

- B. Downgrade MySQL to v5.7, which is supported by Cloud SQL for MySQL.
- C. Resize compute resources to match predefined Compute Engine machine types.
- D. Containerize the micro services and host them in Google Kubernetes Engine.

Correct Answer: C

QUESTION 4

For this question, refer to the Dress4Win case study. To be legally compliant during an audit, Dress4Win must be able to give insights in all administrative actions that modify the configuration or metadata of resources on Google Cloud. What should you do?

- A. Use Stackdriver Trace to create a trace list analysis.
- B. Use Stackdriver Monitoring to create a dashboard on the project's activity.
- C. Enable Cloud Identity-Aware Proxy in all projects, and add the group of Administrators as a member.
- D. Use the Activity page in the GCP Console and Stackdriver Logging to provide the required insight.

Correct Answer: A

Explanation:

<https://cloud.google.com/logging/docs/audit/>

QUESTION 5

For this question, refer to the Dress4Win case study. You are responsible for the security of data stored in Cloud Storage for your company, Dress4Win. You have already created a set of Google Groups and assigned the appropriate users to those groups. You should use Google best practices and implement the simplest design to meet the requirements. Considering Dress4Win's business and technical requirements, what should you do?

- A. Assign custom IAM roles to the Google Groups you created in order to enforce security requirements. Encrypt data with a customer-supplied encryption key when storing files in Cloud Storage.
- B. Assign custom IAM roles to the Google Groups you created in order to enforce security requirements. Enable default storage encryption before storing files in Cloud Storage.
- C. Assign predefined IAM roles to the Google Groups you created in order to enforce security requirements. Utilize Google's default encryption at rest when storing files in Cloud Storage.
- D. Assign predefined IAM roles to the Google Groups you created in order to enforce security requirements. Ensure that the default Cloud KMS key is set before storing files in Cloud Storage.

Correct Answer: D

Explanation:

<https://cloud.google.com/iam/docs/understanding-service-accounts>

QUESTION 6

For this question, refer to the Dress4Win case study. Which of the compute services should be migrated as 瓩s and would still be an optimized architecture for performance in the cloud?

- A. Web applications deployed using App Engine standard environment

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- B. RabbitMQ deployed using an unmanaged instance group
- C. Hadoop/Spark deployed using Cloud Dataproc Regional in High Availability mode
- D. Jenkins, monitoring, bastion hosts, security scanners services deployed on custom machine types

Correct Answer: C

Topic 6, TerramEarth Case 2

Company Overview

TerramEarth manufactures heavy equipment for the mining and agricultural industries. About 80% of their business is from mining and 20% from agriculture. They currently have over 500 dealers and service centers in 100 countries. Their mission is to build products that make their customers more productive.

Solution Concept

There are 20 million TerramEarth vehicles in operation that collect 120 fields of data per second. Data is stored locally on the vehicle and can be accessed for analysis when a vehicle is serviced. The data is downloaded via a maintenance port. This same port can be used to adjust operational parameters, allowing the vehicles to be upgraded in the field with new computing modules.

Approximately 200,000 vehicles are connected to a cellular network, allowing TerramEarth to collect data directly. At a rate of 120 fields of data per second with 22 hours of operation per day, TerramEarth collects a total of about 9 TB/day from these connected vehicles.

Existing Technical Environment

TerramEarth's existing architecture is composed of Linux and Windows-based systems that reside in a single U.S. west coast based data center. These systems gzip CSV files from the field and upload via FTP, and place the data in their data warehouse. Because this process takes time, aggregated reports are based on data that is 3 weeks old.

With this data, TerramEarth has been able to preemptively stock replacement parts and reduce unplanned downtime of their vehicles by 60%. However, because the data is stale, some customers are without their vehicles for up to 4 weeks while they wait for replacement parts.

Business Requirements

Decrease unplanned vehicle downtime to less than 1 week.

Support the dealer network with more data on how their customers use their equipment to better position new products and services

Have the ability to partner with different companies ?especially with seed and fertilizer suppliers in the fast-growing agricultural business ?to create compelling joint offerings for their customers.

Technical Requirements

Expand beyond a single datacenter to decrease latency to the American Midwest and east coast.

Create a backup strategy.

Increase security of data transfer from equipment to the datacenter.

Improve data in the data warehouse.

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Use customer and equipment data to anticipate customer needs.

Application 1: Data ingest

A custom Python application reads uploaded datafiles from a single server, writes to the data warehouse.

Compute:

Windows Server 2008 R2

16 CPUs

128 GB of RAM

10 TB local HDD storage

Application 2: Reporting

An off the shelf application that business analysts use to run a daily report to see what equipment needs repair. Only 2 analysts of a team of 10 (5 west coast, 5 east coast) can connect to the reporting application at a time.

Compute:

Off the shelf application. License tied to number of physical CPUs

Windows Server 2008 R2

16 CPUs

32 GB of RAM

500 GB HDD

Data warehouse:

A single PostgreSQL server

RedHat Linux

64 CPUs

128 GB of RAM

4x 6TB HDD in RAID 0

Executive Statement

Our competitive advantage has always been in the manufacturing process, with our ability to build better vehicles for lower cost than our competitors. However, new products with different approaches are constantly being developed, and I'm concerned that we lack the skills to undergo the next wave of transformations in our industry. My goals are to build our skills while addressing immediate market needs through incremental innovations.

QUESTION 1

TerramEarth has about 1 petabyte (PB) of vehicle testing data in a private data center. You want to move the data to Cloud Storage for your machine learning team. Currently, a 1-Gbps interconnect link is available for you. The machine learning team wants to start using the data in a month. What should you do?

- A. Request Transfer Appliances from Google Cloud, export the data to appliances, and return the appliances to Google Cloud.
- B. Configure the Storage Transfer service from Google Cloud to send the data from your data center

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- to Cloud Storage
- C. Make sure there are no other users consuming the 1 Gbps link, and use multi-thread transfer to upload the data to Cloud Storage.
 - D. Export files to an encrypted USB device, send the device to Google Cloud, and request an import of the data to Cloud Storage

Correct Answer: A

QUESTION 2

TerramEarth has a legacy web application that you cannot migrate to cloud. However, you still want to build a cloud-native way to monitor the application. If the application goes down, you want the URL to point to a "Site is unavailable" page as soon as possible. You also want your Ops team to receive a notification for the issue. You need to build a reliable solution for minimum cost. What should you do?

- A. Create a scheduled job in Cloud Run to invoke a container every minute. The container will check the application URL. If the application is down, switch the URL to the "Site is unavailable" page, and notify the Ops team.
- B. Create a cron job on a Compute Engine VM that runs every minute. The cron job invokes a Python program to check the application URL. If the application is down, switch the URL to the "Site is unavailable" page, and notify the Ops team.
- C. Create a Cloud Monitoring uptime check to validate the application URL. If it fails, put a message in a Pub/Sub queue that triggers a Cloud Function to switch the URL to the "Site is unavailable" page, and notify the Ops team.
- D. Use Cloud Error Reporting to check the application URL. If the application is down, switch the URL to the "Site is unavailable" page, and notify the Ops team.

Correct Answer: C

Explanation:

<https://cloud.google.com/blog/products/management-tools/how-to-use-pubsub-as-a-cloud-monitoring-notification-channel>

QUESTION 3

You have broken down a legacy monolithic application into a few containerized RESTful microservices. You want to run those microservices on Cloud Run. You also want to make sure the services are highly available with low latency to your customers. What should you do?

- A. Deploy Cloud Run services to multiple availability zones. Create Cloud Endpoints that point to the services. Create a global HTTP(S) Load Balancing instance and attach the Cloud Endpoints to its backend.
- B. Deploy Cloud Run services to multiple regions. Create serverless network endpoint groups pointing to the services. Add the serverless NEGs to a backend service that is used by a global HTTP(S) Load Balancing instance.
- C. Deploy Cloud Run services to multiple regions. In Cloud DNS, create a latency-based DNS name that points to the services.
- D. Deploy Cloud Run services to multiple availability zones. Create a TCP/IP global load balancer. Add the Cloud Run Endpoints to its backend service.

Correct Answer: B

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Explanation:

<https://cloud.google.com/run/docs/multiple-regions>

QUESTION 4

For this question, refer to the TerramEarth case study. You start to build a new application that uses a few Cloud Functions for the backend. One use case requires a Cloud Function func_display to invoke another Cloud Function func_query. You want func_query only to accept invocations from func_display. You also want to follow Google's recommended best practices. What should you do?

- A. Create a token and pass it in as an environment variable to func_display. When invoking func_query, include the token in the request. Pass the same token to func_query and reject the invocation if the tokens are different.
- B. Make func_query 'Require authentication.' Create a unique service account and associate it to func_display. Grant the service account invoker role for func_query. Create an id token in func_display and include the token to the request when invoking func_query.
- C. Make func_query 'Require authentication' and only accept internal traffic. Create those two functions in the same VPC. Create an ingress firewall rule for func_query to only allow traffic from func_display.
- D. Create those two functions in the same project and VPC. Make func_query only accept internal traffic. Create an ingress firewall for func_query to only allow traffic from func_display. Also, make sure both functions use the same service account.

Correct Answer: B

Explanation:

https://cloud.google.com/functions/docs/securing/authenticating#authenticating_function_to_function_calls

QUESTION 5

For this question, refer to the TerramEarth case study. You need to implement a reliable, scalable GCP solution for the data warehouse for your company, TerramEarth. Considering the TerramEarth business and technical requirements, what should you do?

- A. Replace the existing data warehouse with BigQuery. Use table partitioning.
- B. Replace the existing data warehouse with a Compute Engine instance with 96 CPUs.
- C. Replace the existing data warehouse with BigQuery. Use federated data sources.
- D. Replace the existing data warehouse with a Compute Engine instance with 96 CPUs. Add an additional Compute Engine pre-emptible instance with 32 CPUs.

Correct Answer: C

Explanation:

https://cloud.google.com/solutions/bigquery-data-warehouse#external_sources
<https://cloud.google.com/solutions/bigquery-data-warehouse>

QUESTION 6

You are migrating a Linux-based application from your private data center to Google Cloud. The TerramEarth security team sent you several recent Linux vulnerabilities published by Common Vulnerabilities and Exposures (CVE). You need assistance in understanding how these vulnerabilities could impact your migration. What should you do?

- A. Open a support case regarding the CVE and chat with the support engineer.

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