to the production environment.
- D. Use Cloud Build to automate building container images from code based on forked versions.

Answer: B

Explanation:

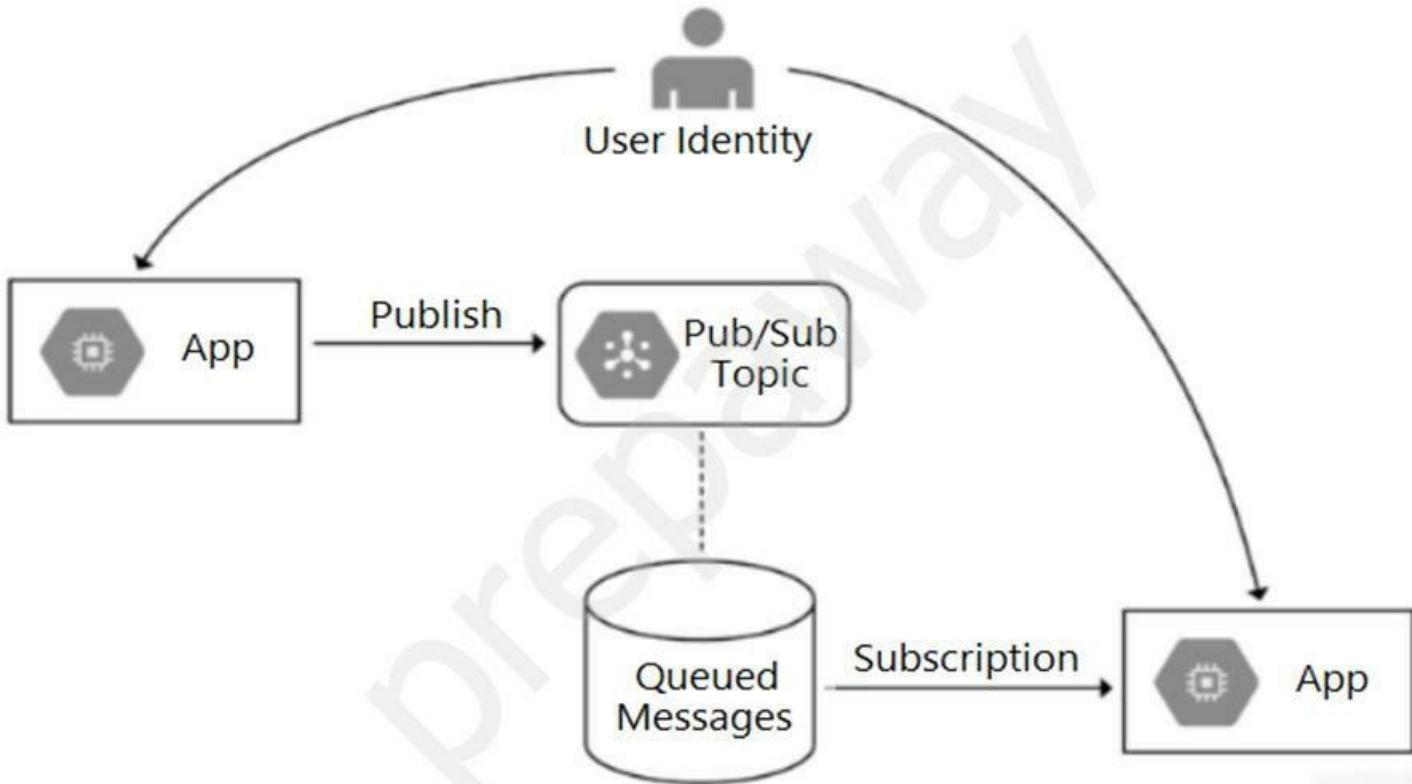
Option B is appropriate because it uses Cloud Build, a service that can automatically build container images from code stored in Cloud Source Repositories based on Git tags. This allows developers to quickly identify bugs in their code before it is deployed to production, by automating the building process and improving developer feedback. Option A uses Spinnaker, which is a multi-cloud continuous delivery platform that can

automate building, testing, and deploying container images. However, it does not specifically mention using git tags to trigger builds, thus for this particular use case it might not be the best fit.

Question: 123

CertyIQ

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: A

Explanation:

A -> resource level

A. Bind the user identity to the pubsub.publisher and pubsub.subscriber roles at the resource level. By binding the user identity to the pubsub.publisher and pubsub.subscriber roles at the resource level, you can ensure that each user can only publish and subscribe to their specific Pub/Sub topic and subscription. This allows for granular permissions management and ensures that each user can only access the resources they are authorized to. The other options are not suitable in this case because,

Question: 124

CertyIQ

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:

Use Cloud Code to develop applications. Cloud Code is a set of plugins for VS Code and IntelliJ that provides an integrated development experience for working with Kubernetes and Google Cloud. The plugins include features such as interactive cluster and resource management, one-click Kubernetes cluster creation, and built-in debugging and diagnostics. It also supports to quickly deploy and debug applications using the Kubernetes and Google Cloud SDKs. Also, it allows developers to easily perform tasks like deploying and debugging applications, managing resources, and running local development environments. Cloud Code is a great tool for teams looking to streamline their development process for Kubernetes and Google Cloud.

Reference:

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

CertyIQ

Question: 125

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

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

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

Answer: B

Explanation:

B is the correct answer in this case, A is wrong because according to the best practice and security purpose gcp doesn't allow public ip for redis server.

A is not correct because Cloud Run connects to Memorystore via the Serverless VPC Connector. Connections are over private networks. Public addresses are not required. B is correct. All of the components must be in the same region. C is not correct because for connectivity between Cloud Run and Memorystore all that is required is a Serverless VPN Connector. D is not correct. The Serverless VPC Connector is configured with a non-overlapping subnet that is not associated with the VPC.

Question: 126

CertyIQ

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

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

Answer: C**Explanation:**

Reference:

<https://medium.com/google-cloud/how-to-securelyInvoke-a-cloud-function-from-google-kubernetes-engine-running-on-another-gcp-79797ec2b2c6>

Question: 127

CertyIQ

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#identify_the_reason_why_the_boot_disk_isnt_booting- Verify that your boot disk is not full.If your boot disk is completely full and your operating system does not support automatic resizing, you won't be able to connect to your instance. You must create a new instance and recreate the boot disk.- Verify that your disk has a valid file system.If your file system is corrupted or otherwise invalid, you won't be able to launch your instance.

AD is the answer.https://cloud.google.com/compute/docs/troubleshooting/vm-startup#identify_the_reason_why_the_boot_disk_isnt_booting- Verify that your boot disk is not full.If your boot disk is completely full and your operating system does not support automatic resizing, you won't be able to connect to your instance. You must create a new instance and recreate the boot disk. - Verify that your disk has a valid file system.If your file system is corrupted or otherwise invalid, you won't be able to launch your instance.

Question: 128

CertyIQ

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. Change the web application DNS to point to the proxy Compute Engine instance. After authenticating, the Compute Engine instance forwards requests to and from the web application.
- D.Configure a Compute Engine instance that requests users to log in to their corporate account. Change the web application DNS to point to the proxy Compute Engine instance. After authenticating, the Compute Engine issues an HTTP redirect to a public IP address hosting the web application.

Answer: C**Explanation:**

This approach allows you to use Google Cloud infrastructure to authenticate users against the corporate intranet before providing access to the web application, without making major changes to the web application. By configuring a Compute Engine instance as a proxy and changing the web application's DNS to point to this proxy, you can ensure that only employees who have been authenticated against the corporate intranet are able to access the web application. This approach also allows the employees to access the web application while they are traveling, as long as they have internet access.

Question: 129

CertyIQ

You have an application that uses an HTTP Cloud Function to process user activity from both desktop browser and mobile application clients. This function will serve as the endpoint for all metric submissions using HTTP POST. Due to legacy restrictions, the function must be mapped to a domain that is separate from the domain requested by users on web or mobile sessions. The domain for the Cloud Function is <https://fn.example.com>. Desktop and mobile clients use the domain <https://www.example.com>. You need to add a header to the function's HTTP response so that only those browser and mobile sessions can submit metrics to the Cloud Function. Which response header should you add?

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

Answer: D**Explanation:**

D is the answer

<https://cloud.google.com/functions/docs/samples/functions-http-cors>

Question: 130

CertyIQ

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: B

Explanation:

B should be the correct one because question has mentioned for analytics of the data.

"data should be immediately available for ongoing and complex analytics" -> B

CertyIQ

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

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

Answer: B

Explanation:

B. Install Istio, enable proxy injection on your application namespace, and then enable mTLS.Istio is a service mesh that runs within your Kubernetes cluster and provides a set of features, such as traffic management, service discovery, and automatic encryption of traffic between services using mutual Transport Layer Security (mTLS). By installing Istio and enabling proxy injection on your application namespace, you can quickly and easily enable mTLS for all traffic within the cluster without making changes to your applications. Once the proxy injection is enabled, Istio automatically adds the necessary sidecar proxies to each pod in the namespace and configures them to encrypt traffic.

B is the answer.<https://cloud.google.com/istio/docs/istio-on-gke/overview>Istio gives you the following benefits:- Secure service-to-service communication in a cluster with strong identity-based authentication and authorization.

CertyIQ

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

Answer: D

Explanation:

D. Use Cloud Logging and Cloud Monitoring to capture logs, monitor, and send alerts. Send them to your existing platform. This is a valid option if your aim is to integrate the on-premise monitoring platform with the cloud monitoring platform, this way you can have a holistic view of all your application performance. You can also use Google Cloud's Stackdriver service to integrate the monitoring, logging and tracing across both on-premise and cloud. Stackdriver can be used to get unified view of all your application performance and trace the root cause of an issue.

Question: 133

CertyIQ

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

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

Answer: C

Explanation:

C. Perform a blue/green deployment, and test your new application after the deployment is complete. A Blue/Green deployment is a technique that allows you to release new versions of an application while maintaining the ability to roll back to the previous version if there are issues. It works by having two identical production environments: one, the "green" environment, that is serving traffic, and another, the "blue" environment, that is idle. When you want to release a new version of your application, you deploy it to the "blue" environment, test it to make sure it is working as expected and then switch traffic to the "blue" environment. This way you can have zero-downtime deployment and if there's any issues with the new version you can easily roll back to the previous version by switching the traffic back to the green environment.

C is the answer.https://cloud.google.com/architecture/application-deployment-and-testing-strategies#choosing_the_right_strategy

Question: 134

CertyIQ

You developed a JavaScript web application that needs to access Google Drive's API and obtain permission from users to store files in their Google Drives. You need to select an authorization approach for your application. What should you do?

- A.Create an API key.
- B.Create a SAML token.

C.Create a service account.

D.Create an OAuth Client ID.

Answer: D

Explanation:

D. Create an OAuth Client ID. OAuth is an authorization framework that allows third-party applications to access resources on behalf of a user, without having to handle the user's credentials. To use Google Drive's API, your application needs to obtain permission from the user to access their Google Drive, and the best way to do this is through OAuth. You would need to create an OAuth 2.0 client ID and integrate it into your application. This will allow your application to redirect users to the Google OAuth 2.0 server, where they can grant permission to your application to access their Google Drive.

Reference:

<https://developers.google.com/drive/api/v3/about-auth>

CertyIQ

Question: 135

You manage an ecommerce application that processes purchases from customers who can subsequently cancel or change those purchases. You discover that order volumes are highly variable and the backend order-processing system can only process one request at a time. You want to ensure seamless performance for customers regardless of usage volume. It is crucial that customers' order update requests are performed in the sequence in which they were generated. What should you do?

A.Send the purchase and change requests over WebSockets to the backend.

B.Send the purchase and change requests as REST requests to the backend.

C.Use a Pub/Sub subscriber in pull mode and use a data store to manage ordering.

D.Use a Pub/Sub subscriber in push mode and use a data store to manage ordering.

Answer: C

Explanation:

C. Use a Pub/Sub subscriber in pull mode and use a data store to manage ordering. To ensure that customer order update requests are performed in the sequence in which they were generated, the recommended approach is to use a Pub/Sub subscriber in pull mode, together with a data store to manage ordering. This approach allows the backend system to process requests one at a time, while maintaining the order of requests. By using a pull-based subscription, the backend system can control the rate at which messages are consumed from the Pub/Sub topic, and can ensure that requests are processed in the correct order. The data store can be used to maintain a queue of requests, where each request is added to the queue in the order that it was generated, and then processed by the backend system.

CertyIQ

Question: 136

Your company needs a database solution that stores customer purchase history and meets the following requirements:

- ⇒ Customers can query their purchase immediately after submission.
- ⇒ Purchases can be sorted on a variety of fields.
- ⇒ Distinct record formats can be stored at the same time.

Which storage option satisfies these requirements?

- A.Firestore in Native mode
- B.Cloud Storage using an object read
- C.Cloud SQL using a SQL SELECT statement
- D.Firestore in Datastore mode using a global query

Answer: A

Explanation:

Firestore is the next major version of Datastore and a re-branding of the product. Taking the best of Datastore and the Firebase Realtime Database, Firestore is a NoSQL document database built for automatic scaling, high performance, and ease of application development. Firestore introduces new features such as:
A new, strongly consistent storage layer
A collection and document data model
Real-time updates
Mobile and Web client libraries
Firestore is backwards compatible with Datastore, but the new data model, real-time updates, and mobile and web client library features are not. To access all of the new Firestore features, you must use Firestore in Native mode.

Question: 137

CertyIQ

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 Run. Analyze the VPC Flow Logs using Cloud Logging.
- B.Create a Google Kubernetes Engine cluster running the Locust or JMeter images to dynamically generate load tests. Analyze the results using Cloud Trace.
- C.Create a Cloud Task to generate a test load. Use Cloud Scheduler to run 60,000 Cloud Task transactions per minute for 10 minutes. Analyze the results using Cloud Monitoring.
- D.Create a Compute Engine instance that uses a LAMP stack image from the Marketplace, and use Apache Bench to generate load tests against the service. Analyze the results using Cloud Trace.

Answer: B

Explanation:

B. Create a Google Kubernetes Engine cluster running the Locust or JMeter images to dynamically generate load tests. Analyze the results using Cloud Trace. To verify that your application can support up to 5,000 read and 1,000 write transactions per second and to identify any bottlenecks that occur, you can use a load testing tool such as Locust or JMeter to generate load tests on your Cloud Run service. These tools allow you to simulate a high number of concurrent requests and help you determine the maximum number of requests your service can handle. You can run the load testing tool on a Google Kubernetes Engine (GKE) cluster which will support autoscale feature, this way you can handle the high number of requests, and use Cloud Trace to analyze the results, which will give you insights into the performance and any bottlenecks.

Question: 138

CertyIQ

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

in the pipeline can access it?

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

The best approach is to output the file contents to a file in /workspace directory in one build step and read from the same /workspace file in the subsequent build step . This way, the file is easily accessible by all builders in the pipeline as they all run in the same environment and share the same file system. And it's the easiest and simplest way of sharing the file between the builds in the pipeline.

Question: 139

CertyIQ

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:

A. Enable the Vulnerability scanning setting in the Container Registry would be the best solution in this case. It would allow you to automatically scan images for known vulnerabilities and detect any issues as soon as they're pushed to the registry. This will help to identify vulnerabilities early in the development cycle, allowing the development teams to take action before images are deployed to production. This approach is automated, does not impact development agility and since it is a built-in feature of the Container Registry, it is a managed service and therefore, it does not require additional maintenance and management.

Question: 140

CertyIQ

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

The Dockerfile is as follows:

```
FROM python:3.7-alpine -  
COPY . /app -  
WORKDIR /app -  
RUN pip install -r requirements.txt  
CMD [ "gunicorn", "-w 4", "main:app" ]
```

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

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

Answer: AC

Explanation:

A is correct because a high-CPU virtual machine type can increase the speed of your build.B is not correct because a Container Registry on a VM will not speed up the build.C is correct because the same container is used in subsequent steps for testing and to be pushed to the registry.D is not correct because an ubuntu container image will be significantly larger than the python:3.7-alpine image.E is not correct because storing the application source code on Cloud Storage does not decrease the time to build the application.

<https://cloud.google.com/build/docs/optimize-builds/increase-vcpu-for-builds>
https://cloud.google.com/build/docs/optimize-builds/building-leaner-containers#building_leaner_containersYes, answer A and C are both valid solutions based on the articles you linked.Increasing the number of vCPUs allocated to the Cloud Build VM can help to decrease build time because it provides the build environment with more CPU resources to use, which can help to speed up the build process. This can be achieved by selecting a VM size with higher CPU for Cloud Build runs.as mentioned, caching the Docker image for subsequent builds can also help to decrease build time by reusing previously built image layers. This can be achieved by adding the --cache-from argument to the build command in the build config file, which tells Cloud Build to use the specified images as a cache source.

Question: 141

CertyIQ

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:

IMHO by eliminating B and C - uses canary which letting the users use the new version without testing A - canary is often a synonym of A/B testing

CertyIQ

Question: 142

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 lists. Combine the results, and then apply the filter to display the results

B.Use the HBase API, Redis API, and MySQL connection to retrieve database lists. Filter the results individually, and then combine them to display the results

C.Run gcloud bigtable instances list, gcloud redis instances list, and gcloud sql databases list. Use a filter within the application, and then display the results

D.Run gcloud bigtable instances list, gcloud redis instances list, and gcloud sql databases list. Use --filter flag with each command, and then display the results

Answer: D

Explanation:

1. Option D is correct, running gcloud bigtable instances list, gcloud redis instances list, and gcloud sql databases list and using the --filter flag with each command can be used to filter the results before displaying them. This would allow users to submit a filter expression to limit the results presented as specified in the question. As per the google official documentation.

2. D is the answer.<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. Use the --filter flag to select resources to be listed. Resource filters are described in detail below.

CertyIQ

Question: 143

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:**

1. Based on the requirements and the references <https://kubernetes.io/docs/concepts/services-networking/ingress/#name-based-virtual-hosting> <https://cloud.google.com/kubernetes-engine/docs/tutorials/configuring-domain-name-static-ip>. You should modify the existing Ingress resource with a host rule matching the new domain. This will allow you to route traffic to the new website while still using the same IP address and load balancer. This approach allows you to use name-based virtual hosting, which supports routing HTTP traffic to multiple host names at the same IP address. It also enables you to reuse the existing IP address and load balancer, which means that the existing website and the new website can be accessed through the same IP address while having different domain names.
2. B is the answer. <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.

CertyIQ**Question: 144**

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**Explanation:**

Compute Engine answers are eliminated because they can't scale quickly enough. GKE Answer is ruled out because you can end up overprovisioned, also cannot scale out to add more nodes quickly enough.

CertyIQ**Question: 145**

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**Explanation:**

Best practice is to create a groupnot sure between project ID and project number

Question: 146**CertyIQ**

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:**

A. Incorrect: This doesn't help with a distributed application.B. Incorrect: This would work, but would require Cloud Monitoring integration and possible application modification. This would also not apply to a distributed application.C. Correct: This will require the least number of changes to the code and fits the requirements.D. Incorrect: This would work, but would require Cloud Monitoring integration and possible application modification.

C is the answer.<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.

Question: 147**CertyIQ**

Your application is composed of a set of loosely coupled services orchestrated by code executed on Compute Engine. You want your application to easily bring up new Compute Engine instances that find and use a specific version of a service. How should this be configured?

- A.Define your service endpoint information as metadata that is retrieved at runtime and used to connect to the desired service.
- B.Define your service endpoint information as label data that is retrieved at runtime and used to connect to the desired service.
- C.Define your service endpoint information to be retrieved from an environment variable at runtime and used to connect to the desired service.
- D.Define your service to use a fixed hostname and port to connect to the desired service. Replace the service at the endpoint with your new version.

Answer: B**Explanation:**

Answer is [B] .

An example of how you can retrieve the endpoint information from a label in Python:
import google.auth
from google.cloud import compute# Authenticate and create a client for the Compute Engine API(credentials,
project = google.auth.default())compute_client = compute.Client(credentials=credentials, project=project)#
Get the instance based on the instance nameinstance_name = "example-instance"instance =
compute_client.instance(instance_name)# Get the endpoint information from the instance's labelsendpoint =

```
instance.labels.get("endpoint")
```

CertyIQ

Question: 148

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>

A is incorrect. While it could work, all the services are using the same service account, there is no separation of permissions, and no detailed logging.B and E together connect GKE and Google service accounts, so GKE can authenticate a service with a Google service account.C is incorrect. While this is feasible, it's not the recommended practice for workload identity because of the mandatory key rotation of the service accounts.D is incorrect. While this is feasible, it's not the recommended practice for workload identity because of the mandatory key rotation of the service accounts.E and B together connect GKE and Google service accounts, so GKE can authenticate a service with a Google service account.

Question: 149

CertyIQ

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

Answer: B

Explanation:

https://cloud.google.com/architecture/modernization-path-dotnet-applications-google-cloud#take_advantage_of_compute_engine
The reason why B is better than D, hence had to paste the link above.

Answer B

B is the answer.https://cloud.google.com/architecture/modernization-path-dotnet-applications-google-cloud#phase_1_rehost_in_the_cloud

Question: 150

CertyIQ

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 versions. Use Cloud Monitoring to look for performance issues.
- B. Deploy the application via a continuous delivery pipeline using canary deployments. Use Cloud Monitoring to look for performance issues, and ramp up traffic as the metrics support it.
- C. Deploy the application via a continuous delivery pipeline using blue/green deployments. Use Cloud Monitoring to look for performance issues, and launch fully when the metrics support it.
- D. Deploy the application using kubectl and set the spec.updateStrategy.type to RollingUpdate. Use Cloud Monitoring to look for performance issues, and run the kubectl rollback command if there are any issues.

Answer: B

Explanation:

deployment should be automatedhttps://cloud.google.com/deploy/docs/deployment-strategies/canary#types_of_canary

B. Deploy the application via a continuous delivery pipeline using canary deployments. Use Cloud Monitoring to look for performance issues, and ramp up traffic as the metrics support it. Canary deployment strategy can be used to mitigate risk in the production deployment process. In this strategy, a small subset of traffic is routed to the new version of the application, while the rest of the traffic is sent to the current version. This allows for real-time monitoring of the new version's performance before fully rolling it out to all users. If there are any issues or performance problems, the traffic can be immediately routed back to the previous version. Cloud Monitoring can be used to monitor performance metrics and make informed decisions about when to ramp up traffic to the new version

Question: 151

CertyIQ

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: B

Explanation:

B. Package application configuration and static data into the application image during build time. By packaging application configuration and static data into the application image during build time, the application can quickly serve requests without having to make additional requests to a database, thus

reducing response time. Additionally, you might consider caching static data in the application to reduce latency and provide faster responses to user requests, also you could move some of the computation that is not time critical to be done asynchronously.

B is the answer from the recommendation of google because "For starters, on Cloud Run, the size of your container image does not affect cold start or request processing time" so you can add the configuration and static data.

Question: 152

CertyIQ

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. Create a subscription for each downstream development team to subscribe to their step's topic.
- C.Create a Pub/Sub topic for timesheet submissions. Create a subscription for each downstream development team to subscribe to the topic.
- D.Create a timesheet microservice deployed to Google Kubernetes Engine. The microservice calls each downstream step and waits for a successful response before calling the next step.

Answer: C

Explanation:

Create a Pub/Sub topic for timesheet submissions. Create a subscription for each downstream development team to subscribe to the topic.

Question: 153

CertyIQ

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-premises. Use an external load balancer service to distribute traffic across the two environments.

Answer: B

Explanation:

B is the answer.<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.

CertyIQ**Question: 154**

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

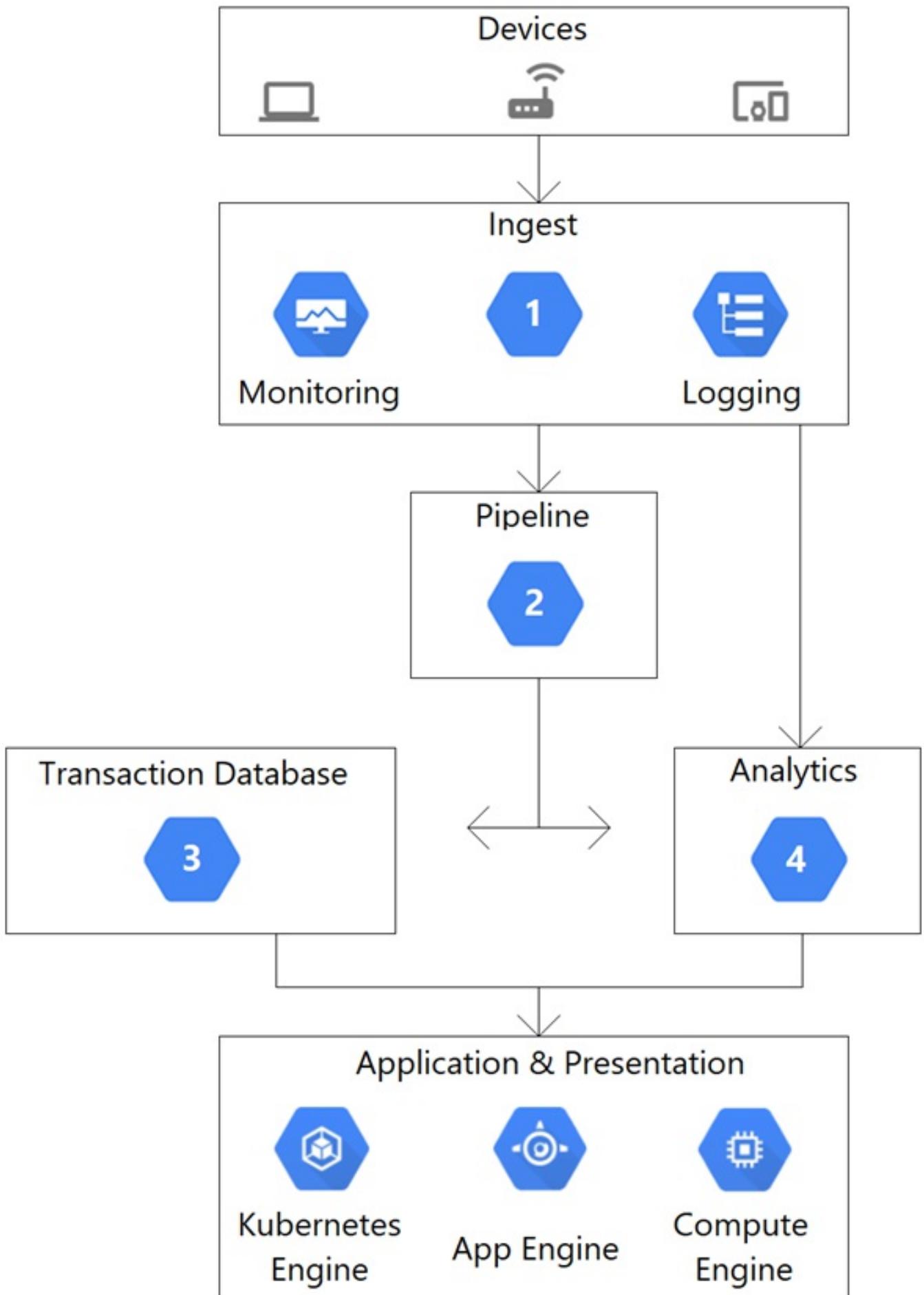
- A.Cloud Run
- B.Compute Engine
- C.Google Kubernetes Engine
- D.App Engine flexible environment

Answer: A**Explanation:**

A. container running in knative

CertyIQ**Question: 155**

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

Explanation:

- 1. Pub/Sub - for ingest
- 2. Dataflow - dataflow pipeline
- 3. Firestore - transaction DB
- 4. BigQuery - analytics

CertyIQ

Question: 156

Your company just experienced a Google Kubernetes Engine (GKE) API outage due to a zone failure. You want to deploy a highly available GKE architecture that minimizes service interruption to users in the event of a future zone failure. What should you do?

- A. Deploy Zonal clusters
- B. Deploy Regional clusters
- C. Deploy Multi-Zone clusters
- D. Deploy GKE on-premises clusters

Answer: B

Explanation:

B is the answer.https://cloud.google.com/kubernetes-engine/docs/concepts/types-of-clusters#regional_clusters A regional cluster has multiple replicas of the control plane, running in multiple zones within a given region. Nodes in a regional cluster can run in multiple zones or a single zone depending on the configured node locations. By default, GKE replicates each node pool across three zones of the control plane's region. When you create a cluster or when you add a new node pool, you can change the default configuration by specifying the zone(s) in which the cluster's nodes run. All zones must be within the same region as the control plane.

CertyIQ

Question: 157

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

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

Dataflow streaming pipeline to deduplicate messages.

Answer: B

Explanation:

Answer is B <https://cloud.google.com/blog/products/data-analytics/handling-duplicate-data-in-streaming-pipeline-using-pubsub-dataflow>"...because Pub/Sub provides each message with a unique message_id, Dataflow uses it to deduplicate messages by default if you use the built-in Apache Beam PubSubIO"

Question: 158

CertyIQ

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:

Answer is D, use the default tools provided by google like container analysis.

D is the answer.<https://cloud.google.com/binary-authorization/docs/creating-attestations-kritis>

Question: 159

CertyIQ

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: B

Explanation:

The correct option is B. The 403 Permission Denied error code indicates that the service account is authenticated, but it doesn't have sufficient permissions to access the Cloud Storage bucket. If the error code were 401 Unauthorized, it would suggest that the authentication failed, which could be caused by a rotated key, as in option C. However, in this case, the error code is 403, which indicates a problem with the permissions of the service account, making option B the most likely cause.

Anwser B with status code 403 => Forbidden so the first authentication is working just the service has not enough permission to access the document.

Question: 160

CertyIQ

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

Explanation:

<https://cloud.google.com/storage/docs/retry-strategy#exponential-backoff>Answer A

Question: 161

CertyIQ

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:

C is the answer.<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.

Question: 162

CertyIQ

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

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

Answer: D

Explanation:

You can eliminate B. Because the MIG needs to be updated immediately, which is not what Opportunistic does. C. Because max unavailable at 100% will cause downtime. So that leaves A, and D. If you choose A, the MIG will spin up hundreds of new machines, to replace the existing ones, and shutdown the old ones. This is the fastest method, but could be costly, or you could run into quota issues. If you choose D, the MIG will spin up 3 VMs at a time (maxSurge default to 3), and then it will bring up one at a time, as soon as more surge slots are available, so it won't be really that fast. I think D is the most sensible in this case.

Question: 163

CertyIQ

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:

According to the explanation "prevents your Compute Engine instance from booting to a normal run level". So I think sshd daemon has not launched yet and you can't use ssh. I can't think of a correct answer to anything other than C.

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

Question: 164

CertyIQ

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

subcategory should also be created. What should you do?

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

Answer: A

Explanation:

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

Question: 165

CertyIQ

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

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

Answer: A

Explanation:

A. Build a new Docker container that examines the files in /workspace and then checks and adds a copyright for each source file. Changed files are explicitly committed back to the source repository. This option would allow you to create a custom step in Cloud Build that is triggered by each source commit, which would examine the source files in the /workspace directory, check for the presence of a copyright comment, and add one if not present. By committing the changed files back to the source repository, you ensure that the updated files with the added copyright comment are properly tracked and stored in the source control system.

the code changes must be put back in the workplace folder or the sub other sub-step won't have the changes.

Question: 166

CertyIQ

One of your deployed applications in Google Kubernetes Engine (GKE) is having intermittent performance issues.

Your team uses a third-party logging solution. You want to install this solution on each node in your GKE cluster so you can view the logs. What should you do?

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

Answer: A

Explanation:

A is the answer.https://cloud.google.com/kubernetes-engine/docs/concepts/daemonset#usage_patternsDaemonSets are useful for deploying ongoing background tasks that you need to run on all or certain nodes, and which do not require user intervention. Examples of such tasks include storage daemons like ceph, log collection daemons like fluent-bit, and node monitoring daemons like collectd.

Question: 167

CertyIQ

Case study -

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To start the case study -

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Company Overview -

HipLocal is a community application designed to facilitate communication between people in close proximity. It is used for event planning and organizing sporting events, and for businesses to connect with their local communities. HipLocal launched recently in a few neighborhoods in Dallas and is rapidly growing into a global phenomenon. Its unique style of hyper-local community communication and business outreach is in demand around the world.

Executive Statement -

We are the number one local community app; it's time to take our local community services global. Our venture capital investors want to see rapid growth and the same great experience for new local and virtual communities that come online, whether their members are 10 or 10000 miles away from each other.

Solution Concept -

HipLocal wants to expand their existing service, with updated functionality, in new regions to better serve their global customers. They want to hire and train a new team to support these regions in their time zones. They will

need to ensure that the application scales smoothly and provides clear uptime data, and that they analyze and respond to any issues that occur.

Existing Technical Environment -

HipLocal's environment is a mix of on-premises hardware and infrastructure running in Google Cloud Platform. The HipLocal team understands their application well, but has limited experience in global scale applications. Their existing technical environment is as follows:

- Existing APIs run on Compute Engine virtual machine instances hosted in GCP.
- State is stored in a single instance MySQL database in GCP.
- Release cycles include development freezes to allow for QA testing.
- The application has no logging.
- Applications are manually deployed by infrastructure engineers during periods of slow traffic on weekday evenings.
- There are basic indicators of uptime; alerts are frequently fired when the APIs are unresponsive.

Business Requirements -

HipLocal's investors want to expand their footprint and support the increase in demand they are seeing. Their requirements are:

- Expand availability of the application to new regions.
- Support 10x as many concurrent users.
- Ensure a consistent experience for users when they travel to different regions.
- Obtain user activity metrics to better understand how to monetize their product.
- Ensure compliance with regulations in the new regions (for example, GDPR).
- Reduce infrastructure management time and cost.
- Adopt the Google-recommended practices for cloud computing.
- Develop standardized workflows and processes around application lifecycle management.
- Define service level indicators (SLIs) and service level objectives (SLOs).

Technical Requirements -

- Provide secure communications between the on-premises data center and cloud-hosted applications and infrastructure.
- The application must provide usage metrics and monitoring.
- APIs require authentication and authorization.
- Implement faster and more accurate validation of new features.
- Logging and performance metrics must provide actionable information to be able to provide debugging information and alerts.
- Must scale to meet user demand.

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. Run the MySQL database on a dedicated GKE node.
- B. Use multiple Compute Engine instances to run MySQL to store state information. Use a Google Cloud-managed load balancer to distribute the load between instances. Use managed instance groups for scaling.
- C. Use Memorystore to store session information and CloudSQL to store state information. Use a Google Cloud-managed load balancer to distribute the load between instances. Use managed instance groups for scaling.
- D. 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: C

Explanation:

A, B and D can be eliminated.
A. Because running MySQL inside GKE is not a GCP Best practice (there is CloudSQL).
B. Running MySQL manually on CE instances is not best practice (there is CloudSQL).
D. State information does not belong in cloud storage.
So that leaves C as the only valid option.

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For this question, refer to the HipLocal case study.

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

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

Answer: A

Explanation:

A stable environment is one that works. Performance testing does not mean it works fine, unit testing will enable this.

Question: 169

CertyIQ

Case study -

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- Logging and performance metrics must provide actionable information to be able to provide debugging information and alerts.
- Must scale to meet user demand.

For this question, refer to the HipLocal case study.

HipLocal's application uses Cloud Client Libraries to interact with Google Cloud. HipLocal needs to configure

authentication and authorization in the Cloud Client Libraries to implement least privileged access for the application. What should they do?

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

Answer: C

Explanation:

A,B,D can be eliminated:
A. Cloud Client Libraries do not use API Keys to authenticate
B. Compute engine default service account has too many privileges
D. It does not make sense to create an SA for every API being accessed.
The SA represents the Application itself, not the API
So that leaves C as the only valid option.
Still, ideally you should not copy SA keys around.
Most of the time, GCP gives you a way to associate a service account with a workload.

Question: 170

CertyIQ

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:

A,C and D can be eliminated
A. App engine flexible cannot scale down to 0, thus not minimizes the cost
C. Deploying to a single VM will not allow autoscaling
D. Running in a GKE cluster will not minimize the cost
That leaves B as the only valid option.

B is the answer.<https://cloud.google.com/appengine/docs/standard>

Question: 171

CertyIQ

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:

Storing sensitive information such as database credentials in Kubernetes Secrets is a common and secure way to manage sensitive information in a cluster. The Cloud Key Management Service (KMS) can be used to further protect the secrets by encrypting and decrypting them, ensuring that they are protected both at rest and in transit. This combination of Kubernetes Secrets and Cloud KMS provides a secure way to manage and rotate credentials while following security best practices. Options A and B are not recommended, as they do not provide a secure and centralized way to manage and rotate credentials. Option C is not recommended because storing secrets in an encrypted volume mount is not as secure as using a Key Management Service, as the encryption keys must still be managed and protected within the cluster.

D is the answer.<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.

Question: 172

CertyIQ

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. After 1 year, move the logs to another bucket with a 2-year retention period.

Answer: C

Explanation:

The requirements say that the logs should be easily searchable. This is not easily achieved in Cloud Storage, so that eliminates A, B and D. That leaves C and the valid option. Note, that it's possible to configure Cloud Logging with a custom retention period.<https://cloud.google.com/logging/docs/buckets#custom-retention>

Question: 173

CertyIQ

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

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

Answer: AB**Explanation:**

AB should be correct instead.https://cloud.google.com/kms/docs/separation-of-duties#using_separate_projectInstead, to allow for a separation of duties, you could run Cloud KMS in its own project, for example your-key-project. Then, depending on the strictness of your separation requirements, you could either:- (recommended) Create your-key-project without an owner at the project level, and designate an Organization Admin granted at the organization-level. Unlike an owner, an Organization Admin can't manage or use keys directly. They are restricted to setting IAM policies, which restrict who can manage and use keys. Using an organization-level node, you can further restrict permissions for projects in your organization.

Question: 174

CertyIQ

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

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

Answer: D**Explanation:**

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

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

Question: 175

CertyIQ

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: C

Explanation:

1. A is incorrect, because Cloud Storage FUSE does not support concurrency and file locking.B is incorrect, because a persistent disk PersistentVolume is not read-write-many. It can only be read-write once or read-many.C is correct, because it's the only managed, supported read-write-many storage option available for file-system access in Google Kubernetes Engine.D is incorrect, because the ConfigMap cannot be written to from the Pods.
<https://kubernetes.io/docs/concepts/storage/persistent-volumes/#access-modes>
<https://cloud.google.com/filestore/docs/accessing-fileshares>
<https://cloud.google.com/storage/docs/gcs-fuse>
2. C is the correct answer instead.
<https://kubernetes.io/docs/concepts/storage/volumes/#nfs>
An nfs volume allows an existing NFS (Network File System) share to be mounted into a Pod. Unlike emptyDir, which is erased when a Pod is removed, the contents of an nfs volume are preserved and the volume is merely unmounted. This means that an NFS volume can be pre-populated with data, and that data can be shared between pods. NFS can be mounted by multiple writers simultaneously.

Question: 176

CertyIQ

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

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

Answer: D

Explanation:

https://cloud.google.com/build/docs/securing-builds/configure-access-for-cloud-build-service-account#granting_a_role_using_the_iam_page
https://cloud.google.com/build/docs/troubleshooting#build_trigger_fails_due_to_missing_cloudbuildbuildscreate_permission

Answer D

Question: 177

CertyIQ

You manage a microservices application on Google Kubernetes Engine (GKE) using Istio. You secure the

communication channels between your microservices by implementing an Istio AuthorizationPolicy, a Kubernetes NetworkPolicy, and mTLS on your GKE cluster. You discover that HTTP requests between two Pods to specific URLs fail, while other requests to other URLs succeed. What is the cause of the connection issue?

- A.A Kubernetes NetworkPolicy resource is blocking HTTP traffic between the Pods.
- B.The Pod initiating the HTTP requests is attempting to connect to the target Pod via an incorrect TCP port.
- C.The Authorization Policy of your cluster is blocking HTTP requests for specific paths within your application.
- D.The cluster has mTLS configured in permissive mode, but the Pod's sidecar proxy is sending unencrypted traffic in plain text.

Answer: C

Explanation:

A is not correct because Kubernetes NetworkPolicy resources allow you to block HTTP traffic between groups of pods but not for selected paths. (<https://kubernetes.io/docs/concepts/services-networking/network-policies/>).B is not correct because if the client pod is using an incorrect port to communicate with the server, pod requests will time out for all URL paths.C is correct because an Istio Authorization policy allows you to block HTTP methods between pods for specific URL paths (<https://istio.io/latest/docs/tasks/security/authorization/authz-http/>).D is not correct because mTLS configuration using Istio should not cause HTTP requests to fail. In permissive mode (default configuration), a service can accept both plain text and mTLS encrypted traffic (<https://istio.io/latest/docs/tasks/security/authentication/mtls-migration/>).

https://cloud.google.com/service-mesh/docs/troubleshooting/troubleshoot-security#authorization_policy_denial_logging Answer C <https://istio.io/latest/docs/ops/common-problems/network-issues/#sending-https-to-an-http-port>

Question: 178

CertyIQ

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:

C is the correct answer instead.<https://cloud.google.com/network-connectivity/docs/vpn/concepts/topologies#more-bandwidth> To increase the bandwidth of your HA VPN gateways, add more HA VPN tunnels.

A, B, and D can be eliminatedA. Caching PII (Personally Identifiable Information) is never a good practiceB.

Using Istio is not going to improve the latency (the network hops remain the same)D. Reducing the packet size, has the effect of more packets being sent across which is counter productive That leaves C as the valid optionGCP does support having multiple VPN Tunnels on the same gateway<https://cloud.google.com/network-connectivity/docs/vpn/concepts/choosing-networks-routing#route-alignment>

Question: 179

CertyIQ

Your company has deployed a new API to a Compute Engine instance. During testing, the API is not behaving as expected. You want to monitor the application over 12 hours to diagnose the problem within the application code without redeploying the application. Which tool should you use?

- A.Cloud Trace
- B.Cloud Monitoring
- C.Cloud Debugger logpoints
- D.Cloud Debugger snapshots

Answer: C

Explanation:

C but debugger is deprecated

Answer is C because within code and without changes on code so it eliminate the others choice.

Question: 180

CertyIQ

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

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

Answer: A

Explanation:

https://cloud.google.com/kubernetes-engine/docs/concepts/ingress#deprecated_annotation
https://cloud.google.com/kubernetes-engine/docs/concepts/ingress#features_of_https_load_balancing

B,C, and D can be eliminatedB. Service discovery only works within the cluster itself, so external clients can't use itC. Using multiple clusters is an overkill, you can deploy multiple version of the same service within a single clusterD. Passing the API version in the request body is not a REST best practiceThe best practice is to pass the version of the API in the the URL path, e.g /v1/foo, /v2/fooUsing this approach, you can route requests to the appropriate backend service within the GKE cluster using an Ingress resource, which is option A.

Question: 181

CertyIQ

Your team is building an application for a financial institution. The application's frontend runs on Compute Engine, and the data resides in Cloud SQL and one Cloud Storage bucket. The application will collect data containing PII, which will be stored in the Cloud SQL database and the Cloud Storage bucket. You need to secure the PII data. What should you do?

- A.1. Create the relevant firewall rules to allow only the frontend to communicate with the Cloud SQL database
- 2. Using IAM, allow only the frontend service account to access the Cloud Storage bucket
- B.1. Create the relevant firewall rules to allow only the frontend to communicate with the Cloud SQL database
- 2. Enable private access to allow the frontend to access the Cloud Storage bucket privately
- C.1. Configure a private IP address for Cloud SQL
- 2. Use VPC-SC to create a service perimeter
- 3. Add the Cloud SQL database and the Cloud Storage bucket to the same service perimeter
- D.1. Configure a private IP address for Cloud SQL
- 2. Use VPC-SC to create a service perimeter
- 3. Add the Cloud SQL database and the Cloud Storage bucket to different service perimeters

Answer: C**Explanation:**

Without using VPC-SC, the PII data is not secure from exfiltration. So that leaves only C, and D as possible valid responses. However, D can be eliminated because both the Cloud SQL instance and Cloud Storage bucket must be within the same perimeter, which leaves C and the valid answer.

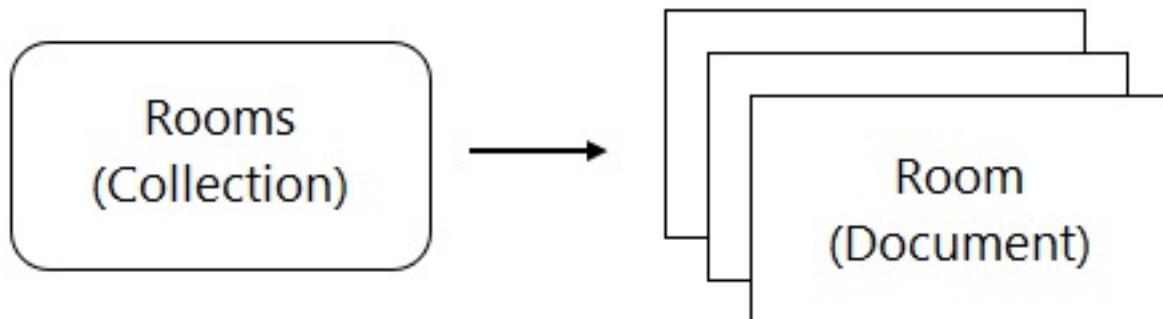
C should be the correct answer instead.

Question: 182

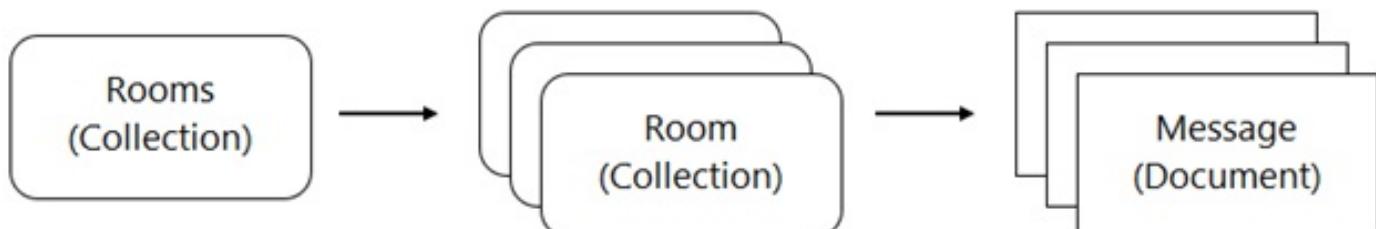
CertyIQ

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?

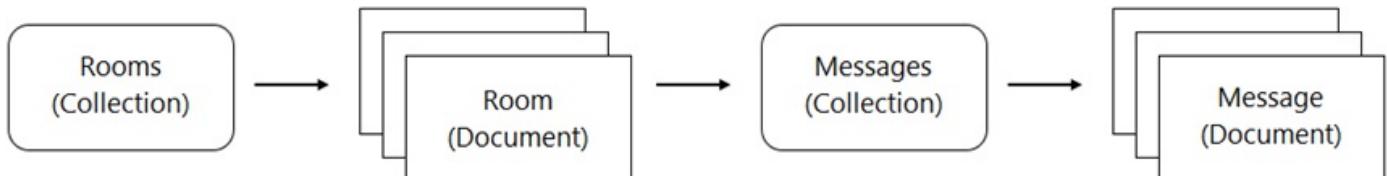
- A.Create a collection for the rooms. For each room, create a document that lists the contents of the messages



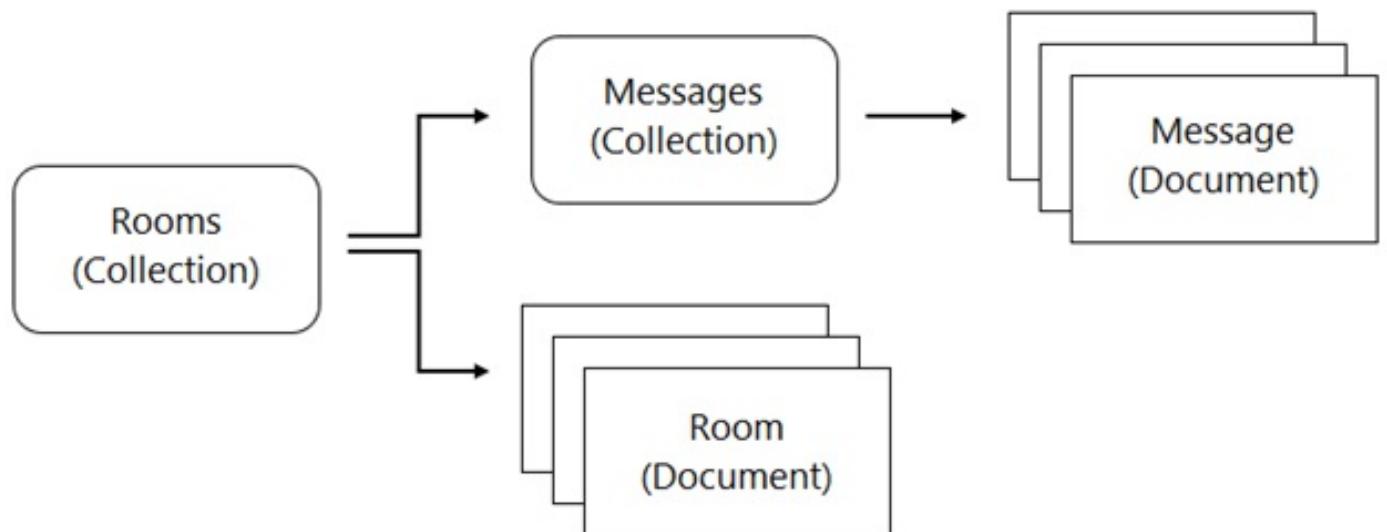
- B.Create a collection for the rooms. For each room, create a collection that contains a document for each message



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



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



Answer: C

Explanation:

Answer is C. "The best way to store messages in this scenario is by using subcollections. A subcollection is a collection associated with a specific document."<https://firebase.google.com/docs/firestore/data-model#subcollections>

Question: 183

CertyIQ

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: B

Explanation:

Have the user account you are using to access Cloud Functions assigned a role that contains the cloudfunctions.functions.invoke permission. By default, the Cloud Functions Admin and Cloud Functions Developer roles have this permission. See Cloud Functions IAM Roles for the full list of roles and their associated permissions.

Question: 184**CertyIQ**

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:**

C is the answer.<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.

Question: 185**CertyIQ**

You are building a highly available and globally accessible application that will serve static content to users. You need to configure the storage and serving components. You want to minimize management overhead and latency while maximizing reliability for users. What should you do?

- A.1. Create a managed instance group. Replicate the static content across the virtual machines (VMs)
2. Create an external HTTP(S) load balancer.
3. Enable Cloud CDN, and send traffic to the managed instance group.
- B.1. Create an unmanaged instance group. Replicate the static content across the VMs.
2. Create an external HTTP(S) load balancer
3. Enable Cloud CDN, and send traffic to the unmanaged instance group.
- C.1. Create a Standard storage class, regional Cloud Storage bucket. Put the static content in the bucket
2. Reserve an external IP address, and create an external HTTP(S) load balancer
3. Enable Cloud CDN, and send traffic to your backend bucket
- D.1. Create a Standard storage class, multi-regional Cloud Storage bucket. Put the static content in the bucket.
2. Reserve an external IP address, and create an external HTTP(S) load balancer.
3. Enable Cloud CDN, and send traffic to your backend bucket.

Answer: D**Explanation:**

D is the answer.

multi regional, less maintenance

Question: 186**CertyIQ**

Case study -

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your time to ensure that you are able to complete all questions included on this exam in the time provided.

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Company Overview -

HipLocal is a community application designed to facilitate communication between people in close proximity. It is used for event planning and organizing sporting events, and for businesses to connect with their local communities. HipLocal launched recently in a few neighborhoods in Dallas and is rapidly growing into a global phenomenon. Its unique style of hyper-local community communication and business outreach is in demand around the world.

Executive Statement -

We are the number one local community app; it's time to take our local community services global. Our venture capital investors want to see rapid growth and the same great experience for new local and virtual communities that come online, whether their members are 10 or 10000 miles away from each other.

Solution Concept -

HipLocal wants to expand their existing service, with updated functionality, in new regions to better serve their global customers. They want to hire and train a new team to support these regions in their time zones. They will need to ensure that the application scales smoothly and provides clear uptime data, and that they analyze and respond to any issues that occur.

Existing Technical Environment -

HipLocal's environment is a mix of on-premises hardware and infrastructure running in Google Cloud Platform. The HipLocal team understands their application well, but has limited experience in global scale applications. Their existing technical environment is as follows:

- Existing APIs run on Compute Engine virtual machine instances hosted in GCP.
- State is stored in a single instance MySQL database in GCP.
- Release cycles include development freezes to allow for QA testing.
- The application has no logging.
- Applications are manually deployed by infrastructure engineers during periods of slow traffic on weekday evenings.
- There are basic indicators of uptime; alerts are frequently fired when the APIs are unresponsive.

Business Requirements -

HipLocal's investors want to expand their footprint and support the increase in demand they are seeing. Their requirements are:

- Expand availability of the application to new regions.
- Support 10x as many concurrent users.
- Ensure a consistent experience for users when they travel to different regions.
- Obtain user activity metrics to better understand how to monetize their product.
- Ensure compliance with regulations in the new regions (for example, GDPR).
- Reduce infrastructure management time and cost.
- Adopt the Google-recommended practices for cloud computing.
- Develop standardized workflows and processes around application lifecycle management.
- Define service level indicators (SLIs) and service level objectives (SLOs).

Technical Requirements -

- Provide secure communications between the on-premises data center and cloud-hosted applications and infrastructure.
- The application must provide usage metrics and monitoring.
- APIs require authentication and authorization.
- Implement faster and more accurate validation of new features.
- Logging and performance metrics must provide actionable information to be able to provide debugging information and alerts.
- Must scale to meet user demand.

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: B

Explanation:

While the question asks for "least amount of effort" ... all possible answers require a database migration. So it really boils down, to which database will be easiest to migrate to. HipLocal is using MySQL, which is a Relational database, so that rules out all options that are not relational ... leaving option B, Cloud Spanner as the only valid option. Also, option D is completely unrelated. There is no point in migrated services to Kubernetes if you what you are after is improving the database latency. Maybe, if they put the services closer to the database it would help, but option D does not say anything about that.

Question: 187

CertyIQ

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- Must scale to meet user demand.

For this question, refer to the HipLocal case study.

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

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

Answer: B

Explanation:

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

Question: 188

CertyIQ

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For this question, refer to the HipLocal case study.

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

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

Answer: D

Explanation:

Both A, and B go against best practices that say you should try avoiding service account keys. Plus, these two answers would still store the service account key in the VM. Option C is completely irrelevant as it does not address the issue at hand, which is plain text credentials stored on disk. This leaves option D as the valid option.

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- There are basic indicators of uptime; alerts are frequently fired when the APIs are unresponsive.

Business Requirements -

HipLocal's investors want to expand their footprint and support the increase in demand they are seeing. Their requirements are:

- Expand availability of the application to new regions.
- Support 10x as many concurrent users.
- Ensure a consistent experience for users when they travel to different regions.
- Obtain user activity metrics to better understand how to monetize their product.
- Ensure compliance with regulations in the new regions (for example, GDPR).
- Reduce infrastructure management time and cost.
- Adopt the Google-recommended practices for cloud computing.

- Develop standardized workflows and processes around application lifecycle management.
- Define service level indicators (SLIs) and service level objectives (SLOs).

Technical Requirements -

- Provide secure communications between the on-premises data center and cloud-hosted applications and infrastructure.
- The application must provide usage metrics and monitoring.
- APIs require authentication and authorization.
- Implement faster and more accurate validation of new features.
- Logging and performance metrics must provide actionable information to be able to provide debugging information and alerts.
- Must scale to meet user demand.

For this question, refer to the HipLocal case study.

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

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

Answer: D

Explanation:

D is the answer.

Looks like Option D satisfies the most requirements .1. It's a Document store, without strict schema enforcement so it's good for "constant schema changes"2. You can setup separate instances in NA, and EU to satisfy GDPR3. Dev teams can emulate Firestore locally for testing.4. It's a managed service, so reduces infra management time and costOption C is a non-starter, as it's moving from managed service to non-managed, also it replicates data between EU and NA, which is against GDPROption B could work, but Bigtable is an overkill for HipLocal, it costs more than Firestore.Option A does not reduce infrastructure management, as they need to provide local MySQL instances for developers.

Question: 190

CertyIQ

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

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

Answer: A

Explanation:

A is correct
BC are part of AD idk “Cloud Client Libraries are the recommended option for accessing Cloud APIs programmatically, where available. Cloud Client Libraries use the latest client library models”
<https://cloud.google.com/apis/docs/client-libraries-explained>

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

CertyIQ

Question: 191

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/iam/docs/best-practices-service-accounts#use-workload-identity>

CertyIQ**Question: 192**

You are planning to deploy hundreds of microservices in your Google Kubernetes Engine (GKE) cluster. How should you secure communication between the microservices on GKE using a managed service?

- A.Use global HTTP(S) Load Balancing with managed SSL certificates to protect your services
- B.Deploy open source Istio in your GKE cluster, and enable mTLS in your Service Mesh
- C.Install cert-manager on GKE to automatically renew the SSL certificates.
- D.Install Anthos Service Mesh, and enable mTLS in your Service Mesh.

Answer: D**Explanation:**

https://cloud.google.com/architecture/service-meshes-in-microservices-architecture#security_2
https://cloud.google.com/architecture/service-meshes-in-microservices-architecture#security_2

CertyIQ**Question: 193**

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

do? (Choose two.)

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

Answer: AD

Explanation:

A is correct because Cloud Storage provides an option to configure a retention lifecycle rule.B is incorrect because it is not a recommended way to implement data retention requirements.C is incorrect because it does not guarantee that objects are not deleted within 7 years after object creation.D is correct because it's the easiest and recommended way to implement a storage lifecycle policy to move objects from Standard to Archive tier.E is incorrect because you do not require two buckets to store objects on two storage tiers.

Question: 194

CertyIQ

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

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

Answer: A

Explanation:

A Is correct because the Service will have a DNS entry inside the cluster that other microservices can use to address the pods of the Deployment that the Service is targetting.B Is not correct because an Ingress exposes a Service using an external or internal HTTP(s) load balancer, and it does not apply directly to a Deployment.C is not correct because a Pod is a single instance of the microservice, whereas a Deployment can be configured with a number of replicas.D is not correct because it combines the mistakes of options B and C.

Question: 195

CertyIQ

You are building an application that uses a distributed microservices architecture. You want to measure the performance and system resource utilization in one of the microservices written in Java. What should you do?

- A.Instrument the service with Cloud Profiler to measure CPU utilization and method-level execution times in the

service.

- B.Instrument the service with Debugger to investigate service errors.
- C.Instrument the service with Cloud Trace to measure request latency.
- D.Instrument the service with OpenCensus to measure service latency, and write custom metrics to Cloud Monitoring.

Answer: A

Explanation:

Answer A
<https://cloud.google.com/profiler/docs/profiling-java>
<https://cloud.google.com/appengine/docs/standard/java/microservice-performance>
<https://cloud.google.com/profiler/docs>

Question: 196

CertyIQ

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

Answer: D

Explanation:

A is incorrect. A service account cannot be used to encrypt HTTPS traffic.B is incorrect. Periodical export would not meet the real-time requirement.C is incorrect. IAP is not securing the communication channel, it authenticates the user. Technically Cloud Load Balancing already secures the channel but without an appropriate certificate.D is correct. This provides an external HTTPS endpoint, and uses Google-managed services and a valid SSL certificate.

Question: 197

CertyIQ

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:

Option B, creating a topic and subscription for each tester, would be costly and time-consuming as it would require creating and managing a large number of topics and subscriptions. Additionally, it would not ensure that messages are processed in order, as messages may be delivered out of order to different subscriptions. Option D, using the Pub/Sub emulator, would be cost-effective and reliable as it allows you to test your application's Pub/Sub functionality locally without incurring any costs. Additionally, the emulator allows you to easily assert that messages are processed in order by using the same topic and subscription for all unit tests.

CertyIQ**Question: 198**

You have an application deployed in Google Kubernetes Engine (GKE) that reads and processes Pub/Sub messages. Each Pod handles a fixed number of messages per minute. The rate at which messages are published to the Pub/Sub topic varies considerably throughout the day and week, including occasional large batches of messages published at a single moment.

You want to scale your GKE Deployment to be able to process messages in a timely manner. What GKE feature should you use to automatically adapt your workload?

- A.Vertical Pod Autoscaler in Auto mode
- B.Vertical Pod Autoscaler in Recommendation mode
- C.Horizontal Pod Autoscaler based on an external metric
- D.Horizontal Pod Autoscaler based on resources utilization

Answer: C**Explanation:**

Custom and external metrics allow workloads to adapt to conditions besides the workload itself. Consider an application that pulls tasks from a queue and completes them. An external metric is reported from an application or service not running on your cluster, but whose performance impacts your Kubernetes application. For information, the metric could be reported from Cloud Monitoring or Pub/Sub. D isn't the answer, before selecting an answer , please do a thorough research and understand concepts and the key words in a question, D cant be the answer in this case.

<https://cloud.google.com/kubernetes-engine/docs/concepts/custom-and-external-metrics>

CertyIQ**Question: 199**

You are using Cloud Run to host a web application. You need to securely obtain the application project ID and region where the application is running and display this information to users. You want to use the most performant approach. What should you do?

- A.Use HTTP requests to query the available metadata server at the `http://metadata.google.internal/` endpoint with the `Metadata-Flavor: Google` header.
- B.In the Google Cloud console, navigate to the Project Dashboard and gather configuration details. Navigate to the Cloud Run “Variables & Secrets” tab, and add the desired environment variables in Key:Value format.
- C.In the Google Cloud console, navigate to the Project Dashboard and gather configuration details. Write the application configuration information to Cloud Run’s in-memory container filesystem.
- D.Make an API call to the Cloud Asset Inventory API from the application and format the request to include instance metadata.

Answer: A**Explanation:**

Answer A
<https://cloud.google.com/run/docs/container-contract#metadata-server>

<https://cloud.google.com/run/docs/container-contract#metadata-server> Answer A

CertyIQ**Question: 200**

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

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

Answer: B**Explanation:**

A&D assume that you download and store SA keys, which violates best practices, since you potentially loose control over what happens to those credentials and makes it impossible to track who actually uses the SA. D makes it even worse since it requires you to maintain your own secret management to minimize the risk.C does nothing that would give you the SA permissions you need.B follows best practices, since impersonation permissions can be managed transparently via IAM and via logs you can also see who impersonated/used the SA.

CertyIQ**Question: 201**

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?

- 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.

Answer: A**Explanation:**

https://cloud.google.com/logging/docs/export/configure_export_v2#overview
https://cloud.google.com/logging/do
This document explains how you can find log entries that you routed from Cloud Logging to Pub/Sub topics, which occurs in near real-time. We recommend using Pub/Sub for integrating Cloud Logging logs with third-party software. When you route logs to a Pub/Sub topic, Logging publishes each log entry as a Pub/Sub message as soon as Logging receives that log entry. Routed logs are generally available within seconds of their arrival to Logging, with 99% of logs available in less than 60 seconds.

The processing will be done in a third-party application so we need a solution to pass logs from gcp to thirs party in real time and no need for analytics. So the solution is pub/sub. Example on a case corresponding to the question by google:<https://cloud.google.com/architecture/exporting-stackdriver-logging-for-splunk>

Question: 202

CertyIQ

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?

- A.Use the patch method.
- B.Use the compose method.
- C.Use the copy method.
- D.Use the fields request parameter.

Answer: D

Explanation:

https://cloud.google.com/storage/docs/json_api/v1/objects/get#alt: Type of data to return. Defaults to json. Acceptable values are:json: Return object metadata.media: Return object data.

Question: 203

CertyIQ

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 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.

Answer: AC

Explanation:

https://cloud.google.com/kubernetes-engine/docs/concepts/planning-scalability#choosing_multi-zonal_or_single-zone_node_pools

Question: 204**CertyIQ**

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**Explanation:**

Create a Cloud Storage bucket in each region, and create a Cloud Run service of the payment processing application in each region.

Question: 205**CertyIQ**

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:**

C is the answer.https://cloud.google.com/spanner/docs/compute-capacity#increasing_and_decreasing_compute_capacity

Question: 206**CertyIQ**

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. 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.

Answer: D**Explanation:**

D is the answer.<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.

Question: 207**CertyIQ**

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

- A.Using Identity and Access Management (IAM), grant the Viewer IAM role on the cluster project to the other team.
- B.Create a new GKE cluster. 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.

Answer: D**Explanation:**

D: You define permissions within a Role or ClusterRole object. A Role defines access to resources within a single Namespace, while a ClusterRole defines access to resources in the entire cluster

[.https://cloud.google.com/kubernetes-engine/docs/how-to/role-based-access-control](https://cloud.google.com/kubernetes-engine/docs/how-to/role-based-access-control)

Question: 208**CertyIQ**

You have recently instrumented a new application with OpenTelemetry, and you want to check the latency of your

application requests in Trace. You want to ensure that a specific request is always traced. What should you do?

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

Answer: D

Explanation:

D is the answer.<https://cloud.google.com/trace/docs/setup#force-trace>Cloud Trace doesn't sample every request. To force a specific request to be traced, add an X-Cloud-Trace-Context header to the request.

Question: 209

CertyIQ

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

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

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

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

Answer: B

Explanation:

B is the answer.https://cloud.google.com/kubernetes-engine/docs/how-to/private-clusters#cloud_shellIf you want to use Cloud Shell to access the cluster, you must add the public IP address of your Cloud Shell to the cluster's list of authorized networks.

Question: 210

CertyIQ

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?

- 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.

Answer: D

Explanation:

D is the answer.<https://cloud.google.com/storage/docs/access-control/signed-urls#should-you-use>In some scenarios, you might not want to require your users to have a Google account in order to access Cloud Storage, but you still want to control access using your application-specific logic. The typical way to address this use case is to provide a signed URL to a user, which gives the user read, write, or delete access to that resource for a limited time. You specify an expiration time when you create the signed URL. Anyone who knows the URL can access the resource until the expiration time for the URL is reached or the key used to sign the URL is rotated.

Question: 211

CertyIQ

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

Explanation:

https://cloud.google.com/architecture/best-practices-for-running-cost-effective-kubernetes-applications-on-gke#make_sure_your_applications_are_shutting_down_in_accordance_with_kubernetes_expectations -> the preStop hook is a good option for triggering a graceful shutdown without modifying the application.<https://kubernetes.io/docs/concepts/containers/container-lifecycle-hooks/#hook-details> -> This hook is called immediately before a container is terminated due to an API request or management event such as a liveness/startup probe failure, preemption, resource contention and others. A call to the PreStop hook fails if the container is already in a terminated or completed state and the hook must complete before the TERM signal to stop the container can be sent. The Pod's termination grace period countdown begins before the PreStop hook is executed, so regardless of the outcome of the handler, the container will eventually terminate within the Pod's termination grace period. No parameters are passed to the handler.

Question: 212

CertyIQ

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: D

Explanation:

Create three Cloud Functions as three backend services exposed using an HTTPS load balancer.

CertyIQ

Question: 213

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: B

Explanation:

<https://cloud.google.com/artifact-registry/docs/analysis> Vulnerability scanning can occur automatically or on-demand: When automatic scanning is enabled, scanning triggers automatically every time you push a new image to Artifact Registry or Container Registry. Vulnerability information is continuously updated when new vulnerabilities are discovered. When On-Demand Scanning is enabled, you must run a command to scan a local image or an image in Artifact Registry or Container Registry. On-Demand Scanning gives you more flexibility around when you scan containers. For example, you can scan a locally-built image and remediate vulnerabilities before storing it in a registry. Scanning results are available for up to 48 hours after the scan is completed, and vulnerability information is not updated after the scan.

Container Analysis is a service that provides vulnerability scanning and metadata storage for containers. The scanning service performs vulnerability scans on images in Container Registry and Artifact Registry, then stores the resulting metadata and makes it available for consumption through an API. Metadata storage allows storing information from different sources, including vulnerability scanning, other Google Cloud services, and third-party providers. <https://cloud.google.com/container-analysis/docs/container-analysis>

CertyIQ

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?

Question: 214

- 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

Explanation:

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

Question: 215

CertyIQ

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:

A - assign the needed permissions, following the least privilege rule
Not B -
<https://cloud.google.com/iam/docs/understanding-roles#storage.admin>
C and D gives too many access

Question: 216

CertyIQ

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**Explanation:**

1. i made a midtake, it's d
2. 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. This ensures that only the specific service account, which has the necessary permissions, is able to deploy the code after it has passed the unit tests. The developer does not need to worry about deploying the code, and the code cannot be deployed without passing the tests.

Question: 217**CertyIQ**

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**Explanation:**

I choose A. C is against all practices.

A is the answer.

Question: 218**CertyIQ**

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>

D is the answer. You need to use OAuth of Google so A and B are eliminated. The C is using the authorization code in the cookie, it's not how it's works. So D is the correct to exchange the code for an access token.

Question: 219

CertyIQ

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: CD

Explanation:

```
pack build [IMAGE-NAME] --builder [BUILDER-IMAGE] --path [APPLICATION-DIRECTORY] gcloud run deploy [SERVICE-NAME] --image [IMAGE-NAME] --source [APPLICATION-DIRECTORY]
```

Question: 220

CertyIQ

You work for an organization that manages an online ecommerce website. Your company plans to expand across the world; however, the store 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

Explanation:

across the world -> global/multi-region -> spanneruuid for primary key

Answer C, cloud spanner for multi-region and ui primary key to be sure to be unique

CertyIQ**Question: 221**

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 identify time-intensive functions.

Answer: B**Explanation:**

B is the answer.<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.

CertyIQ**Question: 222**

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/>Caution: Liveness probes do not wait for readiness probes to succeed. If you want to wait before executing a liveness probe you should use initialDelaySeconds or a startupProbe.

A liveness probe checks if the container is running as expected, and if not, it restarts it. If the container is slow

to launch, it may take some time for it to fully start up and be able to respond to the liveness probe. Increasing the initial delay for the liveness probe can help mitigate this issue by giving the container more time to start up before the probe begins checking its status. This can help reduce the likelihood of false-positive failures during launch.

Question: 223

CertyIQ

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

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

Answer: A

Explanation:

in a randomized way - so its A, D otherwise

https://cloud.google.com/traffic-director/docs/advanced-traffic-management#weight-based_traffic_splitting_for_safer_deployments

Question: 224

CertyIQ

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

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

Answer: A

Explanation:

<https://kubernetes.io/docs/tasks/run-application/configure-pdb/#identify-an-application-to-protect>

A rolling update with a PodDisruptionBudget (PDB) of 80% helps to minimize the risk of issues after deploying a new revision to a production environment in GKE. The PDB specifies the number of pods in a deployment that must remain available during an update, ensuring that there is sufficient capacity to handle any increase in traffic or demand. By setting a PDB of 80%, you ensure that at least 80% of the pods are available during the update, reducing the risk of disruption to your application. This is a recommended best practice by Google for deploying updates to production environments in GKE.

Question: 225

CertyIQ

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

Explanation:

The requirement is "you want to control which users are forwarded to the new version of the application based on their operating system"., <https://cloud.google.com/traffic-director/docs/ingress-traffic#sending-traffic>

Question: 226

CertyIQ

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:

Answer DThis 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

Reference:

<https://cloud.google.com/run/docs/tutorials/secure-services#:~:text=The%20backend%20service%20is%20private,Google%20Cloud%20except%20where%20necess>

Question: 227

CertyIQ

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:

1. A or D Cloud SQL ideal for heavy reads and not ideal for heavy writes; Cloud Spanner ideal for both reads/writes but more about global anyway both are extremely fast - then go for A
2. <https://cloud.google.com/sql/docs/mysql> -> no time to manage DB therefore use a managed service

Question: 228

CertyIQ

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

Explanation:

B is the answer. <https://cloud.google.com/build/docs/triggers> Cloud Build uses build triggers to enable CI/CD automation. You can configure triggers to listen for incoming events, such as when a new commit is pushed to a repository or when a pull request is initiated, and then automatically execute a build when new events come in. You can also configure triggers to build code on any changes to your source repository or only on changes that match certain criteria.

Question: 229

CertyIQ

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 clouddesploy-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 clouddesploy-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: A**Explanation:**

<https://cloud.google.com/functions/docs/calling/pubsub>
<https://cloud.google.com/deploy/docs/integrating#integrating-cloud-deploy-with-cloud-build>

testingcloud deploy sends message
cloud build reads this message

https://cloud.google.com/build/docs/automate-builds-pubsub-events#console_2

Question: 230

CertyIQ

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: D**Explanation:**

<https://kubernetes.io/docs/concepts/configuration/secret/>

A is not correct because a Kubernetes Secret only encodes the string, and anyone who can read the secret will be able to decode it.

Question: 231

CertyIQ

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**Explanation:**

Store user data in a Cloud Storage bucket is a good option for storing large amounts of data, but if you need to minimize code changes, using a persistent disk in a Compute Engine instance may be a better fit as it provides a more direct replacement for an ephemeral disk with similar access patterns, which will likely require fewer changes to your existing code. Storing user data in a Cloud Storage bucket would likely require more significant changes to how your application interacts with the data.

https://cloud.google.com/shell/docs/how-cloud-shell-works#persistent_disk_storage How Cloud Shell works bookmark_border Cloud Shell provisions a Compute Engine virtual machine running a Debian-based Linux operating system for your temporary use. This virtual machine is owned and managed by Google Cloud, so will not appear within any of your GCP projects. <https://cloud.google.com/shell/docs/how-cloud-shell-works>

Question: 232

CertyIQ

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: AD**Explanation:**

lock to avoid deletion before 7 years lifecycle policy to change to coldline (since it will be accessed annually) after 14 days.

The requirement of storing data for a period of no less than 7 years can be met by setting the retention policy for the data in the Cloud Storage bucket. This can be done using the Bucket Lock feature (A) or a lifecycle management policy (D), which can be set to retain the objects for the required period of 7 years.

Question: 233

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: C**Explanation:**

https://cloud.google.com/functions/docs/running/calling#cloudevent_functions

https://cloud.google.com/functions/docs/running/overview#choosing_an_abstraction_layer
<https://cloud.google.com/functions/docs/running/function-frameworks>
<https://cloud.google.com/functions/docs/running/calling#cloudevent-function-curl-tabs-storage>

Question: 234

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: D**Explanation:**

<https://cloud.google.com/binary-authorization/docs/cloud-build>

Question: 235

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: C

Explanation:

<https://cloud.google.com/run/docs/monitoring#custom-metrics>

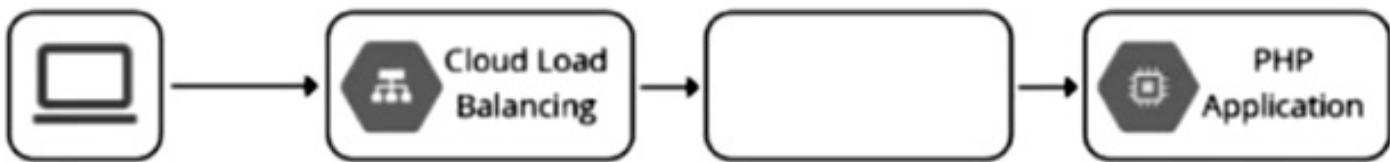
https://cloud.google.com/run/docs/monitoring#add_alerts

Option A involves creating a Cloud Function that is triggered by Cloud Scheduler, but this option does not fully address the requirement of being alerted if the number of errors exceeds a specific threshold. Option A requires manual checking of the error count, whereas option C provides a more automated solution by setting up an alerting policy in Cloud Monitoring that sends an alert if the number of errors exceeds the defined threshold.

Question: 236

CertyIQ

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

Explanation:

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

<https://cloud.google.com/endpoints/docs/openapi/quotas-overview>

Question: 237

CertyIQ

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**Explanation:**

A is a best practice <https://cloud.google.com/blog/products/containers-kubernetes/kubernetes-best-practices-terminating-with-grace>

<https://cloud.google.com/blog/products/containers-kubernetes/kubernetes-best-practices-terminating-with-grace>

Question: 238**CertyIQ**

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**Explanation:**

<https://cloud.google.com/datastore/docs/best-practices#queries>

While increasing the memory limits of Cloud Run instances could help alleviate the issue temporarily, it would not address the root cause of the problem, which is the high number of Datastore entity reads during busy times. Over time, as more products are added to the system, this problem would only become more severe, and you would have to continually increase the memory limits to prevent Cloud Run from crashing. Using cursors to paginate the results and retrieve a limited number of products at a time is a more sustainable solution as it reduces the amount of data that needs to be read from Datastore and decreases the memory usage of your Cloud Run instances. This way, you can maintain the performance of the system and prevent it from crashing, even as more products are added over time.

Question: 239**CertyIQ**

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

Explanation:

I couldn't find the wrong point in Option C. And it's cool way. I think in option B, some accidents possibly occur in the case the communication occurred between some microservices including new container.

https://cloud.google.com/architecture/implementing-deployment-and-testing-strategies-on-gke#perform_an_ab_test I would say C: To try this pattern, you perform the following steps: Deploy the current version of the application (app:current) on the GKE cluster. Deploy a new version of the application (app:new) alongside the current version. Use Istio to route incoming requests that have the username test in the request's cookie to app:new. All other requests are routed to app:current.

Question: 240

CertyIQ

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: A

Explanation:

To configure more granular access to Kubernetes resources at the cluster level or within Kubernetes namespaces, you use Role-Based Access Control (RBAC). RBAC allows you to create detailed policies that define which operations and resources you allow users and service accounts to access. With RBAC, you can control access for Google Accounts, Google Cloud service accounts, and Kubernetes service accounts. T

Question: 241

CertyIQ

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

Explanation:

It should be B, EI faced this exact challenge in one of my projects

Option B, using a Serverless VPC Access connector, is the recommended best practice for accessing a Cloud SQL instance from Cloud Run because it provides a secure and scalable way to connect to your internal resources. With this option, you can connect your Cloud Run service to your internal VPC network, allowing it to access resources such as Cloud SQL instances that have internal IP addresses. This eliminates the need for a public IP address or a public network connection to your database, which can increase security and regulatory compliance.

Question: 242

CertyIQ

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

Explanation:

According to the documentation the SHA256 is needed in the REST API ->

[Bhttps://cloud.google.com/storage/docs/encryption/using-customer-supplied-keys#rest-csek-download-object](https://cloud.google.com/storage/docs/encryption/using-customer-supplied-keys#rest-csek-download-object)

Question: 243

CertyIQ

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 ([\[email protected\]](mailto:)) 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 ([\[email protected\]](mailto:)) 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**Explanation:**

it's B.<https://articles.wesionary.team/multi-project-account-service-account-in-gcp-ba8f8821347e>

A is not correct because you cannot run a Cloud Function with a service account that is not in the same Google Cloud project. B is correct because it follows the least privilege principle and for a Cloud Function, the service account must be created in the same project where the function is getting executed.

Question: 244**CertyIQ**

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**Explanation:**

i also choose A. <https://cloud.google.com/architecture/security-log-analytics>

I choose option A because it provides a direct and automated solution for duplicating the specific application logs and sending them to the security team's project. This method uses Cloud Logging's sink feature, which is a powerful tool for routing logs to other destinations, such as log buckets or Pub/Sub topics. By using a sink, you can ensure that the duplication of logs is performed in real-time and automatically, which would minimize manual intervention and minimize the risk of errors.

Question: 245**CertyIQ**

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

Explanation:

<https://cloud.google.com/run/docs/continuous-deployment-with-cloud-build> Cloud Build is a fully managed, scalable, and efficient service provided by Google Cloud that allows you to automate your software delivery pipeline, including building, testing, and deploying applications. By using a trigger with Cloud Build, you can automatically build and deploy your Go application to Cloud Run whenever a source code commit is made in Cloud Source Repositories. This provides a simple, fully managed solution for continuous deployment, and eliminates the need for manual processes or external tools like Jenkins.

Question: 246

CertyIQ

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

Explanation:

A. Using Traffic Director with a sidecar proxy can provide resilience for your application by allowing for failover to the secondary region in the event of an outage. The sidecar proxy can route traffic to the legacy service in either of the two GKE clusters, ensuring high availability.C. Configuring the legacy service's firewall to allow health checks originating from the proxy allows the proxy to periodically check the health of the legacy service and ensure that it is functioning properly. This helps to ensure that traffic is only routed to healthy instances of the legacy service, further improving the resilience of the setup.

Question: 247

CertyIQ

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

Explanation:

Minikube is a tool that runs a single-node Kubernetes cluster locally on your laptop, allowing you to test and run your application on a simulated production environment. Skaffold is a command line tool that automates the process of building and deploying your application to a local or remote Kubernetes cluster. Together, Minikube and Skaffold allow you to test your frequent changes locally, with a deployment that emulates a production environment, using minimal resources. Minikube provides the simulated production environment, while Skaffold takes care of building and deploying your application, making the development process smoother and more efficient.

Question: 248

CertyIQ

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-central1-docker.pkg.dev/${PROJECT_ID}/${_REPO_NAME}/myimage:${SHORT_SHA}',
         '..']

- name: 'gcr.io/cloud-builders/docker'
  args: ['push', 'us-central1-
docker.pkg.dev/${PROJECT_ID}/${_REPO_NAME}/myimage:${SHORT_SHA}']

- name: google/cloud-sdk
  args: ['gcloud', 'run', 'deploy', 'helloworld-${SHORT_SHA}',
         '--image=us-central1-
docker.pkg.dev/${PROJECT_ID}/${_REPO_NAME}/myimage:${SHORT_SHA}',
         '--region', 'us-central1', '--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**Explanation:**

Option D, adding the --cache-from argument to the Docker build step in the build config file, would be the best option to optimize deployment times. The --cache-from argument allows you to specify a list of images that Docker should use as a cache source when building the image. If a layer in the current build matches a layer in one of the cache source images, Docker uses the cached layer instead of building it again, reducing the build time. Options A and C may not have a significant impact on deployment times, and option B would likely add complexity and increase deployment times, as it would require deploying and managing a new Docker registry and using a VPC-based Cloud Build worker pool.

Question: 249**CertyIQ**

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: B**Explanation:**

Option D is not ideal because using a Pub/Sub trigger to handle new messages in a topic is not the most efficient way to process messages in real time. In a trigger-based architecture, Cloud Functions are invoked only when new messages are available, so there is a possibility of delays in processing. On the other hand, Option B provides a more efficient architecture for real-time processing. A Cloud Function is invoked for each message received in the Pub/Sub topic, providing immediate processing as messages arrive. This way, the application is independent from any other system and incurs costs only when new messages arrive, fulfilling the requirements stated in the question.

Question: 250**CertyIQ**

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: A

Explanation:

1. to log request metadata https://cloud.google.com/logging/docs/reference/libraries#write_request_logs
2. When you write logs from your service or job, they will be picked up automatically by Cloud Logging so long as the logs are written to any of these locations:
Standard output (stdout) or standard error (stderr)
streams
Any files under the /var/log directory
syslog (/dev/log)
Logs written using Cloud Logging client libraries, which are available for many popular languages <https://cloud.google.com/run/docs/logging#container-logs>

Question: 251**CertyIQ**

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**Explanation:**

service directory for registration and discovery of services

Service Directory provides a scalable way to manage the registration and discovery of services. By creating a namespace, you can use API calls to register your Cloud Run and Cloud Functions services, and query them during runtime. This allows for dynamic discovery and eliminates the need for manually updating environment variables. Service Directory also provides features such as service health checks and metadata, which can be used to further improve the reliability and scalability of your application.

Question: 252**CertyIQ**

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 attester 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 attester 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**Explanation:**

Kritis Signer is an open source command-line tool that can create Binary Authorization attestations based on a policy that you configure. You can also use Kritis Signer to create attestations after checking an image for vulnerabilities identified by Container Analysis.<https://cloud.google.com/binary-authorization/docs/creating-attestations-kritis>

Question: 253**CertyIQ**

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**Explanation:**

Enabling the Container Scanning API in Artifact Registry and scanning the built container images is a best practice because it allows you to perform security scans within the same environment where the built images are stored. This helps minimize the changes that could disrupt other teams' processes, as the images are already in Artifact Registry, and the scanning results can be easily accessed by the deployment pipeline in Google Cloud. Additionally, the Container Scanning API integrates with Google Cloud security and governance tools, allowing you to enforce security policies and manage vulnerabilities in a centralized and automated way.

Question: 254**CertyIQ**

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

Explanation:

This is the best way to investigate performance bottlenecks in a microservices application. By using OpenTelemetry, you can collect traces from all of your microservices and analyze them in Trace. This will allow you to identify which requests are taking the longest and where the bottlenecks are occurring.

Question: 255

CertyIQ

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: C

Explanation:

Option D, which involves starting several instances of a load testing framework container on Cloud Shell, may not be a recommended approach for several reasons:Cloud Shell is a shell environment for managing resources hosted on Google Cloud and does not provide a scalable infrastructure for running load tests.Starting several instances of a container on Cloud Shell is not a highly available or scalable solution for load testing, and may not provide sufficient parallelism or control over the source IP addresses of the traffic.Using a private Google Kubernetes Engine cluster to deploy a distributed load testing framework allows for scaling up the load testing by deploying additional Pods, which can provide more control over the number of concurrent users and the source IP addresses of the traffic, and can provide a more robust and scalable infrastructure for load testing.

To deploy the load testing tasks, you do the following:Deploy a load testing master.Deploy a group of load testing workers. With these load testing workers, you can create a substantial amount of traffic for testing purposes.<https://cloud.google.com/run/docs/about-load-testing>
https://cloud.google.com/architecture/distributed-load-testing-using-gke#build_the_container_image

Question: 256

CertyIQ

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: D

Explanation:

most secure and efficient way to give the application Identity and Access Management (IAM) permission to access the images in the bucket.

Question: 257

CertyIQ

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: A

Explanation:

1. Correct answer is A. This is classic A/B testing. Since you already have a new version, built into an image, all you need do is to use the load balancer to split traffic going to old version and new version. See:
https://cloud.google.com/load-balancing/docs/l7-internal/traffic-management#traffic_actions_weight-based_traffic_splitting. Note that global load balancers can route to serverless services.
<https://cloud.google.com/load-balancing/docs/https/setting-up-https-serverless>

Question: 258

CertyIQ

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 kubectl config 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 kubectl config to configure access to each cluster.

Answer: B

Explanation:

Option B is the best solution because it is secure, convenient, and time-efficient. By using a configuration file, you can define the clusters, users, and contexts that you want to use. You can then share the file with the developers, who can use it to add the cluster, user, and context details to their kubeconfig file. Once the developers have added the cluster, user, and context details to their kubeconfig file, they can switch to another cluster by using the following command: kubectl config use <context-name>

Question: 259

CertyIQ

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: A

Explanation:

- 1. A cursor is a pointer to a specific location in a Firestore database. By using cursors with limits, you can control the number of documents that are returned in a query. This can help to reduce the number of Firestore queries that are made, which can improve performance and prevent Cloud Run from crashing.

Question: 260

CertyIQ

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**Explanation:**

Use a centralized repository. A centralized repository is a single location where all of your team's code is stored. This makes it easy for everyone to access the latest code, and it also helps to prevent conflicts. Use branches. Branches are a way to create a separate version of the code for development purposes. This allows developers to work on new features or bug fixes without affecting the main branch of the code.

You are a developer at a large organization

Question: 261**CertyIQ**

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?

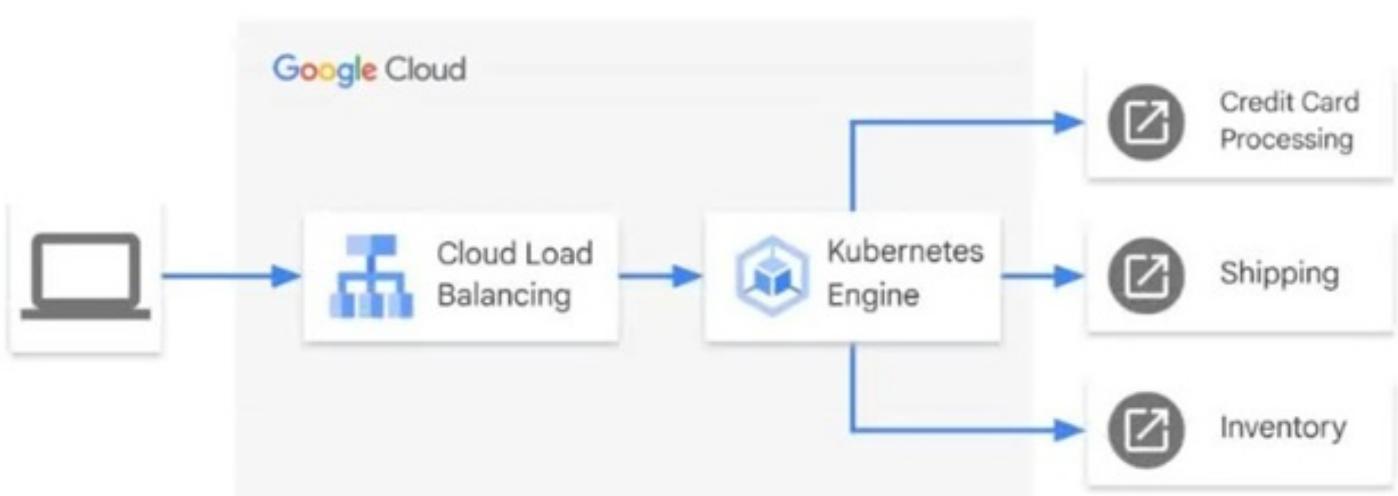
- A.Install Cloud Code on the integrated development environment (IDE). Navigate to Cloud APIs, and enable Pub/Sub against a valid Google Project ID. When developing locally, configure your application to call pubsub.googleapis.com.
- B.Install the Pub/Sub emulator using gcloud, and start the emulator 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: D**Explanation:**

```
gcloud beta emulators pubsub start --project=my-project-id
export PUBSUB_EMULATOR_HOST=localhost:8085
export GOOGLE_CLOUD_PROJECT=my-project-id
```

Question: 262**CertyIQ**

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: A

Explanation:

OpenTelemetry is a set of APIs, libraries, and agents that help you collect telemetry data (such as traces, metrics, and logs) from your applications. By instrumenting your application with OpenTelemetry, you can gather performance metrics, trace requests across different components, and identify potential bottlenecks or issues causing inconsistent performance.

Question: 263

CertyIQ

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

Explanation:

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

Question: 264**CertyIQ**

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**Explanation:**

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.

Question: 265**CertyIQ**

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: D**Explanation:**

Reference:

<https://cloud.google.com/kubernetes-engine/docs/concepts/release-channels#channels>

Question: 266**CertyIQ**

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: B

Explanation:

Use Cloud Build to create the container, and deploy it on Cloud Run.

CertyIQ

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: D

Explanation:

Host the application on Google Kubernetes Engine, and use Identity-Aware Proxy (IAP) with Cloud Load Balancing and Google-managed certificates.

CertyIQ

Question: 268

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: D

Explanation:

D. When setting PubSub subscription, use type push and use the service account with the invoker role as authentication. A. no need more permissions. B. it could work if the vms are in the same VPC, but it is not best practice. C. That setting is only for connecting to load balancer

Question: 269

CertyIQ

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: D**Explanation:**

D. <https://cloud.google.com/sdk/gcloud/reference/beta/emulators/spanner> Use an emulator if possible when testing. B. It could work, but in real world, spanning a cluster of cloud spanner takes a lot of time, and also money

Question: 270

CertyIQ

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: C**Explanation:**

Create a GitHub repository, mirror it to a Cloud Source Repositories repository, and use trunk-based development.

Question: 271

CertyIQ

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

Explanation:

Pull Subscription for Controlled Processing: A pull subscription gives you control over when and how messages are processed. This can be particularly important for maintaining the integrity of the in-memory database, as it allows for more deliberate handling of message backlogs and peak loads. Message Ordering Is Crucial: The ordering of stock price updates is critical. Using the stock symbol as the ordering key ensures that updates for a specific stock are processed in the order they were sent. This is vital to ensure the accuracy of stock price data, as prices must be updated in the sequence they were received to reflect the true market conditions. No Need for Exactly-Once Delivery: In most financial data scenarios, the latest data supersedes the old. If a message is delivered more than once, the last update for a given timestamp will leave the database in the correct state. Therefore, exactly-once delivery, which can add complexity and overhead, might not be necessary.

Question: 272

CertyIQ

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

Explanation:

For migrating user profile information to Firestore in your social media company, the best approach is: B. Create one root collection for user profiles, and create one subcollection for each user's posts. This structure offers better scalability, efficient data retrieval, and clearer organization, while also simplifying access control and data modeling. Options A, C, and D are less optimal due to potential performance issues, complex querying, and counterintuitive data relationships.

Question: 273

CertyIQ

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

Explanation:

In Cloud Monitoring, create an alerting policy to notify you if the average memory consumption is outside the defined range.

Question: 274

CertyIQ

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

Explanation:

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.

Question: 275

CertyIQ

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

- A.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.
- 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 by exporting the PUBSUB_EMULATOR_HOST variable.
- C.Run the gcloud config set api_endpoint_overrides/pubsub https://pubsubemulator.googleapis.com command to change the Pub/Sub endpoint prior to starting the application.
- D.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.

Answer: B**Explanation:**

For local testing of Pub/Sub integration, the most suitable option is B. You'd install the Pub/Sub emulator via gcloud, initiate it with a valid Google Project ID, and configure your application to utilize the local emulator by setting the PUBSUB_EMULATOR_HOST variable. This method replicates the Pub/Sub environment locally for efficient testing.

CertyIQ**Question: 276**

You recently developed an application that monitors a large number of stock prices. You need to configure Pub/Sub to receive a high volume messages and update the current stock price in a single large 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 pull subscription with exactly-once delivery enabled.
- B.Create a push subscription with both ordering and exactly-once delivery turned off.
- C.Create a push subscription with exactly-once delivery enabled.
- D.Create a pull subscription with both ordering and exactly-once delivery turned off.

Answer: C**Explanation:**

Create a push subscription with exactly-once delivery enabled.

CertyIQ**Question: 277**

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 legacy service in a way that is resilient and requires the fewest number of steps. You also want to be able to run probe-based 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.Set up a proxyless Traffic Director configuration for the application.
- C.Configure the legacy service's firewall to allow health checks originating from the sidecar 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**Explanation:**

- 1.Use Traffic Director with a sidecar proxy (Option A):This enables reliable communication between your application and the legacy service. The sidecar proxy can manage traffic routing, load balancing, and

resilience.2. Configure the legacy service's firewall to allow health checks originating from the sidecar proxy (Option C): By allowing health checks from the sidecar proxy, you ensure that the health checks, which are necessary for ensuring service availability, are permitted by the firewall.

Question: 278

CertyIQ

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 function is consuming the most CPU and memory resources. What should you do?

- A. Add print commands to the application source code to log when each function is called, and redeploy the application.
- B. 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 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 which functions cause the most latency.
- D. 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.

Answer: D

Explanation:

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.

Question: 279

CertyIQ

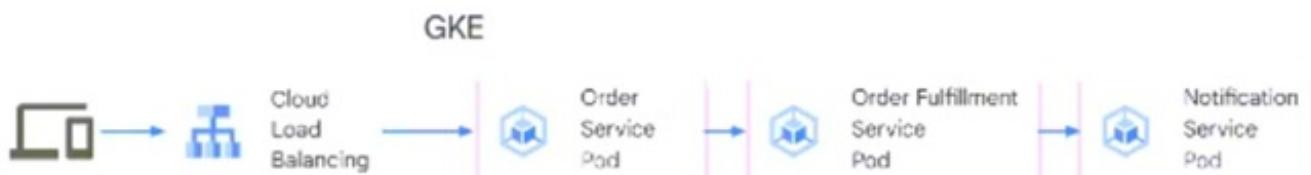
You are developing a flower ordering application. Currently you have three microservices:

- Order Service (receives the orders)
- Order Fulfillment Service (processes the orders)
- Notification Service (notifies the customer when the order is filled)

You need to determine how the services will communicate with each other. You want incoming orders to be processed quickly and you need to collect order information for fulfillment. You also want to make sure orders are not lost between your services and are able to communicate asynchronously. How should the requests be processed?

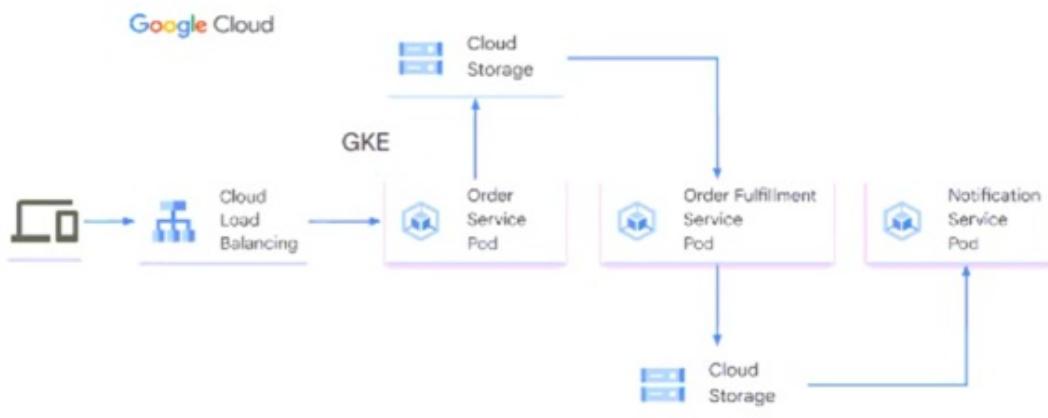
- A.
Order request → Order Service → Order Fulfillment Service → Notification Service

Google Cloud

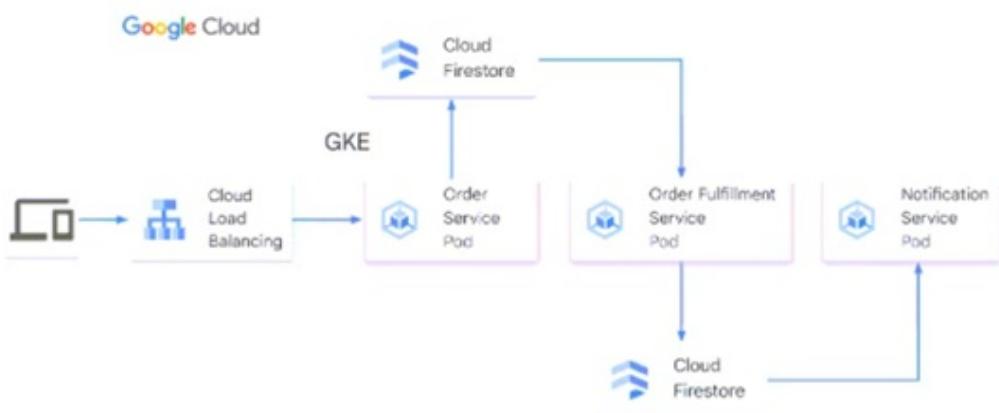


- B.

Order request → Order Service → Cloud Storage bucket → Order Fulfillment Service → Cloud Storage bucket → Notification Service



C.
Order request → Order Service → Firestore database → Order Fulfillment Service → Firestore database → Notification Service



D.
Order request → Order Service → Pub/Sub queue → Order Fulfillment Service → Firestore database → Pub/Sub queue → Notification Service



Answer: D

Explanation:

For efficient and reliable communication in a flower ordering application with microservices, the best approach is "Order request -> Order Service -> Pub/Sub queue -> Order Fulfillment Service -> Firestore Database -> Pub/Sub queue -> Notification Service," ensuring quick processing and asynchronous communication without data loss. More information can be found at: [Google Cloud Documentation](#).

Question: 280

Case Study -

Company Overview -

HipLocal is a community application designed to facilitate communication between people in close proximity. It is used for event planning and organizing sporting events, and for businesses to connect with their local communities. HipLocal launched recently in a few neighborhoods in Dallas and is rapidly growing into a global phenomenon. Its unique style of hyper-local community communication and business outreach is in demand around the world.

Executive Statement -

We are the number one local community app; it's time to take our local community services global. Our venture capital investors want to see rapid growth and the same great experience for new local and virtual communities that come online, whether their members are 10 or 10000 miles away from each other.

Solution Concept -

HipLocal wants to expand their existing service, with updated functionality, in new regions to better serve their global customers. They want to hire and train a new team to support these regions in their time zones. They will need to ensure that the application scales smoothly and provides clear uptime data.

Existing Technical Environment -

HipLocal's environment is a mix of on-premises hardware and infrastructure running in Google Cloud Platform. The HipLocal team understands their application well, but has limited experience in global scale applications. Their existing technical environment is as follows:

- "¢ Existing APIs run on Compute Engine virtual machine instances hosted in GCP.
- "¢ State is stored in a single instance MySQL database in GCP.
- "¢ Data is exported to an on-premises Teradata/Vertica data warehouse.
- "¢ Data analytics is performed in an on-premises Hadoop environment.
- "¢ The application has no logging.
- "¢ There are basic indicators of uptime; alerts are frequently fired when the APIs are unresponsive.

Business Requirements -

HipLocal's investors want to expand their footprint and support the increase in demand they are seeing. Their requirements are:

- "¢ Expand availability of the application to new regions.
- "¢ Increase the number of concurrent users that can be supported.
- "¢ Ensure a consistent experience for users when they travel to different regions.
- "¢ Obtain user activity metrics to better understand how to monetize their product.
- "¢ Ensure compliance with regulations in the new regions (for example, GDPR).
- "¢ Reduce infrastructure management time and cost.
- "¢ Adopt the Google-recommended practices for cloud computing.

Technical Requirements -

- "¢ The application and backend must provide usage metrics and monitoring.
- "¢ APIs require strong authentication and authorization.
- "¢ Logging must be increased, and data should be stored in a cloud analytics platform.
- "¢ Move to serverless architecture to facilitate elastic scaling.
- "¢ Provide authorized access to internal apps in a secure manner.

HipLocal's .net-based auth service fails under intermittent load.

What should they do?

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

Answer: A

Explanation:

Use App Engine for autoscaling.

CertyIQ

Question: 281

Case Study -

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- "¢ Provide authorized access to internal apps in a secure manner.

HipLocal's APIs are showing occasional failures, but they cannot find a pattern. They want to collect some metrics to help them troubleshoot.

What should they do?

- A. Take frequent snapshots of all of the VMs.
- B. Install the Stackdriver Logging agent on the VMs.
- C. Install the Stackdriver Monitoring agent on the VMs.
- D. Use Stackdriver Trace to look for performance bottlenecks.

Answer: B

Explanation:

Install the Stackdriver Logging agent on the VMs.

CertyIQ

Question: 282

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- "¢ Provide authorized access to internal apps in a secure manner.

Which service should HipLocal use to enable access to internal apps?

- A. Cloud VPN
- B. Cloud Armor
- C. Virtual Private Cloud
- D. Cloud Identity-Aware Proxy

Answer: D

Explanation:

Reference:

<https://cloud.google.com/iap/docs/cloud-iap-for-on-prem-apps-overview>

CertyIQ

Question: 283

Case Study -

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- "¢ Logging must be increased, and data should be stored in a cloud analytics platform.
- "¢ Move to serverless architecture to facilitate elastic scaling.
- "¢ Provide authorized access to internal apps in a secure manner.

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: AB

Explanation:

- A. Use Google App Engine services.
- B. Use serverless Google Cloud Functions.

Question: 284

CertyIQ

Case Study -

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- "¢ Existing APIs run on Compute Engine virtual machine instances hosted in GCP.
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- "¢ Data is exported to an on-premises Teradata/Vertica data warehouse.
- "¢ Data analytics is performed in an on-premises Hadoop environment.
- "¢ The application has no logging.
- "¢ There are basic indicators of uptime; alerts are frequently fired when the APIs are unresponsive.

Business Requirements -

HipLocal's investors want to expand their footprint and support the increase in demand they are seeing. Their requirements are:

- "¢ Expand availability of the application to new regions.
- "¢ Increase the number of concurrent users that can be supported.
- "¢ Ensure a consistent experience for users when they travel to different regions.
- "¢ Obtain user activity metrics to better understand how to monetize their product.
- "¢ Ensure compliance with regulations in the new regions (for example, GDPR).
- "¢ Reduce infrastructure management time and cost.
- "¢ Adopt the Google-recommended practices for cloud computing.

Technical Requirements -

- "¢ The application and backend must provide usage metrics and monitoring.
- "¢ APIs require strong authentication and authorization.
- "¢ Logging must be increased, and data should be stored in a cloud analytics platform.
- "¢ Move to serverless architecture to facilitate elastic scaling.
- "¢ Provide authorized access to internal apps in a secure manner.

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

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

Answer: C

Explanation:

- C. Move the state storage to Cloud Spanner.

Question: 285

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Case Study -

Company Overview -

HipLocal is a community application designed to facilitate communication between people in close proximity. It is used for event planning and organizing sporting events, and for businesses to connect with their local communities. HipLocal launched recently in a few neighborhoods in Dallas and is rapidly growing into a global phenomenon. Its unique style of hyper-local community communication and business outreach is in demand around the world.

Executive Statement -

We are the number one local community app; it's time to take our local community services global. Our venture capital investors want to see rapid growth and the same great experience for new local and virtual communities that come online, whether their members are 10 or 10000 miles away from each other.

Solution Concept -

HipLocal wants to expand their existing service, with updated functionality, in new regions to better serve their global customers. They want to hire and train a new team to support these regions in their time zones. They will need to ensure that the application scales smoothly and provides clear uptime data.

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- Which service should HipLocal use for their public APIs?

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

Answer: C

Explanation:

- C. Cloud Endpoints

Question: 286

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 - "¢ Provide authorized access to internal apps in a secure manner.
- HipLocal wants to improve the resilience of their MySQL deployment, while also meeting their business and

technical requirements.

Which configuration should they choose?

- A. Use the current single instance MySQL on Compute Engine and several read-only MySQL servers on Compute Engine.
- B. Use the current single instance MySQL on Compute Engine, and replicate the data to Cloud SQL in an external master configuration.
- C. Replace the current single instance MySQL instance with Cloud SQL, and configure high availability.
- D. Replace the current single instance MySQL instance with Cloud SQL, and Google provides redundancy without further configuration.

Answer: C

Explanation:

Replace the current single instance MySQL instance with Cloud SQL, and configure high availability.

Thank you

Thank you for being so interested in the premium exam material.

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Your insights can help me improve our writing and better understand our readers.

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