

# Google

## Exam Questions Professional-Cloud-DevOps-Engineer

Google Cloud Certified - Professional Cloud DevOps Engineer Exam



**NEW QUESTION 1**

You have an application running in Google Kubernetes Engine. The application invokes multiple services per request but responds too slowly. You need to identify which downstream service or services are causing the delay. What should you do?

- A. Analyze VPC flow logs along the path of the request.
- B. Investigate the Liveness and Readiness probes for each service.
- C. Create a Dataflow pipeline to analyze service metrics in real time.
- D. Use a distributed tracing framework such as OpenTelemetry or Stackdriver Trace.

**Answer: C**

**NEW QUESTION 2**

Your company follows Site Reliability Engineering principles. You are writing a postmortem for an incident, triggered by a software change, that severely affected users. You want to prevent severe incidents from happening in the future. What should you do?

- A. Identify engineers responsible for the incident and escalate to their senior management.
- B. Ensure that test cases that catch errors of this type are run successfully before new software releases.
- C. Follow up with the employees who reviewed the changes and prescribe practices they should follow in the future.
- D. Design a policy that will require on-call teams to immediately call engineers and management to discuss a plan of action if an incident occurs.

**Answer: B**

**NEW QUESTION 3**

You use Cloud Build to build your application. You want to reduce the build time while minimizing cost and development effort. What should you do?

- A. Use Cloud Storage to cache intermediate artifacts.
- B. Run multiple Jenkins agents to parallelize the build.
- C. Use multiple smaller build steps to minimize execution time.
- D. Use larger Cloud Build virtual machines (VMs) by using the machine-type option.

**Answer: C**

**Explanation:**

<https://cloud.google.com/storage/docs/best-practices>

[https://cloud.google.com/build/docs/speeding-up-builds#caching\\_directories\\_with\\_google\\_cloud\\_storage](https://cloud.google.com/build/docs/speeding-up-builds#caching_directories_with_google_cloud_storage) Caching directories with Google Cloud Storage To increase the speed of a build, reuse the results from a

previous build. You can copy the results of a previous build to a Google Cloud Storage bucket, use the results for faster calculation, and then copy the new results back to the bucket. Use this method when your build takes a long time and produces a small number of files that does not take time to copy to and from Google Cloud Storage.

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**NEW QUESTION 4**

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 5**

You encountered a major service outage that affected all users of the service for multiple hours. After several hours of incident management, the service returned to normal, and user access was restored. You need to provide an incident summary to relevant stakeholders following the Site Reliability Engineering recommended practices. What should you do first?

- A. Call individual stakeholders to explain what happened.
- B. Develop a post-mortem to be distributed to stakeholders.
- C. Send the Incident State Document to all the stakeholders.
- D. Require the engineer responsible to write an apology email to all stakeholders.

**Answer: B**

**NEW QUESTION 6**

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 7

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 8

You use a multiple step Cloud Build pipeline to build and deploy your application to Google Kubernetes Engine (GKE). You want to integrate with a third-party monitoring platform by performing a HTTP POST of the build information to a webhook. You want to minimize the development effort. What should you do?

- A. Add logic to each Cloud Build step to HTTP POST the build information to a webhook.
- B. Add a new step at the end of the pipeline in Cloud Build to HTTP POST the build information to a webhook.
- C. Use Stackdriver Logging to create a logs-based metric from the Cloud Build log
- D. Create an Alert with a Webhook notification type.
- E. Create a Cloud Pub/Sub push subscription to the Cloud Build cloud-builds PubSub topic to HTTP POST the build information to a webhook.

**Answer:** D

#### NEW QUESTION 9

You support a high-traffic web application that runs on Google Cloud Platform (GCP). You need to measure application reliability from a user perspective without making any engineering changes to it. What should you do?

Choose 2 answers

- A. Review current application metrics and add new ones as needed.
- B. Modify the code to capture additional information for user interaction.
- C. Analyze the web proxy logs only and capture response time of each request.
- D. Create new synthetic clients to simulate a user journey using the application.
- E. Use current and historic Request Logs to trace customer interaction with the application.

**Answer:** CE

**Explanation:**

<https://cloud.google.com/architecture/adopting-slos?hl=en>

#### NEW QUESTION 10

You are running an application on Compute Engine and collecting logs through Stackdriver. You discover that some personally identifiable information (PII) is leaking into certain log entry fields. You want to prevent these fields from being written in new log entries as quickly as possible. What should you do?

- A. Use the filter-record-transformer Fluentd filter plugin to remove the fields from the log entries in flight.
- B. Use the fluent-plugin-record-reformer Fluentd output plugin to remove the fields from the log entries in flight.
- C. Wait for the application developers to patch the application, and then verify that the log entries are no longer exposing PII.
- D. Stage log entries to Cloud Storage, and then trigger a Cloud Function to remove the fields and write the entries to Stackdriver via the Stackdriver Logging API.

**Answer:** A

#### NEW QUESTION 10

You support an application that stores product information in cached memory. For every cache miss, an entry is logged in Stackdriver Logging. You want to visualize how often a cache miss happens over time. What should you do?

- A. Link Stackdriver Logging as a source in Google Data Studio
- B. Filter (he logs on the cache misses.
- C. Configure Stackdriver Profiler to identify and visualize when the cache misses occur based on the logs.
- D. Create a logs-based metric in Stackdriver Logging and a dashboard for that metric in Stackdriver Monitoring.
- E. Configure BigQuery as a sink for Stackdriver Logging
- F. Create a scheduled query to filter the cache miss logs and write them to a separate table

**Answer:** C

**Explanation:**

<https://cloud.google.com/logging/docs/logs-based-metrics#counter-metric>

**NEW QUESTION 13**

Your team is designing a new application for deployment into Google Kubernetes Engine (GKE). You need to set up monitoring to collect and aggregate various application-level metrics in a centralized location. You want to use Google Cloud Platform services while minimizing the amount of work required to set up monitoring. What should you do?

- A. Publish various metrics from the application directly to the Stackdriver Monitoring API, and then observe these custom metrics in Stackdriver.
- B. Install the Cloud Pub/Sub client libraries, push various metrics from the application to various topics, and then observe the aggregated metrics in Stackdriver.
- C. Install the OpenTelemetry client libraries in the application, configure Stackdriver as the export destination for the metrics, and then observe the application's metrics in Stackdriver.
- D. Emit all metrics in the form of application-specific log messages, pass these messages from the containers to the Stackdriver logging collector, and then observe metrics in Stackdriver.

**Answer:** A

**Explanation:**

[https://cloud.google.com/kubernetes-engine/docs/concepts/custom-and-external-metrics#custom\\_metrics](https://cloud.google.com/kubernetes-engine/docs/concepts/custom-and-external-metrics#custom_metrics) <https://github.com/GoogleCloudPlatform/k8s-stackdriver/blob/master/custom-metrics-stackdriver-adapter/REA> Your application can report a custom metric to Cloud Monitoring. You can configure Kubernetes to respond to these metrics and scale your workload automatically. For example, you can scale your application based on metrics such as queries per second, writes per second, network performance, latency when communicating with a different application, or other metrics that make sense for your workload.  
<https://cloud.google.com/kubernetes-engine/docs/concepts/custom-and-external-metrics>

**NEW QUESTION 18**

You support a Node.js application running on Google Kubernetes Engine (GKE) in production. The application makes several HTTP requests to dependent applications. You want to anticipate which dependent applications might cause performance issues. What should you do?

- A. Instrument all applications with Stackdriver Profiler.
- B. Instrument all applications with Stackdriver Trace and review inter-service HTTP requests.
- C. Use Stackdriver Debugger to review the execution of logic within each application to instrument all applications.
- D. Modify the Node.js application to log HTTP request and response times to dependent application
- E. Use Stackdriver Logging to find dependent applications that are performing poorly.

**Answer:** B

**NEW QUESTION 19**

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 20**

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 Profile
- 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 policy
- G. Set up a Slack-to-SMS integration to send SMS messages when Slack messages are received
- 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 22**

You are creating and assigning action items in a postmodern for an outage. The outage is over, but you need to address the root causes. You want to ensure that your team handles the action items quickly and efficiently. How should you assign owners and collaborators to action items?

- A. Assign one owner for each action item and any necessary collaborators.
- B. Assign multiple owners for each item to guarantee that the team addresses items quickly
- C. Assign collaborators but no individual owners to the items to keep the postmortem blameless.
- D. Assign the team lead as the owner for all action items because they are in charge of the SRE team.

**Answer:** A

**Explanation:**

<https://devops.com/when-it-disaster-strikes-part-3-conducting-a-blameless-post-mortem/>

#### NEW QUESTION 27

You support a stateless web-based API that is deployed on a single Compute Engine instance in the europe-west2-a zone . The Service Level Indicator (SLI) for service availability is below the specified Service Level Objective (SLO). A postmortem has revealed that requests to the API regularly time out. The time outs are due to the API having a high number of requests and running out memory. You want to improve service availability. What should you do?

- A. Change the specified SLO to match the measured SLI.
- B. Move the service to higher-specification compute instances with more memory.
- C. Set up additional service instances in other zones and load balance the traffic between all instances.
- D. Set up additional service instances in other zones and use them as a failover in case the primary instance is unavailable.

**Answer:** C

#### NEW QUESTION 30

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 the production environment. A recent security audit alerted your team that the code pushed to production could contain vulnerabilities and that the existing tooling around virtual machine (VM) vulnerabilities no longer applies to the containerized environment. You need to ensure the security and patch level of all code running through the pipeline. What should you do?

- A. Set up Container Analysis to scan and report Common Vulnerabilities and Exposures.
- B. Configure the containers in the build pipeline to always update themselves before release.
- C. Reconfigure the existing operating system vulnerability software to exist inside the container.
- D. Implement static code analysis tooling against the Docker files used to create the containers.

**Answer:** D

**Explanation:**

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

Binary Authorization is a deploy-time security control that ensures only trusted container images are deployed on Google Kubernetes Engine (GKE) or Cloud Run. With Binary Authorization, you can require images to be signed by trusted authorities during the development process and then enforce signature validation when deploying. By enforcing validation, you can gain tighter control over your container environment by ensuring only verified images are integrated into the build-and-release process.

#### NEW QUESTION 35

Your application images are built and pushed to Google Container Registry (GCR). You want to build an automated pipeline that deploys the application when the image is updated while minimizing the development effort. What should you do?

- A. Use Cloud Build to trigger a Spinnaker pipeline.
- B. Use Cloud Pub/Sub to trigger a Spinnaker pipeline.
- C. Use a custom builder in Cloud Build to trigger a Jenkins pipeline.
- D. Use Cloud Pub/Sub to trigger a custom deployment service running in Google Kubernetes Engine(GKE).

**Answer:** B

**Explanation:**

<https://cloud.google.com/architecture/continuous-delivery-toolchain-spinnaker-cloud> <https://spinnaker.io/guides/user/pipeline/triggers/pubsub/>

#### NEW QUESTION 38

Your team has recently deployed an NGINX-based application into Google Kubernetes Engine (GKE) and has exposed it to the public via an HTTP Google Cloud Load Balancer (GCLB) ingress. You want to scale the deployment of the application's frontend using an appropriate Service Level Indicator (SLI). What should you do?

- A. Configure the horizontal pod autoscaler to use the average response time from the Liveness and Readiness probes.
- B. Configure the vertical pod autoscaler in GKE and enable the cluster autoscaler to scale the cluster as pods expand.
- C. Install the Stackdriver custom metrics adapter and configure a horizontal pod autoscaler to use the number of requests provided by the GCLB.
- D. Expose the NGINX stats endpoint and configure the horizontal pod autoscaler to use the request metrics exposed by the NGINX deployment.

**Answer:** C

**Explanation:**

<https://cloud.google.com/kubernetes-engine/docs/tutorials/autoscaling-metrics>

#### NEW QUESTION 40

You manage an application that is writing logs to Stackdriver Logging. You need to give some team members the ability to export logs. What should you do?



- A. Grant the team members the IAM role of logging.configWriter on Cloud IAM.
- B. Configure Access Context Manager to allow only these members to export logs.
- C. Create and grant a custom IAM role with the permissions logging.sinks.list and logging.sink.get.
- D. Create an Organizational Policy in Cloud IAM to allow only these members to create log exports.

**Answer:** A

**Explanation:**

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

#### NEW QUESTION 43

You are writing a postmortem for an incident that severely affected users. You want to prevent similar incidents in the future. Which two of the following sections should you include in the postmortem? (Choose two.)

- A. An explanation of the root cause of the incident
- B. A list of employees responsible for causing the incident
- C. A list of action items to prevent a recurrence of the incident
- D. Your opinion of the incident's severity compared to past incidents
- E. Copies of the design documents for all the services impacted by the incident

**Answer:** AC

**Explanation:**

For a postmortem to be truly blameless, it must focus on identifying the contributing causes of the incident without indicting any individual or team for bad or inappropriate behavior.

#### NEW QUESTION 46

You need to deploy a new service to production. The service needs to automatically scale using a Managed Instance Group (MIG) and should be deployed over multiple regions. The service needs a large number of resources for each instance and you need to plan for capacity. What should you do?

- A. Use the n1-highcpu-96 machine type in the configuration of the MIG.
- B. Monitor results of Stackdriver Trace to determine the required amount of resources.
- C. Validate that the resource requirements are within the available quota limits of each region.
- D. Deploy the service in one region and use a global load balancer to route traffic to this region.

**Answer:** C

**Explanation:**

[https://cloud.google.com/compute/quotas#understanding\\_quotas](https://cloud.google.com/compute/quotas#understanding_quotas) <https://cloud.google.com/compute/quotas>

#### NEW QUESTION 50

You are developing a strategy for monitoring your Google Cloud Platform (GCP) projects in production using Stackdriver Workspaces. One of the requirements is to be able to quickly identify and react to production environment issues without false alerts from development and staging projects. You want to ensure that you adhere to the principle of least privilege when providing relevant team members with access to Stackdriver Workspaces. What should you do?

- A. Grant relevant team members read access to all GCP production project
- B. Create Stackdriver workspaces inside each project.
- C. Grant relevant team members the Project Viewer IAM role on all GCP production project
- D. Create Slackdriver workspaces inside each project.
- E. Choose an existing GCP production project to host the monitoring workspac
- F. Attach the production projects to this workspac
- G. Grant relevant team members read access to the Stackdriver Workspace.
- H. Create a new GCP monitoring project, and create a Stackdriver Workspace inside i
- I. Attach the production projects to this workspac
- J. Grant relevant team members read access to the Stackdriver Workspace.

**Answer:** D

**Explanation:**

"A Project can host many Projects and appear in many Projects, but it can only be used as the scoping project once. We recommend that you create a new Project for the purpose of having multiple Projects in the same scope."

#### NEW QUESTION 54

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