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Review the Answers

Sorting by

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Question 1

Unattempted

Domain : Other

Your company has developed a series of LAMP stack applications, that are required to be scalable and fast and that are often updated by the IT teams. Which of the following actions allow you to facilitate the process of managing the various configurations in production, staging, and development (Choose 4)?

- A. Organize Configuration and create Instance Templates
- B. Create deployments using Deployment Manager
- C. Use Labels for your Resources

- D. Use Template Name with talking prefixes
- E. Organize Resources according to your standard and setup/reuse configurations and templates 
- F. Always use expanded configuration
- G. Use References, template properties, and outputs 

Explanation:

Correct Answers: B, C, E, G

A is wrong. Instance Templates are immutable, stored resources used for the creation of VM instances and managed instance groups only with identical configurations. So it is not possible to update an existing instance template or change an instance template after it has been created. If an instance template goes out of date, or you need to make changes to the configuration, you have to create a new instance template

You can find further information about Instance Templates at this link:

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

B is correct. Deployment Manager allows to create resources for applications in a declarative format using YAML, Python or Jinja2 and to deploy them in a repeatable way. It also allows to add, delete, or change resources in the deployment and allow reuse of common deployment paradigms such as a load balanced, auto-scaled instance group.

See: <https://cloud.google.com/deployment-manager/>

C is correct. With labels, you can group related resources together by adding metadata to your resources in the form of key-value pairs. Labels are a good way to categorize resources related to different deployments and are also useful to distinguish the current stage, for example production or test environment.

D is wrong. Labels are more useful, flexible and effective

E is correct. A configuration contains the structure of your deployment, with the reference of all the resources needed, that you can define only once.

F is wrong. It is not optimized, it may lead to errors and it is useless: you may always check your expanded configuration previewing your deployments.

G is correct. The use of template properties and outputs is advisable because it allows you to pass in variables like the zone, machine size, a number of machines, the application state (test, prod, staging) into your templates and get output values back such as the IP address and the selfLink to a VM instance.

For any further detail, please refer to the URL below:

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

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Question 2

Unattempted

Domain : Other

You have been asked to migrate to the Cloud, a legacy system, listening to specific TCP ports, in a "lift and shift way", that needs different types of instances but is accessed by a single IP address.

Which configuration among the following would you evaluate as the best one?

- A. Layer 7 Load Balancer with an Unmanaged Instance Group
- B. Layer 4 Load Balancer with a Managed Instance Group
- C. Layer 4 Load Balancer with an Unmanaged Instance Group 
- D. Layer 7 Load Balancer with a Managed Instance Group

Explanation:

Correct Answer: C

A is wrong. The application does not use HTTP(s), so an HTTP(S) Load Balancer is out of scope

B is wrong. Managed Instance Groups are for scalable and identical Instances

C is correct. It is the only feasible way

D is wrong. The application does not use Http, and Managed Instance Groups is for scalable and identical Instances

Flowchart for choosing a load balancer:

[Create a load balancer](#)

HTTP(S) Load Balancing Layer 7 load balancing for HTTP and HTTPS applications Learn more Configure HTTP LB HTTPS LB (includes HTTP/2 LB) Options Internet-facing or internal Single- or multi-region Start configuration	TCP Load Balancing Layer 4 load balancing or proxy for applications that rely on TCP/SSL protocol Learn more Configure TCP LB SSL Proxy TCP Proxy Options Internet-facing or internal Single- or multi-region Start configuration	UDP Load Balancing Layer 4 load balancing for applications that rely on UDP protocol Learn more Configure UDP LB Options Internet-facing or internal Single-region Start configuration
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For more details, please refer to the URLs below:

<https://cloud.google.com/load-balancing/docs/choosing-load-balancer>

<https://cloud.google.com/compute/docs/instance-groups/>

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Question 3

Unattempted

Domain : Other

You have the task of deploying a stateless Node.js already containerized application with a scalable configuration so that the start of a new instance is fast and easy to update. Additional requirements for the instances are:

Ubuntu-1804-lts

Nodejs 10

Free from boot or kernel-level malware or rootkits.

Which is the best solution?

- A. Instance Json Template with startup script
- B. Instance custom image Template
- C. Instance public image Template with startup script
- D. Instance shielded public image Template with startup script 

Explanation:

Correct Answer: D

A is wrong. It is not the fastest way (images are quicker) and don't malware protection

B is wrong. It is the fastest but it don't have malware protection

C is wrong. It doesn't have malware protection

D is correct

The key requirement is that is needed for the Shielded VM support, so you are compelled to use a Public Image. See <https://cloud.google.com/compute/docs/images>

Instance template may use a **public image** and a **startup script** to prepare the instance after it starts running.

Custom images are more **deterministic** and start more quickly than instances with startup scripts. However, startup scripts are more flexible and allow you to update the applications and settings in your instances more easily.

For more details, please refer to the URLs below:

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

<https://cloud.google.com/compute/docs/instances/create-vm-from-instance-template>

<https://cloud.google.com/security/shielded-cloud/shielded-vm>

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Question 4

Unattempted

Domain : Other

You have to deploy an update to your scalable app, operating with managed instance groups but you cannot undergo any service disruption during the migration.

You have already tested the new configuration and you need to deploy it in the fastest and safest way.

Which is the best solution?

- A. Change Template and everything will be automatic
- B. Change Template, then start new instances and stop the old ones
- C. Change Template and ask for a Rolling update 
- D. Change Template and ask for a Canary update

Explanation:

Correct Answer: C

A is wrong. Instance Template are immutable so you have to create a new Instance Template and update the Managed Group Definition

B is wrong. It is not advisable to do such a manual operation. It's cumbersome and prone to errors.

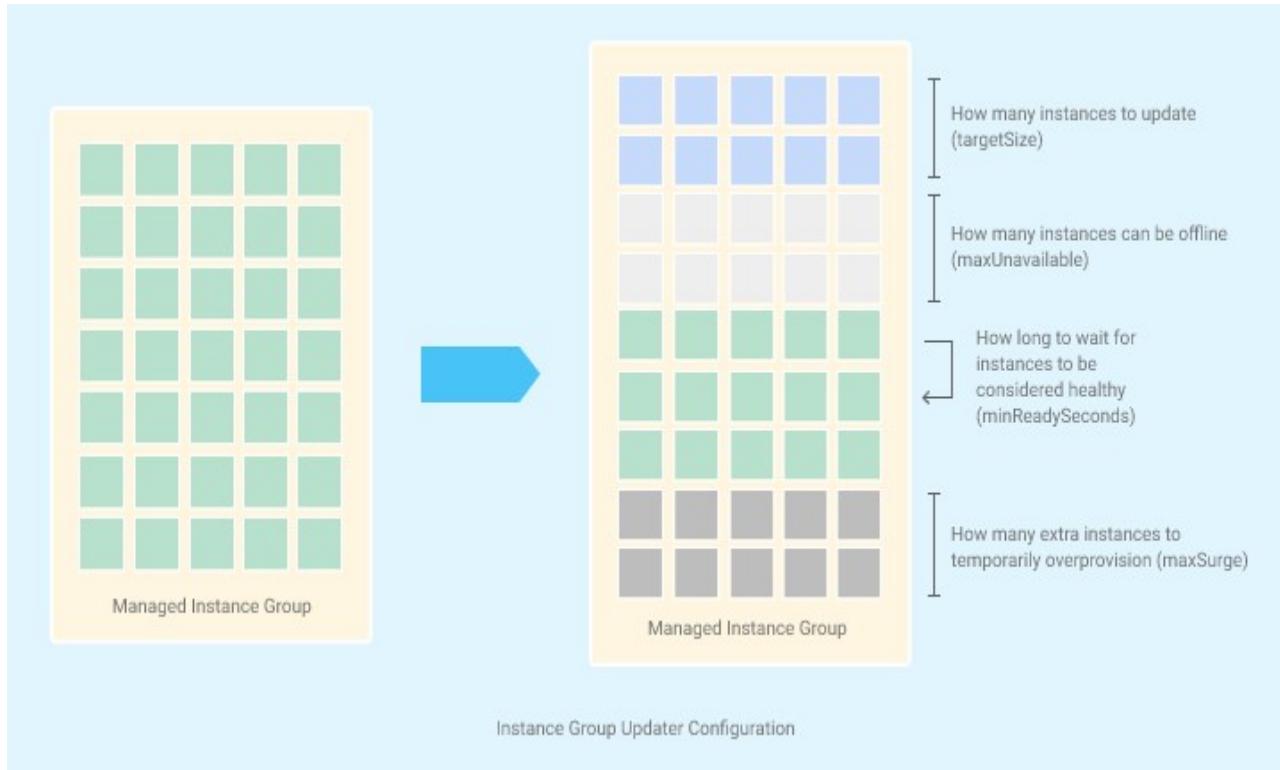
C is correct. With managed instance group updater, you may roll out an update automatically based on your specifications:

maxSurge is the number of Instances beyond the targetSize of the group

maxUnavailable set the number of instances unavailable at any time during the update

Minimal action: if the updater has to REPLACE or RESTART the Instances

D is wrong. A canary update is a partial update to a few numbers of instances in the instance group. The requirement was to deploy it in all the VMs in the fastest and safest way



For more details, please refer to the URLs below:

<https://cloud.google.com/compute/docs/instance-groups/>

<https://cloud.google.com/compute/docs/instance-groups/rolling-out-updates-to-managed-instance-groups>

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Question 5

Unattempted

Domain : Other

You have to quickly deploy an update to your scalable app operating with managed instance groups but you definitely know that there may be some errors.

You want to test the new app in production before fully committing to the update.

Which is the best solution?

- A. Change Template and everything will be automatic
- B. Change Template, then start new instances and stop the old ones
- C. Change Template and ask for a Rolling update
- D. Change Template and ask for a Canary update 

Explanation:

Correct Answer: D

A is wrong. Instance Template are immutable, so you have to create a new Instance Template and update the Managed Group Definition

B is wrong. It is not advisable to do such a manual operation. It is cumbersome and prone to errors

C is wrong. With managed instance group updater, you may roll out all an update automatically. The question required a partial update.

D is correct. A canary update is a partial update to a few numbers of instances in the instance group.

You may view with console or gcloud for the currentAction being performed on each instance in your group, as well as the status of each instance.

You may roll back quickly to the previous version and control the speed of an update with the parameters: minReadySeconds (wait for the next replacement), Enable health checking (wait until healthy), tune maxUnavailable (number of Instances beyond the targetSize of the group), and maxSurge (number of instances unavailable at any time during the update)

A canary update is an update that is applied to a partial number of instances in the instance group. Canary updates let you test new features or upgrades on a subset of instances, instead of rolling out a potentially disruptive update to all your instances. If an update is not going well, you only need to roll back a small number of instances, minimizing the disruption for your users. From the perspective of the server, a canary update is the same as a standard rolling update, except that the number of instances that should be updated is less than the total size of the instance group. Like a standard rolling update, a canary update is disruptive to the instances affected; that is, the affected instances are deleted and replaced by new VM instances during the update.

For more details, please visit the following URLs:

<https://cloud.google.com/compute/docs/instance-groups/>

<https://cloud.google.com/compute/docs/instance-groups/rolling-out-updates-to-managed-instance-groups>

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Question 6

Unattempted

Domain : Other

Your customer has a web app running with an instance template deployed with a Docker container. The system was deployed with a Container-Optimized OS (COS) image with Docker installed and a script that launches the container at the VM startup activation.

Now your customer asked for advice because he wants to start using Kubernetes (K8s). Choose the right steps for correct installation (Choose 3).

- A. Setup a GKE cluster with: `gcloud container clusters create` 
- B. Deploy a Configuration with: `kubectl create configuration`
- C. Create a Deployment with: `kubectl create deployment` 
- D. Create a set of pods
- E. Create a Service with: `kubectl expose deployment` 
- F. Run the Pods with: `kubectl run`

Explanation:

Correct Answers: A, C, E

A is correct. You already have the container image stored in a registry, so you need to create a **container cluster** to run the container image. A cluster consists of a pool of **Compute Engine VM instances** running **Kubernetes**.

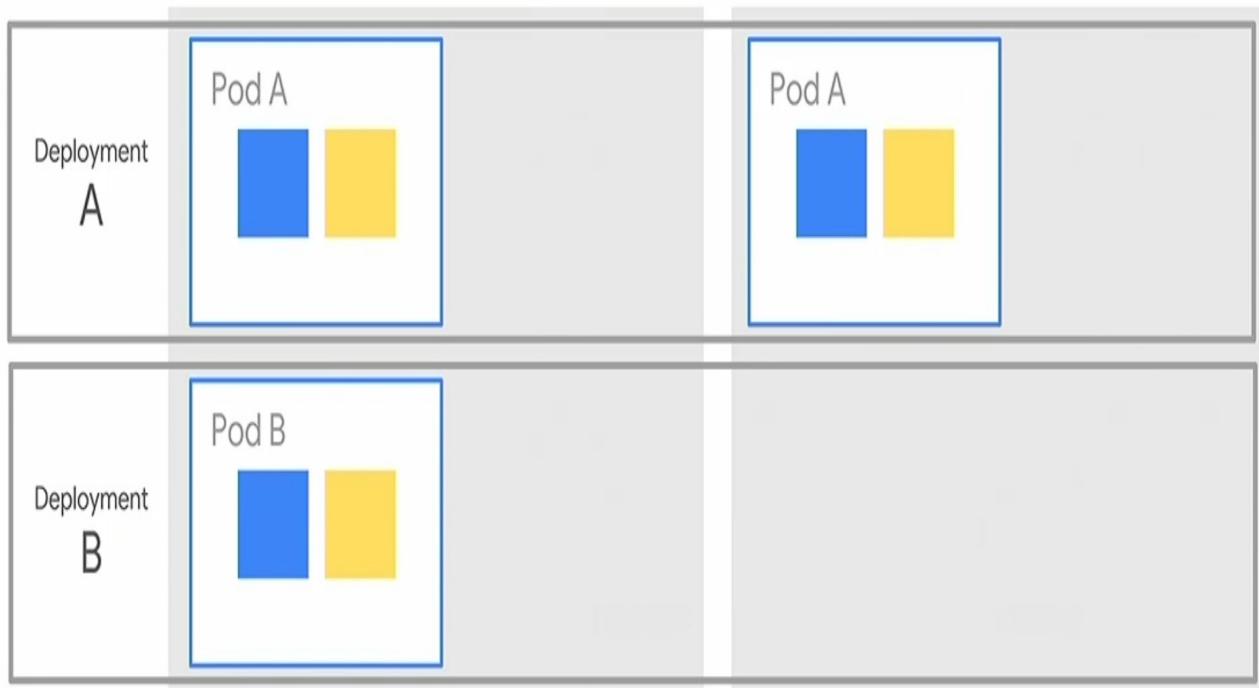
B is wrong. The Command doesn't exist. Use `kubectl create deployment`

C is correct. The deployment is the Pods configuration. Pods are just smallest collections of schedulable containers (one or more)

D is wrong. The creation of Pods is completely automated according to the Deployment info

E is correct. You must explicitly expose your application to traffic from the Internet, otherwise it will run only internally. The kubectl expose command creates a **Service** resource, which provides networking and IP support to your application's Pods. GKE creates an external IP and a Load Balancer (**subject to billing**) for your application.

F is wrong. The kubectl run command is used for starting containers and setting up pods, but all that is done automatically by K8s based on your configuration (Deployment).



For more details, please visit the following URLs:

<https://cloud.google.com/kubernetes-engine/docs/tutorials/hello-app>

<https://cloud.google.com/kubernetes-engine/docs/how-to/container-native-load-balancing>

<https://cloud.google.com/kubernetes-engine/docs/tutorials/hello-app>

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Question 7**Unattempted**

Domain : Other

Your Customer has been testing Kubernetes for a while and needs a **punctual analysis** comparing the deployment with instance template and Docker vs Kubernetes. You performed a list of advantages and disadvantages.

Which of the following is correct? (Select three)

- A. Money-Saving because of less computing power required 
- B. More manual intervention is needed with K8s
- C. Allows continuous Deployment with Cloud Build 
- D. Difficult to change Cloud Provider, because K8s is a Google product
- E. K8s Container-native load balancing is more performant than Instance Group Load Balancing 

Explanation:

Correct Answers: A, C, E

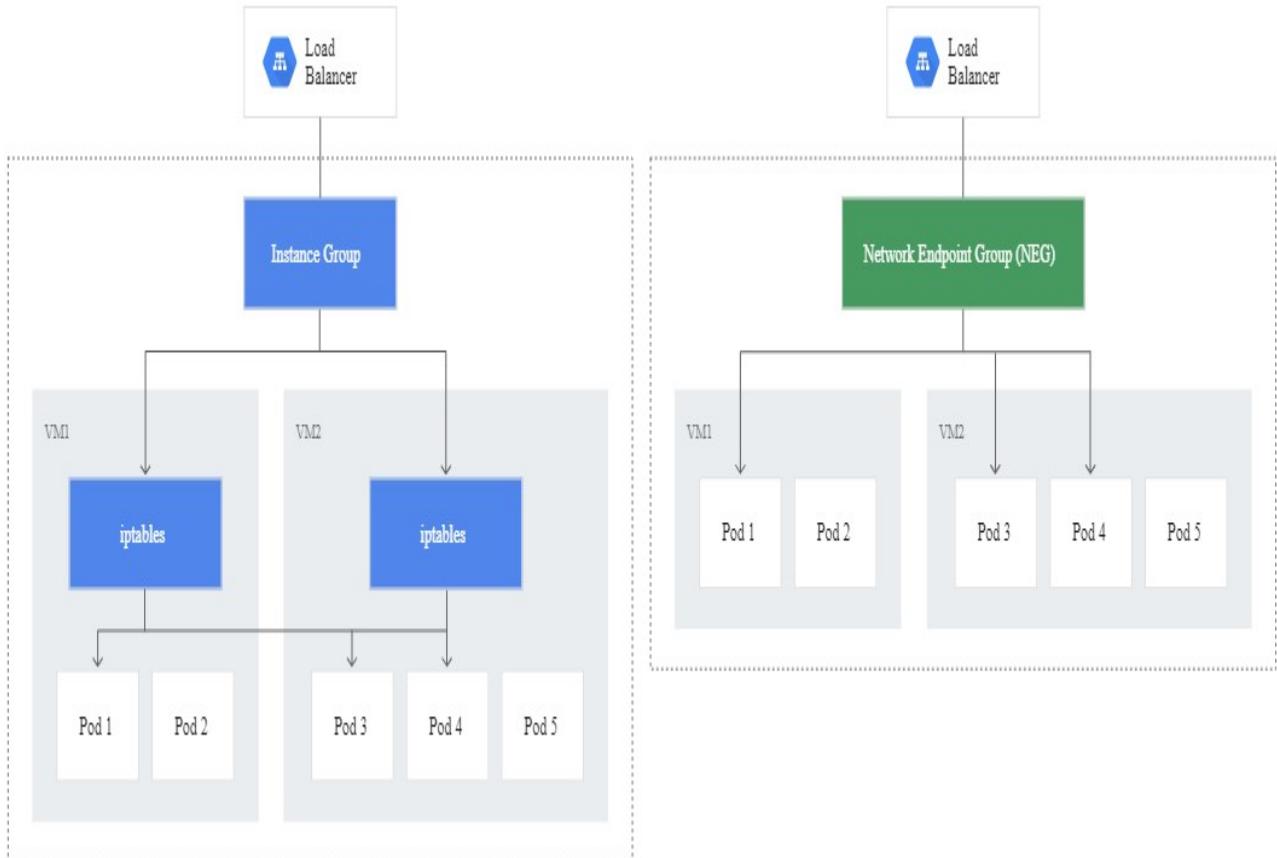
A is correct. K8s can fit more containers/pods in the same VM

B is wrong. K8s can automate more operations and hide the complexity of networking and load balancing

C is correct. You may create automation with Cloud Build such as when you commit your source, your production or staging environment will be seamlessly updated. See: [Continuous Deployment with Cloud Build](#)

D is wrong. K8s has been adopted by all the major cloud platforms as the leading Containers Orchestrator

E is correct. As you can easily see from the following picture, the container-native load balancer communicates directly with the Pods, connections have fewer network hops, so both latency and throughput are improved.



For more details, please visit the following URLs:

<https://cloud.google.com/kubernetes-engine/>

<https://cloud.google.com/kubernetes-engine/docs/how-to/container-native-load-balancing>

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Question 8

Unattempted

Domain : Other

Your customer needs a dedicated System with a MongoDB and 2 replicas and wants maximum availability, protection against failures and interruptions for maintenance/ updates to the instances.

The Database operates only in one US region and is actively queried and updated 24/7. So, you cannot select a comfortable maintenance Window.

What do you advice?

- A. Use an internal load balancing Service with a Managed Instance Group and Regional persistent disks 
- B. Use a 3rd party MongoDB Managed Service
- C. Implement Live Migration and use persistent regional SSDs
- D. Use internal TCP/UDP Load Balancing with local SSD disks

Explanation:

Correct Answer: A

A is correct. A load balancer with MIG will provide the scalability with an inbuilt feature of Live Migration if needed.

B is wrong. The requirement was to have a dedicated and private System.

C is wrong. Live migration is not an option but an inbuilt feature provided by Google.

D is wrong. A DB Instance, even is NoSQL, cannot scale in a simple way. In case of failover, it is likely to have inconsistencies and loss of services. In addition, local SSD disks are really fast but they persist only until the instance is stopped or deleted. Definitely not according to the requirements.

For any further detail, please check the following URLs:

<https://cloud.google.com/compute/docs/instances/live-migration>

<https://cloud.google.com/compute/docs/disks/>

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Question 9

Unattempted

Domain : Other

AD on GCE - As a Cloud Architect, you have been asked to set up a fault-tolerant MS Active Directory in GCP for a Customer already using AD for their Systems and Applications. So, you have to describe the main choices available to them.

Which of the following scenarios is correct?

- A. MS Active Directory is not supported in the GCP platform

- B. **Setup 2 Compute Engine Windows VMs and install Primary and Secondary AD DC**
- C. **Use Cloud Identity federated with Azure Active Directory**
- D. **Use Cloud Identity federated with on-premise Active Directory**
- E. **Use the new Managed Service for Microsoft Active Directory**
- F. **The solutions B, C, D, and E are all correct and feasible** 

Explanation:

Correct Answer: F

A. is **wrong** because GCP supports Windows Instances, Active Directory Identity, and access management service.

B. is **correct** because it is always possible to install Windows VMs and AD standard Domain Controllers, even if there are better alternatives for integration with current Systems

C. and D.: Cloud Identity is the Identity as a Service (IDaaS) and enterprise mobility management (EMM) product of Google. It offers features similar to those of MS Azure Active Directory, such as Single Sign on, MFA, and support for Mobile Users. It may be integrated with Azure Active Directory and standard Microsoft Active Directory

E. is a Google Cloud full managed service running Microsoft Azure Active Directory that can manage cloud-based AD-dependent workloads, automate AD server maintenance and security configuration, and extend on-premises AD domain to the cloud.

For more details, please refer to the URLs below:

<https://cloud.google.com/managed-microsoft-ad/>

<https://cloud.google.com/solutions/deploy-fault-tolerant-active-directory-environment>

<https://cloud.google.com/managed-microsoft-ad/>

<https://cloud.google.com/solutions/federating-gcp-with-azure-active-directory>

<https://cloud.google.com/solutions/federating-gcp-with-active-directory-introduction>

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Question 10**Unattempted**

Domain : Other

You have been asked to set up a Disaster Recovery solution for a non-critical Database Server with multiple disks. The application can be stopped for hours without creating major issues. The data must be recovered at the beginning of the last day. The solution must be simple and inexpensive.

What would you advise?

- A. Create a Custom Image of the Instance root disk and use it for re-creating the VM in another region
- B. Set the autodelete flag to false for the persistent disks and make regular snapshots
- C. Save the snapshots to Cloud Storage
- D. Use Zonal SSD persistent disks
- E. Regional SSD persistent disks, and daily snapshots stored to Cloud Storage 

Explanation:

Correct Answers: E

All answers are a partial solution with the exception of option D, which is incorrect because Zonal SSD persistent disks are useless in the event of a disaster. Furthermore, regional disks may not be available, but in this case, all the snapshots in Cloud Storage are preserved.

Remember that snapshots are incremental and compressed, so they are fast and inexpensive.

Check the following link to get the complete procedure of this solution:

<https://cloud.google.com/solutions/dr-scenarios-for-data>

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Domain : Other

Your company has developed IT Systems deployed on Kubernetes and GKE. The company has

also recently acquired a new company and wants to integrate its applications and services.

Fortunately, the new company also uses Kubernetes but on Microsoft Azure.

The requirement is to quickly integrate the two Cloud platforms and the on-premises organization, having in this way, the capability to use any type of service.

The solution must be seamless, quick, safe, standard, fast, without heavy migrations or network updates.

You are asked to identify the best solution among those proposed.

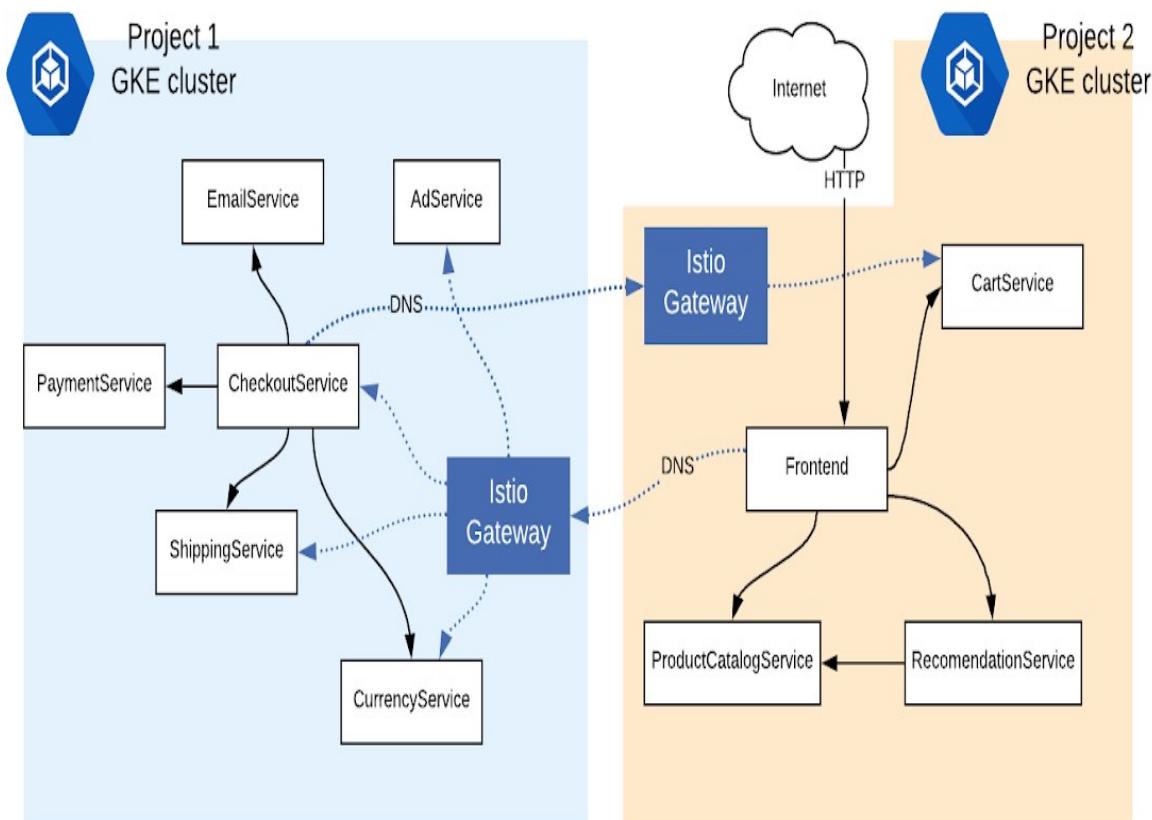
- A. It is not possible to meet all the requirements
- B. Develop an interface between the various systems that work on-premise
- C. Use Cloud Endpoints to create a set of services that encapsulate external ones and use JWT
- D. Use ISTIO on GKE 
- E. Adopt a proprietary solution from Microsoft

Explanation:

Correct Answer: D

The perfect solution is **ISTIO**.

ISTIO provides a services abstraction for Pods, Jobs, and VM-based applications. In a hybrid topology, it standardizes networking across environments, centralizes API management, and decouples JWT validation from your code and creates a secure, zero-trust network across cloud providers.



A and B are wrong. It is not possible to develop quickly an internal solution that meets these requirements.

C. is wrong because Endpoint creates APIs and doesn't integrate all kinds of services.
<https://cloud.google.com/endpoints/>

E. is wrong because it is not standard and cannot integrate all kinds of services.

For any further detail, please follow the links below:

<https://cloud.google.com/blog/topics/hybrid-cloud/the-service-mesh-era-istios-role-in-the-future-of-hybrid-cloud>

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Question 12

Unattempted

Domain : Other

As a GCP architect, you have been asked to organize a series of data integration procedures for a group of companies that uses different cloud platforms: AWS and Azure.

The procedures, which require subsequent processing with different techniques, must be:

Easy to maintain, even by the users who are not IT professionals

Quick to create, implement and manage

Time triggered

Based on open technologies, so they will be more easily reusable in any environment.

The solution has to be simple, completely managed and inexpensive.

Which GCP product would you recommend?

- A. App Engine Standard environment
- B. Cloud Tasks
- C. Cloud Composer 
- D. Google Functions
- E. Data Flow
- F. Pub/Sub
- G. Data Proc

Explanation:

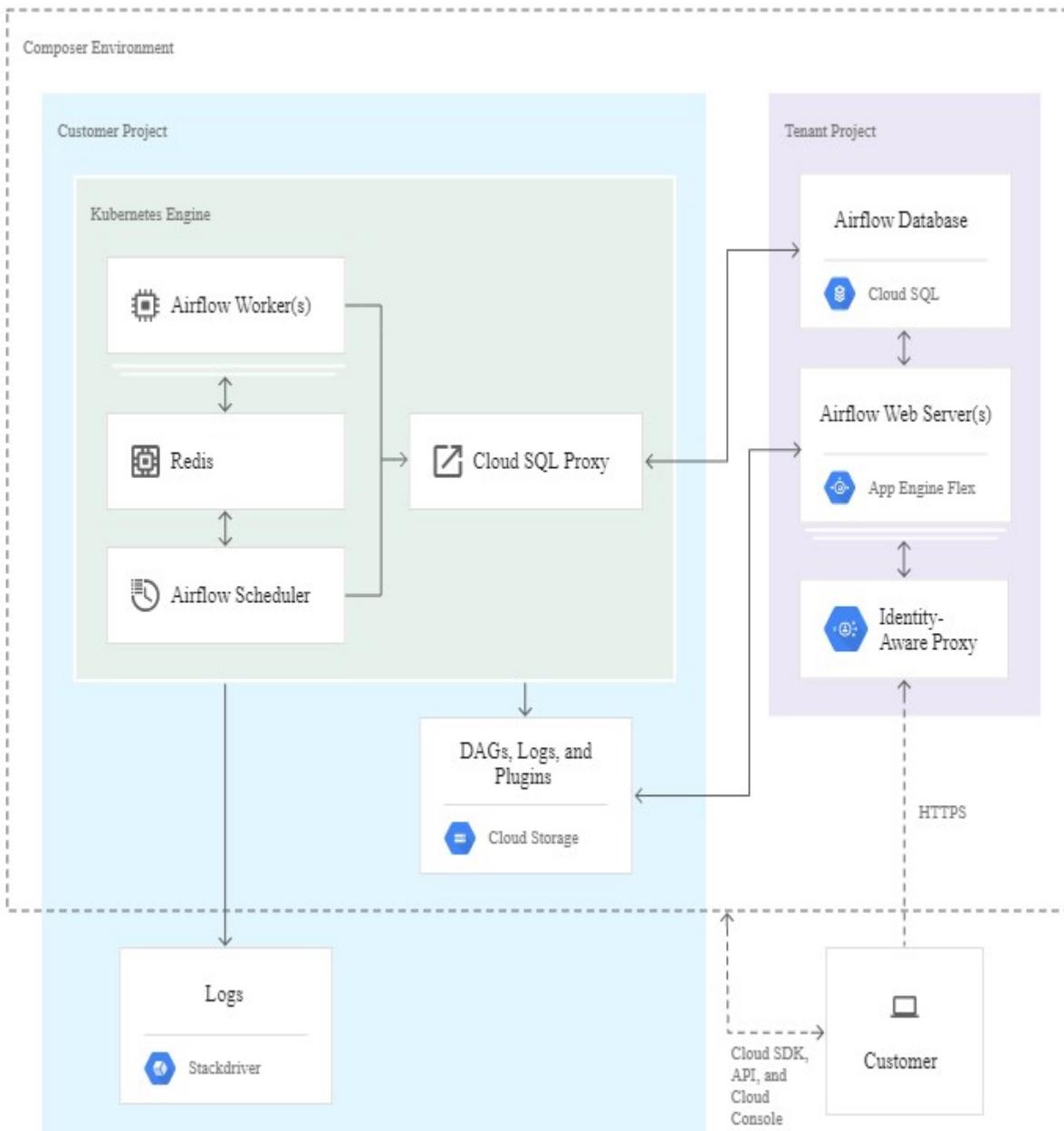
Correct Answer: C

The best tool for this task is GCP Cloud Composer, based on the popular open-source workflow tool Apache [Airflow](#).

It is provided with many connectors for services of the requested Cloud platform (<https://airflow.apache.org/integration.html>).

In GCP, it is hosted in the App Engine flexible environment and uses MySQL as metadata datastore.

So it is extremely open, interconnected and deployable in any Cloud Platform, as required.



For more details, please check the URLs below:

Airflow - Airflow is a platform to programmatically author, schedule, and monitor workflows.

directed acyclic graphs (DAGs) of tasks.

DAG - A Directed Acyclic Graph is a collection of all the tasks you want to run, organized in a way that reflects their relationships and dependencies.

Operator - The description of a single task, it is usually atomic. For example, the BashOperator is used to execute the bash command.

Task - A parameterized instance of an Operator; a node in the DAG.

Task Instance - A specific run of a task; characterized as: a DAG, a Task, and a point in time. It has an indicative state: running, success, failed, skipped, ...

You can check the following links read more about the concepts:

<https://airflow.apache.org/> and <https://cloud.google.com/composer/docs/concepts/overview>

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Question 13

Unattempted

Domain : Other

You have several Python apps in App Engine Standard. You want to start to experience continuous deployment but you want to handle the process in the best way possible.

You need to deploy a new release for two apps: myapp-a and myapp-b.

myapp-a has some deeply tested updates regarding the bugs. The main requirement is that the transition to the new version which is myapp-b has to be smooth and without any disruptions.

myapp-b has new features and updates and you want to do an A / B testing, introducing the new version for only 50% of the traffic.

What are the correct and best commands to execute? (SELECT 2)

- A. `gcloud app services set-traffic myapp-b splits 1=.5,2=.5 split-by cookie` 
- B. `gcloud app services set-version myapp-a splits 1=.5,2=.5 split-by cookie`
- C. Add warmup and issue; `gcloud app services set-traffic myapp-b --split 2=1`
- D. `gcloud app services set-traffic myapp-a --splits 2=1`
- E. `gcloud app services set-traffic myapp-b splits 1=.5,2=.5 split-by IP`
- F. `gcloud app services set-version myapp-a splits 1=.5,2=.5 split-by IP`
- G. `gcloud app services set-traffic myapp-b --splits 2=1 --migrate`
- H. Add warmup and issue; `gcloud app services set-traffic myapp-a --split 2=1 --migrate` 

Explanation:

Correct Answers: A, H

For myapp-b, the best solution is a migration that moves traffic from one version to a new version gradually. In this way, you will not experience problems.

Otherwise, all instances of the old version will immediately shut down. There will be a latency spike due to loading of the requests for the new version; and when warmup requests are not enabled, user requests are sent to those new instances before they have been created.

For myapp-a, the best solution is to use "Traffic splitting", that distributes a percentage of traffic to different versions of your application.

Also, in this case, it is advisable to enable warmup requests, so that new instances are put to work only when they are ready to go.

The other answers don't fulfill the explained solution to the requirements.

For any further detail, please refer to the URLs below:

<https://cloud.google.com/appengine/docs/standard/python/migrating-traffic>

<https://cloud.google.com/appengine/docs/admin-api/migrating-splitting-traffic>

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Question 14

Unattempted

Domain : Other

Your team is developing a social engagement app in Node.js on App Engine Flexible Edition. Among the various features required, there is an online chat between related and connected users.

Which of the following functions should you use or activate to accomplish what is required?
(Choose 2)

- A. Redis store
- B. Node.js client to Cloud Storage
- C. Custom domains
- D. oAuth 2.0 and App Engine firewall
- E. Session Affinity 
- F. Websocket 

Explanation:

Correct Answers: E, F

In order to develop a chat application, it is necessary to establish a permanent connection between the client and the App Engine instance (Server).

This is achieved with the WebSocket protocol, defined with the RFC 6455 standard, which provides full-duplex communication, initiated by an HTTP (S) request with an "upgrade" header.

WebSockets are always available for the application without any additional configuration. Once a WebSocket connection is established, it will expire after an hour.

It is also appropriate to use Session affinity. App Engine normally uses sessionless connections, but in this case, you have to support long polling so that the Server always waits for new information from its client. In this case, multiple sequential requests from a given user need to reach the same instance.

All the other answers are not related to the requirements:

1. Redis is a cache in-memory DB
2. Node.js client to Cloud Storage is a library for using the Object Store
3. Custom domains are DNS-related
4. OAuth 2.0 and App Engine firewall are connected to the User Authorization Process and to the app Security

For any further detail, please visit the URLs below:

<https://cloud.google.com/appengine/docs/flexible/nodejs/using-websockets-and-session-affinity>

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Question 15

Unattempted

Domain : Other

An e-commerce System is operating in an App Engine flex with Node.js and has to perform many operations while registering orders. You have been asked to find a way to decouple the service with a procedure that will send an email to the customer with an order confirmation, at the end.

You must find the fastest, serverless, simple, economic, and secure solution to perform this procedure.

What would you recommend?

- A. Make an asynchronous call with Node.js
- B. Use Pub / Sub to call a Cloud function
- C. Use Cloud Task and define an appropriate worker server 
- D. Record orders in a database and manage them with a cron job within App Engine

Explanation:

Correct Answer: C

Cloud Tasks is an asynchronous task execution service that encodes and executes Tasks using Queues.

It enables serverless execution for Systems operating in App Engine standard or flexible environments. With this Service, it is possible to offload long-running and background activities, decouple services from one another and make your applications much more resilient to failures.

The other answers depict feasible solutions, that are not Serverless (A,D) or incomplete (B)

For more details, please refer to the URLs below:

<https://cloud.google.com/tasks/>

<https://cloud.google.com/appengine/docs/flexible/dotnet/scheduling-jobs-with-cron-yaml>

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Question 16

Unattempted

Domain : Other

Your company wants to migrate to the GCP Cloud an on-premise J2EE application that uses a Postgres SQL Database.

The solution is required to be:

Economic

Flexible

Fully managed

Highly scalable

Platform independent

Which of the following solution do you think is the most suitable?

- A. GCE with Lift and Shift
- B. Application Layer and Database Layer with Docker Containers
- C. GKE for Layer and Cloud SQL for PostgreSQL
- D. App Engine Flexible Edition and Cloud SQL for PostgreSQL 

Explanation:

Correct Answer: D

App Engine Flexible Edition is a PaaS solution without any constraints regarding the technologies adopted, as long as you can package the app into a Container.

So it is the only solution that meets all the requirements.

A is wrong because it is not fully managed, scalable and flexible

B is wrong especially because Containers are not advisable with Database Systems. SQL Databases cannot scale simply starting a new Instance.

C is wrong because it is not fully managed.

For any further detail, please refer to the URLs below:

<https://cloud.google.com/appengine/docs/flexible/java/>

<https://cloud.google.com/sql/docs/postgres/connect-app-engine>

<https://vsupalov.com/database-in-docker/>

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Question 17

Unattempted

Domain : Other

You have been asked to design an application that allows you to manage XML Customer Orders documents as soon as they are written in a specific Cloud Storage Bucket. The document must be processed with an existing routine written in Node.js. The solution must be as simple as possible, fully managed, asynchronous, secure and economical.

How could this be accomplished?

- Develop a new App to be deployed with App Engine Standard that**
- A. **periodically reads the bucket, processes the files, and transfers them to a new bucket**
 - B. **Create a GSuite module that performs the required operations**
 - C. **Create a Cloud Function with the existing code triggered by change notifications from Google Cloud Storage** 
 - D. **Develop an app, package it into a Container and deploy with App Engine Flexible Edition that periodically reads the bucket, processes the files, and transfers them to a new bucket**

Explanation:

Correct Answer: C

It is a simple and quick solution that meets all the requirements.

The other solutions are much more complex and not so easy to manage and maintain.

The GSuite module (solution B) requires to partially rewrite the routine.

For any further detail, please refer to the URLs below:

<https://cloud.google.com/functions/docs/calling/storage>

<https://cloud.google.com/functions/docs/tutorials/storage>

For more complex scenarios, it is also possible to use Pub/Sub Notifications for Cloud Storage.

These solutions are suitable when there are multiple activities that arise after the change of an Object.

For more details on Pub/Sub notifications, check the following URLs:

<https://cloud.google.com/functions/docs/calling/pubsub>

<https://cloud.google.com/storage/docs/pubsub-notifications>

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Question 18**Unattempted**

Domain : Other

You have a Cloud Function that sometimes fails because of an error that is still not well identified. The error happens randomly, sometimes it occurs and sometimes it doesn't. Is there a method to minimize the effect while the developers are looking for the solution?

- A. Change the function with an exception routine that logs the error
- B. Use the Retry on failure option 
- C. Change the function with an exception routine that repeats the operation
- D. Use Pub/Sub to decouple the operation and store the results
- E. Use Stackdriver Error Reporting

Explanation:

Correct Answer: B

The 'retry on failure' option is aimed to automatically retry a background function until it completes successfully. And this is exactly what is needed.

You have to use it carefully and you should handle permanent problems inside the function.

The other proposed solutions modify the function which is not advisable because developers are already looking for the solution or just the debugging methods.

For any further detail, please follow the URL below:

<https://cloud.google.com/blog/products/serverless/cloud-functions-pro-tips-using-retries-to-build-reliable-serverless-systems>

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Question 19**Unattempted**

Domain : Other

In your organization, you have 2 projects: projA and projB. You have never created a VPC in your projects. Which network configuration do you actually have?

Pick 3 choices:

- A. No VPC present
- B. A Regional standard VPC
- C. A global default VPC
- D. No routes so that your VMs can send data to each other
- E. No firewalls at all and access to the public Internet for every VM
- F. A route for Internet connection and a route for each subnet/region
- G. A set of firewall, with pre-populated rules in the default network, allows ICMP, SSH, and RDP traffic from the Internet (0.0.0.0/0)

Explanation:

Correct Answers: C, F, G

Each new project starts with a default network. The default network is a global auto mode network with:

pre-populated firewall rules

subnets, automatically created in each region

predefined IP ranges of the subnets that do not overlap with IP ranges you would use for different purposes (for example, Cloud VPN connections to on-premises resources).

The other choices are alternatives, therefore wrong.

For any further detail, please refer to the URLs below:

<https://cloud.google.com/vpc/docs/vpc#default-network>

https://cloud.google.com/vpc/docs/vpc?hl=en_US&_ga=2.75763221.-1423722002.1566284004#firewall_rules

https://cloud.google.com/vpc/docs/firewalls?hl=en_US#more_rules_default_vpc

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Question 20**Unattempted**

Domain : Other

In your organization, you have 2 projects: projA and projB. You have never created a VPC in your projects. In which way the VMs in different projects or networks can communicate?

- A. In a totally automatic way: in the same organization, all the VMs may see and talk to each other regardless of the project they belong to.
- B. No way: it is impossible. Different projects, different networks, so no communications
- C. You have to use Cloud Interconnect
- D. You may use a VPN
- E. Through shared VPC 
- F. Through VPC Peering

Explanation:

Correct Answer: E

A is wrong. In a totally automatic way, the different VPCs are completely independent and isolated from each other

B is wrong. The different VPCs are completely independent but there is a way for mutual communication.

C is wrong. Cloud Interconnect provides low latency and highly available connections that enable you to reliably transfer data between your on-premises and Virtual Private Cloud networks. In the given scenario, there is no need for a hybrid connection.

D is wrong. VPN provides a hybrid connection with an on-premise network, too.

E is correct. Shared VPC allows to configure and centrally manage one or more virtual networks across multiple projects in your Organization. It is exactly what we need.

F is wrong. VPC Peering enables to peer VPC networks, even in different organizations, so that workloads can communicate in private RFC 1918 space. Traffic stays within Google's network

and doesn't traverse the public internet. Shared VPC is simpler and more suitable for our needs.

For any further detail, please visit the following URLs:

<https://cloud.google.com/compute/docs/shared-vpc/>

<https://cloud.google.com/blog/products/gcp/getting-started-with-shared-vpc>

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Question 21

Unattempted

Domain : Other

You created a new development project and you don't want to manage a Network. So, you delete the default network because it may consume unwanted resources. What is most likely expected to happen? Select 3 correct options.

- A. Nothing. It is the best choice if you deal with a small, free project
- B. You cannot create a VM 
- C. You cannot create a Serverless Function
- D. You cannot create a Storage Bucket
- E. You are free to create Cloud Functions 
- F. You may create a Storage Bucket 

Explanation:

Correct Answers: B, E, F

Even if you don't realize that you are working inside a VPC, any Compute Operations need a Network.

So, GCP refuses to create even a simple VM.

Instead, serverless technologies are free from infrastructure. So, no server and NO NETWORK.

For any further detail, please refer to the URL below:

<https://cloud.google.com/vpc/docs/vpc>

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Question 22

Unattempted

Domain : Other

Rules must be set to allow data traffic to database servers only from application servers, in 3 different projects: A, B, C.

The resources of the 3 projects must be isolated from each other.

You want to organize operations in order to create simple and intuitive standards to use, which can be repeated for other projects.

In your organization, it is not necessary to provide different security for various projects.

Which of the following strategies is the best?

- A. Create 2 Firewall Rules, one in ingress and one in egress, between each Database Server and App Server using the ephemeral external IP address
- B. Create 1 Firewall Rule, in ingress, between each Database Server and App Server using private IP addresses
- C. Configure your Servers with appropriate Network Tags (AppVM and DBVM, for example) and create 1 Firewall Rule, in ingress, between each Database Server and App Server using these Tags 
- D. Configure your Servers with appropriate Network Tags (AppVM and DBVM, for example) and create 2 Firewall Rules, in ingress and egress, between each Database Server and App Server using these Tags
- E. Create and assign appropriate Service Accounts and rights to the VMs and create a Firewall Rule between each Database Server and App Server using source-service-accounts and target-service-accounts

Explanation:

Correct Answer: C

GCP firewall rules are stateful. If a connection is allowed between a source and a target, all subsequent traffic in either direction will be allowed as long as the connection is active. In other words, firewall rules allow bidirectional communication once a session is established. The connection is considered active if at least one packet is sent every 10 minutes. Firewall rules cannot allow traffic in one direction while denying the associated return traffic.

So,

A and D are wrong.

A service account represents an identity associated with an instance. Only one service account can be associated with an instance. So it is the best option in case of strict security constraints.

Be careful because you cannot mix and match service accounts and network tags in any firewall rules.

E is wrong because it is necessary to provide different security to various projects. So service accounts are not enough for this requirement.

For any further detail, please refer to the URLs below:

<https://cloud.google.com/vpc/docs/using-firewalls>

<https://cloud.google.com/vpc/docs/firewalls#service-accounts-vs-tags>

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Domain : Other

Rules must be set to allow data traffic to database servers only from application servers, in 3 different projects: A, B, and C.

The resources of the 3 projects must be isolated from each other.

You want to organize operations in order to create simple and intuitive standards to use, which can be repeated for other projects.

In your organization, it is mandatory to provide different security to the various projects.

Which of the following strategies is the best?

- A. Create 2 Firewall Rules, one in ingress and one in egress, between each Database Server and App Server using the ephemeral external IP address
- B. Create 1 Firewall Rule in ingress, between each Database Server and App Server using private IP addresses
- C. Configure your Servers with appropriate Network Tags (AppVM and DBVM, for example) and create 1 Firewall Rule, in ingress, between each Database Server and App Server using these Tags
- D. Configure your Servers with appropriate Network Tags (AppVM and DBVM, for example) and create 2 Firewall Rules, in ingress and egress, between each Database Server and App Server using these Tags

- E. Create and assign appropriate Service Accounts and rights to the VMs and create a Firewall Rule between each Database Server and App Server using source-service-accounts and target-service-accounts



Explanation:

Correct Answer: E

GCP firewall rules are stateful. If a connection is allowed between a source and a target, all subsequent traffic in either direction will be allowed as long as the connection is active. In other words, firewall rules allow bidirectional communication once a session is established. The connection is considered active if at least one packet is sent every 10 minutes. Firewall rules cannot allow traffic in one direction while denying the associated return traffic.

So,

A and D are wrong.

A service account represents an identity associated with an instance. Only one service account can be associated with an instance. So it is the best option in case of strict security constraints.

Be careful because you cannot mix and match service accounts and network tags in any firewall rules.

C is wrong because it is necessary to provide different security to various projects. So network tags are the arbitrary attributes and are not enough for this requirement.

For any further detail, please refer to the URLs below:

<https://cloud.google.com/vpc/docs/using-firewalls>

<https://cloud.google.com/vpc/docs/firewalls#service-accounts-vs-tags>

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Question 24

Unattempted

Domain : Other

Your international Company called CompA has acquired the firm CompB that also uses GCP and has its own VPC named VPC-B.

CompA administers the Cloud Services through a global network that incorporates its VPC (named VPC-A) with the on-premise technical environment through a redundant VPN with

BGP dynamic routing.

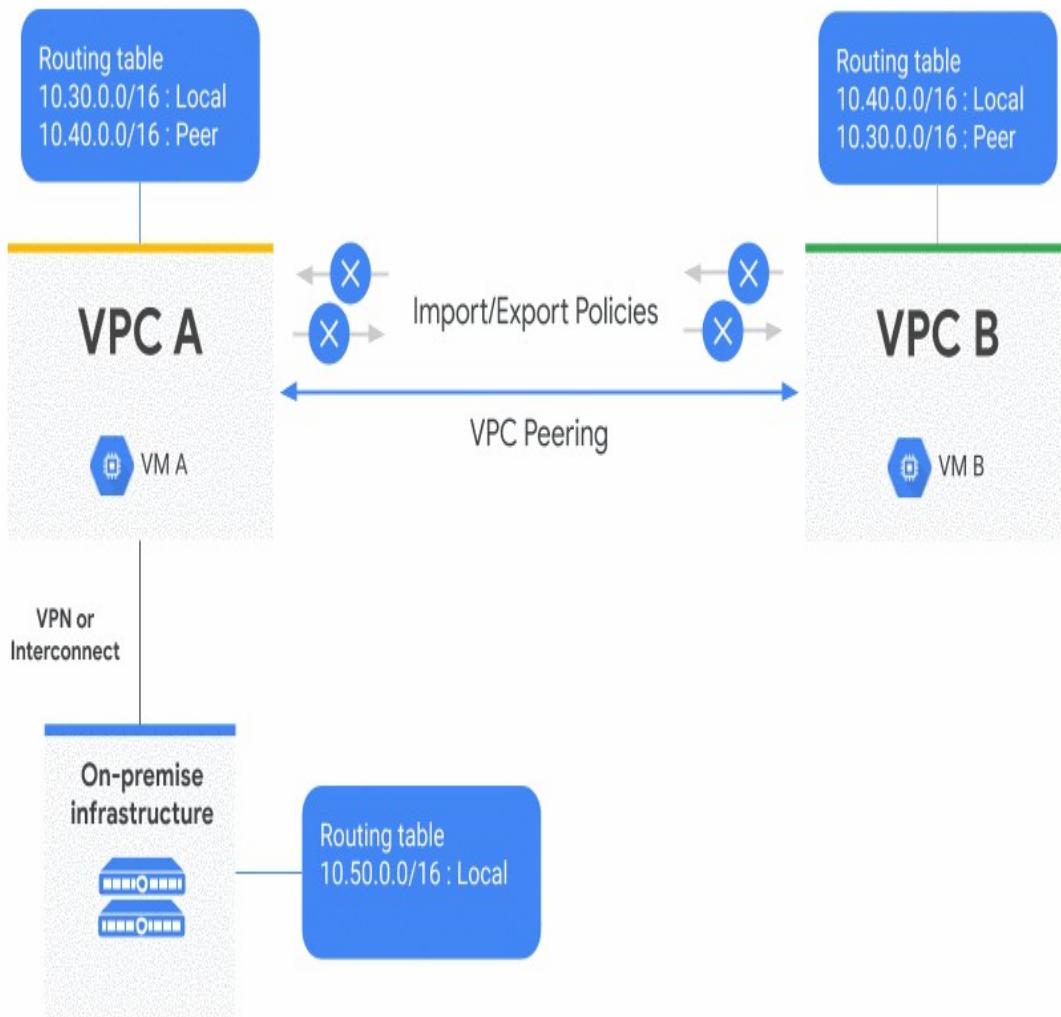
It is in addition required to extend this organization to VPC-B in order to manage the necessary integrations and migrations of data and applications in an easier and smoother way. All of this, of course, should be done in the fastest, most manageable and convenient way. Which of the following solutions would you recommend?

- A. **VPC peering** 
- B. **Dedicated Interconnect between the 2 VPCs**
- C. **Another VPN between on-premise and VPC-B**
- D. **Partner Interconnect between the 2 VPCs**
- E. **Shared VPC**

Explanation:

Correct Answer: A

VPC peering allows any integration of VPC between different Organizations, so it meets all requirements.



B, C, and D are wrong because the need is to connect the 2 VPCs, without realizing other data link on-premises.

E is wrong because shared VPC is only within an organization.

Check the following URLs:

<https://cloud.google.com/blog/products/gcp/getting-started-with-shared-vpc>

<https://cloud.google.com/blog/products/gcp/getting-started-with-shared-vpc>

For any further detail, please visit the URLs below:

<https://cloud.google.com/vpn/docs/concepts/choosing-networks-routing>

<https://cloud.google.com/blog/products/networking/google-cloud-networking-in-depth-simplify-routing-between-your-vpcs-with-vpc-peering>

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Domain : Other

Company rules require that the VMs within the private subnets never have a public address. As an administrator, you need to perform software updates for all your Instances using Internet connections.

You need a fast, easy and reliable automated solution.

Which of the following would be the best solution?

- A. Use Cloud CDN
- B. Use a NAT Instance or a Cloud NAT gateway 
- C. Setup a VPN Connection
- D. Use Cloud Interconnect
- E. Use a Bastion Host

Explanation:

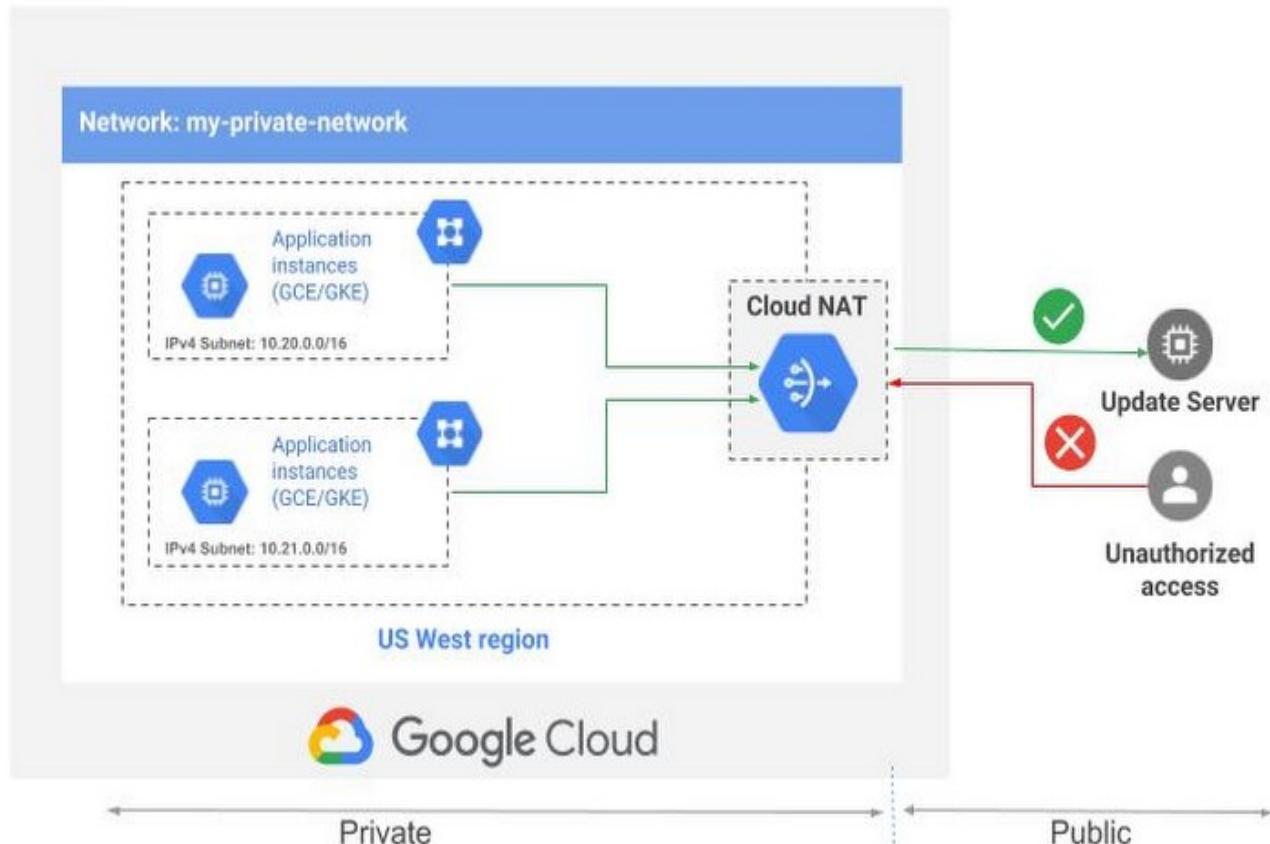
Correct Answer: B

You could have solved the problem with a NAT system or a Bastion Host too, but the first option is far simpler and meets requirements.

Network Address Translation (NAT) performs Private to Public Address translations, so VMs in private subnets can access the internet—for updates, patching, config management, and more—in a controlled and efficient manner, but outside resources cannot directly access those instances.

A is totally out of scope.

C and D could solve the problem but are too expensive and complex for this case.



For any further detail, please refer to the URLs below:

<https://cloud.google.com/nat/docs/overview>

<https://cloud.google.com/blog/products/networking/cloud-nat-deep-dive-into-our-new-network-address-translation-service>

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Question 26

Unattempted

Domain : Other

Company rules require that the VMs within the private subnets never have a public address. As an administrator, you need to connect and operate with these VMs. You need an automated solution, that should be fast, easy, and reliable. Which is the best solution?

- A. Use Cloud Shell from your terminal
- B. Use a NAT Instance or a Cloud NAT gateway

- C. Setup a VPN Connection
- D. Set up a Bastion Host 
- E. Use the private IP Address to connect to the Internet

Explanation:

Correct Answer: D

Bastion hosts are instances that sit within your public subnet and are typically accessed using SSH or RDP. Once remote connectivity has been established with the bastion host, it then acts as a 'jump' server, allowing you to use SSH or RDP to log in to other instances (within private subnets) deeper within your VPC. When properly configured through the use of security groups and Network ACLs (NACLs), the bastion essentially acts as a bridge to your private instances via the internet.

So, this solution meets the given requirement.

A is wrong because it is possible to use Cloud Shell from your terminal, but you need a public IP

B is wrong. Cloud NAT primarily allows instances to reach the Internet. If a specific public IP can be reached over the VPN, a static route has to be created. Unless your VPC network is connected to an on-premises network via Cloud VPN or Interconnect, you cannot connect to an instance that only has an internal IP address.

C is wrong. Feasible, but not fast and easy

D is correct.

E is wrong. Unless your VPC network is connected to an on-premises network via Cloud VPN or Interconnect, you cannot connect to an instance that only has an internal IP address.

For any further detail, please visit the following URLs:

https://cloud.google.com/compute/docs/instances/connecting-advanced#bastion_host

https://cloud.google.com/nat/docs/troubleshooting#and_other_google_services

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Question 27

Unattempted

Domain : Other

You are asked to create a global L7 load balancer in order to scale a set of Internet applications heavily used around the world.

Which are the tasks to be accomplished: (Select three)

- A. Add an HTTP firewalling rule allowing network access to the Backend VM instances 
- B. Create Managed Instance Groups with the VM instance configurations 
- C. Create a Network Load Balancer with backends to route requests to available instances
- D. Create an HTTP Load Balancer with backends to route requests to available instances 
- E. Create a Route Table
- F. Create an unmanaged Instance Groups

Explanation:

Correct Answers: A, B, D

A is correct. The firewall rules are needed to allow HTTP Internet requests

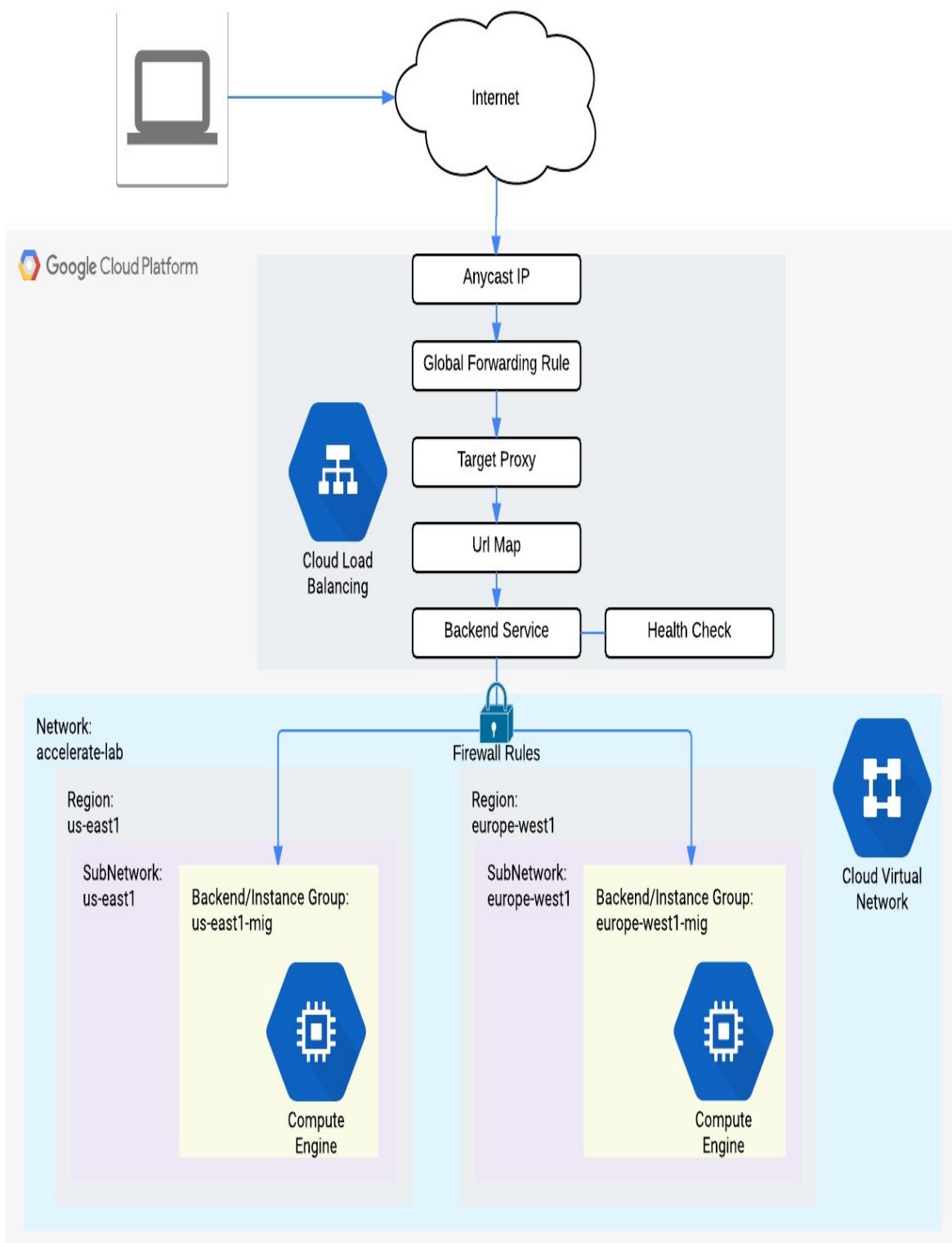
B is correct. Managed Instance Groups include the patterns for backend resources used by the HTTP Load Balancer. First Instance Templates, with the configuration for VMs, need to be created for each region. Next, for a backend in each region, a Managed Instance Group that references an Instance Template is to be set.

C is wrong. A Network Load Balancer is an L4 Load Balancer.

D is correct. The HTTP Load Balancer is an L7 distributed global Load Balancer capable of distributing load across several regions.

E is wrong. The standard Route Table is suitable for the task

F is wrong. Unmanaged Instance Groups are not scalable. They exist for legacy environments.



For more details, please check the URLs below:

<https://codelabs.developers.google.com/codelabs/cloud-networking-101/>

<https://cloud.google.com/load-balancing/docs/https/cross-region-example>

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Question 28**Unattempted**

Domain : Other

A tour company deals with sensitive data and must meet high compliance requirements. All the interactions regarding Customer Care Offices are stored with BigQuery and Cloud Storage. You have to give advice for protecting private data with a quick and managed solution. Which of the following is the best solution?

- A. Develop a Cloud Function internally that detects sensitive data and transfers data and records in a special vault
- B. Use DLP 
- C. Use Versioning to classify data
- D. Use PCI Data Security Standard compliance

Explanation:

Correct Answer: B

Cloud DLP can identify where sensitive data is stored, then use tools to redact those sensitive identifiers. Cloud DLP uses more than 90 predefined detectors to identify patterns, formats, and checksums, and de-identification techniques like masking, secure hashing, and tokenization to redact sensitive data, all without replicating customer data.

A is wrong. This solution is not at all quick and managed

B is correct. Cloud DLP is the perfect solution

C is wrong. Versioning doesn't protect sensitive data but preserves an old version of the Objects.

D is wrong. PCI Data Security Standard compliance, that is Payment Card Industry Data Security Standard (PCI DSS) compliance is only related to electronic payments. It sets the requirements for organizations and sellers to accept, store, process, and transmit cardholder data safely and securely during a credit card transaction.

For more details, please check the URLs below:

<https://cloud.google.com/blog/products/storage-data-transfer/scan-your-cloud-storage-buckets-for-sensitive-data-using-cloud-dlp>

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Domain : Other

You are attending a tech AWS meetup and the speaker is talking about Cloud Storage features.

You, as an experienced GCP Cloud Architect, notice that there are some inaccuracies. Please choose the correct statements (Select 2).

- A. Cloud Storage Object can be updated or appended
- B. It has Global consistency 
- C. There is not an archive and cheap Solution like AWS Glacier
- D. Objects may have a Retention Policy and can be versioned 

Explanation:

Correct Answers: B, D

A is wrong: Cloud Storage Object cannot be updated or appended. Objects are immutable, you cannot make incremental changes to objects, such as append operations or truncate operations. You may overwrite objects, so incremental updates can be achieved by rewriting an object with the desired updates.

B is correct: It has Global consistency. It is different from AWS because it has full consistency for all these operations: Read-after-write, Read-after-metadata-update, Read-after-delete, Bucket listing, Object listing and Granting access to resources

C is wrong: There is not an archive and cheap Solution like AWS Glacier. There is the ColdLine Storage, that is available within milliseconds. It is the low-cost, highly durable storage service for data archiving, online backup, and disaster recovery.

D is correct: Objects may have a Retention Policy and can be versioned. A retention period can be placed on a bucket. An object in the bucket cannot be deleted or overwritten until it reaches the specified age. **Object Versioning** can be enabled on a bucket in order to retain older versions of objects when they are deleted or overwritten. Object Versioning increases

storage costs, but this can be partially mitigated by configuring **Object Lifecycle Management** to delete older object versions.

For any further detail, please visit the following URLs:

<https://cloud.google.com/storage/docs/concepts>

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

<https://cloud.google.com/blog/products/storage-data-transfer/hdfs-vs-cloud-storage-pros-cons-and-migration-tips>

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Question 30

Unattempted

Domain : Other

You are a GCP Cloud Architect and have been asked to suggest the best method to serve a mostly static internet website for an international Company.

The requirements are: global accessibility, low costs, high availability, and performances.

You suggest to use Cloud Storage and give the following hints.

One of these hints is, sadly, wrong. Which one?

- A. You can store all your static assets on Cloud Storage
- B. It is better to use a new domain, such as mycompany.com
- C. It is possible to use naked Domains and https
- D. External calls with CORS are possible
- E. You may set caching parameters for increased performances
- F. Cloud Storage works as CDN, too 

Explanation:

Correct Answer: F

GCS cannot be used as CDN. For CDN, GCP has Cloud CDN as a separate service.

Link: <https://cloud.google.com/cdn>

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Question 31**Unattempted**

Domain : Other

Your company is planning a Data Lake with all the files, data, and information related to its activities. At the moment, the acquisition, cleaning and archiving of data is the first and only concern.

In a second time, you will set up the processing techniques to extract insights from all the data (Analytics, ML, Data Mart, Big Data processing).

What Services among the following are the best suited at the moment?(Select three)

- A. Cloud Storage Standard Class
- B. Cloud Storage Nearline Class
- C. Cloud Storage Coldline Class 
- D. Transfer Appliance and Service 
- E. Cloud Datastore
- F. Cloud DataPrep 

Explanation:

Correct Answers: C, D, F

A is wrong. Cloud Storage Standard Class: if the data is not to be used at the moment, the cheapest solution is the most appropriate

B is wrong. Cloud Storage Nearline Class: if the data is not to be used at the moment, the cheapest solution is the most appropriate

C is true. Cloud Storage Coldline Class: it is the cheapest solution and so the most appropriate

D is true. Transfer Appliance and Service: it is useful for uploading large amounts of data

E is wrong. Cloud Datastore is a NoSQL database, so out of scope at the moment

F is true. Cloud DataPrep. It could be useful for data transformation and cleaning before loading (excel to csv or avro, for example).

For any further detail, please visit the URLs below:

<https://cloud.google.com/solutions/build-a-data-lake-on-gcp>

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Question 32

Unattempted

Domain : Other

Your company has collected all its historical data in BigQuery. Most tables are structured on historical sales data and have a large number of fields, many of which are rarely examined. Almost all the queries target only current and previous years.

Older data are stored in tables with only statistical aggregates.

They asked you to improve this process, with the following guidelines:

Economicity

Ease of use

Security

The system is also going to be used by inexperienced users, so a special attention have to be cared for.

Which of these strategies do you consider appropriate (Choose 3)?

- A. Use federated Tables organized by timestamp and with mnemonic names
- B. Use Partitioned Tables 
- C. Create Views with a limited number of fields in a new Dataset 
- D. Create Views with a limited number of fields in the same Dataset
- E. Organize reference data produced by analysts with Cloud Storage and External Tables 
- F. Organize reference data produced by analysts with BigTables and External tables

Explanation:

Correct Answers: B, C, E

A is wrong. It would require a lot of hard work to organize the new structures every year. It is far much easier to use Partitioned Tables

B is correct. With Partitioned Tables, it is totally automatic to save data in such a way that the queries are faster and, above all, less expensive

C is correct. Views are also important because they can show only the required fields and computed data. In a different Dataset we can manage security in a better way, giving the correct rights to users

D is wrong. Views are also important because they can show only the required fields and computed data. In the same Dataset all users may access all the Data, with security and billing concerns.

E is correct. Analysts create new Data in a very easy way that may be used immediately by BigQuery

F is wrong. BigTable is a powerful NoSQL Database suitable for Big Data. Definitely, not the right choice for small reference data.

BigQuery is a fully managed, low cost, serverless, columnar and ANSI SQL data warehouse that can analyze terabytes to petabytes of data at blazing-fast speed.

Additional features:

Analyze geospatial data using familiar SQL with BigQuery GIS

ML models on large-scale structured or semi-structured data: BigQuery ML

Real-time interactive dashboarding with sub-second query latency using BigQuery BI Engine.

Transferring services and flexible data ingestion

Pay-for-what-you-use pricing

It doesn't use indexes, but only full scan searches. It is important because you will be charged for the amount of data processed for a query.

So, the use of Partitioned Tables and View is uttermost important.

BigQuery query editor

```

1 SELECT
2   country, product, year, subject, platform, revenue
3   FROM books_data
4 WHERE
5   product = "{$PRODUCT}" AND
6   year = "{$YEAR}" AND
7   revenue > "{$MIN_REVENUE}"
  
```

Query settings

Parameters

- PRODUCT: 'Gross Revenue'!A1
- YEAR: 'Gross Revenue'!B3
- MIN_REVENUE: 'Gross Revenue'!C3

Schema

A	B	C	D	E	F
country	product	year	subject	platform	revenue
Great Britain	books	2017	Educational	Hardcover	
Canada	books	2017	Suspense	Hardcover	
Great Britain	books	2017	Educational	Hardcover	
France	books	2017	Young Adult	Hardcover	
Canada	books	2017	SciFi	Hardcover	
Canada	books	2017	Suspense	Hardcover	
United States	books	2017	Educational	Hardcover	
Australia	books	2017	Educational	Hardcover	

Refresh 3,982,182 rows (only the first 10,000 rows will be shown) **Cancel** **Insert results**

For more details, please check the URLs below:

<https://cloud.google.com/bigquery/docs/partitioned-tables>

<https://cloud.google.com/bigquery/external-table-definition>

<https://cloud.google.com/bigquery/external-data-sources>

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Question 33

Unattempted

Domain : Other

Your company has collected all its historical data in BigQuery and Documents in Cloud Storage.

Most BigQuery tables are structured on historical sales data and have a large number of fields, many of which are rarely examined.

Almost all the queries target only current and previous years and they have to select data by product families and sale regions.

Older data is stored in tables with only statistical aggregates.

They asked you to improve this process, with the following guidelines:

Economicity

Ease of use

Security

The system is going to be used less experienced users, so a special attention have to be cared for.

Which one of the following strategies would you consider appropriate?

- A. Leave the Organization untouched, It is just perfect
- B. Use BigTables with Views
- C. Use BigQuery Clustered tables with authorized views 
- D. Cloud Spanner with authorized views
- E. Use Cloud Firebase

Explanation:

Correct Answer: C

A is wrong. The key requirement that you need to meet is to select data by product families and sale regions

B is wrong. **BigTable** is a NoSQL database, not an Analytics System

C is correct. Clustering Partitioned Tables with Product Type and Sale Region you will gain in speed and spare money.

D is wrong. **Cloud Spanner** is a global SQL database and not an Analytics System

E is wrong. **Cloud Firestore** is a NoSQL database and not an Analytics System

BigQuery is a fully managed, low cost, serverless, columnar and ANSI SQL data warehouse that can analyze terabytes to petabytes of data in blazing-fast speeds.

Additional features:

Analyze geospatial data using familiar SQL with BigQuery GIS

ML models on large-scale structured or semi-structured data: BigQuery ML

Real-time interactive dashboarding with sub-second query latency using BigQuery BI Engine.

Transferring services and flexible data ingestion

Pay-for-what-you-use pricing

It doesn't use indexes, but only full-scan searches. It is important because you will be charged for the amount of data processed for a query.

So, the use of Partitioned Tables, Clustering Tables, and View are uttermost important.

Clustering Tables improve the performance of queries when filter clauses based on the contents of clustered columns are used.

When data is written to a clustered table by a query job or a load job, BigQuery sorts the data using the values in the clustering columns. These values are used to organize the data into multiple blocks in BigQuery storage. When you submit a query containing a clause that filters data based on the clustering columns, **BigQuery uses the sorted blocks to eliminate scans of unnecessary data.**

Similarly, when you submit a query that aggregates data based on the values in the clustering columns, performance is improved because the sorted blocks find out rows with similar values.

For any further detail, please check the URLs below:

<https://cloud.google.com/bigquery/docs/clustered-tables>

<https://cloud.google.com/bigquery/docs/authorized-views>

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Question 34

Unattempted

Domain : Other

Your company has collected all its historical data in BigQuery and Documents in Cloud Storage.

It has just been completed, the organization of structured Data with your help; now it is time to cope with documents.

Many documents are originated from papers, so they are image files.

Management wants to find a way to quickly classify docs. The actual organization will be perfectioned with use and practice.

You are a Cloud Architect with a basic knowledge of Machine Learning. There are no AI experts in the Company.

According to requirements, which tool is the best, for detecting text from image files?

- A. Develop a complete solution with Tensorflow
- B. AI Platform Data Labeling Service
- C. Vision API
- D. BigQuery ML
- E. Vision AI

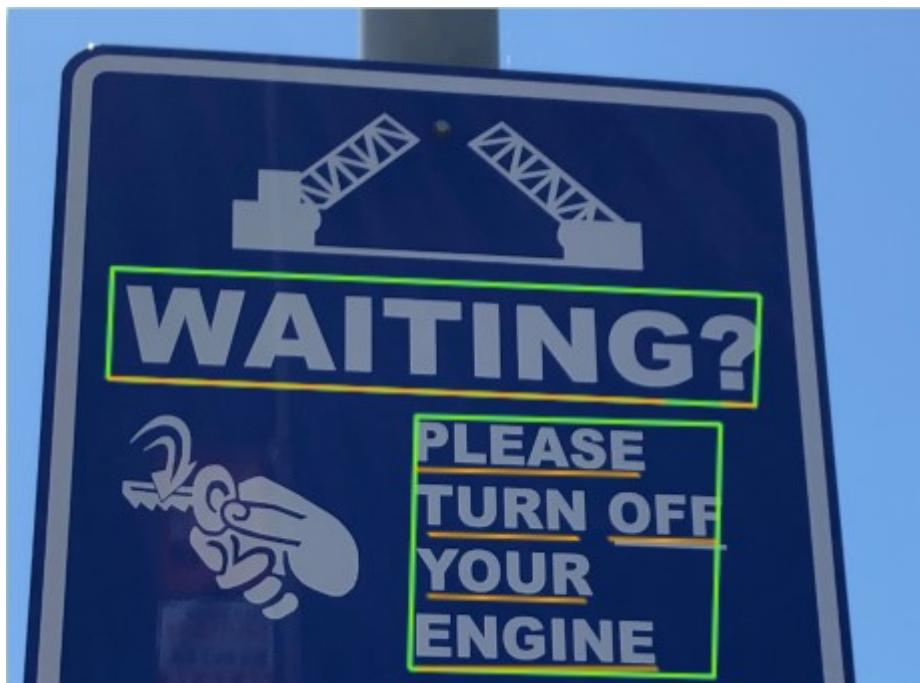
Explanation:

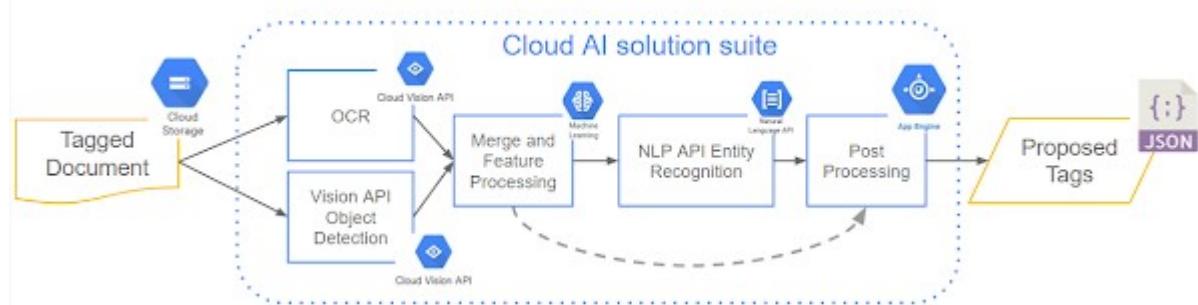
Correct Answer: C

The **Vision API** can detect and extract text from images. There are two annotation features that support optical character recognition (OCR):

TEXT_DETECTION detects and extracts text from any image.

DOCUMENT_TEXT_DETECTION also extracts text from an image, but the response is optimized for dense text and documents. The JSON includes page, block, paragraph, word, and break information.





For more details, please visit the following links:

<https://cloud.google.com/vision/docs/ocr>

<https://cloud.google.com/data-labeling/docs/>

<https://cloud.google.com/vision/>

<https://cloud.google.com/automl/>

<https://cloud.google.com/blog/products/ai-machine-learning/how-to-implement-document-tagging-with-automl>

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Question 35

Unattempted

Domain : Other

A large financial company wants to collect and analyze (both in real-time and in batches) a huge amount of stock quotes and historical movements. This data must be processed as follows:

It is necessary to calculate a complete set of statistical parameters, even in streaming mode

A series of forecasting models, currently under development, is going to be set up and backtested

The response times have to be, for every type of operation, in milliseconds and with linear scalability.

Which of the following product groups would you recommend?

- A. Pub/sub and Cloud Spanner
- B. Cloud Dataproc
- C. Composer, Cloud Dataprep, and Cloud Dataview

D. Pub/Sub, Cloud Dataflow, and BigTable

E. Cloud Task and Cloud Datastore

Explanation:

Correct Answer: D

A is wrong. Pub/Sub is correct but Cloud Spanner is a global SQL Database with outstanding integrity and consistency, but don't have milliseconds performances. We don't need (and want to pay) all these features.

B is wrong. Dataproc is the Hadoop solution in GCP. It doesn't really solve the real-time requirement that hasn't milliseconds performances.

C is wrong. Cloud Dataprep is a tool for Data correction and refining (not required in the question).

D is correct. It is the only solution that meets all requirements.

E is wrong. Cloud Datastore is a performant NoSQL Database, inexpensive but not suitable for Big Data and realtime processing.

Cloud Pub/Sub is a serverless product for stream analytics and event-driven computing. You can send and receive messages between independent applications and transmit data across projects and applications running on the cloud, on-premise, or hybrid environments. Cloud Pub/Sub is perfect to decouple systems and components hosted on GCP or elsewhere on the internet. It provides "at least once" delivery at low latency with on-demand scaling to **tens of millions** of messages per second.

With Cloud Pub/Sub, data engineers can:

Scale without provisioning, partitioning, or load isolation

Expand applications and pipelines to new regions

Enrich, deduplicate, order, aggregate, and land events using Cloud Dataflow

Mix real-time and batch processing via Cloud Pub/Sub's durable storage

Cloud Dataflow is a fully managed service for transforming and enriching data in real-time and batch stream.

Cloud Dataflow has a serverless approach that saves money because you only pay for what you use. Plus, Cloud Dataflow not only works with Google's **ingestion**, **data warehousing**, and **machine learning** products but also third-party tools like Apache Spark and Apache Beam.

<https://cloud.google.com/dataflow/>

Cloud Bigtable is a NoSQL database service for use cases where low latency reads and high throughput writes, scalability, and reliability are critical.

Main features:

Now it is global (used to be regional)

It offers consistent sub-10ms latency

It is ideal for Ad Tech, Fintech, and IoT

It offers a storage engine for machine learning applications

It provides easy integration with open-source big data tools

For any further detail, please visit the following URLs:

<https://cloud.google.com/pubsub/>

<https://cloud.google.com/dataflow/>

<https://cloud.google.com/bigtable/>

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Question 36

Unattempted

Domain : Other

You are working for a major Bank that operates worldwide and has recently acquired a small Hong Kong financial institution that offers truly innovative services.

The IT Management is planning to migrate these apps to make them global and with a much larger number of loyal users.

These systems use a mySQL Database which, while preserving data integrity and consistency, is absolutely inadequate for the new scope.

Which of the following solutions would you recommend?

- A. Cloud SQL with Postgres e Memory and MemoryStore
- B. Cloud Spanner 
- C. Cloud Firestore
- D. Cloud SQL with MS SQL Server
- E. Cloud Datastore

Explanation:

Correct Answer: B

A is wrong: Cloud SQL is not global

B is correct: it meets all the requirements (see the main features below)

C is wrong: Cloud Firestore is not global and it is a NoSQL DB

D is wrong: Cloud SQL is not global

E is wrong: Cloud Datastore is not global and it is a NoSQL DB

A small recap of the targeted technologies:

Cloud Spanner is a mission-critical, scalable relational database service, built to support transactions, strong consistency, and high availability across regions and continents.

Main features:

scalable,

enterprise-grade,

globally-distributed,

combine the benefits of relational database structure with a non-relational horizontal scale

industry-leading 99.999% availability SLA

no planned downtime

enterprise-grade security.

For more details, please visit the link:

<https://cloud.google.com/spanner/>

Cloud SQL is a fully-managed database service that offers to set up, maintain, manage, and administer your relational **PostgreSQL, MySQL, and SQL Server** databases in the cloud.

Main features:

high performance and good scalability (not linear).

database infrastructure for applications running anywhere.

Regional with multi-regional Backups.

Live migration

High availability with continuous health-checking and automatic failover

For more details, please visit the link: <https://cloud.google.com/sql/>

Cloud Firestore is a fast, fully managed, serverless, cloud-native NoSQL document database that simplifies storing, syncing, and querying data for your mobile, web, and IoT apps at a global scale.

Cloud Firestore is the next generation of Cloud Datastore.

Main features:

ACID transactions

Datastore mode

Regional (multi-zone) with multi-region replication, if needed

Automatic horizontal scaling in and out

Realtime Database

For more details, please visit the link: <https://cloud.google.com/firestore/>

Cloud Datastore is a highly-scalable NoSQL database for your applications. Cloud Datastore automatically handles sharding and replication

Main features:

ACID transactions

Regional with multi-region replication

Regional (multi-zone) with multi-region replication, if needed

It will be replaced by Firestore

For more details, please visit the link: <https://cloud.google.com/datastore/>

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Question 37

Unattempted

Domain : Other

You are the founder-CIO of a startup that provides tourism services in Europe.

Your apps load or query lots of data, with peak times. It also seasons and stores the activities and preferences of individual users.

It is often used with mobile apps and devices.

You have a strong need to keep costs very low and to avoid recurring costs, but you want the system to be snappy fast and easy to use.

Which type of database would you choose to use?

- A. Cloud Spanner
- B. Cloud Storage
- C. Cloud SQL MySQL
- D. Cloud Datastore/Firebase 
- E. Cloud SQL Postgres
- F. Cloud SQL Server

Explanation:

Correct Answer: D

The best database with these requirements is the Datastore/ Firestore mode. Cheap, Fast and realtime Database feature is really useful for mobile users.

A is wrong: It is a global and expensive Service.

B is wrong: It is not a Database

C is wrong: Cloud SQL, in any flavor, don't have linear scalability and it is not so cheap

D is correct: It meets all the requirements.

E is wrong: Cloud SQL, in any flavor, don't have linear scalability and is not so cheap

F is wrong: Cloud SQL, in any flavor, don't have linear scalability and is not so cheap

Cloud Firestore is a fast, fully managed, serverless, cloud-native NoSQL document database that simplifies storing, syncing, and querying data for your mobile, web, and IoT apps at global scale.

Cloud Firestore is the next generation of Cloud Datastore.

Main features:

ACID transactions

Datastore mode

Regional (multi-zone) with multi-region replication, if needed

Automatic horizontal scaling in and out

Realtime Database

For more details, please visit the following links:

<https://cloud.google.com/datastore/>

<https://cloud.google.com/firestore/>

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Question 38

Unattempted

Domain : Other

Your team has created a set of applications that will run in GCP. IT Management wants to activate and standardize a simple but effective security system. You have prepared a list of possibilities and features that you can use. You realize that some choices must be discarded

because they are not safe enough or even wrong.

What solutions would you recommend at the end? (Choose 3)

- A. Google groups for each category of users with associated roles
- B. Service Accounts related to your applications 
- C. G Suite or Cloud Identity domains with associated roles
- D. Service Accounts related to your VMs 
- E. Service Accounts related to your K8s Clusters 

Explanation:

Correct Answers: B, D, E

A is wrong. Feasible, but not advisable. Burdensome and difficult to maintain. Works properly only for internal apps.

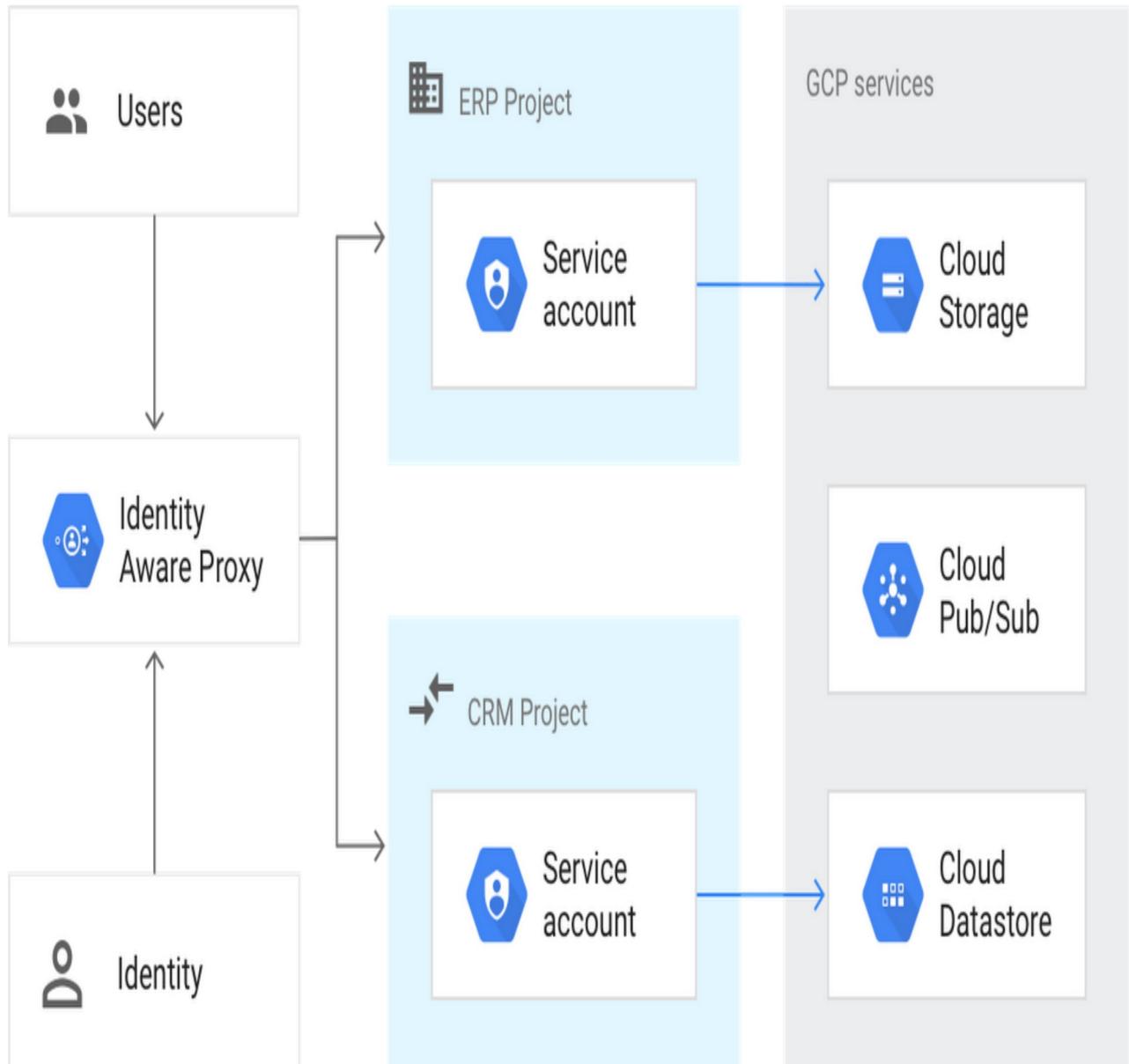
B is correct. You can authorize users via Cloud Identity-Aware Proxy (IAP). They do not require direct access to the underlying GCP resources—just to the web app that utilizes the GCP resources.

C is wrong. Feasible, but not advisable. Burdensome and difficult to maintain.

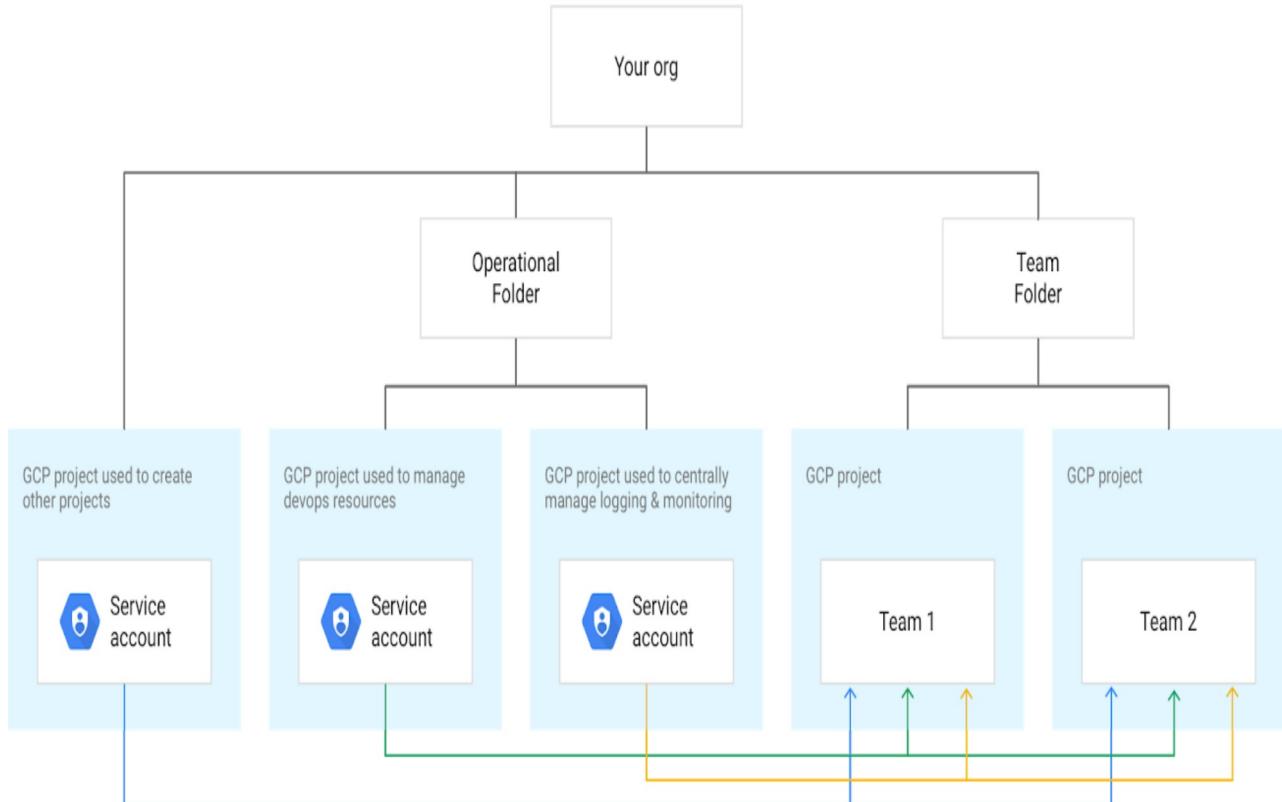
D is correct. You create the basic Service Accounts and link them to the VMs. So, users that have access to the VM, inherit all the authorizations needed

E is correct. Associating Service Accounts to your Cluster

Service Accounts related to your applications



Service Accounts related to your VMs



For more details, please visit the following links:

<https://cloud.google.com/iam/docs/overview>

<https://cloud.google.com/kubernetes-engine/docs/tutorials/authenticating-to-cloud-platform>

<https://cloud.google.com/blog/products/identity-security/understanding-gcp-service-accounts-three-common-use-cases>

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Question 39

Unattempted

Domain : Other

Your team has created a set of applications that will run in GKE Clusters. IT Management wants to activate and standardize a simple but effective security system. You have prepared a list of possibilities and features that you can use. You realize that some choices must be discarded because they are not safe enough or even wrong.

Which solutions would you recommend? (Select 3)

- A. In the cluster, the nodes will be assigned on internal RFC 1918 IP addresses only 
- B. Use Service Accounts and store keys in Configuration Files
- C. In the cluster, you have to assign public IP addresses to the Master nodes
- D. Use Service Accounts and store the keys as a Kubernetes secret 
- E. Use Workload Identity 

Explanation:

Correct Answers: A, D, E

A is correct. It is the most advisable way to build private clusters that can use an HTTP(S), an internal or a network load balancer to accept incoming traffic

B is wrong. You have to use Service Accounts, but you cannot expose keys in clear text inside Configuration Files

C is wrong. It is always possible to use private clusters, that can use an HTTP(S), an internal or a network load balancer to accept incoming traffic

D is correct. It is the basic way to go, but now there is a better way: Workload Identity

E is correct. It is the new security method: once you configure the relationship between a Kubernetes service account and a Google service account, any workload running as the Kubernetes service account automatically authenticates as the Google service account while accessing Google Cloud APIs.

Workload Identity, is the new way for GKE applications to authenticate and consume other Google Cloud services.

It works by creating a relationship between Kubernetes service accounts and Cloud IAM service accounts, so you can use Kubernetes-native concepts to define which workloads run as which identities, and permit your workloads to automatically access other Google Cloud services, all without having to manage Kubernetes secrets or IAM service account keys.

For any further detail, please refer to the URLs below:

<https://cloud.google.com/kubernetes-engine/docs/how-to/workload-identity>

<https://cloud.google.com/kubernetes-engine/docs/concepts/security-overview>

<https://cloud.google.com/kubernetes-engine/docs/tutorials/authenticating-to-cloud-platform>

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Question 40**Unattempted**

Domain : Other

You are working for an international company that has many projects on various platforms. These projects are executed either in GCP or in AWS. They have many inter-relationships and there is the involvement of many teams related to development, staging, and production environments. Your job is to find the best way to organize these systems.

Which solution would you recommend?

- A. Stackdriver Monitoring, organized for project
- B. CloudWatch.
- C. Cloud Audit
- D. Stackdriver Workspaces and Groups 
- E. Stackdriver Profiling

Explanation:

Correct Answer: D

A is wrong. Stackdriver Monitoring is the right tool, but with many projects and teams it could be hard to organize all the activities one by one.

B is wrong. CloudWatch is the monitoring tool of Amazon Web Services. It may be a solution only for AWS projects.

C is wrong. Cloud Audit is part of Stackdriver Logging and is aimed to store, search, analyze, monitor, and alert on just log data and events from Google Cloud Platform and Amazon Web Services (AWS). We need a complete solution, not only logs.

D is correct. Stackdriver Workspaces can wholly track every GCP project as well as any Amazon Web Services (AWS) accounts that you want to monitor; it is accessed through Stackdriver Monitoring. Inside Workspaces, Stackdriver Groups tool organizes groups of resources such as virtual machine (VM) instances, databases, and load balancers to be monitored as a single entity. Groups can be based on names, tags, regions, applications, and other criteria.

E is wrong. **Stackdriver Profiling** is a profiling tool for apps; it analyzes the performance of CPU or memory-intensive functions executed across an application.

For any further detail, please refer to the URLs below:

<https://cloud.google.com/monitoring/workspaces/>

<https://cloud.google.com/monitoring/groups/>

<https://cloud.google.com/blog/products/management-tools/using-stackdriver-workspaces-help-manage-your-hybrid-and-multicloud-environment>

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Question 41

Unattempted

Domain : Other

Your company has a set of IT teams related to the development, staging, and production environments. As a Cloud Architect, you have been asked to introduce systems that help you better organize the test and management processes for any coding/ setup error and performance issue related to the design of applications.

Which are the best strategies and products among the following? (Choose 4)

- A. **Cloud Deployment Manager**
- B. **Stackdriver Debugger** 
- C. **Cloud Shell**
- D. **Stackdriver Profiler** 
- E. **Stackdriver Trace** 
- F. **Stackdriver Error Reporting** 

Explanation:

Correct Answers: B, D, E, F

A is wrong. **Cloud Deployment Manager** is a tool for managing resources in a declarative format. So, it is uniquely related to infrastructure.

B is correct. **Stackdriver Debugger** Let's inspect the state of an application, at any code location, without stopping or slowing down the running app. It has a user interface similar to that of the popular Chrome Devtools.

C is wrong. **Cloud Shell** is just a shell environment for managing resources hosted on the Google Cloud Platform. Very handy for system administration.

D is correct. **Stackdriver Profiler** is a statistical, low-overhead profiler that continuously gathers CPU usage and memory-allocation information from your production applications. So, it meets our requirements because it helps to identify the parts of the application consuming the most resources and the performance characteristics of the code.

E is correct. **Stackdriver Trace** is a tracing system that collects latency data and displays it in near real-time in the Google Cloud Platform Console.

F is correct. **Stackdriver Error Reporting** aggregates and displays errors produced in your running cloud services.

With this suite of products it is possible to control and manage the operation and performance of all the Cloud applications.

For any further detail, please visit the following URLs:

<https://cloud.google.com/debugger/>

<https://cloud.google.com/profiler/>

<https://cloud.google.com/trace/>

<https://cloud.google.com/error-reporting/>

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Question 42

Unattempted

Domain : Other

You are a consultant for a client company and the management wants to migrate its systems to the cloud.

The customer is concerned about cost control. They send you communication with a series of hypotheses and questions that you must solve.

Which of the required possibilities are correct? (Choose 3)

- A. Is it possible to control only all your Google Cloud Platform charges?

- B. Is it possible to create separate budgets for projects and resources? 
- C. Is it possible to have notifications? 
- D. The alerts, if any, are set only when the limit is reached?
- E. Is there a way to have a programmatic interface? 

Explanation:

Correct Answers: B, C, E

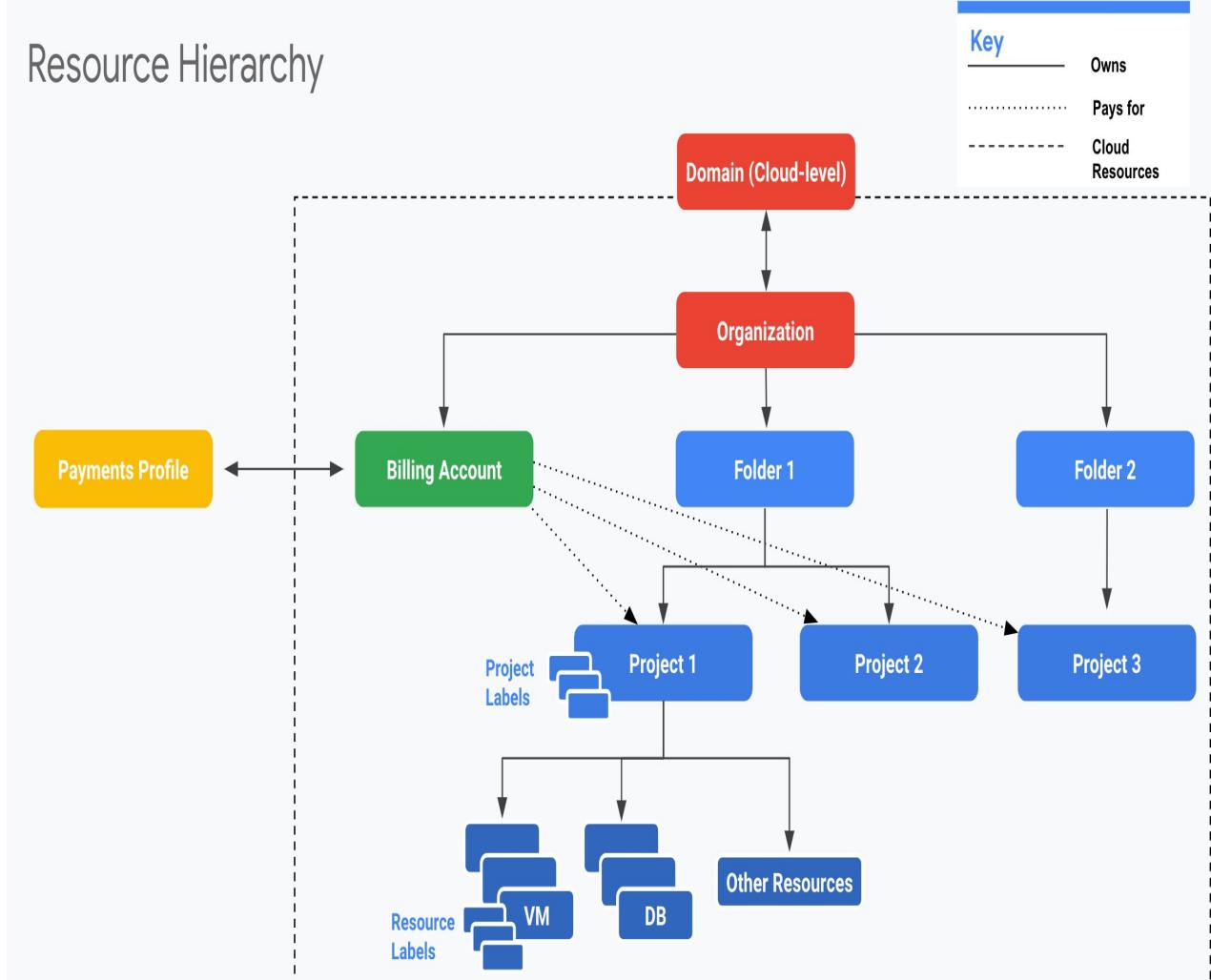
A is wrong. You may control all your billing account or the set of projects that you choose, and/or one or more products.

B is correct. You may organize the set of resources to monitor in many ways.

C is correct. When costs (actual costs or forecasted costs) exceed a percentage of your budget, based on the rules you set, alert notifications are sent to billing administrators and billing account users (that is, every user is assigned a billing role either roles/billing.admin or roles/billing.user).

D is wrong. When you first create a budget, the default alert thresholds are set at 50%, 90%, and 100% of the budget amount, calculated against Actual spending. You may change them as you want.

E is correct. [Google Cloud Billing](#) API is used for reporting and billing management (activation and deactivation)



For any further detail, please refer to the URLs below:

<https://cloud.google.com/billing/docs/how-to/budgets>

<https://cloud.google.com/billing/docs/>

<https://cloud.google.com/billing/v1/getting-started>

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Question 43

Unattempted

Domain : Other

In your company it is now necessary for auditors and control managers to be able to access and query the IT systems, in a simple way, for both the administrative functions and for data access.

IT management has the problem of providing simple access, organized by historical period. At

the same time, they need to restrict costs.

Which solution would you recommend?

- A. Let auditors and control managers use Stackdriver Logging
- B. Export selected logs to Cloud Storage
- C. Export selected logs to Cloud BigQuery 
- D. Develop an interface application for accessing log data

Explanation:

Correct Answer: C

A is wrong. It is not easy and simple. Auditors would not be able to search and analyze data the way they would need it.

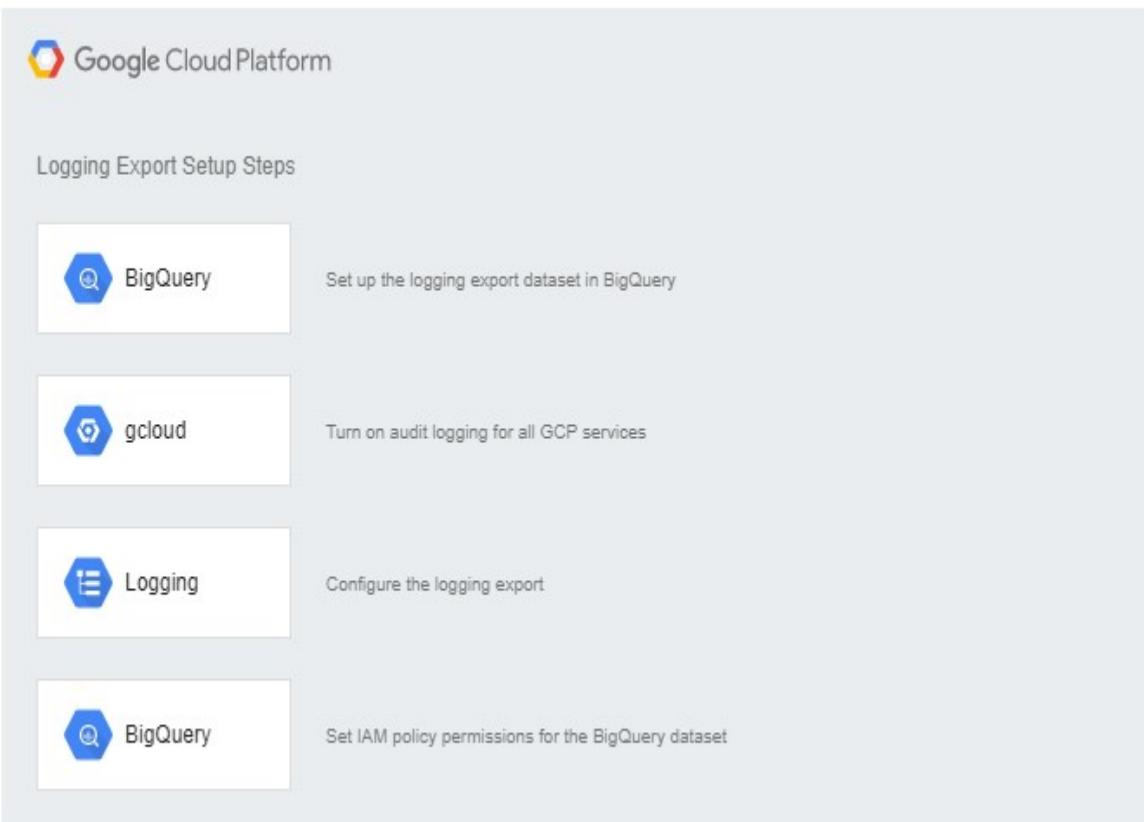
B is wrong. Cloud Storage is not searchable at the granular level required.

C is correct. It will be easy to query and organize the Log information by historical period

D is wrong. It is neither easy nor simple and economical

You may configure log export and deliver them to a dataset in BigQuery, granting permissions to limit access.

Date-partitioned tables and expiration dates could help limit query costs by reducing the amount of data scanned as a part of queries and might keep auditing the logging data for the required period and then delete it.



For any further detail, please refer to the URLs below:

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

<https://cloud.google.com/solutions/exporting-stackdriver-logging-for-security-and-access-analytics>

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Question 44

Unattempted

Domain : Other

You're reviewing an application that sometimes executes some SQL queries with unacceptable response times.

You need to find a way to scale the problem and identify the causes.

Which of the following methods would you suggest?

- A. Extract the queries from the application code and try to identify the slowest ones

- B. Use Cloud Debugger
- C. Use Cloud Trace
- D. Use Stackdriver Logs and set up a metric ✓
- E. Look at the Stackdriver Error Reporting dashboard

Explanation:

Correct Answer: D

A is wrong. It is a manual operation, long and heavy, and the problem may be related to other elements and factors related to the application

B is wrong. Cloud Debugger checks the code, and you already know the queries with problems

C is wrong. Cloud Trace collects latency data from your applications and displays it in the Google Cloud Platform Console. You already know that this kind of problem exists.

D is correct. You can set a metric that accurately identifies the log lines related to queries. You can also create an alert that can promptly alert you when the problem is displayed, so you can review all the related logs and information at the right time.

E is wrong. There are no errors, so this is a useless operation.

The screenshot shows the Stackdriver Logging interface. On the left, there's a sidebar with options: 'Logs Viewer' (selected), 'Logs-based metrics', 'Exports', and 'Logs ingestion'. The main area has a header with 'CREATE METRIC', 'CREATE EXPORT', and navigation icons. Below is a search bar with placeholder 'Filter by label or text search'. A dropdown menu shows 'Cloud SQL Database, jwlee-myproject-01:clou...' and a selected filter 'cloudsql.googleapis.c...'. Other filters include 'Any log level' and 'Last hour'. The main table lists log entries from '2019-06-27 11:32:26.700 JST' to '2019-06-27 11:32:34.669 JST'. The first entry is expanded, showing details like 'SET timestamp=1561002734;'. At the bottom of the expanded view are 'OK' and 'Cancel' buttons.

For more details, please refer to the following URLs:

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

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

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Question 45

Unattempted

Domain : Other

Case Study Mountkirk Games 1

Mountkirk Games collects a huge amount of player telemetry data and game events.

The main task is to capture, transform, and archive millions of messages on system performance in real time, to analyze player behavior and for gaming purposes.

It has to process incoming data on the fly directly from the game servers, so data must be available very quickly.

As the system scales, it is important to ensure that data is not lost due to processing backlogs. Therefore, it was thought to use and create overload, the information that the system already produces and that is in JSON format.

How would you acquire and collect information?

- A. Cloud Composer
- B. Pub/Sub 
- C. Cloud Task
- D. Cloud Functions
- E. Cloud SQL

Explanation:

Correct Answer: B

Cloud Pub/Sub is the perfect product for this project: you can send and receive messages between independent applications and transmit data across projects and applications running on cloud, on-premise, or hybrid environments. Cloud Pub/Sub is perfect to decouple systems and components hosted on GCP or elsewhere on the internet. It provides "at least once" delivery at low latency with on-demand scaling **to tens of millions of messages per second**.

A is wrong. Cloud Composer is a managed workflow orchestration. So, different processing

are often related to each other

B is correct.

C is wrong. Cloud Tasks manage queues, but within an Application, so its scalability cannot meet requirements. It is used with App Engine.

D is wrong. Cloud Functions are the small pieces of code executed in an event driven mode. Natively, it doesn't handle messages.

E is wrong. It a managed Database Service. Its scalability cannot meet requirements, definitely.

For any further detail, please refer to the URL below:

<https://cloud.google.com/pubsub/>

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Question 46

Unattempted

Domain : Other

Case Study Mountkirk Games 2

You're working for a gaming company that collects a huge amount of player telemetry data and game events.

The main task is to capture, transform and archive in real time millions of messages on system performance, for analysis on player behavior and for gaming purposes.

Data must be available very quickly. Therefore it was thought to use, also in order not to create overload, the information that the system already produces and that are in Json format.

The archival time series database service selected must allow queries to access at least 10 TB of historical data

How do you process the collected information in order to be used real-time and batch and which storage solution would you choose?

- A. Cloud Dataflow and Cloud Bigtable 
- B. Cloud Dataproc and Cloud Storage
- C. Cloud Functions and Cloud Spanner
- D. Data Catalog and Cloud Datalab
- E. Cloud Dataprep and Cloud Data Fusion

Explanation:

Correct Answer: A

A is correct. **Cloud Dataflow** is the only product that can process streaming and batch data at the same time. In addition, there are ready to use Templates, useful for streaming data transformation. Look at this link for any further detail:

<https://github.com/GoogleCloudPlatform/DataflowTemplates>

Cloud Bigtable provides a massively scalable NoSQL database suitable for low-latency and high-throughput workloads.

B is wrong. **Cloud Dataproc** is a service for running Apache Spark and Apache Hadoop clusters. It is not completely serverless and has limited support for streaming data.

Cloud Storage is an object storage solution that allows worldwide storage and retrieval of any amount of data at any time. It is not a Database.

C is wrong. **Cloud Functions** is a serverless execution environment for building and connecting cloud services. You write simple, single-purpose functions that are attached to events released from your cloud infrastructure and services. Also, in this case, there is no direct support for streaming data. In any case, you have to write all your code.

Cloud Spanner is a powerful, mission-critical, scalable relational database service, built to support transactions, strong consistency, and high availability across regions and continents. It doesn't have the required speed of Bigtable.

D is wrong. **Data Catalog** is a fully managed and scalable metadata management service that helps to discover, manage, and understand all their data in Google Cloud. So, it performs a completely different task. The same goes for **Cloud Datalab** which is a visual tool created to explore, analyze, transform, and visualize data already stored somewhere and build machine-learning models on Google Cloud Platform.

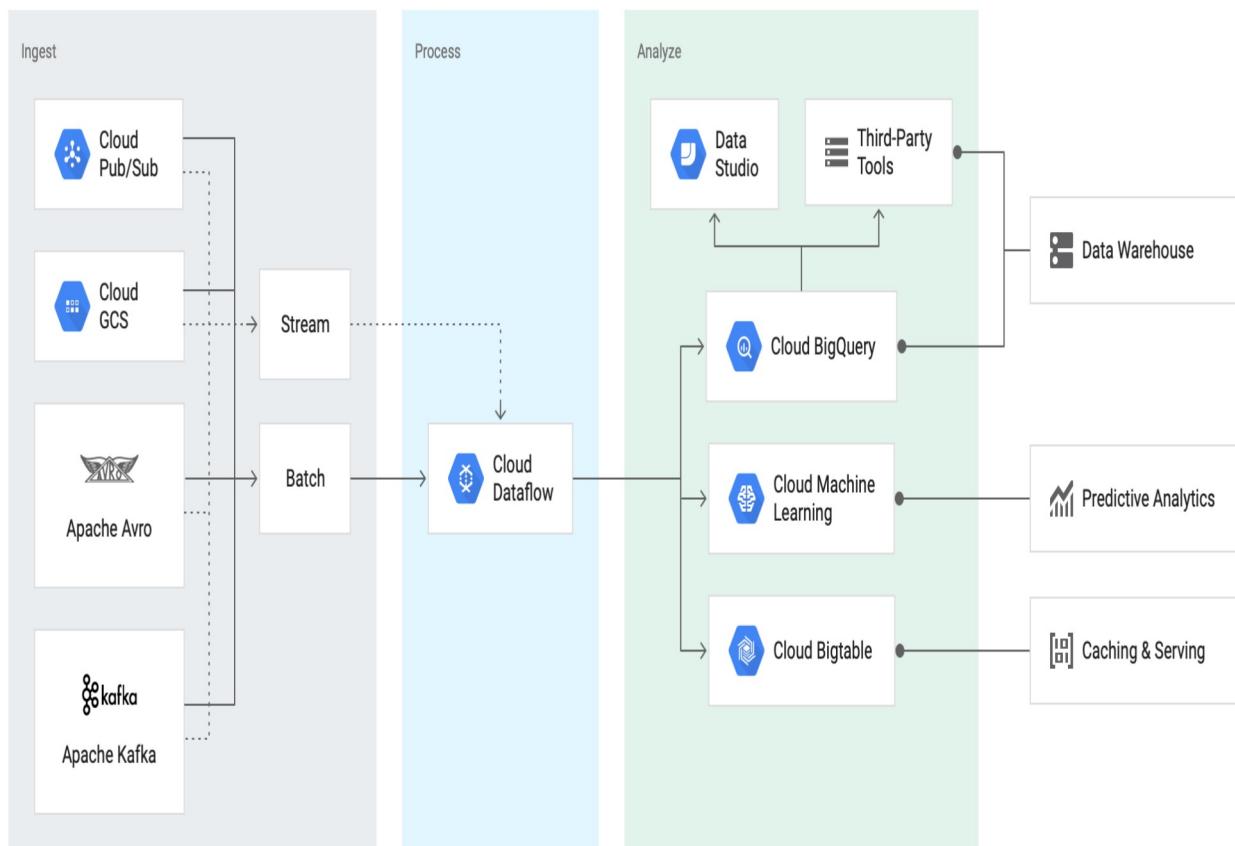
E is wrong. **Cloud Dataprep** is a tool for cleaning and preparing structured and unstructured data for analysis. **Cloud Data Fusion** is a fully managed, cloud-native data integration service that helps users efficiently build and manage ETL/ELT data pipelines. With a graphical interface and a broad open-source library of preconfigured connectors and transformations, Data Fusion shifts an organization's focus away from code and integration to insights and action. The problem, even in this case, is that there is no direct support for streaming data.

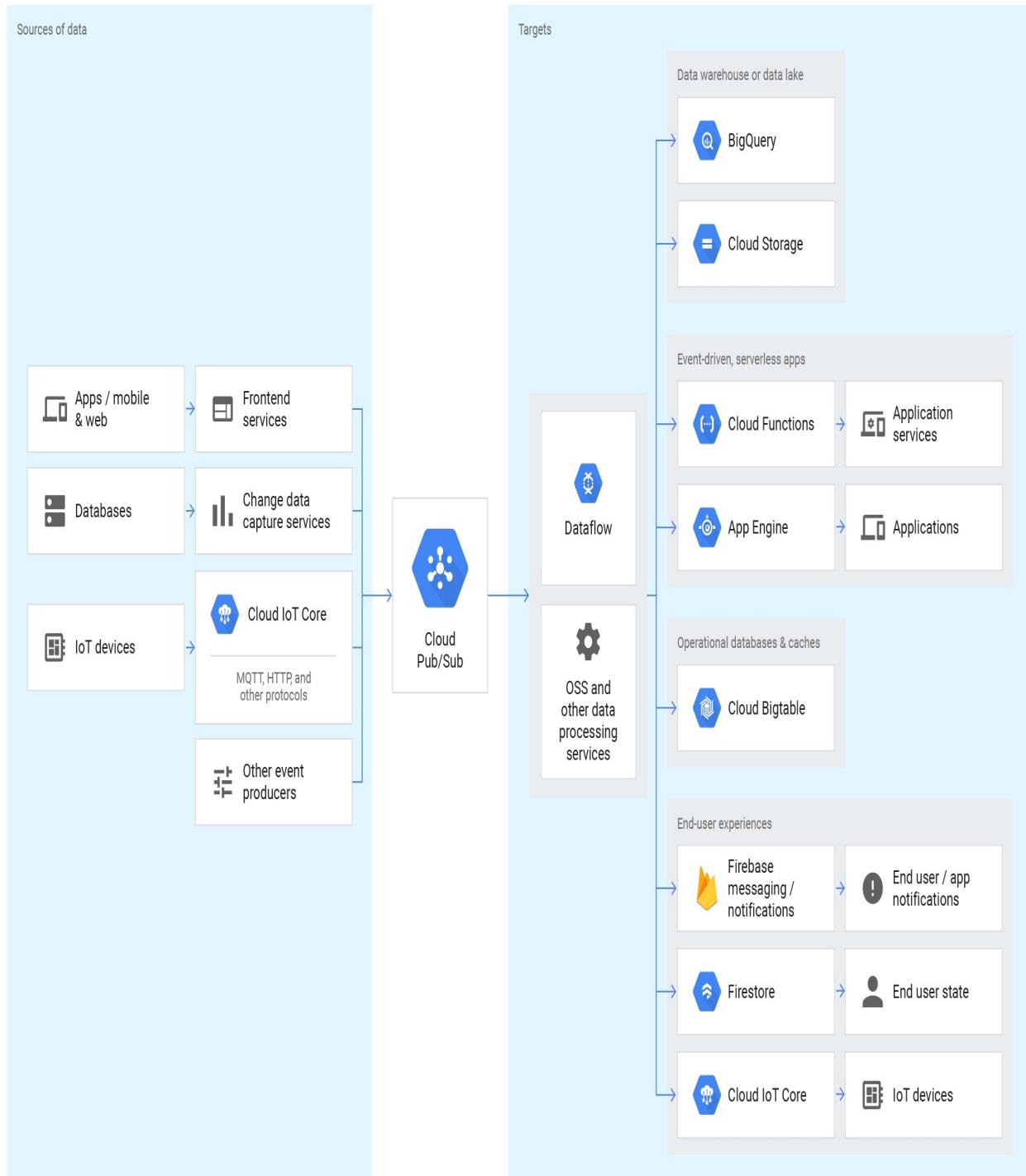
For any further detail, please visit the following URLs:

<https://cloud.google.com/dataflow/docs/>

<https://github.com/GoogleCloudPlatform/DataflowTemplates>

<https://cloud.google.com/bigtable/docs/>




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Question 47
Unattempted

Domain : Other

Case Study Dress4Win 1

Dress4Win business is growing strongly. The management wants to accelerate cloud migration in the most convenient and scalable way. They did a test with GCE and it went well. Now they also want to evaluate GKE before making the final decision in order to optimize the price / performance ratio.

What actions would you recommend for this general test? (Choose 3)

- A. Use Cloud SQL mySQL Service 
- B. Install the J2EE app directly on a K8 cluster
- C. Setup a Pod for the Application Server and start using Cloud Build 
- D. Setup a Docker Container for the Database
- E. Use DB Server inside the Region
- F. Use DB Server with high availability 

Explanation:

Correct Answers: A,C,F

A is correct. **Cloud SQL** is a fully-managed database service that sets up, maintains, manages, and administers relational PostgreSQL, MySQL, and SQL Server databases in the cloud. Minimum effort and great scalability fully preserve the data integrity.

B is wrong. It is important to start using an organization for maintenance and deployment

C is correct. **Cloud Build** is a service that executes your builds, importing source code from repositories or cloud storage spaces, execute a build to your specifications, and produce Docker containers or Java archives. You need such a tool to start with CI/CD.

D is wrong. Docker containers in K8s are easily scalable but Databases Instances cannot be replicated without data integrity concerns. It is better to use the Cloud SQL Service.

E is wrong. Cloud SQL Service is Regional with the possibility of multi-regional high availability.

F is correct. Service is Regional with the possibility of multi-regional Backups and high availability with continuous health-checking and automatic failover.

For more details, please check the URLs below:

<https://cloud.google.com/sql/>

[Continuous Deployment with Cloud Build](#)

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Question 48**Unattempted**

Domain : Other

Case Study Dress4Win 2 Support failover of the production environment to cloud during an emergency

After several tests, you are developing the final plan for Disaster Recovery and hot failover of the on-premises production environment on the Cloud. You have planned network, storage and infrastructure.

Which of the following actions would be in your final plan? (Choose 3)

- A. Prepare a custom image of the DB server by stopping the instance. 
- B. Prepare a snapshot of the DB without stopping the instance
- C. Configure replication between your on-premises database server and the Cloud DB 
- D. Setup the Cloud VPN and DNS 
- E. Setup the Cloud CDN

Explanation:

Correct Answers: A, C, D

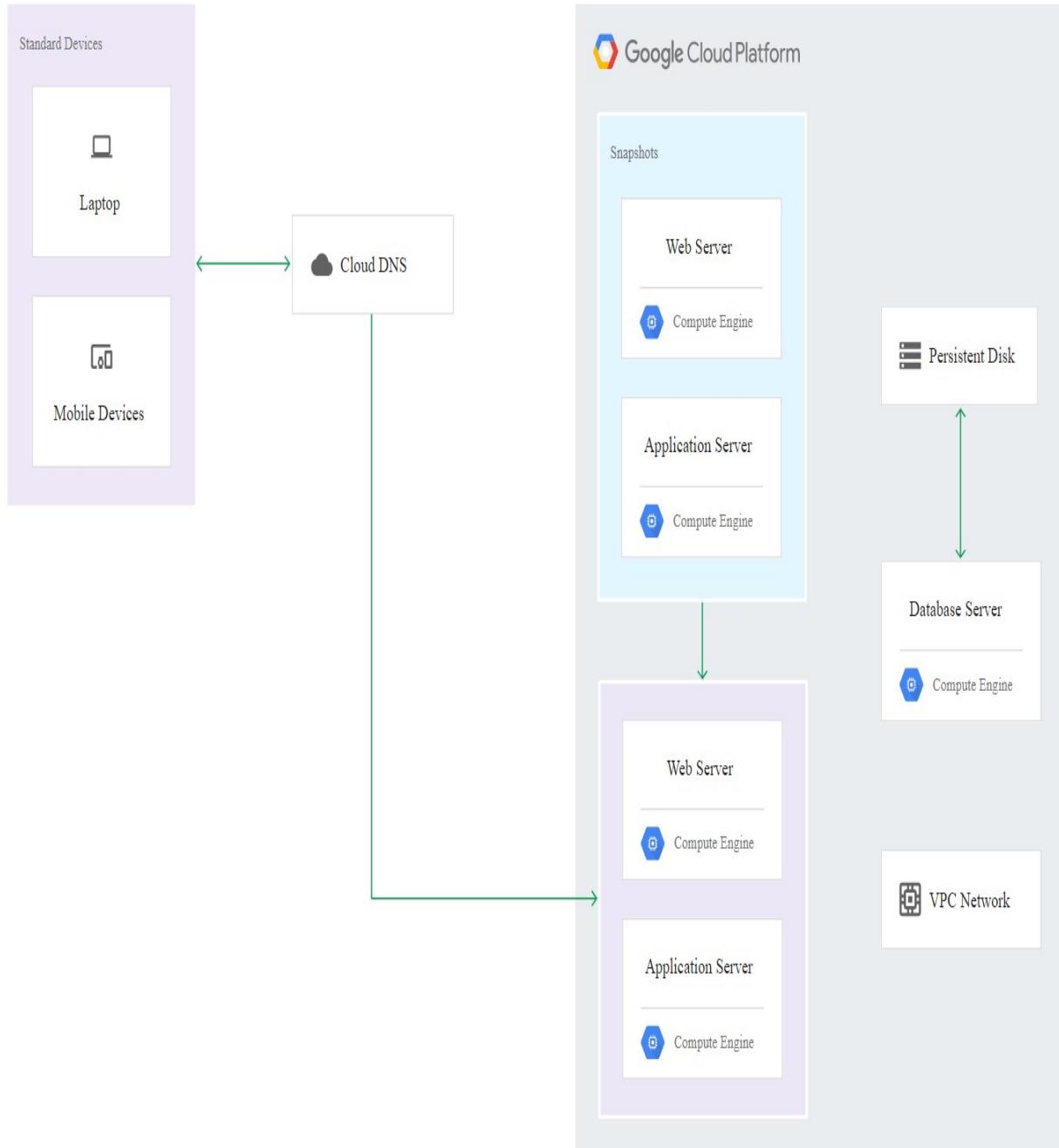
A is correct. DBs have the problem of Data Integrity. So, it is important to behave in the safest way.

B is wrong. The Database wouldn't probably work properly in this way.

C is correct. For hot Failover, you have to keep on synching the 2 DBs.

D is correct. Cloud VPN is needed for the connectivity between on-premises and Cloud. Cloud DNS service is needed to distribute traffic between the 2 environments.

D is wrong. Cloud CDN is a content delivery for websites and applications in Google Cloud Engine and Google Cloud Storage. So, it is aimed to create a fast cache, not a System failover.



For any further detail, please refer to the URLs below:

<https://cloud.google.com/solutions/dr-scenarios-for-applications#warm-standby-recovery-to-gcp>

<https://cloud.google.com/hybrid-connectivity/>

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Question 49**Unattempted**

Domain : Other

Case Study TerramEarth 1 - Data Warehouse

TerramEarth is in the process of creating a faster transmission of the gzip CSV files. It has deployed 5g devices in their vehicles with the goal of achieving an unplanned vehicle downtime to a minimum.

You are planning to:

Acquire directly files, from vehicles or from the services points, to the Cloud

Transform and get statistical figures immediately

Store everything in the Data Warehouse and in the Data Lake in the most suitable way

Use the current and working routines, whenever possible

Which of the following steps contains your solution? (Choose 4)

- A. Pub/Sub
- B. Cloud Data Transfer
- C. Cloud Dataprep
- D. Cloud Dataflow
- E. Cloud Storage
- F. BigQuery
- G. BigTable

Explanation:

Correct Answers: A, D, E, F

A is correct. Cloud Pub/Sub is aimed to decouple systems and components hosted on GCP or elsewhere on the internet. It is just that what we need.

B is wrong. [BigQuery Data Transfer Service](#) loads batch (not streaming) data into BigQuery on a schedule.

C is wrong. [Cloud Dataprep](#) is a tool for cleaning and preparing structured and unstructured data for analysis.

D is correct. From Pub/Sub to storage and DB you have to build a Data Pipeline capable of handling streaming data. And that is exactly the [Cloud Dataflow](#) main job.

E is correct. In order to store in the Data Lake, you have to memorize the gzip CSV files into

Cloud Storage.

F is correct. A SQL tool is needed, since current and working routines are created for Postgres

G is wrong. BigTable is a special and very fast Database, not an Analytics Solution

For any further detail, please refer to the URL below:

<https://cloud.google.com/solutions/data-lake/>

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Question 50

Incorrect

Domain : Other

Case Study TerramEarth 2

In order to speed up the transmission, TerramEarth deployed 5g devices in their vehicles with the goal of achieving an unplanned vehicle downtime to a minimum.

But a set of older vehicles will be still using the old technology for a while.

So, on these vehicles, data is stored locally and can be accessed for analysis only when a vehicle is serviced. In this case, data is downloaded via a maintenance port.

You need to integrate this old procedure with the new one, building a workflow, in the simplest way.

Which of the following tools would you choose?

- A. **Cloud Composer** 
- B. **Cloud Interconnect**
- C. **Appengine**
- ✓ D. **Cloud Build** 

Explanation:

Correct Answer: A

A is correct. **Cloud Composer** is a fully managed workflow service that can author, schedule, and monitor pipelines that span across clouds and on-premises data centers.

B is wrong. Cloud Interconnect gives fast (10/100Gb) connections to your Google VPC. It is too expensive to connect the fields' offices in this way.

C is wrong. Appengine is a PaaS, so you have to prepare a program for that. It is not simple at all.

D is wrong. **Cloud Build** is a service that builds your code on GCP for deploy; any kind of code.

A Cloud Composer task, when started with automated commands, uses **Cloud Identity-Aware Proxy** for security, controls processing, and manage storage with **Cloud Storage** bucket.

In this way, it is possible in a simple, standard, and safe way to automate all the processes.

Once the files are correctly stored, a triggered procedure can start the new and integrated procedures.

For more details, please refer to the URLs below:

<https://cloud.google.com/composer/>

<https://cloud.google.com/composer/docs/concepts/cloud-storage>

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