Google

Professional-Cloud-Architect Exam

Google Cloud Certified

Questions & Answers

(Full Version)

Thank you for Purchasing Professional-Cloud-Architect Exam

Product Questions: 171

Case Study: 1

Mountkirk Games Case Study

Company Overview

Mountkirk Games makes online, session-based. multiplayer games for the most popular mobile platforms.

Company Background

Mountkirk Games builds all of their games with some server-side integration and has historically used cloud providers to lease physical servers. A few of their games were more popular than expected, and they had problems scaling their application servers, MySQL databases, and analytics tools.

Mountkirk's current model is to write game statistics to files and send them through an ETL tool that loads them into a centralized MySQL database for reporting.

Solution Concept

Mountkirk Games is building a new game, which they expect to be very popular. They plan to deploy the game's backend on Google Compute Engine sothey can capture streaming metrics, runintensive analytics and take advantage of its autoscaling server environment and integrate with a managed NoSQL database.

Technical Requirements

Requirements for Game Backend Platform

1. Dynamically scale up or down based on game activity.
2. Connect to a managed NoSQL database service.
3. Run customized Linx distro.

Requirements for Game Analytics Platform

1. Dynamically scale up or down based on game activity.
2. Process incoming data on the fly directly from the game servers.
3. Process data that arrives late because of slow mobile networks.
4. Allow SQL queries to access at least 10 TB of historical data.
5. Process files that are regularly uploaded by users' mobile devices.
6. Use only fully managed services

CEO Statement

Our last successful game did not scale well with our previous cloud provider, resuming in lower user adoption and affecting the game’s reputation. Our investors want more key performance indicators (KPIs) to evaluate the speed and stability of the game, as well as other metrics that provide deeper insight into usage patterns so we can adapt the gams to target users.

CTO Statement

Our current technology stack cannot provide the scale we need, so we want to replace MySQL and

move to an environment that provides autoscaling, low latency load balancing, and frees us up from managing physical servers.

CFO Statement

We are not capturing enough user demographic data usage metrics, and other KPIs. As a result, we do not engage the right users. We are not confident that our marketing is targeting the right users, and we are not selling enough premium Blast-Ups inside the games, which dramatically impacts our revenue.

Question:1

For this question, refer to the Mountkirk Games case study.
Mountkirk Games wants you todesign their new testing strategy. How should the test coverage differ from their existing backends on the other platforms?

A. Tests should scale well beyond the prior approaches.
B. Unit tests are no longer required, only end-to-end tests.
C. Tests should be applied after the release is in the production environment.
D. Tests should include directly testing the Google Cloud Platform (GCP) infrastructure.

Answer: A

Explanation:
From Scenario:
A few of their games were more popular than expected, and they had problems scaling their application servers, MySQL databases, and analytics tools.
Requirements for Game Analytics Platform include: Dynamically scale up or down based on game activity

Question:2

For this question, refer to the Mountkirk Games case study.
Mountkirk Games has deployed their new backend on Google Cloud Platform (GCP). You want to create a thorough testing process for new versions of the backend before they are released to the public. You want the testing environment to scale in an economical way. How should you design the process?

A. Create a scalable environment in GCP for simulating production load.
B. Use the existing infrastructure to test the GCP-based backend at scale.
C. Build stress tests into each component of your application using resources internal to GCP to simulate load.
D. Create aset of static environments in GCP totest different levels of load — forexample, high, medium, and low.

Answer: A

Explanation:
From scenario: Requirements for Game Backend Platform

- Dynamically scale up or down based on game activity
- Connect to a managed NoSQL database service
- Run customize Linux distro

Question:3

For this question, refer to the Mountkirk Games case study.
Mountkirk Games wants to set up a continuous delivery pipeline. Their architecture includes many smallservicesthatthey want to be able toupdate and rollbackquickly. Mountkirk Games has the following requirements:

- Services are deployed redundantly across multiple regions in the US and Europe.
- Only frontend services are exposed on the public internet.
- They can provide a single frontend IP for their fleet of services.
- Deployment artifacts are immutable.

Whichsetof productsshould they use?

A. Google Cloud Storage, Google Cloud Dataflow, Google Compute Engine
B. Google Cloud Storage, Google App Engine, Google Network Load Balancer
C. Google Kubernetes Registry, Google Container Engine, Google HTTP(S) Load Balancer
D. Google Cloud Functions, Google CloudPub/Sub, GoogleCloud Deployment Manager

Answer: C

Question:4

For this question, refer to the Mountkirk Games case study.
Mountkirk Games' gaming servers are notautomatically scaling properly. Last month, they rolled out a new feature, which suddenly became very popular. A record number of users are trying to use the service, but many of them are getting 503 errors and very slow response times. What should they investigate first?

A. Verify that the database isonline.
B. Verify that the project quota hasn't been exceeded.
C. Verify that the new feature code did not introduce any performance bugs.
D. Verify that the load-testing team is not running their tool against production.

Answer: B

Explanation:
503 is service unavailable error. If the database wasonline everyone would get the 503 error.
https://cloud.google.com/docs/quota#capping_usage

Question:5

For this question, refer to the Mountkirk Games case study
Mountkirk Games needs to create a repeatable and configurable mechanism for deploying isolated

application environments. Developers and testers can access each other's environments and resources, but they cannot access staging or production resources. The staging environment needs access to some services from production.

What should you do to isolate development environments from staging and production?

A. Create a project for development and test and another for staging and production.
B. Create a network for development and test and another for staging and production.
C. Create one subnetwork for development and another for staging and production.
D. Create one project for development, a second for staging and a third for production.

Answer: D

Question:6

For this question, refer to the Mountkirk Games case study.
Mountkirk Games wants to set up a real-time analytics platform for their new game. The new platform must meet their technical requirements. Which combination of Google technologies will meet all of theirrequirements?

A. Container Engine, Cloud Pub/Sub, and Cloud SQL
B. Cloud Dataflow, Cloud Storage, Cloud Pub/Sub, and BigQuery
C. Cloud SQL, Cloud Storage, Cloud Pub/Sub, and Cloud Dataflow
D. Cloud Dataproc, Cloud Pub/Sub, Cloud SQL, and Cloud Dataflow
E. Cloud Pub/Sub, Compute Engine, Cloud Storage, and Cloud Dataproc

Answer: B

Explanation:
A real time requires Stream / Messaging so Pub/Sub, Analytics by Big Query.
Explanation:
Ingestmillions ofstreaming events per second from anywhere intheworld with Cloud Pub/Sub, powered by Google's unique, high-speed private network. Process the streams with Cloud Dataflow to ensure reliable, exactly-once, low-latency data transformation. Stream the transformed data into BigQuery, the cloud-native data warehousing service, for immediate analysis via SQL or popular visualization tools.
From scenario: They plan to deploy the game's backend on Google Compute Engine so they can capture streaming metrics, run intensive analytics.
Requirements for Game Analytics Platform
• Dynamically scale up or down based on game activity
• Process incoming data on the fly directly from the game servers
• Process data that arrives late because of slow mobile networks
• Allow SQL queries to access at least 10 TB of historical data
• Process files that are regularly uploaded by users' mobile devices
• Useonly fully managed services
References:
https://cloud.google.com/solutions/big-data/stream-analytics/

Case Study: 2

TerramEarth Case Study

Company Overview

TerramEarth manufactures heavy equipmentforthemining 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.

Company Background

TerramEarth formed in 1946, when several small, family owned companies combined to retool after World War II. The company cares about their employees and customers and considers them to be extended members of theirfamily.

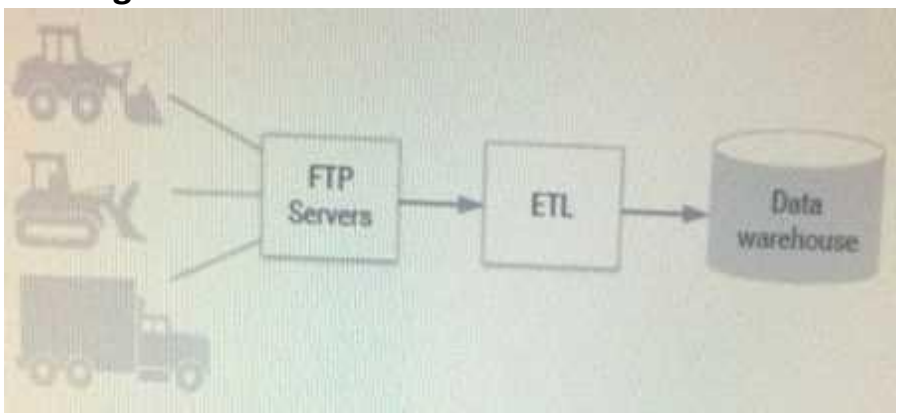
TerramEarth is proud of their ability to innovate on their core products and find new markets as their customers' needs change. For the past 20 years trends in the industry have been largely toward increasing productivity by using larger vehicles with a human operator.

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-based systems that reside in a data center. These systems gzip CSV files from the field and upload via FTP, transform and aggregate them, and place the data in their data warehouse. Becausethis 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, without increasing the cost of carrying surplus inventory

• Support the dealer network with more data on how their customers use their equipment IP better position new products andservices.
• Have the ability to partner with different companies-especially with seed and fertilizer suppliers in thefast-growing agriculturalbusiness-tocreatecompelling jointofferingsfortheircustomers

CEO Statement

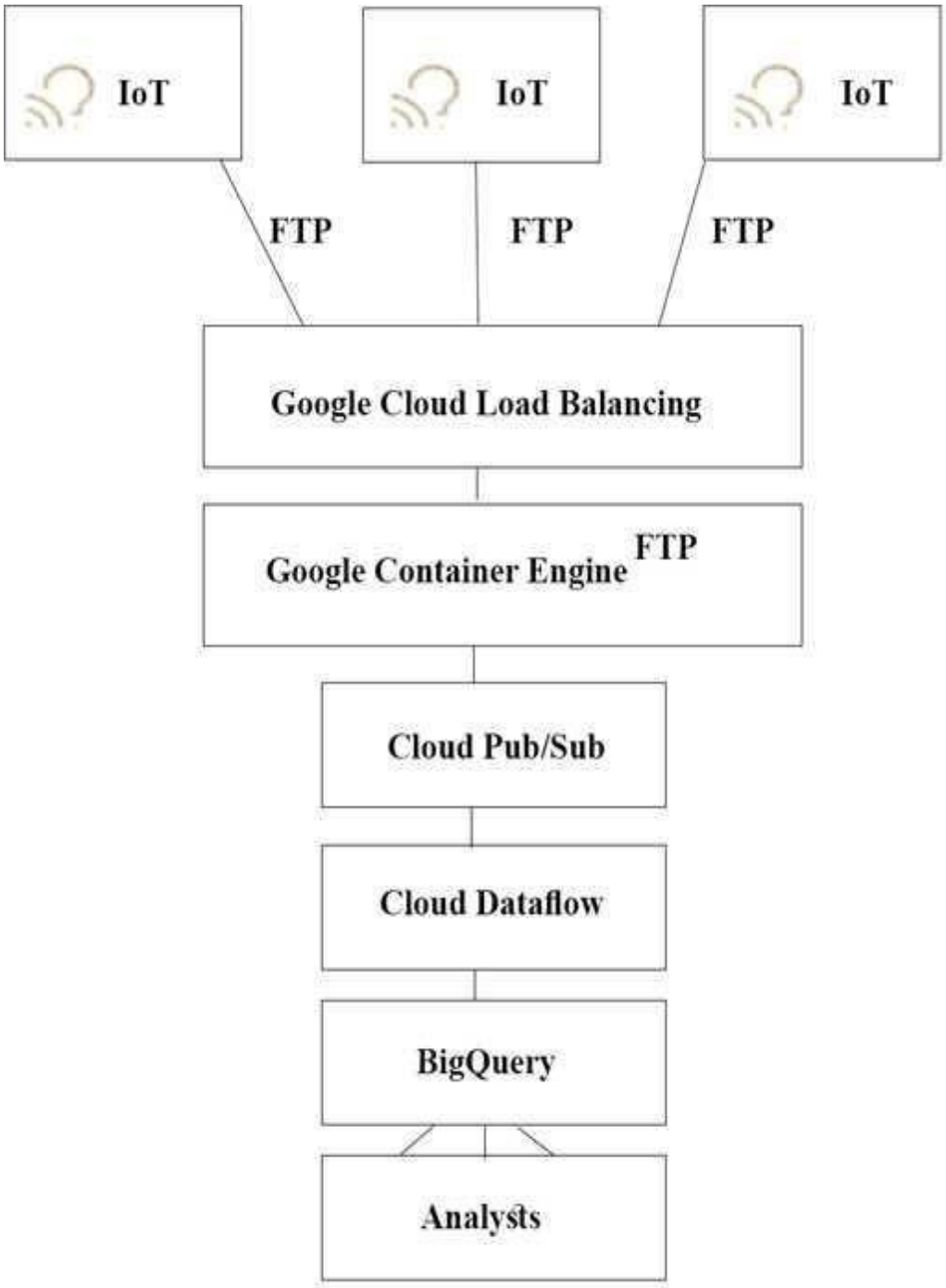
We have been successful in capitalizing on the trend toward larger vehicles to increase the productivity of our customers. Technological change is occurring rapidly and TerramEarth has taken advantage of connected devices technology to provide our customers with better services, such as our intelligent farming equipment. With this technology, we have been able to increase farmers' yields by 25%, by using past trends to adjust how our vehicles operate. These advances have led to the rapid growth of our agricultural product line, which we expect will generate 50% of our revenues by 2020.

CTO Statement

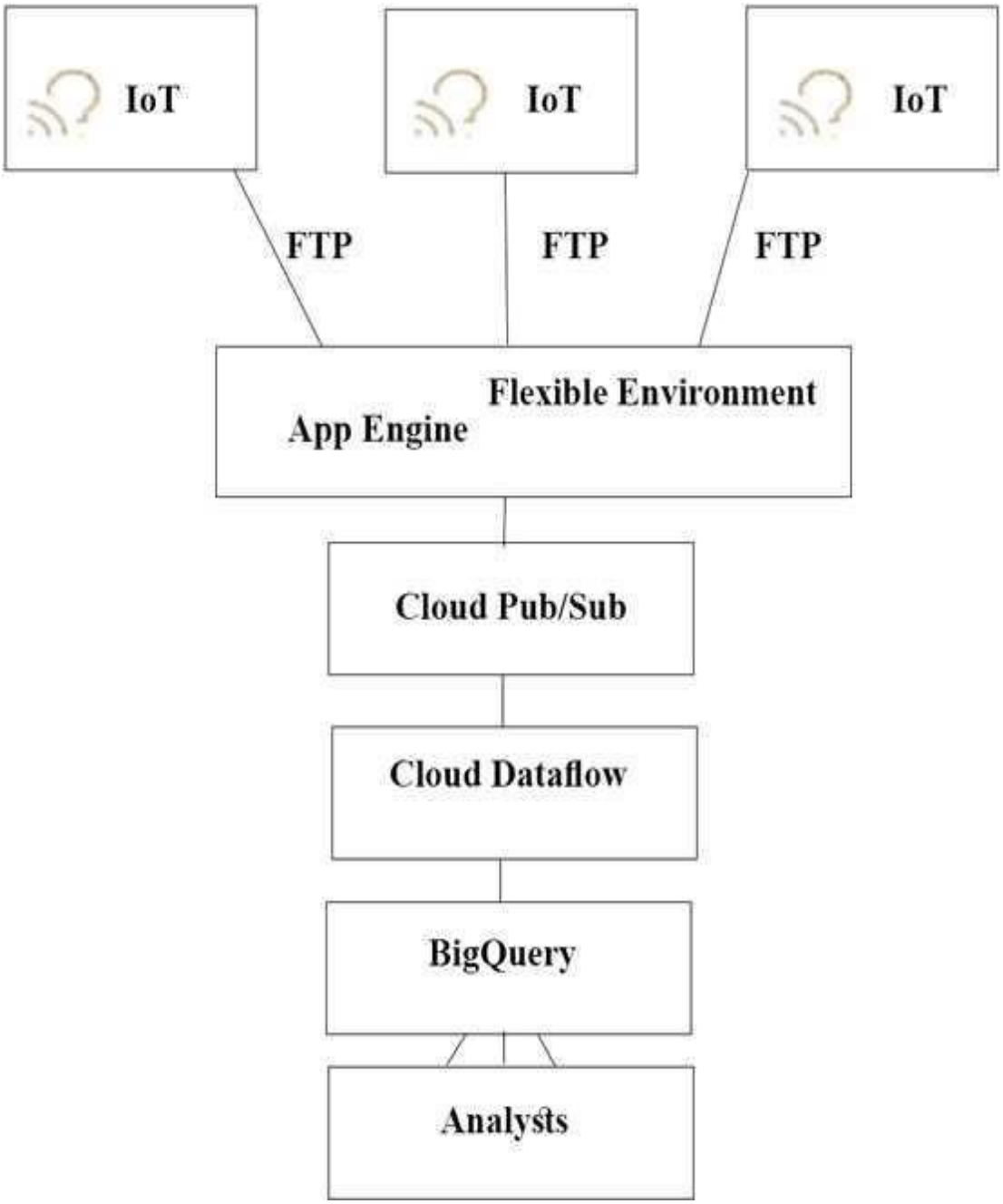
Our competitive advantage has always been in the manufacturing process with our ability to build better vehicles for tower cost than our competitors. However, new products with different approaches are constantly being developed, and I'm concerned that we lack the skills to undergo the next wave of transformations in our industry. Unfortunately, our CEO doesn't take technology obsolescence seriously and he considers the many new companies in our industry to be niche players. My goals are to build our skills while addressing immediate market needs through incremental innovations.

Question:7

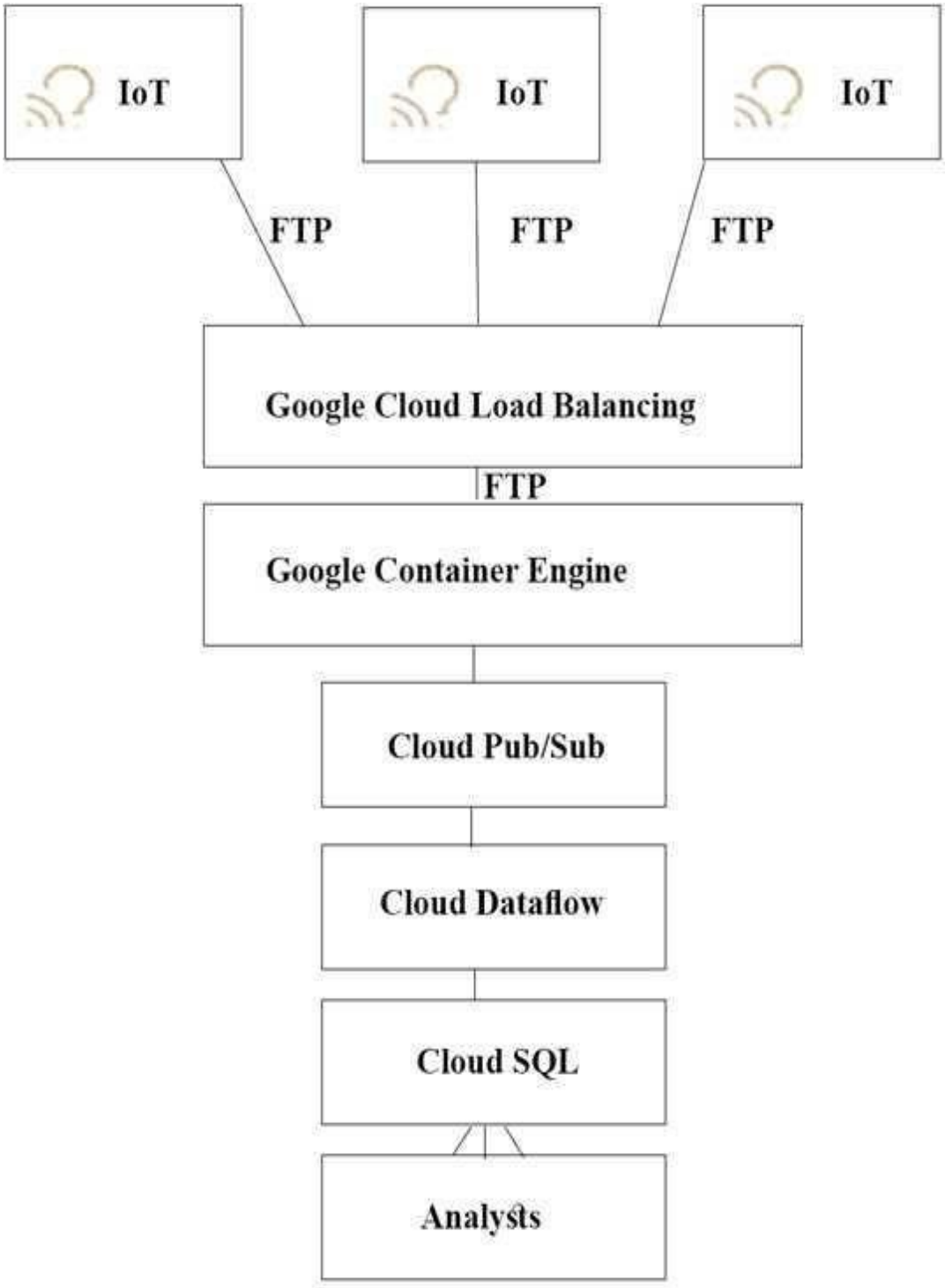
For this question, refer to the TerramEarth case study.
TerramEarth's CTO wants to use the raw data from connected vehicles to help identify approximately when avehicle in the development team to focus their failure. Youwant to allow analysts to centrally query the vehicle dat
a. Which architecture should you recommend?
A)


IoT
IoT
IoT
FTP
FTP
FTP
Google Cloud Load Balancing
Google Container Engine
FTP
Cloud Pub/Sub
Cloud Dataflow
BigQuery
Analysts

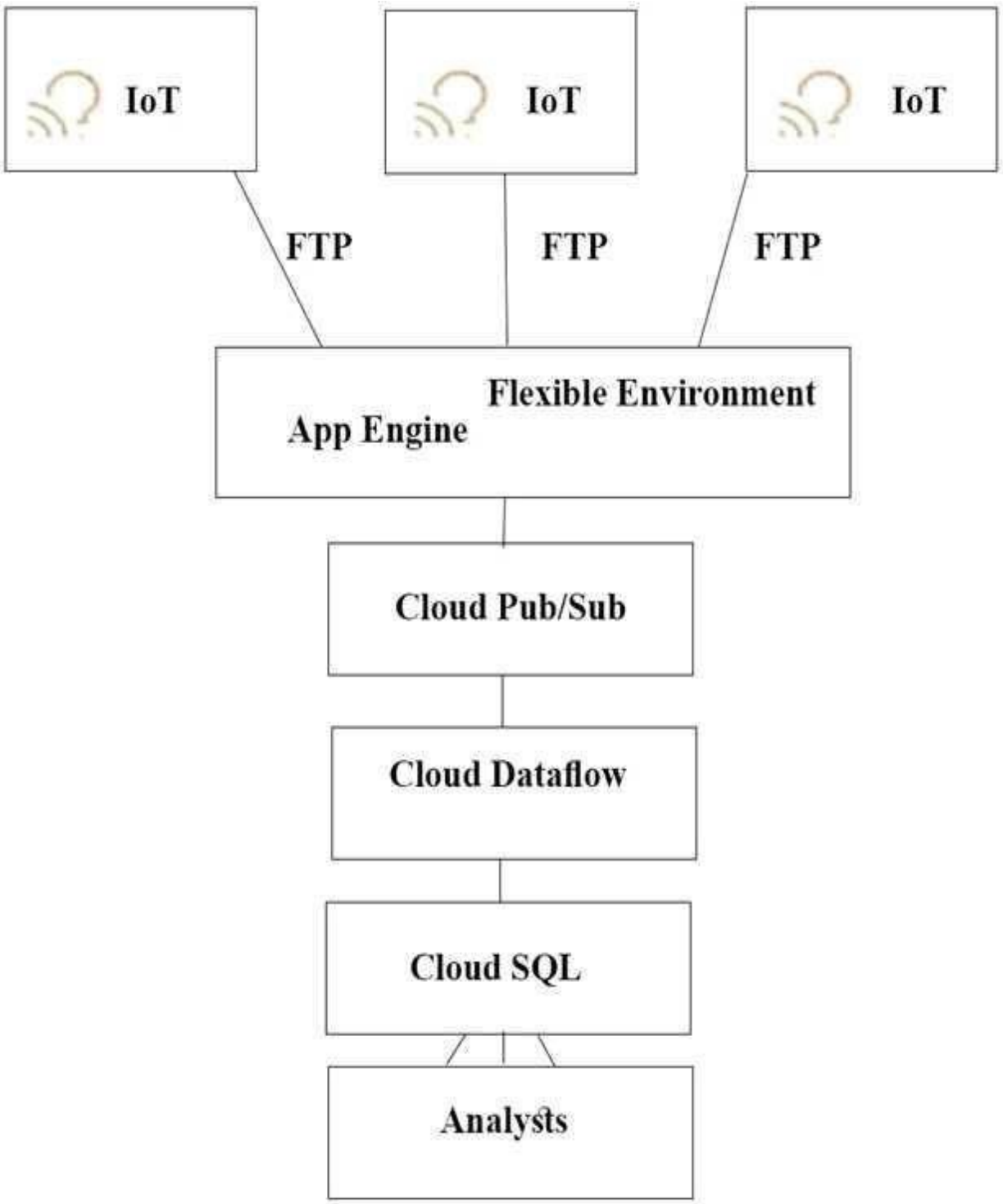
B)


IoT
IoT
IoT
FTP
FTP
FTP
Flexible Environment
App Engine
Cloud Pub/Sub
Cloud Dataflow
BigQuery
Analysts

C)


IoT
IoT
IoT
FTP
FTP
FTP
Google Cloud Load Balancing
FTP
Google Container Engine
Cloud Pub/Sub
Cloud Dataflow
Cloud SQL
Analysts

D)



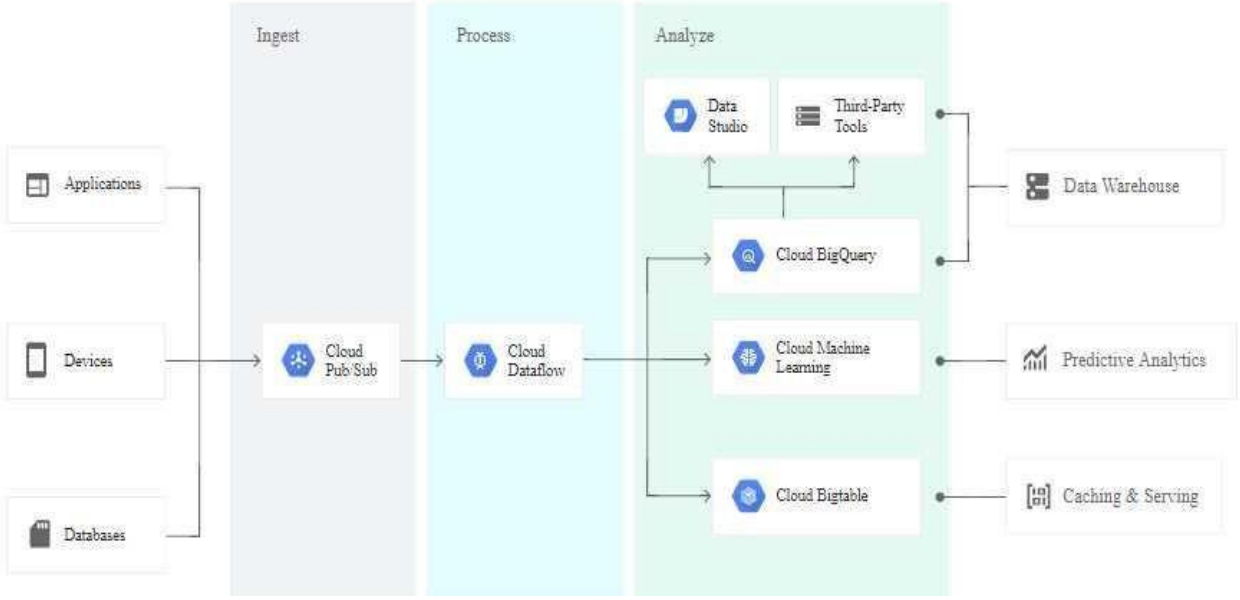
A. OptionA
B. OptionB
C. OptionC
D. Option D

Answer: A

Explanation:
https://cloud.google.com/solutions/iot/

https://cloud.google.com/solutions/designing-connected-vehicle-platform
https://cloud.google.com/solutions/designing-connected-vehicle-platform#data_ingestion
http://www.eweek.com/big-data-and-analytics/google-touts-value-of-cloud-iot-core-for-analyzing-connected-car-data
https://cloud.google.com/solutions/iot/

Explanation:
The push endpoint can be a load balancer.
A container cluster can be used.
Cloud Pub/Sub for Stream Analytics



References:
https://cloud.google.com/pubsub/
https://cloud.google.com/solutions/iot/
https://cloud.google.com/solutions/designing-connected-vehicle-platform
https://cloud.google.com/solutions/designing-connected-vehicle-platform#data_ingestion
http://www.eweek.com/big-data-and-analytics/google-touts-value-of-cloud-iot-core-for-analyzing-connected-car-data
https://cloud.google.com/solutions/iot/

Question:8

For this question, refer to the TerramEarth case study.
The TerramEarth development team wants to create an API to meet the company's business requirements. You want the development team to focus their development effort on business value versus creating a custom framework. Which method should they use?

A. Use Google App Engine with Google Cloud Endpoints. Focus on an API for dealers and partners.
B. Use Google App Engine with a JAX-RS Jersey Java-based framework. Focus on an API for the public.
C. Use Google App Engine with the Swagger (open API Specification) framework. Focus on an API for the public.
D. Use Google Container Engine with a Django Python container. Focus on an API for the public.
E. Use Google Container Engine with a Tomcat container with the Swagger (Open API Specification) framework. Focus on an API for dealers and partners.

Answer: A

Explanation:
https://cloud.google.com/endpoints/docs/openapi/about-cloud-endpoints?hl=en_US&_ga=2.21787131.-1712523161.1522785064
https://cloud.google.com/endpoints/docs/openapi/architecture-overview
https://cloud.google.com/storage/docs/gsutil/commands/test
Explanation:
Develop, deploy, protect and monitor your APIs with Google Cloud Endpoints. Using an Open API Specification or one of our API frameworks, Cloud Endpoints gives you the tools you need for every phase of API development.
From scenario:
Business Requirements
Decrease unplanned vehicle downtime to less than 1 week, without increasing the cost of carrying surplus inventory
Support the dealer network with more data on how their customers use their equipment to better position new products andservices
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.
Reference:
: https://cloud.google.com/certification/guides/cloud-architect/casestudy-terramearth

Question:9

For this question, refer to the TerramEarth case study
Your development team has created a structured API to retrieve vehicle dat
a. They want to allow third parties to develop tools for dealerships that use this vehicle event data. You want to support delegated authorization against this data. What should you do?
A. Build or leverage an OAuth-compatible access control system.
B. Build SAML 2.0 SSO compatibility into your authentication system.
C. Restrict data access based on the source IP address of the partner systems.
D. Create secondary credentials for each dealer that can be given to the trusted third party.

Answer: A

Explanation:
https://cloud.google.com/appengine/docs/flexible/go/authorizing-apps
https://cloud.google.com/docs/enterprise/best-practices-for-enterprise-organizations#delegate_application_authorization_with_oauth2
Explanation:
Delegate application authorization with OAuth2
Cloud Platform APIs support OAuth 2.0, andscopes providegranular authorization over the methods that are supported. Cloud Platform supports both service-account and user-account OAuth, also called three-legged OAuth.
References:
https://cloud.google.com/docs/enterprise/best-practices-for-enterprise-

organizations#delegate_application_authorization_with_oauth2
https://cloud.google.com/appengine/docs/flexible/go/authorizing-apps

Question: 10

For this question, refer to the TerramEarth case study.
TerramEarth plans to connect all 20 million vehicles in the field to the cloud. This increases the volumeto 20 million 600 byterecordsasecondfor 40 TB anhour. Howshouldyoudesignthedata ingestion?

A. Vehicles write data directly toGCS.
B. Vehicles write data directly to Google Cloud Pub/Sub.
C. Vehicles stream data directly to Google BigQuery.
D. Vehicles continue to write data using the existing system (FTP).

Answer: B

Explanation:
https://cloud.google.com/solutions/data-lifecycle-cloud-platform
https://cloud.google.com/solutions/designing-connected-vehicle-platform

Question: 11

For this question, refer to the TerramEarth case study
You analyzed TerramEarth's business requirement to reduce downtime, and found that they can achieve a majority of time saving by reducing customers' wait time for parts You decided to focus on reduction of the 3 weeks aggregate reporting time Which modifications to the company's processes should you recommend?

A. Migrate from CSV to binary format, migrate from FTP to SFTP transport, and develop machine learning analysis of metrics.
B. Migrate from FTP to streaming transport, migrate from CSV to binary format, and develop machine learning analysis ofmetrics.
C. Increase fleet cellular connectivity to 80%, migrate from FTP to streaming transport, and develop machine learning analysis ofmetrics.
D. Migrate from FTP to SFTP transport, develop machine learning analysis of metrics, and increase dealer local inventory by a fixed factor.

Answer: C

Explanation:
The Avro binary format is the preferred format for loading compressed data. Avro data is faster to load becausethedata can be read in parallel, evenwhenthe data blocks are compressed.
Cloud Storage supports streaming transfers with the gsutil tool or boto library, based on HTTP chunked transfer encoding. Streaming data lets you stream data to and from your Cloud Storage account as soon as it becomes available without requiring that the data be first saved to a separate file. Streaming transfers are useful if you have a process that generates data and you do not want to

buffer it locally before uploading it, or if you want to send the result from a computational pipeline directly into Cloud Storage.
References:
https://cloud.google.com/storage/docs/streaming
https://cloud.google.com/bigquery/docs/loading-data

Question: 12

For this question refer to the TerramEarth case study.
Which of TerramEarth's legacy enterprise processes will experience significant change as a result of increased Google Cloud Platform adoption.

A. Opex/capex allocation, LAN changes, capacity planning
B. Capacity planning, TCO calculations, opex/capex allocation
C. Capacity planning, utilization measurement, data center expansion
D. Data Center expansion, TCO calculations, utilization measurement

Answer: B

Explanation:
Capacity planning, TCO calculations, opex/capex allocation From the case study, it can conclude that Management (CXO) all concern rapid provision of resources (infrastructure) for growing as well as cost management, such as Cost optimization in Infrastructure, trade up front capital expenditures (Capex) for ongoing operating expenditures (Opex), and Totalcost of ownership (TCO)

Question: 13

For this question, refer to the TerramEarth case study.
Tospeed up data retrieval, more vehicles will be upgraded to cellular connections and be able to transmitdatatothe ETLprocess. The current FTP process is error-proneandrestartsthedata transfer from the start of the file when connections fail, which happens often. You want to improve the reliability of the solution and minimize data transfer time on the cellular connections. What should you do?

A. Use one Google Container Engine cluster of FTP servers. Save the data to a Multi-Regional bucket. Run the ETL process using data in the bucket.
B. Use multiple Google Container Engine clusters running FTP servers located in different regions. Save the data to Multi-Regional buckets in us, eu, and asia. Run the ETL process using the data in the bucket.
C. Directly transfer the files to different Google Cloud Multi-Regional Storage bucket locations in us, eu, and asia using Google APIsover HTTP(S). Runthe ETLprocessusingthedata in the bucket.
D. Directly transfer the files to a different Google Cloud Regional Storage bucket location in us, eu, and asia using Google APIs over HTTP(S). Run the ETL process to retrieve the data from each Regional bucket.

Answer: D

Explanation:
https://cloud.google.com/storage/docs/locations

Question: 14

For this question, refer to the TerramEarth case study.
TerramEarth's 20 million vehicles are scattered around the world. Based on the vehicle's location its telemetry data is stored in a Google Cloud Storage (GCS) regional bucket (US. Europe, or Asia). The CTO has asked you to run a report on the raw telemetry data to determine why vehicles are breaking down after 100 K miles. You want to run this job on all the dat
a. What is the most cost-effective way to run this job?
A. Move all the data into 1 zone, then launch a Cloud Dataproc cluster to run the job.
B. Move all the data into 1 region, then launch a Google Cloud Dataproc cluster to run the job.
C. Launch a cluster in each region to preprocess and compress the raw data, then move the data into a multi region bucket and use a Dataproc cluster to finish the job.
D. Launch a cluster in each region to preprocess and compress the raw data, then move the data into a region bucket and use a Cloud Dataproc cluster to finish the jo

Answer: D

Explanation:
Storageguarantees 2 replicates which are geo diverse (100 miles apart) which can get better remote latency and availability.
More importantly, is that multiregional heavily leverages Edgecaching and CDNs to provide the content to the endusers.
All this redundancy and caching means that Multiregional comes with overhead to sync and ensure consistency between geo-diverse areas. As such, it's much better for write-once-read-many scenarios. This means frequently accessed (e.g. "hot" objects) around the world, such as website content, streaming videos, gaming or mobile applications.
References:
https://medium.com/google-cloud/google-cloud-storage-what-bucket-class-for-the-best-performance-5c847ac8f9f2

Question: 15

For this question, refer to the TerramEarth case study.
TerramEarth has equipped unconnected trucks with servers and sensors to collet telemetry dat
a. Next year they want to use the data to train machine learning models. They want to store this data in the cloud while reducing costs. What should they do?
A. Have the vehicle' computer compress the data in hourly snapshots, and store it in a Google Cloud storage (GCS) Nearline bucket.
B. Push the telemetry data in Real-time to a streaming dataflow job that compresses the data, and store it in Google BigQuery.
C. Push the telemetry data in real-time to a streaming dataflow job that compresses the data, and store it in Cloud Bigtable.
D. Havethe vehicle'scomputercompressthedata inhourly snapshots, aStore it in aGCSColdline bucket.

Answer: D

Explanation:
Coldline Storage is the best choice for data that you plan to access at most once a year, due to its slightly lower availability, 90-day minimum storage duration, costs for data access, and higher per-operation costs. For example:
Cold Data Storage - Infrequently accessed data, such as data stored for legal or regulatory reasons, can be stored at low cost as Coldline Storage, and be available when you need it.
Disaster recovery - In the event of a disaster recovery event, recovery time is key. Cloud Storage provides low latency access to data stored as Coldline Storage.
References:
https://cloud.google.com/storage/docs/storage-classes

Question: 16

For this question refer to the TerramEarth case study
Operational parameters suchas oil pressure areadjustable on each of TerramEarth's vehicles to increase their efficiency, depending on their environmental conditions. Your primary goal is to increase the operating efficiency of all 20 million cellular and unconnected vehicles in the field How can you accomplish thisgoal?

A. Have your engineers inspect the data for patterns, and then create an algorithm with rules that make operational adjustments automatically.
B. Capture all operating data, train machine learning models that identify ideal operations, and run locally to make operational adjustments automatically.
C. Implement a Google Cloud Dataflow streaming job with a sliding window, and use Google Cloud Messaging (GCM) to make operational adjustments automatically.
D. Capture all operating data, train machine learning models that identify ideal operations, and host in Google Cloud Machine Learning (ML) Platform tomake operational adjustments automatically.

Answer: B

Question: 17

Your agricultural division is experimenting with fully autonomous vehicles.
Youwantyourarchitecturetopromotestrong security duringvehicleoperation.
Which two architecture should you consider?
Choose 2 answers:

A. Treat every micro service call between modules on the vehicle as untrusted.
B. Require IPv6 for connectivity to ensure a secure address space.
C. Use a trusted platform module (TPM) and verify firmware and binaries on boot.
D. Use a functional programming language to isolate code execution cycles.
E. Use multiple connectivity subsystems for redundancy.
F. Enclose the vehicle's drive electronics in a Faraday cage to isolate chips.

Answer:AC

Case Study: 3

JencoMart Case Study

Company Overview

JencoMart is a global retailer with over 10,000 stores in 16 countries. The stores carry a range of goods, such as groceries, tires, and jewelry. One of the company's core values is excellent customer service. In addition, they recently introduced an environmental policy to reduce their carbon output by 50% over the next 5 years.

Company Background

JencoMart started as a general store in 1931, and has grown into one of the world's leading brands known for greatvalue and customer service. Over time, the company transitioned from only physical stores to a stores and online hybrid model, with 25% of sales online. Currently, JencoMart has little presence in Asia, but considers that market key for future growth.

Solution Concept

JencoMart wants to migrate several critical applications to the cloud but has not completed a technical review to determine their suitability for the cloud and the engineering required for migration. They currently host all of these applications on infrastructure that is at its end of life and is no longer supported.

Existing Technical Environment

JencoMart hosts all of its applications in 4datacenters:3 in North Americanand 1 in Europe,most applications are dual-homed.

JencoMart understands the dependencies and resource usage metrics of their on-premises architecture.

Application Customer loyalty portal

LAMP (Linux, Apache, MySQL and PHP) application served from the two JencoMart-owned U.S. data centers.

Database

- Oracle Database stores userprofiles
- 20 TB
- Complex table structure
- Well maintained, clean data
- Strong backup strategy
- PostgreSQL database stores usercredentials
- Single-homedin US West

No redundancy

Backed up every 12 hours

- 100% uptime service level agreement(SLA)
- Authenticates all users

Compute

- 30 machines in US West Coast, each machine has:

Twin, dual core CPUs

32GB of RAM

• Twin 250 GB HDD (RAID1)
• 20 machines in US East Coast, each machine has:
Single dual-core CPU
24 GB of RAM
• Twin 250 GB HDD (RAID1)

Storage

- Access to shared 100 TB SAN in each location
- Tape backup every week

Business Requirements

- Optimize for capacity during peak periods and value during off-peak periods
- Guarantee service availably and support
- Reduce on-premises footprint and associated financial and environmental impact.
- Move tooutsourcing model to avoid large upfront costs associated with infrastructure purchase
- Expand services into Asia.

Technical Requirements

- Assess key application for cloud suitability.
- Modify application for thecloud.
- Move applications toa new infrastructure.
- Leverage managed services wherever feasible
- Sunset 20% of capacityinexisting datacenters
- Decrease latency in Asia

CEO Statement

JencoMartwill continue to develop personal relationships with ourcustomers asmore people access the web. The future of our retail business is in the global market and the connection between online and in-store experiences. As a large global company, we also have a responsibility to the environment through 'green' initiatives and polices.

CTO Statement

The challenges of operating data centers prevents focus on key technologies critical to our long-term success. Migrating our data services to a public cloud infrastructure will allow us to focus on big data and machine learning to improve our service customers.

CFO Statement

Since its founding JencoMart has invested heavily in our data services infrastructure. However, because of changing market trends, we need tooutsource ourinfrastructure toensure our long-term success. This model will allow us to respond to increasing customer demand during peak and reduce costs.

Question: 18

For this question, refer to the JencoMart case study.
The JencoMartsecurity team requires that all Google Cloud Platform infrastructure is deployed using a least privilege model with separation of duties for administration between production and developmentresources. WhatGoogledomainandprojectstructureshouldyourecommend?

A. Create two G Suite accounts tomanage users: one fordevelopment/test/staging and one for production. Each account should contain one project for every application.
B. Create two G Suite accounts to manage users: one with a single project for all development

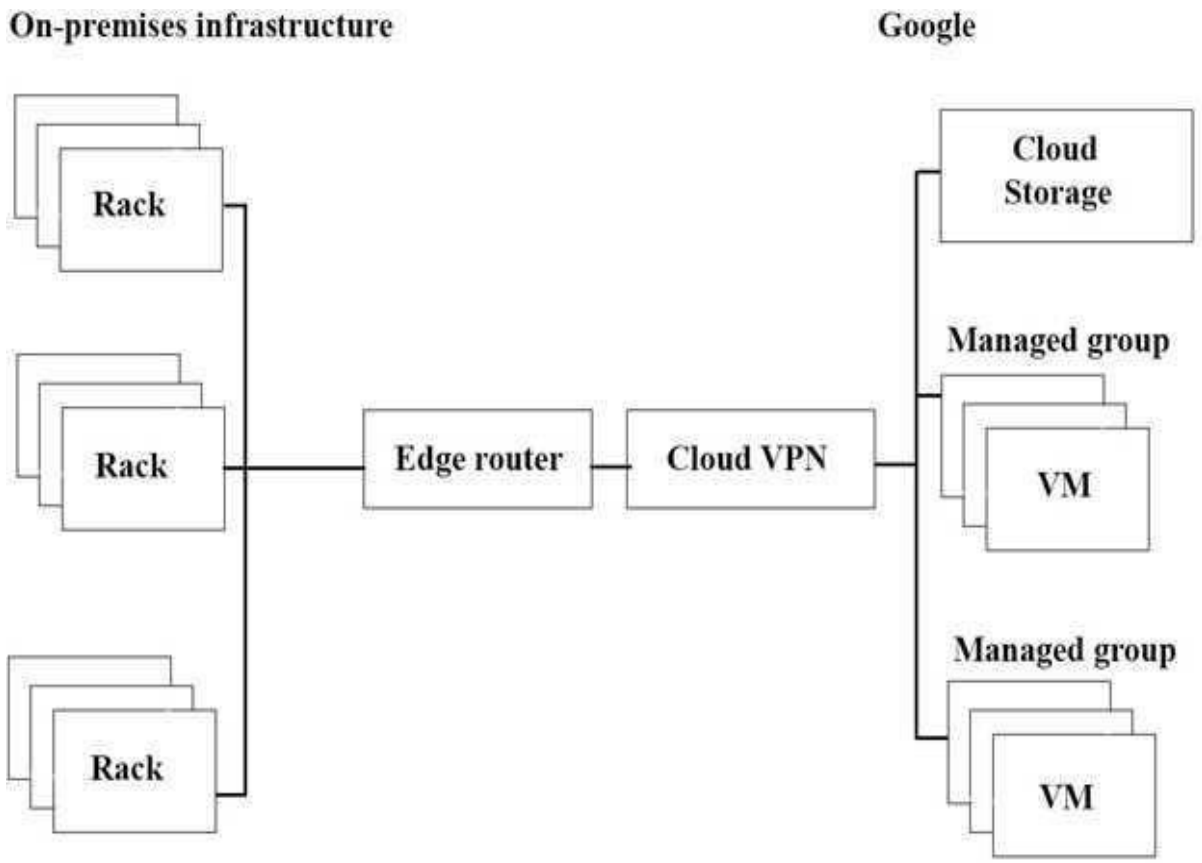
applications and one with a single project for all production applications.
C. Create asingle G Suite account tomanage users witheachstage of each application in its own project.
D. Create a single G Suite account to manage users with one project for the development/test/staging environment and oneproject fortheproductionenvironment.

Answer: D

Explanation:
Note: The principle of least privilege and separation of duties are concepts that, although semantically different, are intrinsically related from the standpoint of security. The intent behind both is to prevent people from having higher privilege levels than they actually need
• Principle of Least Privilege: Users should only have the least amount of privileges required to perform their job and no more. This reduces authorization exploitation by limiting access to resourcessuchastargets, jobs, or monitoringtemplates forwhichtheyarenot authorized.
• Separation of Duties: Beyond limiting user privilege level, you also limit user duties, or the specific jobs they can perform. No user should be given responsibility for more than one related function. This limits the ability of a user to perform a malicious action and then cover up that action.
References:
https://cloud.google.com/kms/docs/separation-of-duties

Question: 19

For this question, refer to the JencoMart case study.
The migration of JencoMart's application to Google Cloud Platform (GCP) is progressing too slowly. The infrastructure is shown in the diagram. You want to maximize throughput. What are three potential bottlenecks? (Choose 3answers.)



A. A single VPN tunnel, which limits throughput
B. A tier of Google Cloud Storage that is not suited for this task
C. A copy commandthatis notsuitedto operate over long distances
D. Fewervirtual machines(VMs) in GCPthanon-premisesmachines
E. A separate storage layer outside the VMs, which is not suited for this task
F. Complicated internet connectivity between the on-premises infrastructure and GCP

Answer:ADF

Question: 20

For this question, refer to the JencoMart case study
A few days after JencoMart migrates the user credentials database to Google Cloud Platform and shuts down the old server, the new database server stops responding to SSH connections. It is still serving database requests to the application servers correctly. What three steps should you take to diagnose the problem? Choose 3 answers

A. Delete the virtual machine (VM) and disks and create a new one.
B. Delete the instance, attachthe disk toanew VM, andinvestigate.
C. Take a snapshot of the disk and connect to a new machine to investigate.
D. Check inbound firewall rules for the network the machine is connected to.
E. Connect the machine to another network with very simple firewall rules and investigate.
F. Print the Serial Console output for the instance for troubleshooting, activate the interactive

console, and investigate.

Answer:CDF

Explanation:
https://cloud.google.com/compute/docs/troubleshooting/troubleshooting-ssh
Explanation:
D: Handling "Unable toconnectonport 22" error message
Possible causes include:
There is no firewall rule allowing SSH access on the port. SSH access on port 22 is enabled on all Compute Engine instances by default. If you have disabled access, SSH fromthe Browserwill not work. If you run sshd on a port other than 22, you need to enable the access to that port with a custom firewall rule.
The firewall rule allowing SSH access is enabled, butis not configured to allow connections from GCP Console services. Source IP addresses for browser-based SSH sessions are dynamically allocated by GCP Console and can vary from session to session.
References:
https://cloud.google.com/compute/docs/ssh-in-browser
https://cloud.google.com/compute/docs/ssh-in-browser

Question: 21

For this question, refer to the JencoMart case study.
JencoMart wants tomovetheir User Profiles database to Google Cloud Platform. Which Google Database should they use?

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

Answer: D

Explanation:
https://cloud.google.com/datastore/docs/concepts/overview
Explanation:
Common workloads for Google Cloud Datastore:
• User profiles
• Product catalogs
• Game state
References:
https://cloud.google.com/storage-options/
https://cloud.google.com/datastore/docs/concepts/overview

Question: 22

For this question, refer to the JencoMart case study.

JencoMarthas decidedto migrate user profile storage to Google Cloud Datastore and the application servers to Google Compute Engine (GCE). During the migration, the existing infrastructure will need access to Datastore to upload the dat

a. What service account key-management strategy should you recommend?

A. Provision service account keys for the on-premises infrastructure andfor the GCE virtual machines (VMs).

B. Authenticate the on-premises infrastructure with a user account and provision service account keys for the VMs.

C. Provision service account keys for the on-premises infrastructure and use Google Cloud Platform (GCP) managed keys for the VMs

D. Deploy a custom authentication service on GCE/Google Container Engine (GKE) for the on-premises infrastructure and use GCP managed keys for the VMs.

Answer: A

Explanation:

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

Explanation:

Migrating data to Google Cloud Platform

Let's say that you have some data processing that happens on another cloud provider and you want totransfer the processed data to Google Cloud Platform. You can usea serviceaccount from the virtual machines on theexternalcloud topushthedata to Google Cloud Platform. Todo this, you must create and download a service account key when you create the service account and then use that key from the external process to call the Cloud Platform APIs.

References:

https://cloud.google.com/iam/docs/understanding-service-accounts#migrating_data_to_google_cloud_platform

Question: 23

For this question, refer to the JencoMart case study.

JencoMart has built a version of their application on Google Cloud Platform that serves traffic to Asi

a. Youwant to measure success against their business and technical goals. Which metrics should you track?

A. Error rates for requests from Asia

B. Latency difference between US andAsia

C. Total visits, error rates, and latency from Asia

D. Total visits and average latency for users in Asia

E. The number of character sets present in the database

Answer: D

Case Study: 4

Dress4Win case study

Company Overview

Dress4win is a web-based company that helps their users organize and manage their personal wardrobe using a website and mobile application. The company also cultivates an active social network that connects their users with designers and retailers. They monetize their services through advertising, e-commerce, referrals, and a freemium app model.

Company Background

Dress4win's application has grown from a few servers in the founder's garage to several hundred servers and appliances in a colocated data center. However, the capacity of their infrastructure is now insufficient for the application's rapid growth. Because of this growth and the company's desire to innovate faster, Dress4win is committing to a full migration to a public cloud.

Solution Concept

For the first phase of their migration to the cloud, Dress4win is considering moving their development and test environments. They are also considering building a disaster recovery site, because their current infrastructure is at a single location. They are not sure which components of their architecture they can migrate as is and which components they need to change before migrating them.

Existing Technical Environment

The Dress4win application is served out of a single data center location.

- Databases:
- MySQL - user data, inventory, static data
- Redis - metadata, social graph,caching
- Application servers:
- Tomcat - Java micro-services
- Nginx - static content
- Apache Beam - Batch processing
- Storage appliances:
- iSCSI for VM hosts
- Fiber channel SAN - MySQLdatabases
- NAS - image storage, logs,backups
- Apache Hadoop/Spark servers:
- Data analysis
- Real-time trending calculations
- MQ servers:
- Messaging
- Social notifications
- Events
- Miscellaneous servers:
- Jenkins, monitoring, bastion hosts, securityscanners

Business Requirements

- Build a reliable and reproducible environment with scaled parity of production.
- Improve security by defining and adhering to a set of security and Identity and Access

Management (IAM) best practices for cloud.
• Improve business agility and speed of innovation through rapid provisioning of new resources.
• Analyze and optimize architecture for performance in the cloud.
• Migrate fully to the cloud if all other requirements are met.

Technical Requirements

• Evaluate and choose an automation framework for provisioning resources in cloud.
• Support failover of the production environment to cloud during an emergency.
• Identify production services that can migrate to cloud to save capacity.
• Use managed services wheneverpossible.
• Encrypt data on the wire and at rest.
• Support multiple VPN connections between the production data center and cloud environment.

CEO Statement

Our investors are concerned about our ability to scale and contain costs with our current infrastructure. They are also concerned that a new competitor could use a public cloud platform to offsettheir up-front investment and freeingthem tofocus on developing betterfeatures.

CTO Statement

We have invested heavily in the current infrastructure, but much of the equipment is approaching the end of its useful life. We are consistently waiting weeks for new gear to be racked before we can start new projects. Our traffic patterns are highest in the mornings and weekend evenings; during other times, 80% of our capacity is sitting idle.

CFO Statement

Our capital expenditure is now exceeding our quarterly projections. Migrating to the cloud will likely cause an initial increase in spending, but we expect to fully transition before our next hardware refresh cycle. Our total cost of ownership (TCO) analysis over the next 5 years puts a cloud strategy between 30 to 50% lower than our current model.

Question: 24

For this question, refer to the Dress4Win case study.
At Dress4Win, an operations engineer wants to create a tow-costsolution to remotely archive copies of database backup files. The database files are compressed tar files stored in their current data center. How should he proceed?

A. Create a cronscriptusing gsutil to copy the files to a Coldline Storage bucket.
B. Create a cron scriptusing gsutil to copy the files toa Regional Storage bucket.
C. Create a Cloud Storage Transfer Service Jobto copy the files toa Coldline Storage bucket.
D. Create a Cloud Storage Transfer Service jobto copy the files toa Regional Storage bucket.

Answer: A

Explanation:
Follow these rules of thumb when deciding whether to use gsutil or Storage Transfer Service:
• When transferring data from an on-premises location, use gsutil.
• When transferring data from another cloud storage provider, use Storage Transfer Service.
• Otherwise, evaluate both tools with respect to your specific scenario.
Use this guidance as a starting point. The specific details of your transfer scenario will also help you

determine which tool is more appropriate
https://cloud.google.com/storage-transfer/docs/overview

Question: 25

For this question, refer to the Dress4Win case study.
Dress4Win has asked you to recommend machine types they should deploy their application servers to. How should youproceed?

A. Perform a mapping of the on-premises physical hardware cores and RAM to the nearest machine types in the cloud.
B. Recommend that Dress4Win deploy application servers to machine types that offer the highest RAM to CPU ratio available.
C. Recommendthat Dress4Win deployintoproductionwiththesmallestinstances available, monitor themovertime, and scale themachine type up until thedesiredperformance is reached.
D. Identify the number of virtual cores and RAM associated with the application server virtual machines align them toacustom machinetype in thecloud, monitorperformance, and scale the machine types up until the desired performance is reached.

Answer: C

Question: 26

For this question, refer to the Dress4Win case study.
Dress4Win has asked you for advice on how to migrate their on-premises MySQL deployment to the cloud. They want to minimize downtime and performance impact to their on-premises solution during the migration. Which approach should you recommend?

A. Create a dump of the on-premises MySQL master server, and then shut it down, upload it to the cloud environment, and load into a new MySQL cluster.
B. Setup a MySQL replica server/slave in the cloud environment, and configure it for asynchronous replication from the MySQL master server on-premises until cutover.
C. Create a new MySQL cluster in the cloud, configure applications to begin writing to both on-premises and cloud MySQL masters, and destroy the original cluster at cutover.
D. Create a dump of the MySQL replica server into the cloud environment, load it into: Google Cloud Datastore, and configure applications to read/write to Cloud Datastore at cutover.

Answer: B

Question: 27

For this question, refer to the Dress4Win case study.
Dress4Win has configured a new uptime check with Google Stackdriver for several of their legacy services. The Stackdriver dashboard is not reporting the services as healthy. What should they do?

A. Install the Stackdriver agent on all of the legacy web servers.
B. In the Cloud Platform Console download the list of the uptime servers' IP addresses and create an inbound firewall rule
C. Configure their load balancer to pass through the User-Agent HTTP header when the value matches GoogleStackdriverMonitoring-UptimeChecks (https://cloud.google.com/monitoring)
D. Configure their legacy web servers to allow requests that contain user-Agent HTTP header when the value matches GoogleStackdriverMonitoring— UptimeChecks (https://cloud.google.com/monitoring)

Answer: B

Question: 28

For this question, refer to the Dress4Win case study.
You want to ensure Dress4Win's sales and tax records remain available for infrequent viewing by auditors for at least 10 years. Cost optimization is your top priority. Which cloud services should you choose?

A. Google Cloud Storage Coldline to store the data, andgsutil to access thedata.
B. Google Cloud Storage Nearline to store thedata, andgsutil toaccess the data.
C. Google Bigtabte with US or EU as location to store the data, and gcloud to access the data.
D. BigQuerytostorethedata, and awebserverclusterinamanaged instance groupto access the data. Google Cloud SQL mirrored across two distinct regions to store the data, and a Redis cluster in a managed instance group to access the data.

Answer: A

Explanation:
References:
https://cloud.google.com/storage/docs/storage-classes

Question: 29

For this question, refer to the Dress4Win case study.
Dress4Winhas end-to-endtests covering 100% of theirendpoints. They want to ensure that the move to the cloud does not introduce any new bugs. Which additional testing methods should the developers employ to prevent an outage?

A. They should enable Google Stackdriver Debugger on the application code to show errors in the code.
B. They should add additional unit tests and production scale load tests on their cloud staging environment.
C. They should run the end-to-end tests in the cloud staging environment to determine if the code is working as intended.
D. They should add canary tests so developers can measure how much of an impact the new release causes to latency.

Answer: B

Question: 30

For this question, refer to the Dress4Win case study.
As part of their new application experience, Dress4Wm allows customers to upload images of themselves. The customer has exclusive control over who may view these images. Customers should be able to upload images with minimal latency and also be shown their images quickly on the main application page when they log in. Which configuration should Dress4Win use?

A. Store image files in a Google Cloud Storage bucket. Use Google Cloud Datastore to maintain metadata that maps each customer's ID and their image files.
B. Store image files in a Google Cloud Storage bucket. Add custom metadata to the uploaded images in Cloud Storage that contains the customer's unique ID.
C. Useadistributedfilesystemtostorecustomers' images. As storage needs increase, addmore persistent disks and/or nodes. Assign each customer a unique ID, which sets each file's owner attribute, ensuring privacy ofimages.
D. Useadistributedfilesystem tostorecustomers' images. Asstorage needsincrease, addmore persistent disks and/or nodes. Use a Google Cloud SQL database to maintain metadata that maps each customer's ID to their image files.

Answer: A

Question: 31

For this question, refer to the Dress4Win case study.
The Dress4Win security team has disabled external SSH access into production virtual machines (VMs) on Google Cloud Platform (GCP). The operations team needs to remotely manage the VMs, build and push Docker containers, and manage Google Cloud Storage objects. What can they do?

A. Grant the operations engineers access to use Google Cloud Shell.
B. Configure a VPN connection to GCP to allow SSH access to the cloud VMs.
C. Develop a new access request process that grants temporary SSH access to cloud VMs when an operations engineer needs to perform a task.
D. Have the development team build an API service that allows the operations team to execute specific remote procedure calls to accomplish their tasks.

Answer: A

Question: 32

For this question, refer to the Dress4Win case study.

Dress4Win would like to become familiar with deploying applications to the cloud by successfully deploying some applications quickly, as is. They have asked for your recommendation. What should you advise?

A. Identify self-contained applications with external dependencies as a first move to the cloud.
B. Identify enterprise applications with internal dependencies and recommend these as a first move to the cloud.
C. Suggest moving their in-house databases to the cloud and continue serving requests to on-premise applications.
D. Recommend moving their message queuing servers to the cloud and continue handling requests to on-premise applications.

Answer: A

Explanation:
https://cloud.google.com/blog/products/gcp/the-five-phases-of-migrating-to-google-cloud-platform

Question: 33

For this question, refer to the Dress4Win case study.
As part of Dress4Win's plans to migrate to the cloud, they want to be able to set up a managed logging and monitoring system so they can handle spikes in their traffic load. They want to ensure that:

- The infrastructure can be notified when it needs to scale up and down to handle the ebb and flow of usage throughout theday
- Their administrators are notified automatically when their application reports errors.
- They can filter their aggregated logs down in order to debug one piece of the application across many hosts

Which Google StackDriver features should they use?

A. Logging, Alerts, Insights, Debug
B. Monitoring, Trace, Debug, Logging
C. Monitoring, Logging, Alerts, Error Reporting
D. Monitoring, Logging, Debug, Error Report

Answer: D

Question: 34

Dress4win has end to end tests covering 100% of their endpoints.
They want to ensure that the move of cloud does not introduce any new bugs.
Which additional testing methods should the developers employ to prevent an outage?

A. They should run the end to end tests in the cloud staging environment to determine if the code is working as intended.
B. They should enable google stack driver debugger on the application code to show errors in the

code
C. They should add additional unit tests and production scale load tests on their cloud staging environment.
D. They should add canary tests so developers can measure how much of an impact the new release causes to latency

Answer: B

Question: 35

The current Dress4win system architecture has high latency to some customers because it is located in onedata center.
Asofafutureevaluationandoptimizing forperformanceinthecloud, Dresss4win wantsto distribute it's system
architecture tomultiplelocationswhenGooglecloudplatform.
Which approach should they use?

A. Use regional managed instance groups and a global load balancer to increase performance because theregional managedinstance group cangrowinstances in each region separately based on traffic.
B. Use a global load balancer with a set ofvirtual machines that forward the requests to a closer group of virtual machines managed by your operations team.
C. Use regional managed instance groups and a global load balancer to increase reliabilityby providing
automatic failover between zones in different regions.
D. Use aglobal load balancer with a set of virtual machines that forward the requests to a closer group of virtual machines as part of a separate managed instance groups.

Answer: A

Case Study: 5
Dress4Win Case 2
Company Overview

Dress4win is a web-based company that helps their users organize and manage their personal wardrobe using a website and mobile application. The company also cultivates an active social network that connects their users with designers and retailers. They monetize their services through advertising, e-commerce, referrals, and a freemium app model. The application has grown from a few servers in the founder's garage to several hundred servers and appliances in a collocated data center. However, the capacity of their infrastructure is now insufficient for the application's rapid growth. Because of this growth and the company's desire to innovate faster. Dress4Win is committing to a full migration to a public cloud.

Solution Concept

For the first phase of their migration to the cloud, Dress4win is moving their development and test environments. They are also building a disaster recovery site, because their current infrastructure is

at a single location. They are not sure which components of their architecture they can migrate as is and which components they need to change before migrating them.

Existing Technical Environment

The Dress4win application is served out of a single data center location. All servers run Ubuntu LTS v16.04.

Databases:

MySQL. 1 server for user data, inventory, static data:
- MySQL 5.8
- 8 core CPUs
- 128 GB of RAM
- 2x 5 TB HDD (RAID1)

Redis 3 server cluster for metadata, social graph, caching. Each server is:
- Redis 3.2
- 4 core CPUs
- 32GB of RAM

Compute:

40 Web Application servers providing micro-services based APIs and static content.
- Tomcat - Java
- Nginx
- 4 core CPUs
- 32 GB of RAM

20 Apache Hadoop/Spark servers:
- Data analysis
- Real-time trending calculations
- 8 core CPUS
- 128 GB of RAM
- 4x 5 TB HDD (RAID1)

3 RabbitMQ servers for messaging, social notifications, and events:
- 8 core CPUs
- 32GB of RAM

Miscellaneous servers:

- Jenkins, monitoring, bastionhosts, security scanners
- 8 core CPUs
- 32GB of RAM

Storage appliances:

iSCSI for VM hosts

Fiber channel SAN – MySQL databases
- 1 PBtotal storage; 400 TB available

NAS–imagestorage,logs,backups
- 100 TB total storage; 35 TB available

Business Requirements

Build a reliable and reproducible environment with scaled parity of production.

Improve security by defining and adhering to a set of security and Identity and Access Management (IAM) best practices forcloud.

Improve business agility andspeedofinnovationthroughrapidprovisioning ofnewresources.

Analyze and optimize architecture for performance in the cloud.

Technical Requirements

Easily create non-production environment in the cloud.
Implement an automation framework for provisioning resources in cloud.
Implement a continuous deployment process for deploying applications to the on-premises datacenter or cloud.
Supportfailover of theproductionenvironmenttocloudduringanemergency.
Encrypt data on the wire and at rest.
Support multiple private connections between the production data center and cloud environment.

Executive Statement

Our investors are concerned about our ability to scale and contain costs with our current infrastructure. They are also concerned that a competitor could use a public cloud platform to offset their up-front investment and free them to focus on developing better features. Our traffic patterns are highest in the mornings and weekend evenings; during other times, 80% of our capacity is sitting idle.
Our capital expenditure is now exceeding our quarterly projections. Migrating to the cloud will likely cause an initial increase in spending, but we expect to fully transition before our next hardware refresh cycle. Our total cost of ownership (TCO) analysis over the next 5 years for a public cloud strategy achieves a cost reduction between 30% and 50% over our current model.

Question: 36

For this question, refer to the Dress4Win case study. Dress4Win is expected to grow to 10 times its size in 1 yearwitha corresponding growth in data and traffic that mirrors theexisting patterns of usage. The CIO has set the target of migrating production infrastructure to the cloud within the next 6 months. How will you configure the solution to scale for this growth without making major application changes and still maximize the ROI?

A. Migrate the web application layer to App Engine, and MySQL to Cloud Datastore, and NAS to Cloud Storage. Deploy RabbitMQ, and deploy Hadoop serversusing Deployment Manager.
B. Migrate RabbitMQ to Cloud Pub/Sub, Hadoop to BigQuery, and NAS to Compute Engine with Persistent Disk storage. Deploy Tomcat, and deploy Nginx using Deployment Manager.
C. Implement managed instance groups for Tomcat and Nginx. Migrate MySQL to Cloud SQL, RabbitMQ to Cloud Pub/Sub, Hadoopto Cloud Dataproc, and NAS to Compute Engine with Persistent Disk storage.
D. Implement managed instance groups for the Tomcat and Nginx. Migrate MySQL to Cloud SQL, RabbitMQ to Cloud Pub/Sub, Hadoop to Cloud Dataproc, and NAS to Cloud Storage.

Answer: D

Question: 37

For this question, refer to the Dress4Win case study. Considering the given business requirements, how would you automate the deployment of web and transactional data layers?

A. Deploy Nginx and Tomcat using Cloud Deployment Manager to Compute Engine. Deploy a Cloud SQL server to replace MySQL. Deploy Jenkins using Cloud Deployment Manager.

B. Deploy Nginx and Tomcat using Cloud Launcher. Deploy a MySQL server using Cloud Launcher. Deploy Jenkins to Compute Engine using Cloud Deployment Manager scripts.
C. Migrate Nginx and Tomcat to App Engine. Deploy a Cloud Datastore server to replace the MySQL server in a high-availability configuration. Deploy Jenkins to Compute Engine using Cloud Launcher.
D. Migrate Nginx and Tomcat to App Engine. Deploy a MySQL server using Cloud Launcher. Deploy Jenkins to Compute Engine using Cloud Launcher.

Answer: A

Question: 38

For this question, refer to the Dress4Win case study. Which of the compute services should be migrated as –is and wouldstill be anoptimized architecture forperformance in the cloud?

A. Web applications deployed using App Engine standard environment
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

Answer: C

Question: 39

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.

Answer: A

Explanation:
https://cloud.google.com/logging/docs/audit/

Question: 40

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. EnsurethatthedefaultCloudKMSkey issetbeforestoring files inCloudStorage.

Answer: D

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

Question: 41

For this question, refer to the Dress4Win case study. You want to ensure that your on-premises architecture meets business requirements before you migrate your solution.
What change in the on-premises architecture should you make?

A. Replace RabbitMQ with Google Pub/Sub.
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.

Answer: C

Case Study: 6
TerramEarth Case 2
Company Overview

TerramEarth manufactures heavy equipmentforthemining andagricultural 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 composedof Linuxand Windows-based systemsthatreside ina single U.S. west coast based data center. These systems gzip CSV files from the field and upload via FTP, and place the datain 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 andservices
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

Expandbeyonda single datacenter todecrease latency tothe American Midwestandeastcoast.
Create a backup strategy.
Increase security of datatransfer from equipmenttothedatacenter.
Improve data in the data warehouse.
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 TBlocal HDD storage

Application 2:Reporting
Anofftheshelf application that business analysts usetorunadaily reporttoseewhatequipment 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 RAID0

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 welack 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: 42

For this question, refer to the TerramEarth case study. To be compliant with European GDPR regulation, TerramEarth is required to delete data generated from its European customers after a period of 36 months when it contains personal dat
a. In the new architecture, this data will be stored in both Cloud Storage and BigQuery. What should you do?
A. Create a BigQuery table for the European data, and set the table retention period to 36 months. For Cloud Storage, use gsutil toenable lifecycle management using a DELETE action with an Age condition of 36 months.
B. Create a BigQuery table for the European data, and set the table retention period to 36 months. For Cloud Storage, use gsutil to create a SetStorageClass to NONE action when with an Age condition of 36 months.
C. Create a BigQuery time-partitioned table for the European data, and set the partition expiration period to 36 months. For Cloud Storage, use gsutil to enable lifecycle management using a DELETE action with an Age condition of 36 months.
D. Create a BigQuery time-partitioned table for the European data, and set the partition period to 36 months. For Cloud Storage, use gsutil to create a SetStorageClass to NONE action with an Age condition of 36 months.

Answer: C

Explanation:
https://cloud.google.com/bigquery/docs/managing-partitioned-tables#partition-expiration
https://cloud.google.com/storage/docs/lifecycle

Question: 43

For this question, refer to the TerramEarth case study. TerramEarth has decided to store data files in Cloud Storage. Youneed to configure Cloud Storage lifecycle rule to store 1 year of data and minimize file storage cost.
Which two actions should you take?

A. Create a Cloud Storage lifecycle rule with Age: "30", Storage Class: "Standard", and Action: "Set to Coldline", and create a second GCS life-cycle rule with Age: "365", Storage Class: "Coldline", and Action: "Delete".
B. Create a Cloud Storage lifecycle rule with Age: "30", Storage Class: "Coldline", and Action: "Set to Nearline", and create a second GCS life-cycle rule with Age: "91", Storage Class: "Coldline", and

Action: “Set to Nearline”.
C. Create a Cloud Storage lifecycle rule with Age: “90”, Storage Class: “Standard”, and Action: “Set to Nearline”, and create a second GCS life-cycle rule with Age: “91”, Storage Class: “Nearline”, and Action: “Set to Coldline”.
D. Create a Cloud Storage lifecycle rule with Age: “30”, Storage Class: “Standard”, and Action: “Set to Coldline”, and create asecond GCS life-cycle rulewith Age:“365”, Storage Class: “Nearline”, and Action: “Delete”.

Answer: A

Question: 44

For this question, refertothe TerramEarth case study. You needtoimplement areliable, 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.

Answer: C

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

Question: 45

For this question, refer to the TerramEarth case study. A new architecture that writes all incoming data to BigQuery has been introduced. You notice that the data is dirty, and want to ensure data quality on an automated daily basis while managing cost.
What should you do?

A. Set up a streaming Cloud Dataflow job, receiving data by the ingestion process. Clean the datain a Cloud Dataflow pipeline.
B. Create a Cloud Function that reads data from BigQuery and cleans it. Trigger it. Trigger the Cloud Function from a Compute Engine instance.
C. Create a SQL statement on the data in BigQuery, and save it as a view. Run the view daily, and save the result to a newtable.
D. Use Cloud Dataprep and configure the BigQuery tables as the source. Schedule a daily job to clean the data.

Answer: A

Question: 46

For this question, refer to the TerramEarth case study. Considering the technical requirements, how should you reduce the unplanned vehicle downtime in GCP?

A. Use BigQuery as the data warehouse. Connect all vehicles to the network and stream data into BigQuery using Cloud Pub/Sub and Cloud Dataflow. Use Google Data Studio for analysis and reporting.
B. Use BigQuery as the data warehouse. Connect all vehicles to the network and upload gzip files to a Multi-Regional Cloud Storage bucketusing gcloud. Use Google Data Studioforanalysis andreporting.
C. Use Cloud Dataproc Hive as the data warehouse. Upload gzip files to a MultiRegional Cloud Storage
bucket. Upload this data into BigQuery using gcloud. Use Google data Studio for analysis and reporting.
D. Use Cloud Dataproc Hive as the data warehouse. Directly stream data into prtitioned Hive tables. Use Pig scripts to analyze data.

Answer: A

Question: 47

For this question, refer to the TerramEarth case study. You are asked to design a new architecture for the ingestion of the data of the 200,000 vehicles that are connected to a cellular network. You want to follow Google-recommendedpractices.
Considering the technical requirements, which components should you use for the ingestion of the data?

A. Google Kubernetes Engine with an SSL Ingress
B. Cloud IoT Core with public/private key pairs
C. Compute Engine with project-wide SSHkeys
D. Compute Engine with specific SSHkeys

Answer: A

Explanation:
https://cloud.google.com/solutions/iot-overview
https://cloud.google.com/iot/quotas

Case Study: 7
Mountkrik Games Case 2
Company Overview

Mountkirk Games makes online, session-based, multiplayer games for mobile platforms. They build all of their games using some server-side integration. Historically, they have used cloud providers to lease physical servers.

Due to the unexpected popularity of some of their games, they have had problems scaling their global audience, application servers, MySQL databases, and analytics tools.

Their current model is to write game statistics to files and send them through an ETL tool that loads them into a centralized MySQL database for reporting.

Solution Concept

Mountkirk Games is building a new game, which they expect to be very popular. They plan to deploy the game's backend on Google Compute Engine so theycan capture streaming metrics, run intensive analytics, and take advantage of its autoscaling server environment and integrate with a managed NoSQL database.

Business Requirements

- Increase to a globalfootprint.
- Improve uptime – downtime is loss of players.
- Increase efficiency of the cloud resources we use.
- Reduce latency to allcustomers.

Technical Requirements

Requirements for Game Backend Platform

- Dynamically scale up or down based on game activity.
- Connect to a transactional database service to manage user profiles and game state.
- Store game activity in a timeseries database service for future analysis.
- As the system scales, ensure that data is not lost due to processing backlogs.
- Run hardened Linux distro.

Requirements for Game Analytics Platform

- Dynamically scale up or down based on game activity
- Process incoming data on the fly directly from the game servers
- Process data that arrives late because of slow mobile networks
- Allow queries to access at least 10 TB of historical data
- Process files that are regularly uploaded by users' mobile devices

Executive Statement

Our last successful game did not scale well with our previous cloud provider, resulting in lower user adoption and affecting the game's reputation. Our investors want more key performance indicators (KPIs) to evaluate the speed and stability of the game, as well as other metrics that provide deeper insight into usage patterns so we can adapt the game to target users. Additionally, our current technologystackcannotprovide thescale weneed, sowewantto replace MySQLand moveto an environment that provides autoscaling, low latency load balancing, and frees us up from managing physical servers.

Question: 48

For this question, refer to the Mountkirk Games case study. Mountkirk Games wants to migrate from their current analytics and statistics reporting model to one that meets their technical requirements on Google Cloud Platform.
Which two steps should be part of their migration plan? (Choose two.)

A. Evaluate the impact of migrating their current batch ETL code to Cloud Dataflow.
B. Write a schema migration plan to denormalize data for better performance in BigQuery.
C. Draw an architecture diagram that shows how to move from a single MySQL database to a MySQL cluster.
D. Load 10 TB of analytics data from a previous game into a Cloud SQL instance, and run test queries against the full dataset to confirm that they complete successfully.
E. Integrate Cloud Armor to defend against possible SQL injection attacks in analytics files uploaded to Cloud Storage.

Answer:AB

Explanation:
https://cloud.google.com/bigquery/docs/loading-data#loading_denormalized_nested_and_repeated_data

Question: 49

For this question, refer to the Mountkirk Games case study. You need to analyze and define the technical architecture for the compute workloads for your company, Mountkirk Games. Considering the Mountkirk Games business and technical requirements, what should you do?

A. Create network load balancers. Use preemptible Compute Engine instances.
B. Create network load balancers. Use non-preemptible Compute Engine instances.
C. Create a global load balancer with managed instance groups and autoscaling policies. Use preemptible Compute Engine instances.
D. Create a global load balancer with managed instance groups and autoscaling policies. Use non-preemptible Compute Engine instances.

Answer: D

Question: 50

For this question, refer to the Mountkirk Games case study. Mountkirk Games wants to design their solutionforthefuture in ordertotake advantage ofcloud and technologyimprovementsasthey become available. Which two steps should they take? (Choose two.)

A. Store asmuch analytics and game activity data asfinancially feasibletoday so it can be usedto train machine learning models to predict user behavior in the future.
B. Begin packaging their game backend artifacts in container images and running them on Kubernetes Engine toimprovethe availability toscale up or downbased on game activity.
C. Set upa CI/CD pipeline using Jenkins and Spinnaker toautomate canary deployments andimprove development velocity.
D. Adopt aschemaversioning tool to reducedowntime when adding new game features thatrequire storing additional player data in the database.
E. Implement a weekly rolling maintenance process for the Linux virtual machines so they can apply critical kernel patches and package updates and reducethe risk of 0-day vulnerabilities.

Answer:BC

Question: 51

For this question, refer to the Mountkirk Games case study. Mountkirk Games wants you to design a wayto test theanalytics platform's resilience to changesin mobile networklatency. What should you do?

A. Deploy failure injection software to the game analytics platform that can inject additional latency to mobile client analytics traffic.
B. Build a test client that can be run from a mobile phone emulator on a Compute Engine virtual machine, and run multiple copies in Google Cloud Platform regions all over the world to generate realistic traffic.
C. Add the ability to introduce a random amount of delay before beginning to process analytics files uploaded from mobile devices.
D. Create an opt-in beta of the game that runs on players' mobile devices and collects response times from analytics endpoints running in Google Cloud Platform regions all over the world.

Answer: D

Question: 52

For this question, refer to the Mountkirk Games case study. You need to analyze and define the technical architecture for the database workloads for your company, Mountkirk Games. Considering the business and technical requirements, what should you do?

A. Use Cloud SQL for time series data, and use Cloud Bigtable for historical data queries.
B. Use Cloud SQL to replace MySQL, and use Cloud Spanner for historical data queries.
C. Use Cloud Bigtable to replace MySQL, and use BigQuery for historical data queries.
D. Use Cloud Bigtable for time series data, use Cloud Spanner for transactional data, and use BigQuery for historical data queries.

Answer: D

Explanation:
https://cloud.google.com/bigtable/docs/schema-design-time-series

Question: 53

For this question, refer to the Mountkirk Games case study. Which managed storage option meets Mountkirk'stechnical requirementforstoringgame activity inatime seriesdatabaseservice?

A. Cloud Bigtable
B. Cloud Spanner
C. BigQuery
D. Cloud Datastore

Answer: A

Explanation:
https://cloud.google.com/blog/products/databases/getting-started-with-time-series-trend-predictions-using-gcp

Question: 54

For this question, refer to the Mountkirk Games case study. You are in charge of the new Game Backend Platform architecture. Thegame communicates withthebackend overa RESTAPI.
You want to follow Google-recommended practices. How should you design the backend?

A. Create aninstance template for the backend. For everyregion, deploy it on a multi-zone managed instance group. Use an L4 load balancer.
B. Create aninstance template for the backend. Foreveryregion, deploy iton a single-zone managed instance group. Use an L4 load balancer.
C. Create aninstance template for the backend. For everyregion, deploy it on a multi-zone managed instance group. Use an L7 load balancer.
D. Create aninstance template for thebackend. Foreveryregion, deploy itona single-zone managed instance group. Use an L7 load balancer.

Answer: C

Explanation:
https://cloud.google.com/solutions/gaming/cloud-game-infrastructure#dedicated_game_server

Case Study: 8
Mix Questions

Question: 55

One of the developers on your team deployed their application in Google Container Engine with the

Dockerfile below. They report that their application deployments are taking too long.

```
FROM ubuntu:16.04

COPY . /src

RUN apt-get update && apt-get install -y python python-pip

RUN pip install -r requirements.txt
```

You want to optimize this Dockerfile for faster deployment times without adversely affecting the app's functionality.
Which two actions should you take? Choose 2 answers.

A. Remove Python after runningpip.
B. Remove dependencies from requirements.txt.
C. Use a slimmed-down base image like Alpine linux.
D. Use larger machine types for your Google Container Engine node pools.
E. Copy the source after the package dependencies (Python and pip) are installed.

Answer:C,E

Explanation:
The speed of deployment can be changed by limiting the size of the uploaded app, limiting the complexity of the buildnecessary in the Dockerfile, if present, and by ensuring a fast and reliable internet connection.
Note: Alpine Linux is built around musllibc and busybox. Thismakes it smaller and moreresource efficient than traditional GNU/Linux distributions. A container requires no more than 8 MB and a minimal installation to disk requires around 130 MB of storage. Not only do you get a fully-fledged Linux environment but a large selection of packages from the repository.
References:
https://groups.google.com/forum/#!topic/google-appengine/hZMEkmmObDU
https://www.alpinelinux.org/about/

Question: 56

Your solution is producing performance bugs in production that you did not see in staging and test environments. You want to adjust your test and deployment procedures to avoid this problem in the future. What should youdo?

A. Deploy fewer changes toproduction.
B. Deploy smaller changes toproduction.
C. Increase the load on your test and staging environments.
D. Deploy changes to a small subset of users before rolling out to production.

Answer: C

Question: 57

Yourcompany has decided to make a major revision of their API in order to create better experiences fortheirdevelopers. They needtokeeptheoldversionofthe API available anddeployable, while allowing new customers and testers to try out the new API. They want to keep the same SSL and DNS records in place to serve both APIs. What should they do?

A. Configure a new load balancer for the new version of the API.
B. Reconfigure old clients to use a new endpoint for the new API.
C. Have the old API forward traffic to the new API based on the path.
D. Use separate backend pools for each API path behind the load balancer.

Answer: D

Explanation:
https://cloud.google.com/endpoints/docs/openapi/lifecycle-management

Question: 58

A small number of API requests to your microservices-based application take a very long time. You know that each request to the API can traverse many services. You want to know which service takes the longest in those cases. What should you do?

A. Set timeouts on your application so that you can fail requests faster.
B. Send custom metrics for each of your requests to Stackdriver Monitoring.
C. Use Stackdriver Monitoring to look for insights that show when your API latencies are high.
D. Instrumentyourapplication with Stackdnver Tracein orderto break down therequestlatencies at each microservice.

Answer: D

Explanation:
https://cloud.google.com/trace/docs/overview

Question: 59

Duringahightraffic portion of theday, one of yourrelational databases crashes, but thereplicais neverpromoted toa master. You want to avoid this inthe future. What should you do?

A. Use a different database.
B. Choose larger instances for your database.
C. Create snapshots of your database more regularly.
D. Implement routinely scheduled failovers of your databases.

Answer: D

Explanation:
https://cloud.google.com/solutions/dr-scenarios-planning-guide

Question: 60

Your organization requires that metrics from all applications be retained for 5 years for future analysis in possible legal proceedings. Which approach should you use?

A. Grant the security team access to the logs in each Project.
B. Configure Stackdriver Monitoring for all Projects, and export to BigQuery.
C. Configure Stackdriver Monitoring for all Projects with the default retention policies.
D. Configure Stackdriver Monitoring for all Projects, and export to Google Cloud Storage.

Answer: D

Explanation:
Overview of storage classes, price, and use cases https://cloud.google.com/storage/docs/storage-classes
Why export logs? https://cloud.google.com/logging/docs/export/
StackDriver Quotas and Limits for Monitoring https://cloud.google.com/monitoring/quotas
The BigQuery pricing. https://cloud.google.com/bigquery/pricing

Question: 61

Your company has decided to build a backup replica of their on-premises userauthentication PostgreSQL database on Google Cloud Platform. The database is 4 TB, and large updates are frequent. Replication requires private address space communication. Which networking approach should you use?

A. Google Cloud Dedicated Interconnect
B. Google Cloud VPN connectedtothedata centernetwork
C. ANATand TLStranslationgatewayinstalledon-premises
D. A Google Compute Engine instance with a VPN server installed connected to the data center network

Answer: A

Explanation:
https://cloud.google.com/docs/enterprise/best-practices-for-enterprise-organizations
Explanation:
Google Cloud Dedicated Interconnect provides direct physical connections and RFC 1918 communication between your on-premises network and Google's network. Dedicated Interconnect enables you to transfer large amounts of data between networks, which can be more cost effective than purchasing additional bandwidth overthe public Internet or using VPN tunnels.
Benefits:

• Traffic between your on-premises network and your VPC network doesn't traverse the public Internet. Traffic traverses a dedicated connection with fewer hops, meaning there are less points of failure where traffic might get dropped or disrupted.
• Your VPC network's internal (RFC 1918) IP addresses are directly accessible from your on-premises network. You don't need to use a NAT device or VPN tunnel to reach internal IP addresses. Currently, you can only reach internal IP addresses over a dedicated connection. To reach Google external IP addresses, you must use a separate connection.
• You can scale your connection to Google based on your needs. Connection capacity is delivered overone ormore 10 Gbps Ethernet connections, withamaximum of eightconnections (80 Gbps total per interconnect).
• The cost of egress traffic from your VPC network to your on-premises network is reduced. A dedicated connection is generally the least expensive method if you have a high-volume of traffic to and from Google's network.
References:
https://cloud.google.com/interconnect/docs/details/dedicated

Question: 62

Your company is forecasting a sharp increase in the number and size of Apache Spark and Hadoop jobs being run on your local datacenter You want to utilize the cloud to help you scale this upcoming demand with theleast amount of operations workand code change. Which productshouldyou use?

A. Google Cloud Dataflow
B. Google Cloud Dataproc
C. Google Compute Engine
D. Google Container Engine

Answer: B

Explanation:
Google Cloud Dataproc is a fast, easy-to-use, low-cost andfully managed service that lets you run the Apache Spark and Apache Hadoop ecosystem on Google Cloud Platform. Cloud Dataproc provisions big or small clusters rapidly, supports many popular job types, and is integrated with other Google Cloud Platform services, such as Google Cloud Storage and Stackdriver Logging, thus helping you reduce TCO.
References:
https://cloud.google.com/dataproc/docs/resources/faq

Question: 63

Your company's test suite is a custom C++ application that runs tests throughout each day on Linux virtual machines. The full test suite takes several hours to complete, running on a limited number of on premises servers reserved for testing. Your company wants to move the testing infrastructure to the cloud, to reduce the amount of time it takes to fully test a change to the system, while changing the tests as little as possible. Which cloud infrastructure should you recommend?

A. Google Compute Engine unmanaged instance groups and Network Load Balancer

B. Google Compute Engine managed instance groups with auto-scaling
C. Google Cloud Dataproc to run Apache Hadoop jobs to process each test
D. Google App Engine with Google Stackdriver for logging

Answer: B

Explanation:
https://cloud.google.com/compute/docs/instance-groups/
Google Compute Engineenablesuserstolaunch virtual machines(VMs) on demand. VMscan be launched from the standard images or custom images created by users.
Managed instance groups offer autoscaling capabilities that allow you to automatically add or remove instances from a managed instance group based on increases or decreases in load. Autoscaling helps your applications gracefully handle increases in traffic and reduces cost when the need for resources is lower.

Question: 64

Auditors visit your teams every 12 months and ask to review all the Google Cloud Identity and Access Management (Cloud IAM) policychanges in the previous 12 months. You want tostreamline and expedite the analysis and audit process. What should you do?

A. Create custom Google Stackdriver alerts and send them to the auditor.
B. Enable Logging export to Google BigQuery and use ACLs and views to scope the data shared with the auditor.
C. Use cloud functions to transfer log entries to Google Cloud SQL and use ACLS and views to limit an auditor's view.
D. Enable Google Cloud Storage (GCS) log export to audit logs Into a GCS bucket and delegate access to the bucket.

Answer: D

Explanation:
Export the logs to Google Cloud Storage bucket - Archive Storage, as it will not be usedfor 1 year, price for which is $0.004 per GB per Month. The price for long term storage in BigQuery is $0.01 per GB per Month (250% more). Also for analysis purpose, whenever Auditors are there(once per year), you can use BigQuery and use GCS bucketas external data source. BigQuery supports querying Cloud Storage data from these storageclasses:
Standard Nearline Coldline Archive

Question: 65

You are designing a large distributed application with 30 microservices. Each ofyour distributed microservices needs to connect to a database back-end. You want to store the credentials securely. Where should you store thecredentials?

A. In the source code
B. In an environment variable

C. In a secret management system
D. In a config file that has restricted access through ACLs

Answer: C

Explanation:
https://cloud.google.com/docs/authentication/production#providing_credentials_to_your_application

Question: 66

The operations manager asks you for a list of recommended practices that she should consider when migrating a J2EE application to the cloud. Which three practices should you recommend? Choose 3 answers

A. Port the application code to run on Google App Engine.
B. Integrate Cloud Dataflow into the application to capture real-time metrics.
C. Instrument the application with a monitoring tool like Stackdriver Debugger.
D. Select an automation framework to reliably provision the cloud infrastructure.
E. Deploy a continuous integration tool with automated testing in a staging environment.
F. Migrate from MySQL to a managed NoSQL database like Google Cloud Datastore or Bigtable.

Answer:AEF

Explanation:
References:
https://cloud.google.com/appengine/docs/standard/java/tools/uploadinganapp
https://cloud.google.com/appengine/docs/standard/java/building-app/cloud-sql

Question: 67

You want to enable your running Google Kubernetes Engine cluster to scale as demand for your application changes.
What should you do?

A. Add additional nodes to your Kubernetes Engine cluster using the following command:gcloud container clusters resizeCLUSTER_Name – -size 10
B. Add a tag to the instances in the cluster with the following command:gcloud compute instances add-tagsINSTANCE - -tags enable-autoscaling max-nodes-10
C. Update the existing Kubernetes Engine cluster with the following command:gcloud alpha containerclustersupdate mycluster--enable-autoscaling --min-nodes=1 --max-nodes=10
D. Create a new Kubernetes Engine cluster with the following command:gcloud alpha container clusterscreate mycluster - -enable-autoscaling - -min-nodes=1 - -max-nodes=10and redeploy your application

Answer: C

Explanation:
https://cloud.google.com/kubernetes-engine/docs/concepts/cluster-autoscaler To enable autoscaling for an existing node pool, run the following command:
gcloud container clusters update [CLUSTER_NAME] --enable-autoscaling \
--min-nodes 1 --max-nodes 10 --zone [COMPUTE_ZONE] --node-pool default-pool

Question: 68

A lead engineer wrote a custom tool that deploys virtual machines in the legacy data center. He wants to migrate the custom tool to the new cloud environment You want to advocate for the adoption of Google Cloud Deployment Manager What are two business risks of migrating to Cloud Deployment Manager? Choose 2answers

A. Cloud Deployment Manager uses Python.
B. Cloud Deployment Manager APIs could be deprecated in the future.
C. Cloud Deployment Manager is unfamiliar to the company's engineers.
D. Cloud Deployment Manager requires a Google APIs service account to run.
E. Cloud Deployment Manager can be used to permanently delete cloud resources.
F. Cloud Deployment Manager only supports automation of Google Cloud resources.

Answer:CF

Explanation:
https://cloud.google.com/deployment-manager/docs/deployments/deleting-deployments

Question: 69

You write a Python script to connect to Google BigQuery from a Google Compute Engine virtual machine. The script is printing errors that it cannot connect to BigQuery. What should you do to fix the script?

A. Install the latest BigQuery API client library for Python
B. Run your script on a new virtual machine with the BigQuery access scope enabled
C. Create a new service account with BigQuery access and execute your script with that user
D. Install the bq component for gccloud with the command gcloud components install bq.

Answer: B

Explanation:
Theerror is most like caused by the access scope issue. When create new instance, you have the default Compute engine default service account but most serves access including BigQuery is not enable. Create an instance Most access are not enabled by default You have default service account but don't have the permission (scope) you can stop the instance, edit, change scope and restart it to enable the scope access. Of course, if you Run your script on a new virtual machine with the BigQuery access scope enabled, it also works
https://cloud.google.com/compute/docs/access/service-accounts

Question: 70

Your company just finished a rapid lift and shift to Google Compute Engine for your compute needs. Youhave another 9 months to design and deploy a more cloud-native solution. Specifically, you want asystem that is no-ops and auto-scaling. Which two compute products should you choose? Choose 2 answers

A. Compute Engine with containers
B. Google Kubernetes Engine with containers
C. Google App Engine Standard Environment
D. Compute Engine with custom instancetypes
E. Compute Engine with managed instance groups

Answer:BC

Explanation:
B: With Container Engine, Google will automatically deploy your cluster for you, update, patch, secure the nodes.
Kubernetes Engine's cluster autoscaler automatically resizes clusters based on the demands of the workloads you want to run.
C: Solutions like Datastore, BigQuery, AppEngine, etc are truly NoOps.
App Engine by default scales the number of instances running up and down to match the load, thus providing consistent performance for your app at all times while minimizing idle instances and thus reducing cost.
Note:Atahighlevel, NoOps meansthat there is noinfrastructure tobuildout and manage during usage of the platform. Typically, the compromise you make with NoOps is thatyou lose control of the underlying infrastructure.
References:
https://www.quora.com/How-well-does-Google-Container-Engine-support-Google-Cloud-Platform%E2%80%99s-NoOps-claim

Question: 71

A development manager is building a new application He asks you to review his requirements and identify what cloud technologies he can use to meet them. The application must
1. Be based on open-source technology for cloud portability
2. Dynamically scale compute capacity based on demand
3. Support continuous software delivery
4. Run multiple segregated copies of the same application stack
5. Deploy application bundles using dynamic templates
6. Route network traffic to specific services based on URL

Which combination of technologies will meet all of his requirements?

A. Google Container Engine, Jenkins, andHelm
B. Google Container Engine and Cloud Load Balancing
C. Google Compute Engine and Cloud Deployment Manager
D. Google Compute Engine, Jenkins, and Cloud Load Balancing

Answer: A

Explanation:
Helm for managing Kubernetes
Kubernetes can base on the URL to route traffic to different location (path)
https://cloud.google.com/kubernetes-engine/docs/tutorials/http-balancer
eg.apiVersion: networking.k8s.io/v1beta1
kind: Ingress
metadata:
name: fanout-ingress
spec:
rules:
- http:
paths:
- path:/*
backend:
serviceName: web
servicePort: 8080
- path: /v2/*
backend:
serviceName: web2
servicePort: 8080

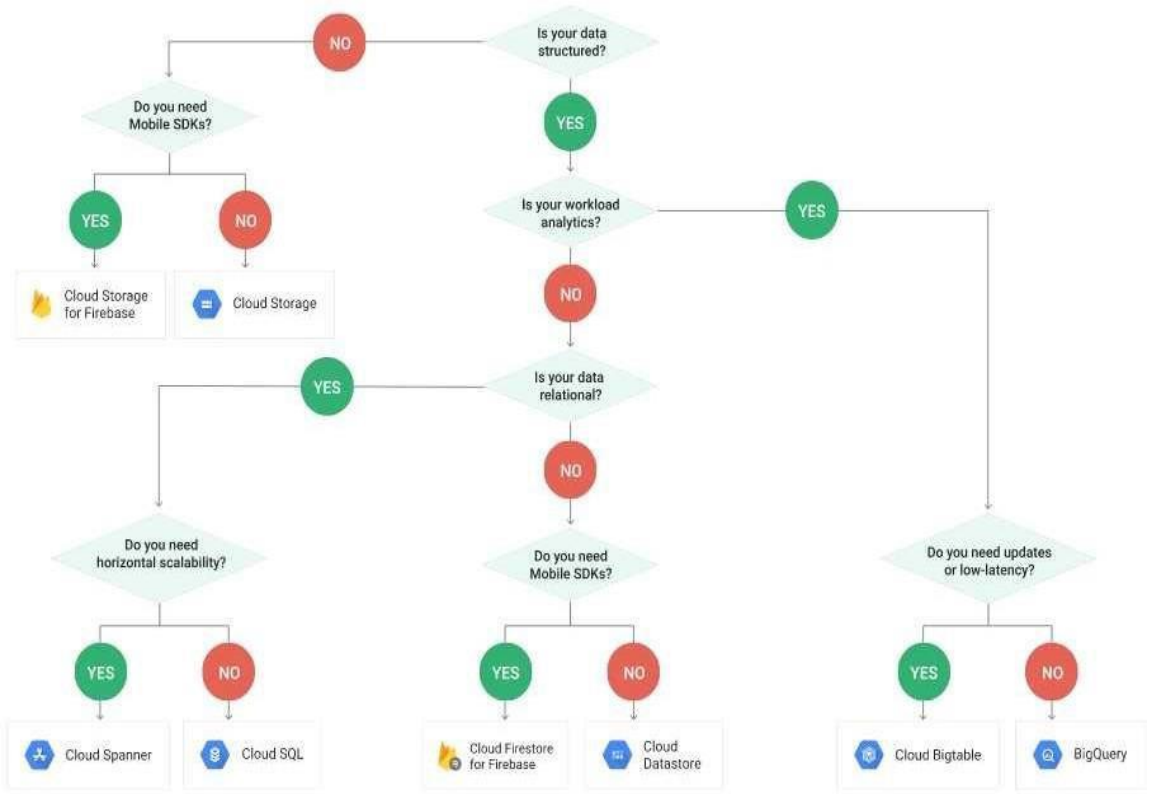
Question: 72

Your marketing department wants to send out a promotional email campaign. The development team wants to minimize direct operation management. They project a wide range of possible customer responses, from 100 to 500,000 click-throughs per day. The link leads to a simple website that explains the promotion and collects user information and preferences. Which infrastructure should you recommend? (CHOOSE TWO)

A. Use Google App Engine to serve the website and Google Cloud Datastore to store user data.
B. Usea Google Container Engine cluster toserve the website and store data topersistent disk.
C. Use a managed instance group to serve the website and Google Cloud Bigtable to store user data.
D. Use a single compute Engine virtual machine (VM) to host a web server, backed by Google Cloud SQL.

Answer:AC

Explanation:
Reference:
: https://cloud.google.com/storage-options/



References:
https://cloud.google.com/storage-options/

Question: 73

One of your primary business objectives is being able to trust the datastored inyour application. You want to log all changes to the application dat
a. How can you design your logging system to verify authenticity of your logs?
A. Write the log concurrently in the cloud and on premises.
B. Use a SQL database and limit who can modify the log table.
C. Digitally sign each timestamp and log entry and store the signature.
D. Create a JSON dump of each log entry and store it in Google Cloud Storage.

Answer: C

Explanation:
https://cloud.google.com/storage/docs/access-logs
References:
https://cloud.google.com/logging/docs/reference/tools/gcloud-logging

Question: 74

Youhave created several preemptible Linux virtual machine instances using Google Compute Engine. You want to properly shut down your application before the virtual machines are preempted. What should you do?

A. Create a shutdown script named k99.shutdown in the /etc/rc.6.d/ directory.
B. Create a shutdown script registered as a xinetd service in Linux and configure a Stackdnver endpoint check to call theservice.
C. Create a shutdown script and use it as the value for a new metadata entry with the key shutdown-script in the Cloud Platform Console whenyou createthe new virtualmachine instance.
D. Create a shutdownscript, registered as a xinetd service in Linux, and use the gcloud compute instances add-metadata command to specify the service URL as the value for a new metadata entry with the key shutdown-script-url

Answer: C

Question: 75

A production database virtual machine on Google Compute Engine has an ext4-formatted persistent disk for data files The database is about to run out of storage space How can you remediate the problem with the least amount of downtime?

A. In the Cloud Platform Console, increase the size of the persistent disk and use the resize2fs command in Linux.
B. Shut down the virtual machine, use the Cloud Platform Console to increase the persistent disk size, then restart the virtualmachine.
C. In the Cloud Platform Console, increase the size of the persistent disk and verify the new space is ready to use with the fdisk command in Linux.
D. In the Cloud Platform Console, create a new persistent disk attached to the virtual machine, formatandmount it, and configure the database servicetomovethefiles tothenew disk.
E. In the Cloud Platform Console, create a snapshot of the persistent disk, restore the snapshot to a newlarger disk, unmounttheolddisk, mountthenewdisk, and restart thedatabase service.

Answer: A

Explanation:
On Linux instances, connect to your instance and manually resize your partitions and file systems to use the additional disk space that you added.
Extendthefilesystemonthediskorthepartitiontousetheaddedspace.Ifyougrewa partitionon yourdisk,specifythepartition.Ifyourdiskdoesnothaveapartitiontable,specifyonlythediskID.
sudo resize2fs /dev/[DISK_ID][PARTITION_NUMBER]
where [DISK_ID] is the device name and [PARTITION_NUMBER] is the partition number for the

device whereyouare resizing the file system.
References:
https://cloud.google.com/compute/docs/disks/add-persistent-disk

Question: 76

Your organization has a 3-tier web application deployed in the same network on Google Cloud Platform. Each tier (web, API, and database) scales independently of the others Network traffic should flow through the web to the API tier and then on to the database tier. Traffic should not flow between the web and the database tier. How should you configure the network?

A. Add each tier to a different subnetwork.
B. Set up software based firewalls on individual VMs.
C. Add tags to each tier and set up routes to allow the desired traffic flow.
D. Add tags to each tier and set up firewall rules to allow the desired traffic flow.

Answer: D

Explanation:
https://aws.amazon.com/blogs/aws/building-three-tier-architectures-with-security-groups/
Explanation:
Google Cloud Platform(GCP) enforces firewall rules through rules and tags. GCP rules and tags can be defined once and used across all regions.
References:
https://cloud.google.com/docs/compare/openstack/
https://aws.amazon.com/it/blogs/aws/building-three-tier-architectures-with-security-groups/

Question: 77

To reduce costs, the Director of Engineering has required all developers to move their development infrastructure resources from on-premises virtual machines (VMs) to Google Cloud Platform. These resources go through multiple start/stop events during the day and require state to persist. You have been asked to designthe process of running a development environment in Google Cloud while providing cost visibility to the finance department. Which two steps should you take? Choose 2 answers

A. Use the --no-auto-delete flag on all persistent disks and stop the VM.
B. Use the -auto-delete flag on all persistent disks and terminate the VM.
C. Apply VM CPU utilization label and include it in the BigQuery billing export.
D. Use Google BigQuery billing export and labels to associate cost to groups.
E. Store all state into local SSD, snapshot the persistent disks, and terminate the VM.
F. Store all state in Google Cloud Storage, snapshot the persistent disks, and terminate the VM.

Answer:AD

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

Question: 78

Your company's user-feedback portal comprises a standard LAMP stack replicated across two zones. It is deployed in the us-central1 region and uses autoscaled managed instance groups on all layers, except the database. Currently, only a small group of select customers have access to the portal. The portal meets a 99.99% availability SLA under these conditions However next quarter, your company will be making the portal available to all users, including unauthenticated users. Youneed to develop a resiliency testing strategy to ensure the system maintains the SLA once they introduce additional user load. What should youdo?

A. Capture existing users input, and replay captured user load until autoscale is triggered on all layers. At the same time, terminate all resources in one of the zones.
B. Create synthetic random user input, replay synthetic load until autoscale logic is triggered on at leastonelayer, andintroduce "chaos" tothe system byterminating random resourcesonbothzones.
C. Expose the new system to a larger group of users, and increase group ' size each day until autoscale logic is tnggered on all layers. At the same time, terminate random resources on both zones.
D. Capture existing users input, and replay captured user load until resource utilization crosses 80%. Also, derive estimated number of users based on existing users usage of the app, and deploy enough resources to handle 200% of expected load.

Answer: A

Question: 79

You are creating a solution to remove backup files older than 90 days from your backup Cloud Storage bucket. You want tooptimize ongoing Cloud Storage spend. What shouldyoudo?

A. Write a lifecycle management rule in XML and push it to the bucket with gsutil.
B. Write a lifecycle management rule in JSON and push it to the bucket with gsutil.
C. Schedule acronscriptusinggsutilis -lrgs://backups/** tofindand removeitemsolderthan 90 days.
D. Schedule acronscriptusinggsutil ls -1 gs://backups/** tofind and removeitemsolderthan 90 days and schedule it withcron.

Answer: B

Explanation:
https://cloud.google.com/storage/docs/gsutil/commands/lifecycle

Question: 80

Yourdevelopment team has installed a new Linux kernel module on the batch servers in Google Compute Engine (GCE) virtual machines (VMs) to speed up the nightly batch process. Two days after the installation, 50% of web application deployed in the same

nightly batch run. You want to collect details on the failure to pass back to the development team. Which three actions should you take? Choose 3 answers

A. Use Stackdriver Logging to search for the module log entries.
B. Read the debug GCE Activity log using the API or Cloud Console.
C. Use gcloud or Cloud Console to connect to the serial console and observe the logs.
D. Identify whether a live migration event of the failed server occurred, using in the activity log.
E. Adjust the Google Stackdriver timeline to match the failure time, and observe the batch server metrics.
F. Export a debug VM into an image, and run the image on a local server where kernel log messages will be displayed on the native screen.

Answer: ACE

Explanation:
https://www.flexera.com/blog/cloud/2013/12/google-compute-engine-live-migration-passes-the-test/
"With live migration, the virtual machines are moved without any downtime or noticeable service degradation"

Question: 81

Yourcompany wants to try out the cloud with low risk. They want to archive approximately 100 TB of their log data to the cloud and test the analytics features available to them there, while also retaining that data as a long-term disaster recovery backup. Which two steps should they take? Choose 2 answers

A. Load logs into Google BigQuery.
B. Load logs into Google CloudSQL.
C. Import logs into Google Stackdriver.
D. Insert logs into Google Cloud Bigtable.
E. Upload log files into Google Cloud Storage.

Answer:AE

Question: 82

You set up an autoscaling instance group to serve web traffic for an upcoming launch. After configuring the instance groupas abackend service toan HTTP(S) load balancer, you noticethat virtual machine (VM) instances are being terminated and re-launched every minute. The instances do not have a public IP address. Youhave verified the appropriate web response is coming from each instance using the curl command. You want toensure the backend is configured correctly. What should you do?

A. Ensure that a firewall rule exists to allow source traffic on HTTP/HTTPS to reach the load balancer.
B. Assign a public IP to each instance and configure a firewall rule to allow the load balancer to reach

the instance public IP.
C. Ensure that a firewall rule exists to allow load balancer health checks to reach the instances in the instance group.
D. Createatag on eachinstance withthename of theload balancer. Configureafirewall rulewith the name of the load balancer as the source and the instance tag as the destination.

Answer: C

Explanation:
https://cloud.google.com/vpc/docs/using-firewalls
Explanation:
The best practice when configuration a health check is to check health and serve traffic on the same port. However, it is possible to perform health checks on one port, but serve traffic on another. If you do use two different ports, ensure that firewall rules and services running on instances are configured appropriately. If you run health checks and serve traffic on the same port, but decide to switchportsatsomepoint, be suretoupdate boththebackend service and thehealthcheck.
Backend services that do not have a valid global forwarding rule referencing it will not be health checked and will have no health status.
References:
https://cloud.google.com/compute/docs/load-balancing/http/backend-service

Question: 83

You want to optimize the performance of an accurate, real-time, weather-charting application. The data comes from 50,000 sensorssending 10 readings asecond, intheformat of atimestamp and sensor reading. Where should you store the data?

A. Google BigQuery
B. Google Cloud SQL
C. Google Cloud Bigtable
D. Google Cloud Storage

Answer: C

Explanation:
It is time-series data, So Big Table.
https://cloud.google.com/bigtable/docs/schema-design-time-series
Google Cloud Bigtable is a scalable, fully-managed NoSQL wide-column database that is suitable for both real-time access and analytics workloads.
Good for:
• Low-latency read/write access
• High-throughput analytics
• Native time series support
• Common workloads:
• IoT, finance, adtech
• Personalization, recommendations
• Monitoring

• Geospatial datasets
• Graphs
References:
https://cloud.google.com/storage-options/

Question: 84

The database administration team has asked you to help them improve the performance of their new database server running on Google Compute Engine. The database is for importing and normalizing their performance statistics and is built with MySQL running on Debian Linux. They have an n1-standard-8 virtual machine with 80 GB of SSD persistent disk. What should they change to get better performance from thissystem?

A. Increase the virtual machine's memory to 64 GB.
B. Create a new virtual machine running PostgreSQL.
C. Dynamically resize the SSD persistent disk to 500 GB.
D. Migrate their performance metrics warehouse to BigQuery.
E. Modify all of their batch jobs to use bulk inserts into the database.

Answer: C

Question: 85

Your application needs to process credit card transactions. You want the smallest scope of Payment Card Industry (PCI) compliance without compromising the ability to analyze transactional data and trendsrelatingtowhichpaymentmethodsareused. Howshouldyoudesignyourarchitecture?

A. Create a tokenizer service and store only tokenized data.
B. Create separate projects that only process credit card data.
C. Create separate subnetworks and isolate the components that process credit card data.
D. Streamline the audit discovery phase by labeling all of the virtual machines (VMs) that process PCI data.
E. Enable Logging export to Google BigQuery and use ACLs and views to scope the data shared with the auditor.

Answer: A

Explanation:
https://cloud.google.com/solutions/pci-dss-compliance-in-gcp

Question: 86

Youhave been asked to select the storage system for the click-data of your company's large portfolio of websites. This data is streamed in froma custom website analytics package at atypical rate of 6,000 clicks per minute, with bursts of up to 8,500 clicks per second. It must been stored for future analysis by your data science and user experience teams. Which storage infrastructure should you

choose?

A. Google Cloud SQL
B. Google Cloud Bigtable
C. Google Cloud Storage
D. Google cloud Datastore

Answer: C

Explanation:
https://cloud.google.com/bigquery/docs/loading-data-cloud-storage

Question: 87

Yourcustomer is receiving reports that their recently updated Google App Engine application is taking approximately 30 seconds to load for some oftheir users. This behavior was not reported before the update. What strategy should you take?

A. Work with your ISP to diagnose the problem.
B. Open a support ticket to ask for network capture and flow data to diagnose the problem, then roll back your application.
C. Roll back to an earlier known good release initially, then use Stackdriver Trace and logging to diagnose the problem in a development/test/staging environment.
D. Roll back toan earlier known good release, then push the release again at a quieter period to investigate. Then use Stackdriver Traceand logging to diagnose the problem.

Answer: C

Explanation:
Stackdriver Logging allows you to store, search, analyze, monitor, and alert on log data and events from Google Cloud Platform and Amazon Web Services (AWS). Our API also allows ingestion of any custom log data from any source. Stackdriver Logging is a fullymanaged servicethat performs at scale and can ingest application and system log data from thousands of VMs. Even better, you can analyze all that log data in real time.
References:
https://cloud.google.com/logging/

Question: 88

Your company has successfully migrated to the cloud and wants to analyze their data stream to optimizeoperations. They do nothave any existingcodeforthisanalysis, sothey are exploringall their options. These options include a mix of batch and stream processing, as they are running some hourly jobs andlive-processing some data as it comesin. Which technology should they use for this?

A. Google Cloud Dataproc
B. Google Cloud Dataflow
C. Google Container Engine with Bigtable

D. Google Compute Engine with GoogleBigQuery

Answer: B

Explanation:
Dataflow is forprocessing boththe Batchand Stream.
Explanation:
Cloud Dataflow is a fully-managed service for transforming and enriching data in stream (real time) and batch (historical) modes with equal reliability and expressiveness -- no more complex workarounds or compromisesneeded.
References:
https://cloud.google.com/dataflow/

Question: 89

Yourcustomer is moving anexisting corporate application to Google Cloud Platform froman on-premises data center. The business owners require minimal user disruption. There are strict security teamrequirementsforstoring passwords. What authentication strategy shouldtheyuse?

A. Use G Suite Password Sync to replicate passwords into Google.
B. Federate authentication via SAML 2.0 to the existing Identity Provider.
C. Provision users in Google using the Google Cloud Directory Sync tool.
D. Ask users to set their Google password to match their corporate password.

Answer: B

Explanation:
https://cloud.google.com/solutions/authenticating-corporate-users-in-a-hybrid-environment

Question: 90

Your company wants to track whether someone is present in a meeting room reserved for a scheduled meeting. There are 1000 meeting rooms across 5 offices on 3 continents. Each room is equipped with a motion sensor that reports its status every second. The data from the motion detector includes only a sensor ID and several different discrete items of information. Analysts will use this data, together withinformation about account owners and office locations. Which database type should you use?

A. Flat file
B. NoSQL
C. Relational
D. Blobstore

Answer: B

Explanation:
Relational databases were not designed to cope with the scale and agility challenges that face

modernapplications, norwerethey built totake advantage of thecommodity storageandprocessing power available today.
NoSQL fits well for:
▪ Developers are working with applications that create massive volumes of new, rapidly changing data types — structured, semi-structured, unstructured and polymorphic data.
Incorrect Answers:
D: The Blobstore API allows your application to serve data objects, called blobs, that are much larger than the size allowed for objects in the Datastore service. Blobs are useful for serving large files, such as video or image files, and for allowing users to upload large data files.
References:
https://www.mongodb.com/nosql-explained

Question: 91

Youneedtoreducethe numberofunplannedrollbacks of erroneous productiondeploymentsinyour company's web hosting platform. Improvement to the QA/Test processes accomplished an 80% reduction. Which additional two approaches can you take to further reduce the rollbacks? Choose 2 answers

A. Introduce a green-blue deploymentmodel.
B. Replace the QA environment with canary releases.
C. Fragment the monolithic platform into microservices.
D. Reduce the platform's dependency on relational database systems.
E. Replace the platform's relational database systems with a NoSQL database.

Answer:AC

Question: 92

An application development team believes their current logging tool will not meet their needs for their new cloud-based product. They wantabettor tool tocapture errors andhelp them analyze their historical log dat
a. You want to help them find a solution that meets their needs, what should you do?
A. Direct them to download and install the Google StackDriver logging agent.
B. Send them a list of online resources about logging best practices.
C. Help them define their requirements and assess viable logging tools.
D. Help them upgrade their current tool to take advantage of any new features.

Answer: C

Explanation:
Help them define their requirements and assess viable logging tools. They know the requirements and the existing tools' problems. While it's true StackDriver Logging and Error Reporting possibly meet all their requirements, there might be other tools also meet their need. They need you to provide expertise to make assessment for new tools, specifically, logging tools that can "capture errors and help them analyze their historical log data".

References:
https://cloud.google.com/logging/docs/agent/installation

Question: 93

Anewsteedwebservicehas thefollowingcoderunning on Google App Engine. Duringpeakload, users report that they can see news articles they already viewed. What is the mostlikely cause of this problem?

```
import news
from flask import Flask, redirect, request
from flask.ext.api import status
from google.appengine.api import users

app = Flask(_name_)
sessions = {}

@app.route("/")
def homepage():
      user = users.get_current_user()
      if not user:
            return "Invalid login",
status.HTTP_401_UNAUTHORIZED

      if user not in sessions:
            sessions[user] = {"viewed": []}

      news_articles = news.get_new_news (user, sessions [user]
["viewed"])
      sessions [user] ["viewed"] +- [n["id"] for n
in news_articles]

      return news.render(news_articles)

if _name_ == "_main_":
      app.run()
```

A. The session variable is local to just a single instance.
B. The session variable is being overwritteninCloud Datastore.
C. The URL of the API needs to be modified to prevent caching.
D. The HTTP Expires header needs to be set to -1 to stop caching.

Answer: A

Explanation:
https://stackoverflow.com/questions/3164280/google-app-engine-cache-list-in-session-

variable?rq=1

Question: 94

Yourcompany plans to migrate a multi-petabyte data set to the cloud. The data set must be available 24hrs a day. Your business analysts have experience only with using a SQL interface. How should you store the data to optimize it for ease of analysis?

A. Load data into Google BigQuery.
B. Insert data intoGoogle Cloud SQL.
C. Put flat files into Google Cloud Storage.
D. Stream data into Google CloudDatastore.

Answer: A

Explanation:
Google Big Query is formultipetabytestorage , HA(High availability) whichmeans 24 hours, SQL interface .
https://medium.com/google-cloud/the-12-components-of-google-bigquery-c2b49829a7c7
https://cloud.google.com/solutions/bigquery-data-warehouse
https://cloud.google.com/bigquery/
Explanation:
BigQuery is Google's serverless, highly scalable, low cost enterprise data warehouse designed to make all your data analysts productive. Because there is no infrastructure to manage, you can focus on analyzing data to find meaningful insights using familiar SQL and you don't need a database administrator.
BigQuery enables you to analyze all your data by creating a logical data warehouse over managed, columnar storage as well as data from object storage, and spreadsheets.
References:
https://cloud.google.com/bigquery/

Question: 95

Your customer is moving their corporate applications to Google Cloud Platform. The security team wants detailed visibility of all projects in the organization. You provision the Google Cloud Resource Manager and set up yourself as the org admin. What Google Cloud Identity and Access Management (Cloud IAM) roles should you give to the security team'?

A. Org viewer, project owner
B. Org viewer, project viewer
C. Org admin, project browser
D. Project owner, network admin

Answer: B

Explanation:
https://cloud.google.com/iam/docs/using-iam-securely

Question: 96

Your company places a high value on being responsive and meeting customer needs quickly. Their primary business objectives are release speed and agility. You want to reduce the chance of security errorsbeing accidentally introduced. Whichtwo actions can youtake? Choose 2 answers

A. Ensure every code check-in is peer reviewed by a security SME.
B. Use source code security analyzers as part of the CI/CD pipeline.
C. Ensure you have stubs to unit test all interfaces between components.
D. Enable code signing and a trusted binary repository integrated with your CI/CD pipeline.
E. Run a vulnerability security scanner as part of your continuous-integration /continuous-delivery (CI/CD) pipeline.

Answer:BE

Explanation:
https://docs.microsoft.com/en-us/vsts/articles/security-validation-cicd-pipeline?view=vsts

Question: 97

You are helping the QA team to roll out a new load-testing tool to test the scalability of your primary cloud services that run on Google Compute Engine with Cloud Bigtable. Which three requirements should they include? Choose 3 answers

A. Ensure that the load tests validate the performance of Cloud Bigtable.
B. Create a separate Google Cloud project to use for the load-testing environment.
C. Schedule the load-testing tool to regularly run against the production environment.
D. Ensure all third-party systems your services use are capable of handling high load.
E. Instrument the production services to record every transaction for replay by the load-testing tool.
F. Instrument the load-testing tool and the target services with detailed logging and metrics collection.

Answer:ABF

Question: 98

You want to make a copy of a production Linux virtual machine in the US-Central region. You want to manage and replace the copy easily if there are changes on the production virtual machine. You will deploy the copy as a new instances in a different project in the US-East region. What steps must you take?

A. Use the Linux dd and netcat command to copy and stream the root disk contents to a new virtual machine instance in the US-East region.
B. Create a snapshot of the root disk and select the snapshot as the root disk when you create a new virtual machine instance in the US-East region.

C. Create an image file from the root disk with Linux dd command, create a new disk from the image file, and use it to create a new virtual machine instance in the US-East region
D. Create a snapshot of the root disk, create an image file in Google Cloud Storage from the snapshot, and create a new virtual machine instance in the US-East region using the image file for the root disk.

Answer: D

Explanation:
https://stackoverflow.com/questions/36441423/migrate-google-compute-engine-instance-to-a-different-region

Question: 99

Yourcompany runsseveral databases on asingle MySQLinstance. They needtotakebackups of a specific database at regular intervals. The backup activity needs to complete as quickly as possible and cannot be allowed toimpact diskperformance. Howshouldyouconfigure thestorage?

A. Configure a cron job to use the gcloud tool to take regular backups using persistent disk snapshots.
B. Mount a Local SSD volume as the backup location. After the backup is complete, use gsutil to move the backup to Google Cloud Storage.
C. Use gcsfuse tomount a Google Cloud Storage bucket as avolumedirectly on the instance and write backups to the mounted location using mysqldump
D. Mount additional persistent disk volumes onto each virtual machine (VM) instance in a RAID10 array and use LVM to create snapshots to send to Cloud Storage.

Answer: B

Explanation:
https://cloud.google.com/compute/docs/instances/sql-server/best-practices

Question: 100

Youdeploy yourcustom Java application toGoogle AppEngine. Itfails todeploy andgives youthe following stack trace.

```
java.lang.SecurityException: SHA1 digest error for
com/Altostrat/CloakedServlet.class
     at com.google.appengine.runtime.Request.process
-d36f818a24b8cf1d (Request.java)
     at
sun.security.util.ManifestEntryVerifier.verify
(ManifestEntryVerifier.java:210)
     at java.util.jar.JarVerifier.processEntry
(JarVerifier.java:218)
     at java.util.jar.JarVerifier.update
(JarVerifier.java:205)
     at
java.util.jar.JarVerifiersVerifierStream.read
(JarVerifier.java:428)
     at sun.misc.Resource.getBytes
(Resource.java:124)
     at java.net.URL.ClassLoader.defineClass
(URLClassLoader.java:273)
     at sun.reflect.GeneratedMethodAccessor5.invoke
(Unknown Source)
     at
sun.reflect.DelegatingMethodAccessorImpl.invoke
(DelegatingMethodAccessorImpl.java:43)
     at java.lang.reflect.Method.invoke
(Method.java:616)
     at java.lang.ClassLoader.loadClass
(ClassLoader.java:266)
```

What should you do?

A. Upload missing JAR files and redeploy your application.

B. Digitally sign all of your JAR files and redeploy your application
C. Recompile the CLoakedServlet class using and MD5 hash instead of SHA1

Answer: B

Question: 101

The application reliability team at your company has added a debug feature to their backend service to send all server events to Google Cloud Storage for eventual analysis. The eventrecords are at least 50 KB and at most 15 MB and are expected to peak at 3,000 events per second. You want to minimize data loss.
Which process should you implement?

A. • Append metadata to file body.
- Compress individual files.
- Name files withserverName-Timestamp.
- Create a new bucket if bucket is older than 1 hour and save individual files to the new bucket.

Otherwise, save files to existingbucket

B. • Batch every 10,000 events with a single manifest file for metadata.
- Compress event files and manifest file into a single archive file.
- Name files using serverName-EventSequence.
- Create anew bucket if bucket is olderthan 1 day and save thesingle archive file tothenew

bucket. Otherwise, save the single archive file to existing bucket.

C. • Compress individualfiles.
- Name files withserverName-EventSequence.
- Save files to onebucket
- Set custom metadata headers for each object after saving.

D. • Append metadata to file body.
- Compress individual files.
- Name files with a random prefix pattern.
- Save files to onebucket

Answer: D

Explanation:
In order to maintain a high request rate, avoid using sequential names. Using completely random object names will give you the bestload distribution. Randomness after a common prefix is effective under the prefix https://cloud.google.com/storage/docs/request-rate

Question: 102

A lead software engineer tells you that his new application design uses websockets and HTTP sessions that are not distributed across the web servers. You want to help him ensure his application will run property on Google Cloud Platform. What should you do?

A. Help the engineer to convert his websocket code to use HTTP streaming.
B. Review the encryption requirements for websocket connections with the security team.
C. Meet with the cloud operations team and the engineer to discuss load balancer options.
D. Help the engineer redesign the application to use a distributed user session service that does not rely on websockets andHTTP sessions.

Answer: C

Explanation:
Google Cloud Platform (GCP) HTTP(S) load balancing provides global load balancing for HTTP(S) requests destined for yourinstances.
The HTTP(S) loadbalancer has native supportforthe WebSocketprotocol.
Incorrect Answers:
A: HTTP server push, also known as HTTP streaming, is a client-server communication pattern that sends information from an HTTP server to a client asynchronously, without a client request. A server push architecture is especially effective for highly interactive web or mobile applications, where one or more clients need to receive continuous information from the server.
References:
https://cloud.google.com/compute/docs/load-balancing/http/

Question: 103

You want to enable your running Google Container Engine cluster to scale as demand for your application
changes.
What should you do?

A. Addadditional nodestoyour Container Engine cluster using the following command:
gcloud container clusters resize CLUSTER_NAME --size 10
B. Add a tag to the instances in the cluster with the following command:
gcloud compute instances add-tags INSTANCE --tags enable --autoscaling max-nodes-10
C. Update the existing Container Engine cluster with the following command:
gcloud alpha container clusters update mycluster --enable-autoscaling --min-nodes=1 --max-nodes=10
D. Create a new Container Engine cluster with the following command:
gcloud alpha container clusters create mycluster --enable-autocaling --min-nodes=1 --max-nodes=10
and redeploy your application.

Answer: B

Explanation:
https://cloud.google.com/kubernetes-engine/docs/concepts/cluster-autoscaler
Explanation:
Cluster autoscaling
--enable-autoscaling
Enables autoscaling for a node pool.
Enables autoscaling in the node pool specified by --node-pool or the default node pool if --node-pool is not provided.
Where:
--max-nodes=MAX_NODES
Maximum number of nodes in the node pool.
Maximum number of nodes to which the node pool specified by --node-pool (or default node pool if unspecified) can scale.
Incorrect Answers:
C, D: Warning: Do not use Alpha Clusters or alpha features for production workloads.
Note: Youcan experimentwith Kubernetes alpha featuresby creating an alpha cluster. Alpha clusters are short-lived clusters that run stable Kubernetes releases with all Kubernetes APIs and features enabled. Alpha clusters are designed for advanced users and early adopters to experiment with workloads that take advantage of new features before those features are production-ready. You can use Alpha clusters just like normal Kubernetes Engine clusters.
References:
https://cloud.google.com/sdk/gcloud/reference/container/clusters/create

Question: 104

Youdeploy yourcustom java application togoogle appengine.
It fails todeploy and gives youthe following stack trace:

```
Java.lang.securityException : SHA1 digest

At com.google.appengine.runtime.Request.pr

At

Sun.securityutil.manifestENtryVerifier.ver

At java . net . URLClassLoader . defineCla

At sun . reflect. GeneratedMethodAccessors

At

Sun.reflect . DelegatingMethodAccesorImp1.

At java . lang . reflect . MThod . invoke
```

A. Recompile the CLoakedServlet class using and MD5 hash instead of SHA1
B. Digitally sign all of your JAR files and redeploy your application.
C. Upload missing JAR files and redeploy your application

Answer: B

Question: 105

You are designing a mobile chatapplication. Youwant to ensure people cannot spoof chat messages, by
providing a message were sent by a specific user.
What should you do

A. Tag messages client side with the originating user identifier and the destination user.
B. Encrypt the message client side using block-based encryption with a shared key.
C. Use public key infrastructure (PKI) to encrypt the message client side using the originating user's private key.
D. Use a trusted certificate authority to enable SSL connectivity between the client application and the server.

Answer: C

Question: 106

You created a pipeline that can deploy your source code changes to your infrastructure in instance groups for self healing.
One of the changesnegatively affects yourkey performance indicator.
You are not sure how to fix it and investigation could take up to a week.
What should you do

A. Log in to a server, and iterate a fix locally
B. Change the instance group template to the previous one, and delete all instances.
C. Revert the source code change and rerun the deployment pipeline
D. Log into the servers with the bad code change, and swap in the previous code

Answer: C

Question: 107

Your organization wants to control IAM policies for different departments independently, but centrally.
Which approach should you take?

A. Multiple Organizations with multipleFolders
B. Multiple Organizations, one for each department
C. A single Organization with Folder for each department
D. A single Organization with multiple projects, each with a central owner

Answer: C

Explanation:
Folders are nodes in the Cloud Platform Resource Hierarchy. A foldercancontain projects, other folders, or a combination of both. You can use folders to group projects under an organization in a hierarchy. For example, your organization might contain multiple departments, each with its own set of GCP resources. Folders allow you to group these resources on a per-department basis. Folders are used to group resources that share common IAM policies. While a folder can contain multiple folders or resources, a given folder or resource can have exactly one parent.
References:
https://cloud.google.com/resource-manager/docs/creating-managing-folders

Question: 108

A recent audit that a new network was created in Your GCP project. In this network, a GCE instance hasanSSHportopentheworld. Youwantto discoverthisnetwork'sorigin. Whatshouldyoudo?

A. Search for Create VM entry in the Stackdriver alerting console.
B. Navigate tothe Activity page in the Home section. Set category to Data Access and search for Create VM entry.
C. In the logging section of the console, specify GCE Network as the logging section. Search for the

Create Insert entry.
D. Connect to the GCE instance using project SSH Keys. Identify previous logins in system logs, and match these with the project owners list.

Answer: C

Explanation:
Incorrect Answers:
A: To use the Stackdriver alerting console we must first set up alerting policies.
B: Data access logs only contain read-only operations.
Auditlogs help you determine whodid what, where, and when.
Cloud Audit Logging returns two types of logs:
Admin activity logs
Data access logs: Contains log entries for operations that perform read-only operations do not modify any data, such as get, list, and aggregated list methods.

Question: 109

As part of implementing their disaster recovery plan, your company is trying to replicate their production
MySQL database from their private data center to their GCP project using a Google Cloud VPN connection.
They are experiencing latency issues and a small amount of packet loss that is disrupting the replication. What should they do?

A. Configure their replication to useUDP.
B. Configure a Google Cloud Dedicated Interconnect.
C. Restore their database daily using Google Cloud SQL.
D. Add additional VPN connections and load balance them.
E. Send the replicated transaction to Google Cloud Pub/Sub.

Answer: B

Question: 110

Your customer support tool logs all email and chat conversations to Cloud Bigtable for retention and analysis.
Whatis the recommended approach for sanitizing this data of personally identifiable information or payment card information before initial storage?

A. Hash all data using SHA256
B. Encrypt all data using elliptic curve cryptography
C. De-identify the data with the Cloud Data Loss Prevention API
D. Use regular expressions to find and redact phone numbers, email addresses, and credit card numbers

Answer: A

Explanation:
Reference:
: https://cloud.google.com/solutions/pci-dss-compliance-ingcp#

Question: 111

Youare using CloudShellandneedtoinstall acustomutilityforusein afewweeks. Wherecan you store the file so it is in the default execution path and persists across sessions?

A. ~/bin
B. Cloud Storage
C. /google/scripts
D. /usr/local/bin

Answer: D

Explanation:
https://medium.com/google-cloud/no-localhost-no-problem-using-google-cloud-shell-as-my-full-time-development-environment-22d5a1942439

Question: 112

You want to create a private connection between your instances on Compute Engine and your on-premises data center. You require a connection of at least 20 Gbps. You want to follow Google-recommended practices.
How should you set up the connection?

A. Create a VPC and connect it to your on-premises data center using Dedicated Interconnect.
B. Create a VPC and connect it to your on-premises data center using a single Cloud VPN.
C. Create a Cloud Content Delivery Network (Cloud CDN) and connect it to your on-premises data center
using Dedicated Interconnect.
D. Create a Cloud Content Delivery Network (Cloud CDN) and connect it to your on-premises datacenter
using a single Cloud VPN.

Answer: A

Explanation:
Reference:
: https://cloud.google.com/compute/docs/instances/connecting-advanced

Question: 113

You are analyzing and defining business processes to support your startup's trial usage of GCP, and you don't yet know what consumer demand for your product will be. Your manager requires you to minimize GCP
service costs and adhere to Google best practices. What should you do?

A. Utilize free tier and sustained use discounts. Provision a staff position for service cost management.
B. Utilize free tier and sustained use discounts. Provide training to the team about service cost management.
C. Utilize free tier and committed use discounts. Provision a staff position for service cost management.
D. Utilize free tier and committedusediscounts. Provide training to the team about service cost management.

Answer: D

Explanation:
https://cloud.google.com/docs/enterprise/best-practices-for-enterprise-organizations#billing_and_management

Question: 114

Youare building a continuous deployment pipeline for a project storedin a Git source repository and wanttoensurethatcodechangescanbeverifieddeploying toproduction. Whatshouldyoudo?

A. Use Spinnaker to deploy builds to production using the red/black deployment strategy so that changes can easily be rolledback.
B. Use Spinnaker to deploy builds to production and run tests on production deployments.
C. Use Jenkins tobuildthestaging branches and themaster branch. Build and deploy changes to production for 10% of users before doing a complete rollout.
D. Use Jenkins to monitor tags in the repository. Deploy staging tags to a staging environment for testing.
After testing, tag the repository for production and deploy that to the production environment.

Answer: D

Explanation:
Reference:
: https://github.com/GoogleCloudPlatform/continuous-deployment-on-kubernetes/blob/master/
README.md

Question: 115

You have an outage in your Compute Engine managed instance group: all instance keep restarting after 5 seconds. Youhave a health check configured, but autoscaling is disabled. Your colleague, who isa Linuxexpert, offeredtolook intotheissue. Youneed tomakesurethat he can access the VMs. What should you do?

A. Grant your colleague the IAM role of project Viewer
B. Perform a rolling restart on the instance group
C. Disable the health check for the instance group. Add his SSH key to the project-wide SSH keys
D. Disable autoscaling for the instance group. Add his SSH key to the project-wide SSH Keys

Answer: C

Explanation:
https://cloud.google.com/compute/docs/instance-groups/autohealing-instances-in-migs
Health checks used for autohealing should be conservative so they don't preemptively delete and recreate your instances. When an autohealer health check is too aggressive, the autohealer might mistake busy instances for failed instances and unnecessarily restart them, reducing availability

Question: 116

Your company is migrating its on-premises data center into the cloud. As part of the migration, you wanttointegrate Kubernetes Engine forworkloadorchestration. Parts ofyourarchitecture must also be PCI DSScompliant.
Which of the following is most accurate?

A. App Engine is the only compute platform on GCP that is certified for PCI DSS hosting.
B. Kubernetes Engine cannot be used under PCI DSS because it is considered shared hosting.
C. Kubernetes Engine and GCP provide the tools you need tobuild a PCI DSS-compliant environment.
D. All Google Cloud services are usable because Google Cloud Platform is certified PCI-compliant.

Answer: D

Explanation:
https://cloud.google.com/security/compliance/pci-dss

Question: 117

Yourcompany has multiple on-premises systems thatserve as sources for reporting. Thedatahas not been maintained well and has become degraded over time. You want to use Google-recommended practices to detect anomalies in your company dat
a. What should you do?
A. Upload your files into Cloud Storage. Use Cloud Datalab to explore and clean your data.
B. Upload your files into Cloud Storage. Use Cloud Dataprep to explore and clean your data.
C. Connect Cloud Datalab to your on-premises systems. Use Cloud Datalab to explore and clean your data.
D. Connect Cloud Dataprep to your on-premises systems. Use Cloud Dataprep to explore and clean

your
data.

Answer: B

Explanation:
https://cloud.google.com/dataprep/

Question: 118

Google Cloud Platform resources are managed hierarchically using organization, folders, and projects. When Cloud Identity and Access Management (IAM) policies exist at these different levels, what is the effective policy at a particular node of the hierarchy?

A. The effective policy is determined only by the policy set at the node
B. The effective policy is the policy set at the node and restricted by the policies of its ancestors
C. The effective policy is the union of the policy set at the node and policies inherited from its ancestors
D. The effective policy is the intersection of the policy set at the node and policies inherited from its ancestors

Answer: B

Explanation:
Reference:
: https://cloud.google.com/resource-manager/docs/cloud-platform-resource-hierarchy

Question: 119

You are migrating your on-premises solution to Google Cloud in several phases. You willuse Cloud VPN to maintain a connection between your on-premises systems and Google Cloud until the migration is completed.
You want to make sure all your on-premises systems remain reachable during this period. How should you organize your networking in Google Cloud?

A. Use the same IP range on Google Cloud as you use on-premises
B. Use the same IP range on Google Cloud as you use on-premises for your primary IP range and use a
secondary range that does not overlap with the range you use on-premises
C. Use an IP range on Google Cloud that does not overlap with the range you use on-premises
D. Usean IPrange on Google Cloudthat doesnotoverlap withthe range youuse on-premises for your
primary IP range and use a secondary range with the same IP range as you use on-premises

Answer: C

Question: 120

You have found an error in your App Engine application caused by missing Cloud Datastore indexes. You have createda YAMLfilewith the required indexes and want todeploy thesenew indexes to Cloud Datastore.
What should you do?

A. Point gcloud datastore create-indexes to your configuration file
B. Upload the configuration file the App Engine's default Cloud Storage bucket, and have App Engine detect the new indexes
C. In the GCP Console, use Datastore Admin to delete the current indexes and upload the new configuration file
D. Create an HTTP request to the built-in python module to send the index configuration file to your application

Answer: A

Question: 121

Youhave an application that will runon Compute Engine. Youneed todesignanarchitecturethat takes into account a disaster recovery plan that requires your application to fail over to another region in case of a regional outage. What should you do?

A. Deploy the application on two Compute Engine instances in the same project but in a different region. Use the first instance to serve traffic, and use the HTTP load balancing service to fail over to the standby instance in case of a disaster.
B. Deploy the application on a Compute Engine instance. Use the instance to serve traffic, and use theHTTP load balancing servicetofailovertoaninstanceon yourpremisesincase of adisaster.
C. Deploy the application on two Compute Engine instance groups, each in the same project but in a different region. Use the first instance group to serve traffic, and use the HTTP load balancing service to fail over to the standby instance group in case of a disaster.
D. Deploy the application on two Compute Engine instance groups, each in separate project and a different region. Use the first instance group to server traffic, and use the HTTP load balancing service to fail over to the standby instance in case of a disaster.

Answer: C

Question: 122

You are deploying an application on App Engine that needs to integrate with an on-premises database. For security purposes, your on-premises database must not be accessible through the public Internet. What should you do?

A. Deploy your application on App Engine standard environment and use App Engine firewall rules to limit access to the open on-premises database.

B. Deploy yourapplication on App Enginestandard environmentand use Cloud VPN to limit access to the onpremises database.
C. Deploy your application on App Engine flexible environment and use App Engine firewall rules to limit access to the on-premises database.
D. Deploy your application on App Engine flexible environment and use Cloud VPN to limit access to the on-premises database.

Answer: D

Explanation:
https://cloud.google.com/appengine/docs/flexible/python/using-third-party-databases

Question: 123

You are working in a highly secured environment where public Internet access from the Compute Engine VMs is not allowed. You do not yet have a VPN connection to access an on-premises file server. Youneed toinstall specific software on a Compute Engine instance. How shouldyouinstall the software?

A. Upload the required installation files to Cloud Storage. Configure the VM on a subnet with a Private Google Access subnet. Assign only an internal IP address to the VM. Download the installation files to the VM using gsutil.
B. Upload therequired installation files to Cloud Storage and use firewall rules toblock all traffic except the IP address range for Cloud Storage. Download thefiles tothe VM using gsutil.
C. Upload the required installation files to Cloud Source Repositories. Configure the VM on a subnet witha Private Google Access subnet. Assignonly aninternal IP address tothe VM. Downloadthe installation files to the VM using gcloud.
D. Upload the required installation files to Cloud Source Repositories and use firewall rules to block all traffic except the IP address range for Cloud Source Repositories. Download the files to the VM using gsutil.

Answer: A

Explanation:
https://cloud.google.com/vpc/docs/private-access-options#pga-supported

Question: 124

Your company is moving 75 TB of data into Google Cloud. You want to use Cloud Storage and follow Googlerecommended practices. What should you do?

A. Move your data onto a Transfer Appliance. Use a Transfer Appliance Rehydrator to decrypt the data into Cloud Storage.
B. Move yourdata ontoa Transfer Appliance. Use Cloud Dataprep todecrypt thedata into Cloud Storage.
C. Install gsutil on each server that contains data. Use resumable transfers to upload the data into Cloud Storage.

D. Install gsutil oneachservercontaining data. Usestreaming transfers touploadthedatainto Cloud Storage.

Answer: A

Explanation:
https://cloud.google.com/transfer-appliance/docs/2.0/faq

Question: 125

You have an application deployed on Kubernetes Engine using a Deployment named echo-deployment. The deploymentis exposed using a Service called echo-service. You need to perform an update tothe application withminimaldowntime totheapplication. What shouldyoudo?

A. Use kubect1 set image deployment/echo-deployment <new-image>
B. Use the rolling update functionality of the Instance Group behind the Kubernetes cluster
C. Update thedeploymentyaml file withthenewcontainer image. Usekubect1 deletedeployment/ echo-deployment and kubect1 create –f <yaml-file>
D. Update the service yaml file which the new container image. Use kubect1 delete service/echoservice
and kubect1 create –f <yaml-file>

Answer: A

Explanation:
https://cloud.google.com/kubernetes-engine/docs/how-to/updating-apps#updating_an_application

Question: 126

Your company is using BigQuery as its enterprise data warehouse. Data is distributed over several Google Cloud projects. All queries on BigQuery need to be billed on a single project. You want to make sure that no query costs are incurred on the projects that contain the dat
a. Users should be able to query the datasets, but not edit them.
How should you configure users' access roles?
A. Add all users to a group. Grant the group the role of BigQuery user on the billing project and BigQuery
dataViewer on the projects that contain the data.
B. Add all users to a group. Grant the group the roles of BigQuery dataViewer on the billing project and
BigQuery user on the projects that contain the data.
C. Add all users to a group. Grant the group the roles of BigQuery jobUser on the billing project and BigQuery dataViewer on the projects that contain the data.
D. Add all users to a group. Grant the group the roles of BigQuery dataViewer on the billing project and
BigQuery jobUser on the projects that contain the data.

Answer: A

Explanation:
Reference:
: https://cloud.google.com/bigquery/docs/running-queries

Question: 127

You have developed an application using Cloud ML Engine that recognizes famous paintings from uploaded images. You want to test the application and allow specific people to upload images for the next24hours. Notall usershaveaGoogleAccount. Howshouldyouhaveusers upload images?

A. Have users upload the images to Cloud Storage. Protect the bucket with a password that expires after 24 hours.
B. Have users upload the images to Cloud Storage using a signed URL that expires after 24 hours.
C. Create an App Engine web application where users can upload images. Configure App Engine to disable the application after 24 hours. Authenticate users via Cloud Identity.
D. Create an App Engine web application where users can upload images for the next 24 hours. Authenticate users via CloudIdentity.

Answer: A

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

Question: 128

Your web application must comply with the requirements of the European Union's General Data Protection Regulation (GDPR). You are responsible for the technical architecture of your web application. What should you do?

A. Ensure that your web application only uses native features and services of Google Cloud Platform, because Google already has various certifications and provides "pass-on" compliance when you use native features.
B. Enable the relevant GDPR compliance setting within the GCPConsole for each of the services in use within your application.
C. Ensurethat Cloud Security Scanner is part ofyourtestplanning strategy in ordertopickupany compliance gaps.
D. Define a design for the security of data in your web application that meets GDPR requirements.

Answer: D

Explanation:
https://cloud.google.com/security/gdpr/?tab=tab4
Reference:
: https://www.mobiloud.com/blog/gdpr-compliant-mobile-app/

Question: 129

You need to set up Microsoft SQL Server on GCP. Management requires that there's no downtime in case of adata center outage in any ofthezones withina GCP region. What should you do?

A. Configure a Cloud SQL instance with high availability enabled.
B. Configure a Cloud Spanner instance with a regional instance configuration.
C. Set up SQL Server on Compute Engine, using Always On Availability Groups using Windows Failover
Clustering. Place nodes in different subnets.
D. Setup SQLServer Always On Availability Groupsusing Windows Failover Clustering. Place nodesin different zones.

Answer: D

Explanation:
https://cloud.google.com/sql/docs/sqlserver/configure-ha

Question: 130

The development team has provided you with a Kubernetes Deployment file. You have no infrastructure yet and need to deploy the application. What should you do?

A. Use gcloud to create a Kubernetes cluster. Use Deployment Manager to create the deployment.
B. Use gcloud to create a Kubernetes cluster. Use kubect1 to create the deployment.
C. Use kubect1 tocreate a Kubernetes cluster. Use Deployment Manager to create the deployment.
D. Use kubect1 to create a Kubernetes cluster. Use kubect1 to create the deployment.

Answer: B

Explanation:
https://cloud.google.com/kubernetes-engine/docs/how-to/creating-a-cluster

Question: 131

You need to evaluate your team readiness for a new GCP project. You must perform the evaluation and create a skills gap plan incorporates the business goal of cost optimization. Your team has deployed two GCP projects successfully to date. What should you do?

A. Allocate budget for team training. Set a deadline for the new GCP project.
B. Allocate budget for team training. Create a roadmap for your team to achieve Google Cloud certification based on job role.
C. Allocate budget to hire skilled external consultants. Set a deadline for the new GCP project.
D. Allocate budget to hire skilled external consultants. Create a roadmap for your team to achieve

Google Cloud certification based on job role.

Answer: B

Explanation:
https://services.google.com/fh/files/misc/cloud_center_of_excellence.pdf

Question: 132

You are designing an application for use only during business hours. For the minimum viable product release, you'd like to use a managed product that automatically "scales to zero" so you don't incur costs when there is noactivity.
Which primary compute resource should you choose?

A. Cloud Functions
B. Compute Engine
C. Kubernetes Engine
D. AppEngine flexible environment

Answer: A

Explanation:
https://cloud.google.com/serverless-options

Question: 133

Youare creatingan App Engine application that uses Cloud Datastore as itspersistence layer. You need to retrieve several root entities for which you have the identifiers. You want to minimizethe overhead in operations performed by Cloud Datastore. What should you do?

A. Create the Key objectforeach Entity and runa batchgetoperation
B. Create the Key object foreach Entity and run multiple get operations, one operation for each entity
C. Use the identifiers to create a query filter and run a batch query operation
D. Use the identifiers to create a query filter and run multiple query operations, one operation for each entity

Answer: C

Explanation:
https://cloud.google.com/datastore/docs/concepts/entities#datastore-datastore-batch-upsert-nodejs

Question: 134

You need to upload files from your on-premises environment to Cloud Storage. You want the files to

be
encrypted on Cloud Storage using customer-supplied encryption keys. What should you do?

A. Supply the encryption key in a .boto configuration file. Use gsutil to upload the files.
B. Supply the encryption key using gcloud config. Use gsutil to upload the files to that bucket.
C. Use gsutil to upload the files, and use the flag --encryption-key to supply the encryption key.
D. Use gsutil to create a bucket, and use the flag --encryption-key to supply the encryption key. Use gsutil to upload the files to that bucket.

Answer: A

Explanation:
https://cloud.google.com/storage/docs/encryption/customer-supplied-keys#gsutil

Question: 135

Your customer wants to capture multiple GBs of aggregate real-time key performance indicators (KPIs) from their game servers running on Google Cloud Platform and monitor the KPIs with low latency. How should they capture the KPIs?

A. Store time-series data from the game servers in Google Bigtable, and view it using Google Data Studio.
B. Output custom metrics to Stackdriver from the game servers, and create a Dashboard in Stackdriver
Monitoring Console to view them.
C. Schedule BigQueryload jobs to ingest analytics files uploaded to Cloud Storage every ten minutes, and visualize the results in Google Data Studio.
D. Insert the KPIs into Cloud Datastore entities, and run ad hoc analysis and visualizations of them in Cloud Datalab.

Answer: ~~A~~ B

Explanation:
https://cloud.google.com/monitoring/api/v3/metrics-details#metric-kinds

Question: 136

Youhave a Python web application with many dependencies that requires 0.1 CPU cores and 128 MB of memory to operate in production. Youwantto monitor and maximize machine utilization. You also toreliably deploy new versions ofthe application. Whichset of steps should you take?

A. Perform the following:
1) Create a managed instance group with f1-micro type machines.
2) Use a startup script to clone the repository, check out the production branch, install the dependencies, and start the Python app.
3) Restart the instances to automatically deploy new production releases.
B. Perform the following:

1) Create a managed instance group with n1-standard-1 type machines.
2) Build a Compute Engine image from the production branch that contains all of the dependencies and
automatically starts the Python app.
3) Rebuildthe Compute Engineimage, andupdate theinstance template todeploy newproduction releases.
C. Perform the following:
1) Create a Kubernetes Engine cluster with n1-standard-1 type machines.
2) Build a Dockerimage from the production branch with all of the dependencies, and tag it withthe version number.
3) Createa Kubernetes DeploymentwiththeimagePullPolicy set to"IfNotPresent"in thestaging namespace, and then promote it to the production namespace after testing.
D. Perform the following:
1) Create a Kubernetes Engine cluster with n1-standard-4 type machines.
2) Build a Docker image from the master branch will all of the dependencies, and tag it with "latest".
3) Create a Kubernetes Deployment in the default namespace with the imagePullPolicy set to "Always".
Restart the pods to automatically deploy new production releases.

Answer: D

Explanation:
https://cloud.google.com/compute/docs/instance-templates

Question: 137

Your company wants to start using Google Cloud resources but wants to retain their on-premises Active
Directory domain controller for identity management. What should you do?

A. Use the Admin Directory API to authenticate against the Active Directory domain controller.
B. Use Google Cloud Directory Sync to synchronize Active Directory usernames with cloud identities and
configure SAML SSO.
C. Use Cloud Identity-Aware Proxy configured to use the on-premises Active Directory domain controller as an identityprovider.
D. Use Compute Engine to create an Active Directory (AD) domain controller that is a replica of the onpremises AD domain controller using Google Cloud Directory Sync.

Answer: B

Explanation:
https://cloud.google.com/solutions/federating-gcp-with-active-directory-introduction#implementing_federation

Question: 138

You are running a cluster on Kubernetes Engine to serve a web application. Users are reporting that a specific part of the application is not responding anymore. You notice that all pods of your deploymentkeeprestarting after 2 seconds. Theapplication writes logstostandardoutput. Youwant to inspect the logs to find the cause of the issue. Which approach can you take?

A. Review the Stackdriver logs for each Compute Engine instance that is serving as a node in the cluster.
B. Review the Stackdriver logs for the specific Kubernetes Engine container that is serving the unresponsive part of theapplication.
C. Connecttotheclusterusinggcloudcredentials and connecttoacontainer in one ofthe podsto read the logs.
D. Review the Serial Port logs for each Compute Engine instance that is serving as a node in the cluster.

Answer: B

Question: 139

Youare using a single Cloud SQLinstance to serve your application from a specific zone. Youwant to introduce high availability. What should you do?

A. Create a read replica instance in a different region
B. Create a failover replica instance in a different region
C. Create a read replica instance in the same region, but in a different zone
D. Create a failover replica instance in the same region, but in a different zone

Answer: B

Explanation:
https://cloud.google.com/sql/docs/mysql/high-availability

Question: 140

Your company is running a stateless application on a Compute Engine instance. The application is used
heavily during regular business hours and lightly outside of business hours. Users are reporting that the
application is slow during peak hours. You need to optimize the application's performance. What should you do?

A. Create asnapshot of theexisting disk. Create aninstance template from thesnapshot. Create an autoscaled managed instance group from the instance template.
B. Create a snapshot of the existing disk. Create a custom image from the snapshot. Create an autoscaled managed instance group from the custom image.
C. Create a custom image from the existing disk. Create an instance template from the custom image. Create an autoscaled managed instance group from the instance template.

D. Create aninstance template from the existing disk. Create acustom image from the instance template.
Create an autoscaled managed instance group from the custom image.

Answer: B

Explanation:
https://cloud.google.com/compute/docs/instance-templates/create-instance-templates

Question: 141

Your web application has several VM instances running within a VPC. You want to restrict communications betweeninstances to only the paths and ports you authorize, but you don't want to rely on static IP addresses or subnets because the app can autoscale. How should you restrict communications?

A. Use separate VPCs to restricttraffic
B. Use firewall rules based on network tags attached to the compute instances
C. Use Cloud DNS and only allow connections from authorized hostnames
D. Use service accounts and configure the web application particular service accounts to have access

Answer: B

Question: 142

You are using Cloud SQL as the database backend for a large CRM deployment. You want to scale as usage increases and ensure that you don't run out of storage, maintain 75% CPU usage cores, and keepreplication lag below60seconds. Whatarethe correctstepstomeetyourrequirements?

A. 1) Enable automatic storage increase for the instance.
2) Create a Stackdriver alert when CPU usageexceeds 75%, andchange theinstance typetoreduce CPU usage.
3) Create a Stackdriver alert for replication lag, and shard the database to reduce replication time.
B. 1) Enable automatic storage increase for the instance.
2) Change the instance type to a 32-core machine type to keep CPU usage below 75%.
3) Create a Stackdriver alert for replication lag, and shard the database to reduce replication time.
C. 1) Create a Stackdriver alert whenstorage exceeds 75%, andincrease theavailable storage onthe instance to create morespace.
2) Deploy memcached to reduce CPUload.
3) Change the instance type to a 32-core machine type to reduce replication lag.
D. 1) Create a Stackdriver alert whenstorage exceeds 75%, andincrease theavailable storage onthe instance to create morespace.
2) Deploy memcached to reduce CPUload.
3) Create a Stackdriver alert for replication lag, and change the instance type to a 32-core machine type to reduce replication lag.

Answer: A

Question: 143

You are tasked with building an online analytical processing (OLAP) marketing analytics and reporting

tool.
This requires a relational database that can operate on hundreds of terabytes of dat
a. What is the Google recommended tool for such applications?
A. Cloud Spanner, because it is globally distributed
B. Cloud SQL, because it is a fully managed relational database
C. Cloud Firestore, because it offers real-time synchronization across devices
D. BigQuery, becauseitis designedforlarge-scale processing of tabular data

Answer: A

Explanation:
Reference:
: https://cloud.google.com/files/BigQueryTechnicalWP.pdf

Question: 144

Youhave deployedan application to Kubernetes Engine, and are using the Cloud SQLproxy container to
make the Cloud SQL database available to the services running on Kubernetes. You are notified that the
application is reporting database connection issues. Your company policies require a post-mortem.
What should you do?

A. Use gcloud sql instances restart.
B. Validate that the Service Account used by the Cloud SQL proxy container still has the Cloud Build Editor role.
C. In the GCP Console, navigate to Stackdriver Logging. Consult logs for Kubernetes Engine and Cloud SQL.
D. In the GCP Console, navigate to Cloud SQL. Restore the latest backup. Use kubect1 to restart all pods.

Answer: C

Question: 145

Your company pushes batches of sensitive transaction data from its application server VMs to Cloud Pub/Sub for processing and storage. What is the Google-recommended way for your application to authenticate to the required Google Cloud services?

A. Ensure that VM service accounts are granted the appropriate Cloud Pub/Sub IAM roles.
B. Ensure that VM service accounts do not have access to Cloud Pub/Sub, and use VM access scopes to
grant the appropriate Cloud Pub/Sub IAM roles.
C. Generate an OAuth2 access token for accessing Cloud Pub/Sub, encrypt it, and store it in Cloud Storage for access from eachVM.
D. Create a gateway to Cloud Pub/Sub using a Cloud Function, and grant the Cloud Function service

account the appropriate Cloud Pub/Sub IAM roles.

Answer: A

Question: 146

You want to establish a Compute Engine application in a single VPC across two regions. The application must communicate over VPN to an on-premises network. How should you deploy the VPN?

A. Use VPC Network Peering between the VPC and the on-premises network.
B. Expose the VPC to the on-premises network using IAM and VPC Sharing.
C. Create a global Cloud VPN Gateway with VPN tunnels from each region to the on-premises peer gateway.
D. Deploy Cloud VPN Gateway in each region. Ensure that each region has at least one VPN tunnel to the on-premises peergateway.

Answer: C

Explanation:
https://cloud.google.com/vpn/docs/how-to/creating-static-vpns

Question: 147

Your applications will be writing their logs to BigQuery for analysis. Each application should have its own table.
Any logs olderthan 45 days should be removed. You want tooptimize storage and follow Google recommended practices. What should you do?

A. Configure the expiration time for your tables at 45 days
B. Make the tables time-partitioned, and configure the partition expiration at 45 days
C. Rely on BigQuery's default behavior to prune application logs older than 45 days
D. Createascriptthat usesthe BigQuerycommandlinetool (bq) toremoverecords olderthan 45 days

Answer: B

Explanation:
https://cloud.google.com/bigquery/docs/managing-partitioned-tables

Question: 148

You want your Google Kubernetes Engine cluster to automatically add or remove nodes based on CPUload. What should you do?

A. Configure a HorizontalPodAutoscaler with a target CPU usage. Enable the Cluster Autoscaler from the
GCP Console.
B. Configure a HorizontalPodAutoscaler withatarget CPUusage. Enable autoscaling onthemanaged instance group for the cluster using the gcloud command.
C. Create a deployment and set the maxUnavailable and maxSurge properties. Enable the Cluster Autoscaler using the gcloudcommand.
D. Create adeploymentandsetthemaxUnavailable and maxSurge properties. Enable autoscaling on the
cluster managed instance group from the GCP Console.

Answer: B

Question: 149

You need to develop procedures to verify resilience of disaster recovery for remote recovery using GCP. Your production environment is hosted on-premises. You need to establish a secure, redundant connection between your on premises network and the GCP network.
What should you do?

A. Verify that Dedicated Interconnect can replicate files to GCP. Verify that direct peering can establish a
secure connection between your networks if Dedicated Interconnect fails.
B. Verify that Dedicated Interconnect can replicate files to GCP. Verify that Cloud VPN can establish a secure connection between your networks if Dedicated Interconnect fails.
C. Verify thatthe Transfer Appliance can replicate files to GCP. Verify that directpeering can establish a
secure connectionbetweenyournetworksifthe TransferAppliance fails.
D. Verify that the Transfer Appliance can replicate files to GCP. Verify that Cloud VPN can establish a secure connection between your networks if the Transfer Appliance fails.

Answer: B

Explanation:
https://cloud.google.com/interconnect/docs/how-to/direct-peering

Question: 150

Yourcompany operates nationally and plans to use GCP for multiple batch workloads, including some that are not time-critical. You also need to use GCP services that are HIPAA-certified and manage service costs.
How should you design to meet Google best practices?

A. Provisioning preemptible VMs toreduce cost. Discontinue use of all GCP services and APIsthat are not HIPAA-compliant.
B. Provisioning preemptible VMs toreduce cost. Disable and then discontinue use of all GCP and APIs

that are not HIPAA-compliant.
C. Provision standard VMsin the same region to reduce cost. Discontinue use of all GCP services and APIs that are notHIPAA-compliant.
D. Provision standard VMs to the same region to reduce cost. Disable and then discontinue use of all GCP services and APIs that are not HIPAA-compliant.

Answer: B

Explanation:
https://cloud.google.com/security/compliance/hipaa/

Question: 151

Your customer wants to do resilience testing of their authentication layer. This consists of a regional managed instance group serving a public REST API that reads from and writes to a Cloud SQL instance.
What should you do?

A. Engage with a security company to run web scrapes that look your users' authentication data om malicious websites and notify you if any if found.
B. Deploy intrusiondetection software to your virtual machines to detect and log unauthorized access.
C. Schedule a disaster simulation exercise during which you can shut off all VMs in a zone to see how your application behaves.
D. Configure a red replica for your Cloud SQL instance in a different zone than the master, and then manually trigger a failover while monitoring KPIs for our REST API.

Answer: C

Question: 152

Your BigQuery project has several users. For audit purposes, you need to see how many queries each user ran in the lastmonth.

A. Connect Google Data Studio toBigQuery. Createadimensionfortheusers and ametricforthe amount of queries peruser.
B. In the BigQuery interface, execute a query on the JOBS table to get the required information.
C. Use 'bq show' to list all jobs. Per job, use 'bq Is' to list job information and get the required information.
D. Use Cloud Audit Loggingtoview Cloud Audit Logs, and createafilter on thequery operation to get the
required information.

Answer: C

Explanation:

https://cloud.google.com/bigquery/docs/managing-jobs

Question: 153

You want to automate the creation of a managed instance group and a startup script to install the OS package dependencies. Youwanttominimize thestartup timefor VMs in theinstance group.
What should you do?

A. Use Terraform tocreate the managed instance groupandastartup script to install the OS package dependencies.
B. Create a custom VMimage with all OS package dependencies. Use Deployment Manager tocreate the managed instance group with the VM image.
C. Use Puppet to create the managed instance group and install the OS package dependencies.
D. Use Deployment Manager tocreatethemanaged instance group and Ansibletoinstall the OS package dependencies.

Answer: B

Explanation:
"Custom images are more deterministic and start more quickly than instances with startup scripts. However, startup scripts are more flexible and let you update the apps and settings in your instances more easily."
https://cloud.google.com/compute/docs/instance-templates/create-instance-templates#using_custom_or_public_images_in_your_instance_templates

Question: 154

Your company captures all web traffic data in Google Analytics 260 and stores it in BigQuery. Each country has its own dataset. Each dataset has multiple tables. Youwant analysts from each country to be able to see and query only the data for their respective countries.
How should you configure the access rights?

A. Create agrouppercountry. Add analysts to their respective country-groups. Create a single group 'all_analysts', and add all country-groupsas members. Grant the 'all-analysis' group the IAM role of BigQuery jobUser. Share the appropriate dataset with view access with each respective analyst country-group.
B. Create agrouppercountry. Addanalysts totheir respective country-groups. Create a single group 'all_analysts', and add all country-groupsas members. Grant the 'all-analysis' group the IAM role of BigQuery jobUser. Share the appropriate tables with view access with each respective analyst countrygroup.
C. Create agrouppercountry. Addanalysts totheirrespective country-groups. Create a single group 'all_analysts', andadd all country-groupsasmembers. Grantthe'all-analysis' groupthe IAM role of BigQuery dataViewer. Sharetheappropriate dataset withview accesswitheachrespective analyst country-group.
D. Create agrouppercountry. Add analysts to their respective country-groups. Create a single group 'all_analysts', and add all country-groupsas members. Grant the 'all-analysis' group the IAM role of BigQuery dataViewer. Share the appropriate table with view access with each respective analyst

countrygroup.

Answer: A

Question: 155

Youhave been engaged byyour client to lead the migration of their application infrastructure to GCP. One of their current problems is that the on-premises high performance SAN is requiring frequent and expensive upgrades to keep up with the variety of workloads that are identified as follows: 20TB of log archives retained for legal reasons; 500 GB of VM boot/data volumes and templates; 500 GB of image thumbnails; 200 GB of customer session state data that allows customers to restart sessions even if off-line for severaldays.
Which of the following best reflects your recommendations for a cost-effective storage allocation?

A. Local SSD for customer sessionstate datA. Lifecycle-managed Cloud Storage for log archives, thumbnails, and VM boot/datavolumes.
B. Memcache backed by Cloud Datastore for the customer session state datA. Lifecycle- managed Cloud
Storage for log archives, thumbnails, and VM boot/data volumes.
C. Memcache backed by Cloud SQL for customer session state datA. Assorted local SSD-backed instances for VM boot/data volumes. Cloud Storage for log archives and thumbnails.
D. Memcache backed by Persistent Disk SSD storage for customer session state datA. Assorted local SSDbackedinstances for VM boot/data volumes. Cloud Storage for log archives and thumbnails.

Answer: D

Explanation:
https://cloud.google.com/compute/docs/disks

Question: 156

Your web application uses Google Kubernetes Engine to manage several workloads. One workload requires a consistent set of hostnames even after pod scaling and relaunches.
Which feature of Kubernetes should you use to accomplish this?

A. StatefulSets
B. Role-based access control
C. Container environment variables
D. Persistent Volumes

Answer: A

Explanation:
https://kubernetes.io/docs/tutorials/stateful-application/basic-stateful-set/

Question: 157

You are using Cloud CDN to deliver static HTTP(S) website content hosted on a Compute Engine instance group. You want to improve the cache hit ratio.
What should you do?

A. Customize the cache keys to omit the protocol from the key.
B. Shorten the expiration time of the cached objects.
C. Make sure the HTTP(S) header "Cache-Region" points to the closest region of your users.
D. Replicate the static content in a Cloud Storage bucket. Point CloudCDN toward a load balancer on that
bucket.

Answer: A

Explanation:
Reference:
https://cloud.google.com/cdn/docs/bestpractices#
using_custom_cache_keys_to_improve_cache_hit_ratio

Question: 158

Your architecture calls for the centralized collection of all admin activity and VM system logs within your
project.
How should you collect these logs from both VMs and services?

A. All admin and VM system logs are automatically collected by Stackdriver.
B. Stackdriver automatically collects admin activity logs for most services. The Stackdriver Logging agent
must be installed on each instance to collect system logs.
C. Launcha custom syslogd compute instance and configure your GCP project and VMs to forward all logs to it.
D. Install the Stackdriver Logging agent on a single compute instance and let it collect all audit and access logs for yourenvironment.

Answer: B

Explanation:
https://cloud.google.com/logging/docs/agent/default-logs

Question: 159

You have an App Engine application that needs to be updated. You want to test the update with production traffic before replacing the current application version.
What should you do?

A. Deploy the update using the Instance Group Updater to create a partial rollout, which allows for canary
testing.
B. Deploytheupdate asanewversion inthe App Engineapplication, andsplittraffic betweenthe new and current versions.
C. Deploy the update in a new VPC, and use Google's global HTTP load balancing to split traffic between the update and current applications.
D. Deploy the update as a new App Engine application, and use Google's global HTTP load balancing to split traffic between the new and current applications.

Answer: B

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

Question: 160

All compute Engine instances in your VPC should be able to connect to an Active Directory server on specific ports. Any other traffic emerging from yourinstances is not allowed. Youwantto enforce this using VPC firewall rules.
How should you configure the firewall rules?

A. Create an egress rule with priority 1000 to deny all traffic for all instances. Create another egress rule with priority 100 to allow the Active Directory traffic for all instances.
B. Create an egress rule with priority 100 to deny all traffic for all instances. Create another egress rule with priority 1000 to allow the Active Directory traffic for all instances.
C. Create an egress rule with priority 1000 to allow the Active Directory traffic. Rely on the implied deny
egress rule with priority 100 to block all traffic for all instances.
D. Createanegressrulewithpriority 100 toallowthe Active Directorytraffic. Rely on the implied deny egress rule with priority 1000 to block all traffic for all instances.

Answer: B

Explanation:
https://cloud.google.com/vpc/docs/firewalls

Question: 161

Your customer runs a web service used by e-commerce sites to offer product recommendations to users. The company has begun experimenting with a machine learning model on Google Cloud Platform to improve the quality of results.
What should the customer do to improve their model's results over time?

A. Export Cloud Machine Learning Engine performance metrics from Stackdriver to BigQuery, to be used to analyze the efficiency of the model.
B. Build a roadmap to move the machine learning model training from Cloud GPUs to Cloud TPUs,

which
offer better results.
C. Monitor Compute Engine announcements for availability of newer CPU architectures, and deploy the model to them as soon as they are available for additional performance.
D. Save ahistory of recommendations andresults of therecommendationsin BigQuery, to be usedas training data.

Answer: D

Explanation:
https://cloud.google.com/solutions/building-a-serverless-ml-model

Question: 162

A development team at your company has created a dockerized HTTPS web application. You need to deploy the application on Google Kubernetes Engine (GKE) and make sure that the application scales automatically.
How should you deploy to GKE?

A. Use the Horizontal Pod Autoscaler and enable cluster autoscaling. Use an Ingress resource to loadbalance the HTTPS traffic.
B. Usethe Horizontal Pod Autoscaler andenable cluster autoscaling onthe Kubernetes cluster. Usea Service resource of type LoadBalancer to load-balance the HTTPS traffic.
C. Enable autoscaling on the Compute Engine instance group. Use an Ingress resource to load balance the HTTPS traffic.
D. Enable autoscaling on the Compute Engine instance group. Use a Service resource of type LoadBalancer to load-balance the HTTPS traffic.

Answer: B

Explanation:
https://cloud.google.com/kubernetes-engine/docs/tutorials/http-balancer
https://cloud.google.com/kubernetes-engine/docs/concepts/network-overview#ext-lb

Question: 163

You need to design a solution for global load balancing based on the URL path being requested. You need to ensure operations reliability and end-to-end in-transit encryption based on Google best practices.
What should you do?

A. Create a cross-region load balancer with URL Maps.
B. Create an HTTPS load balancer with URL maps.
C. Create appropriate instance groups and instances. Configure SSL proxy load balancing.
D. Create a global forwarding rule. Configure SSL proxy balancing.

Answer: B

Explanation:
Reference:
https://cloud.google.com/load-balancing/docs/https/url-map

Question: 164

You have an application that makes HTTP requests to Cloud Storage. Occasionally the requests fail with
HTTP status codes of 5xx and 429.
How should you handle these types of errors?

A. Use gRPC instead of HTTP for better performance.
B. Implement retry logic using a truncated exponential backoff strategy.
C. Make sure the Cloud Storage bucket is multi-regional for geo-redundancy.
D. Monitor https://status.cloud.google.com/feed.atom and only make requests if Cloud Storage is not reporting
an incident.

Answer: A

Explanation:
Reference:
https://cloud.google.com/storage/docs/json_api/v1/status-codes

Question: 165

You need to develop procedures to test a disaster plan for a mission-critical application. You want to use
Google-recommended practices and native capabilities within GCP.
What should you do?

A. Use Deployment Manager to automate service provisioning. Use Activity Logs to monitor and debug your tests.
B. Use Deployment Manager to automate provisioning. Use Stackdriver to monitor and debug your tests.
C. Use gcloud scripts to automate service provisioning. Use Activity Logs monitor and debug your tests.
D. Use automated scripts to automate service provisioning. Use Activity Logs monitor and debug your tests.

Answer: B

Explanation:
https://cloud.google.com/solutions/dr-scenarios-planning-guide

Question: 166

Your company creates rendering software which users can download from the company website. Your
company has customers all over the world. You want to minimize latency for all your customers. You want to follow Google-recommendedpractices.
How should you store the files?

A. Save the files in a Multi-Regional Cloud Storage bucket.
B. Save the files in a Regional Cloud Storage bucket, one bucket per zone of the region.
C. Save the files in multiple Regional Cloud Storage buckets, one bucket per zone per region.
D. Save the files in multiple Multi-Regional Cloud Storage buckets, one bucket per multi-region.

Answer: A

Explanation:
https://cloud.google.com/storage/docs/locations#location-mr

Question: 167

Your company acquired a healthcare startup and must retain its customers' medical information for up to 4 more years, depending on when it was created. Yourcorporate policy is to securely retain this data, and then delete it as soon as regulations allow.
Which approach should you take?

A. Store the data in Google Drive and manually delete records as they expire.
B. Anonymize the data using the Cloud Data Loss Prevention API and store it indefinitely.
C. Store the data using the Cloud Storage and use lifecycle management to delete files when they expire.
D. Store the data in Cloud Storage and run a nightly batch script that deletes all expired datA.

Answer: C

Explanation:
https://cloud.google.com/storage/docs/lifecycle

Question: 168

Youare deploying a PHP App Engine Standard service with SQL as the backend. You want to minimize the number of queries to the database.
What should you do?

A. Set the memcache service level to dedicated. Createa key from the hash of the query, and return database values from memcache before issuing a query to Cloud SQL.
B. Set the memcache service level to dedicated. Create a cron task that runs every minuteto populate the cache with keys containing query results.
C. Set thememcache serviceleveltoshared. Createacrontask that runsevery minute tosave all expected queries to a key called "cached-queries".

D. Set the memcache service level to shared. Create a key called “cached-queries”, and return database
values from the key before using a query to Cloud SQL.

Answer: A

Explanation:
https://cloud.google.com/appengine/docs/standard/php/memcache/using

Question: 169

You need to ensure reliability for your application and operations by supporting reliable task a scheduling for compute on GCP. Leveraging Google best practices, what shouldyou do?

A. Using the Cron service provided by App Engine, publishing messages directly to a message-processing utility service running on Compute Engine instances.
B. Using the Cron service provided by App Engine, publish messages to a Cloud Pub/Sub topic. Subscribe to that topic using a message-processing utility service running on Compute Engine instances.
C. Using the Cron service provided by Google Kubernetes Engine (GKE), publish messages directly to a
message-processing utility service running on Compute Engine instances.
D. Using the Cron service provided by GKE, publish messages to a Cloud Pub/Sub topic. Subscribe to that topicusingamessage-processing utility service running on Compute Engineinstances.

Answer: B

Explanation:
https://cloud.google.com/solutions/reliable-task-scheduling-compute-engine

Question: 170

Your company is building a new architecture to support its data-centric business focus. You are responsible for setting up the network. Your company’s mobile and web-facing applications will be deployed on-premises, and all data analysis will be conducted in GCP. The plan is to process and load 7 years of archived .csv files totaling 900 TB of data and then continue loading 10 TB of data daily. You currently have an existing 100-MB internet connection.
What actions will meet your company’s needs?

A. Compress and upload both achieved files and files uploaded daily using the qsutil –m option.
B. Lease a Transfer Appliance, upload archived files to it, and send it, and send it to Google to transfer
archived data to Cloud Storage. Establish aconnectionwith Google using a DedicatedInterconnector Direct Peering connection and use it to upload files daily.
C. Lease a Transfer Appliance, upload archived files to it, and send it, and send it to Google to transfer
archived data to Cloud Storage. Establish one Cloud VPN Tunnel to VPC networks over the public

internet, and compares and upload files daily using the gsutil –m option.
D. Lease a Transfer Appliance, upload archived files to it, and send it to Google to transfer archived data to Cloud Storage. Establish a Cloud VPN Tunnel to VPC networks over the public internet, and compress and upload filesdaily.

Answer: B

Explanation:
https://cloud.google.com/interconnect/docs/how-to/direct-peering

Question: 171

You are developing a globally scaled frontend for a legacy streaming backend data API. This API expects
events in strict chronological order with no repeat data for proper processing.
Which products should you deploy to ensure guaranteed-once FIFO (first-in, first-out) delivery of data?

A. Cloud Pub/Sub alone
B. Cloud Pub/Sub to Cloud DataFlow
C. Cloud Pub/Sub to Stackdriver
D. Cloud Pub/Sub to Cloud SQL

Answer: B

Explanation:
Reference:
https://cloud.google.com/pubsub/docs/ordering