

# Google

## Exam Questions Professional-Cloud-DevOps-Engineer

Google Cloud Certified - Professional Cloud DevOps Engineer Exam



#### NEW QUESTION 1

Your application images are built using Cloud Build and pushed to Google Container Registry (GCR). You want to be able to specify a particular version of your application for deployment based on the release version tagged in source control. What should you do when you push the image?

- A. Reference the image digest in the source control tag.
- B. Supply the source control tag as a parameter within the image name.
- C. Use Cloud Build to include the release version tag in the application image.
- D. Use GCR digest versioning to match the image to the tag in source control.

**Answer:** B

#### Explanation:

<https://cloud.google.com/container-registry/docs/pushing-and-pulling>

#### NEW QUESTION 2

You encounter a large number of outages in the production systems you support. You receive alerts for all the outages that wake you up at night. The alerts are due to unhealthy systems that are automatically restarted within a minute. You want to set up a process that would prevent staff burnout while following Site Reliability Engineering practices. What should you do?

- A. Eliminate unactionable alerts.
- B. Create an incident report for each of the alerts.
- C. Distribute the alerts to engineers in different time zones.
- D. Redefine the related Service Level Objective so that the error budget is not exhausted.

**Answer:** A

#### Explanation:

Eliminate bad monitoring : Unactionable alerts (i.e., spam) <https://cloud.google.com/blog/products/management-tools/meeting-reliability-challenges-with-sre-principles>

agree with kyubiblaze about having to remove unactionable items aka spam: "good monitoring alerts on actionable problems" @ <https://cloud.google.com/blog/products/management-tools/meeting-reliability-challenges-with-sre-principles>

#### NEW QUESTION 3

You support a high-traffic web application and want to ensure that the home page loads in a timely manner. As a first step, you decide to implement a Service Level Indicator (SLI) to represent home page request latency with an acceptable page load time set to 100 ms. What is the Google-recommended way of calculating this SLI?

- A. Bucketize the request latencies into ranges, and then compute the percentile at 100 ms.
- B. Bucketize the request latencies into ranges, and then compute the median and 90th percentiles.
- C. Count the number of home page requests that load in under 100 ms, and then divide by the total number of home page requests.
- D. Count the number of home page requests that load in under 100 m
- E. and then divide by the total number of all web application requests.

**Answer:** C

#### Explanation:

<https://sre.google/workbook/implementing-slos/>

In the SRE principles book, it's recommended treating the SLI as the ratio of two numbers: the number of good events divided by the total number of events. For example: Number of successful HTTP requests / total HTTP requests (success rate)

#### NEW QUESTION 4

You support an application running on App Engine. The application is used globally and accessed from various device types. You want to know the number of connections. You are using Stackdriver Monitoring for App Engine. What metric should you use?

- A. flex/connections/current
- B. tcp\_ssl\_proxy/new\_connections
- C. tcp\_ssl\_proxy/open\_connections
- D. flex/instance/connections/current

**Answer:** A

#### Explanation:

[https://cloud.google.com/monitoring/api/metrics\\_gcp#gcp-appengine](https://cloud.google.com/monitoring/api/metrics_gcp#gcp-appengine)

#### NEW QUESTION 5

You support a popular mobile game application deployed on Google Kubernetes Engine (GKE) across several Google Cloud regions. Each region has multiple Kubernetes clusters. You receive a report that none of the users in a specific region can connect to the application. You want to resolve the incident while following Site Reliability Engineering practices. What should you do first?

- A. Reroute the user traffic from the affected region to other regions that don't report issues.
- B. Use Stackdriver Monitoring to check for a spike in CPU or memory usage for the affected region.
- C. Add an extra node pool that consists of high memory and high CPU machine type instances to the cluster.
- D. Use Stackdriver Logging to filter on the clusters in the affected region, and inspect error messages in the logs.

**Answer:** A

**Explanation:**

Google always aims to first stop the impact of an incident, and then find the root cause (unless the root cause just happens to be identified early on).

**NEW QUESTION 6**

You have a set of applications running on a Google Kubernetes Engine (GKE) cluster, and you are using Stackdriver Kubernetes Engine Monitoring. You are bringing a new containerized application required by your company into production. This application is written by a third party and cannot be modified or reconfigured. The application writes its log information to `/var/log/app_messages.log`, and you want to send these log entries to Stackdriver Logging. What should you do?

- A. Use the default Stackdriver Kubernetes Engine Monitoring agent configuration.
- B. Deploy a Fluentd daemonset to GK
- C. Then create a customized input and output configuration to tail the log file in the application's pods and write to Stackdriver Logging.
- D. Install Kubernetes on Google Compute Engine (GCE) and redeploy your application
- E. Then customize the built-in Stackdriver Logging configuration to tail the log file in the application's pods and write to Stackdriver Logging.
- F. Write a script to tail the log file within the pod and write entries to standard output
- G. Run the script as a sidecar container with the application's pod
- H. Configure a shared volume between the containers to allow the script to have read access to `/var/log` in the application container.

**Answer: B**

**Explanation:**

<https://cloud.google.com/architecture/customizing-stackdriver-logs-fluentd>

Besides the list of default logs that the Logging agent streams by default, you can customize the Logging agent to send additional logs to Logging or to adjust agent settings by adding input configurations. The configuration definitions in these sections apply to the fluent-plugin-google-cloud output plugin only and specify how logs are transformed and ingested into Cloud Logging. <https://cloud.google.com/logging/docs/agent/logging/configuration#configure>

**NEW QUESTION 7**

Some of your production services are running in Google Kubernetes Engine (GKE) in the eu-west-1 region. Your build system runs in the us-west-1 region. You want to push the container images from your build system to a scalable registry to maximize the bandwidth for transferring the images to the cluster. What should you do?

- A. Push the images to Google Container Registry (GCR) using the gcr.io hostname.
- B. Push the images to Google Container Registry (GCR) using the us.gcr.io hostname.
- C. Push the images to Google Container Registry (GCR) using the eu.gcr.io hostname.
- D. Push the images to a private image registry running on a Compute Engine instance in the eu-west-1 region.

**Answer: C**

**Explanation:**

Hostname Storage location gcr.io Stores images in data centers in the United States asia.gcr.io Stores images in data centers in Asia eu.gcr.io Stores images in data centers within member states of the European Union us.gcr.io Stores images in data centers in the United States

**NEW QUESTION 8**

You need to define Service Level Objectives (SLOs) for a high-traffic multi-region web application. Customers expect the application to always be available and have fast response times. Customers are currently happy with the application performance and availability. Based on current measurement, you observe that the 90th percentile of latency is 120ms and the 95th percentile of latency is 275ms over a 28-day window. What latency SLO would you recommend to the team to publish?

- A. 90th percentile – 100ms 95th percentile – 250ms
- B. 90th percentile – 120ms 95th percentile – 275ms
- C. 90th percentile – 150ms 95th percentile – 300ms
- D. 90th percentile – 250ms 95th percentile – 400ms

**Answer: C**

**Explanation:**

<https://sre.google/sre-book/service-level-objectives/>

**NEW QUESTION 9**

Your organization recently adopted a container-based workflow for application development. Your team develops numerous applications that are deployed continuously through an automated build pipeline to a Kubernetes cluster in the production environment. The security auditor is concerned that developers or operators could circumvent automated testing and push code changes to production without approval. What should you do to enforce approvals?

- A. Configure the build system with protected branches that require pull request approval.
- B. Use an Admission Controller to verify that incoming requests originate from approved sources.
- C. Leverage Kubernetes Role-Based Access Control (RBAC) to restrict access to only approved users.
- D. Enable binary authorization inside the Kubernetes cluster and configure the build pipeline as an attestor.

**Answer: D**

**Explanation:**

The keywords here is "developers or operators". Option A the operators could push images to production without approval (operators could touch the cluster directly and the cluster cannot do any action against them). Rest same as francisco\_guerra.

**NEW QUESTION 10**

You currently store the virtual machine (VM) utilization logs in Stackdriver. You need to provide an easy-to-share interactive VM utilization dashboard that is updated in real time and contains information aggregated on a quarterly basis. You want to use Google Cloud Platform solutions. What should you do?

- A. \* 1. Export VM utilization logs from Stackdriver to BigQuery.\* 2. Create a dashboard in Data Studio.\* 3. Share the dashboard with your stakeholders.
- B. \* 1. Export VM utilization logs from Stackdriver to Cloud Pub/Sub.\* 2. From Cloud Pub/Sub, send the logs to a Security Information and Event Management (SIEM) system.\* 3. Build the dashboards in the SIEM system and share with your stakeholders.
- C. \* 1. Export VM utilization logs (rom Stackdriver to BigQuery.\* 2. From BigQuer
- D. export the logs to a CSV file.\* 3. Import the CSV file into Google Sheets.\* 4. Build a dashboard in Google Sheets and share it with your stakeholders.
- E. \* 1. Export VM utilization logs from Stackdriver to a Cloud Storage bucket.\* 2. Enable the Cloud Storage API to pull the logs programmatically.\* 3. Build a custom data visualization application.\* 4. Display the pulled logs in a custom dashboard.

**Answer: A**

#### NEW QUESTION 10

You are responsible for creating and modifying the Terraform templates that define your Infrastructure. Because two new engineers will also be working on the same code, you need to define a process and adopt a tool that will prevent you from overwriting each other's code. You also want to ensure that you capture all updates in the latest version. What should you do?

- A. • Store your code in a Git-based version control system. • Establish a process that allows developers to merge their own changes at the end of each day. • Package and upload code lo a versioned Cloud Storage bucket as the latest master version.
- B. • Store your code in a Git-based version control system. • Establish a process that includes code reviews by peers and unit testing to ensure integrity and functionality before integration of code. • Establish a process where the fully integrated code in the repository becomes the latest master version.
- C. • Store your code as text files in Google Drive in a defined folder structure that organizes the files. • At the end of each da
- D. confirm that all changes have been captured in the files within the folder structure. • Rename the folder structure with a predefined naming convention that increments the version.
- E. • Store your code as text files in Google Drive in a defined folder structure that organizes the files. • At the end of each day, confirm that all changes have been captured in the files within the folder structure and create a new .zip archive with a predefined naming convention. • Upload the .zip archive to a versioned Cloud Storage bucket and accept it as the latest version.

**Answer: B**

#### NEW QUESTION 13

Your application services run in Google Kubernetes Engine (GKE). You want to make sure that only images from your centrally-managed Google Container Registry (GCR) image registry in the altostrat-images project can be deployed to the cluster while minimizing development time. What should you do?

- A. Create a custom builder for Cloud Build that will only push images to gcr.io/altostrat-images.
- B. Use a Binary Authorization policy that includes the whitelist name pattern gcr.io/altostrat-images/.
- C. Add logic to the deployment pipeline to check that all manifests contain only images from gcr.io/altostrat-images.
- D. Add a tag to each image in gcr.io/altostrat-images and check that this tag is present when the image is deployed.

**Answer: B**

#### NEW QUESTION 14

You are responsible for the reliability of a high-volume enterprise application. A large number of users report that an important subset of the application's functionality – a data intensive reporting feature – is consistently failing with an HTTP 500 error. When you investigate your application's dashboards, you notice a strong correlation between the failures and a metric that represents the size of an internal queue used for generating reports. You trace the failures to a reporting backend that is experiencing high I/O wait times. You quickly fix the issue by resizing the backend's persistent disk (PD). How you need to create an availability Service Level Indicator (SLI) for the report generation feature. How would you define it?

- A. As the I/O wait times aggregated across all report generation backends
- B. As the proportion of report generation requests that result in a successful response
- C. As the application's report generation queue size compared to a known-good threshold
- D. As the reporting backend PD throughput capacity compared to a known-good threshold

**Answer: B**

#### Explanation:

According to SRE Workbook, one of potential SLI is as below:

\* Type of service: Request-driven

\* Type of SLI: Availability

\* Description: The proportion of requests that resulted in a successful response. <https://sre.google/workbook/implementing-slos/>

#### NEW QUESTION 17

You support an application running on GCP and want to configure SMS notifications to your team for the most critical alerts in Stackdriver Monitoring. You have already identified the alerting policies you want to configure this for. What should you do?

- A. Download and configure a third-party integration between Stackdriver Monitoring and an SMS gateway.Ensure that your team members add their SMS/phone numbers to the external tool.
- B. Select the Webhook notifications option for each alerting policy, and configure it to use a third-party integration too
- C. Ensure that your team members add their SMS/phone numbers to the external tool.
- D. Ensure that your team members set their SMS/phone numbers in their Stackdriver Profil
- E. Select the SMS notification option for each alerting policy and then select the appropriate SMS/phone numbers from the list.
- F. Configure a Slack notification for each alerting polic
- G. Set up a Slack-to-SMS integration to send SMS messages when Slack messages are receive
- H. Ensure that your team members add their SMS/phone numbers to the external integration.

**Answer: C**

#### Explanation:

[https://cloud.google.com/monitoring/support/notification-options#creating\\_channels](https://cloud.google.com/monitoring/support/notification-options#creating_channels) To configure SMS notifications, do the following:

In the SMS section, click Add new and follow the instructions. Click Save. When you set up your alerting policy, select the SMS notification type and choose a verified phone number from the list.

#### NEW QUESTION 21

Your company follows Site Reliability Engineering practices. You are the person in charge of Communications for a large, ongoing incident affecting your customer-facing applications. There is still no estimated time for a resolution of the outage. You are receiving emails from internal stakeholders who want updates on the outage, as well as emails from customers who want to know what is happening. You want to efficiently provide updates to everyone affected by the outage. What should you do?

- A. Focus on responding to internal stakeholders at least every 30 minute
- B. Commit to "next update" times.
- C. Provide periodic updates to all stakeholders in a timely manne
- D. Commit to a "next update" time in all communications.
- E. Delegate the responding to internal stakeholder emails to another member of the Incident Response Tea
- F. Focus on providing responses directly to customers.
- G. Provide all internal stakeholder emails to the Incident Commander, and allow them to manage internal communication
- H. Focus on providing responses directly to customers.

**Answer: B**

#### Explanation:

When disaster strikes, the person who declares the incident typically steps into the IC role and directs the high-level state of the incident. The IC concentrates on the 3Cs and does the following: Commands and coordinates the incident response, delegating roles as needed. By default, the IC assumes all roles that have not been delegated yet. Communicates effectively. Stays in control of the incident response. Works with other responders to resolve the incident. <https://sre.google/workbook/incident-response/>

#### NEW QUESTION 23

You created a Stackdriver chart for CPU utilization in a dashboard within your workspace project. You want to share the chart with your Site Reliability Engineering (SRE) team only. You want to ensure you follow the principle of least privilege. What should you do?

- A. Share the workspace Project ID with the SRE tea
- B. Assign the SRE team the Monitoring Viewer IAM role in the workspace project.
- C. Share the workspace Project ID with the SRE tea
- D. Assign the SRE team the Dashboard Viewer IAM role in the workspace project.
- E. Click "Share chart by URL" and provide the URL to the SRE tea
- F. Assign the SRE team the Monitoring Viewer IAM role in the workspace project.
- G. Click "Share chart by URL" and provide the URL to the SRE tea
- H. Assign the SRE team the Dashboard Viewer IAM role in the workspace project.

**Answer: C**

#### Explanation:

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

#### NEW QUESTION 27

You are managing the production deployment to a set of Google Kubernetes Engine (GKE) clusters. You want to make sure only images which are successfully built by your trusted CI/CD pipeline are deployed to production. What should you do?

- A. Enable Cloud Security Scanner on the clusters.
- B. Enable Vulnerability Analysis on the Container Registry.
- C. Set up the Kubernetes Engine clusters as private clusters.
- D. Set up the Kubernetes Engine clusters with Binary Authorization.

**Answer: D**

#### Explanation:

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

#### NEW QUESTION 28

Your team of Infrastructure DevOps Engineers is growing, and you are starting to use Terraform to manage infrastructure. You need a way to implement code versioning and to share code with other team members. What should you do?

- A. Store the Terraform code in a version-control syste
- B. Establish procedures for pushing new versions and merging with the master.
- C. Store the Terraform code in a network shared folder with child folders for each version releas
- D. Ensure that everyone works on different files.
- E. Store the Terraform code in a Cloud Storage bucket using object versionin
- F. Give access to the bucket to every team member so they can download the files.
- G. Store the Terraform code in a shared Google Drive folder so it syncs automatically to every team member's compute
- H. Organize files with a naming convention that identifies each new version.

**Answer: A**

#### Explanation:

<https://www.terraform.io/docs/cloud/guides/recommended-practices/part3.3.html>

#### NEW QUESTION 30

You manage several production systems that run on Compute Engine in the same Google Cloud Platform (GCP) project. Each system has its own set of dedicated Compute Engine instances. You want to know how much it costs to run each of the systems. What should you do?

- A. In the Google Cloud Platform Console, use the Cost Breakdown section to visualize the costs per system.

- B. Assign all instances a label specific to the system they run
- C. Configure BigQuery billing export and query costs per label.
- D. Enrich all instances with metadata specific to the system they run
- E. Configure Stackdriver Logging to export to BigQuery, and query costs based on the metadata.
- F. Name each virtual machine (VM) after the system it runs
- G. Set up a usage report export to a Cloud Storage bucket
- H. Configure the bucket as a source in BigQuery to query costs based on VM name.

**Answer: B**

**Explanation:**

<https://cloud.google.com/billing/docs/how-to/export-data-bigquery>

**NEW QUESTION 31**

Your development team has created a new version of their service's API. You need to deploy the new versions of the API with the least disruption to third-party developers and end users of third-party installed applications. What should you do?

- A. Introduce the new version of the API. Announce deprecation of the old version of the API.
- B. Deprecate the old version of the API. Contact remaining users of the old API. Provide best effort support to users of the old API.
- C. Turn down the old version of the API.
- D. Announce deprecation of the old version of the API.
- E. Introduce the new version of the API. Contact remaining users of the old API.
- F. Deprecate the old version of the API.
- G. Turn down the old version of the API. Provide best effort support to users of the old API.
- H. Announce deprecation of the old version of the API.
- I. Contact remaining users of the old API. Introduce the new version of the API.
- J. Deprecate the old version of the API. Provide best effort support to users of the old API.
- K. Turn down the old version of the API.
- L. Introduce the new version of the API.
- M. Contact remaining users of the old API. Announce deprecation of the old version of the API.
- N. Deprecate the old version of the API. Turn down the old version of the API. Provide best effort support to users of the old API.

**Answer: A**

**NEW QUESTION 35**

You deploy a new release of an internal application during a weekend maintenance window when there is minimal user traffic. After the window ends, you learn that one of the new features isn't working as expected in the production environment. After an extended outage, you roll back the new release and deploy a fix. You want to modify your release process to reduce the mean time to recovery so you can avoid extended outages in the future. What should you do? Choose 2 answers

- A. Before merging new code, require 2 different peers to review the code changes.
- B. Adopt the blue/green deployment strategy when releasing new code via a CD server.
- C. Integrate a code linting tool to validate coding standards before any code is accepted into the repository.
- D. Require developers to run automated integration tests on their local development environments before release.
- E. Configure a CI server
- F. Add a suite of unit tests to your code and have your CI server run them on commit and verify any changes.

**Answer: BE**

**NEW QUESTION 39**

Your application artifacts are being built and deployed via a CI/CD pipeline. You want the CI/CD pipeline to securely access application secrets. You also want to more easily rotate secrets in case of a security breach. What should you do?

- A. Prompt developers for secrets at build time
- B. Instruct developers to not store secrets at rest.
- C. Store secrets in a separate configuration file on GitHub
- D. Provide select developers with access to the configuration file.
- E. Store secrets in Cloud Storage encrypted with a key from Cloud KMS
- F. Provide the CI/CD pipeline with access to Cloud KMS via IAM.
- G. Encrypt the secrets and store them in the source code repository
- H. Store a decryption key in a separate repository and grant your pipeline access to it

**Answer: C**

**NEW QUESTION 44**

You support an e-commerce application that runs on a large Google Kubernetes Engine (GKE) cluster deployed on-premises and on Google Cloud Platform. The application consists of microservices that run in containers. You want to identify containers that are using the most CPU and memory. What should you do?

- A. Use Stackdriver Kubernetes Engine Monitoring.
- B. Use Prometheus to collect and aggregate logs per container, and then analyze the results in Grafana.
- C. Use the Stackdriver Monitoring API to create custom metrics, and then organize your containers using groups.
- D. Use Stackdriver Logging to export application logs to BigQuery
- E. aggregate logs per container, and then analyze CPU and memory consumption.

**Answer: A**

**Explanation:**

<https://cloud.google.com/anthos/clusters/docs/on-prem/1.7/concepts/logging-and-monitoring>

**NEW QUESTION 48**

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