Professional Cloud Developer

1. 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(s): A

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

A. Replace your entire monitoring platform with Stackdriver.

B. Install the Stackdriver agents on your Compute Engine instances.

C. Use Stackdriver to capture and alert on logs, then ship them to your existing platform.

D. Migrate some traffic back to your old platform and perform AB testing on the two platforms concurrently.

Answer(s): B

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3. 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(s): C

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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}-instanc

# 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 --pr
--global
gcloud compute backend-services add-backend ${NAME}-http-bes --instance-group ${NAME}-i --ba
100000 --capacity-scaler 1.0 --global --instance-group-zone us-east1-d

# create urls maps and forwarding rule
gcloud compute url-maps create ${NAME}-http-urlmap --default-service ${NAME}-http-bes
gcloud compute target-http-proxies create ${NAME}-http-proxy --url-map ${NAME}-http-urlmap
gcloud compute forwarding-rules create ${NAME}-http-fw --global --ip-protocol ICP --target-h
--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(s): C

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5. 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(s): A

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6. 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(s): C

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7. 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(s): B

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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(s): C

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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(s): A

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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(s): B F

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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(s): C

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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.

B.

C.

D.

Answer(s): B

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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.newBuilde
              "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(s): B

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14. 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(s): C

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15. 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(s): B

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16. 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(s): A

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17. 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(s): C

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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(s): A

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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(s): D

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20. 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(s): D
