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Exam overview

Exam Name: Professional Cloud Architect

Length: 2 hours

Registration fee: $200 (plus tax where applicable)

Exam format: Multiple choice and multiple select, taken remotely or in person at a test center. [Locate a test center near you](#).

Exam delivery method:

a. Take the [online-proctored exam](#) from a remote location

b. Take the onsite-proctored exam at a [testing center](#)

https://cloud.google.com/certification/cloud-architect

Topic 1, JencoMart

QUESTION NO: 1

Company Overview

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

Company Background

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

Solution Concept

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

Existing Technical Environment

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

Application: Customer loyalty portal

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Database

Oracle Database stores user profiles

PostgreSQL database stores user credentials

Single-homed in US West

No redundancy

Backed up every 12 hours

100% uptime service level agreement (SLA)

Authenticates all users

Compute

30 machines in US West Coast, each machine has:

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Business Requirements

Optimize for capacity during peak periods and value during off-peak periods

Guarantee service availability and support

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Move to outsourcing model to avoid large upfront costs associated with infrastructure purchase

Expand services into Asia

Technical Requirements

Assess key application for cloud suitability

Modify applications for the cloud

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CEO Statement

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

CFO Statement

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The JencoMart security team requires that all Google Cloud Platform infrastructure is deployed using a least privilege model with separation of duties for administration between production and development resources.

What Google domain and project structure should you recommend?

A.
Create two G Suite accounts to manage users: one for development/test/staging and one for production. Each account should contain one project for every application

B.
Create two G Suite accounts to manage users: one with a single project for all development applications and one with a single project for all production applications

C.
Create a single G Suite account to manage users with each stage of each application in its own

project

D.
Create a single G Suite account to manage users with one project for the development/test/staging environment and one project for the production environment

Answer: D
Explanation:

Note: The principle of least privilege and separation of duties are concepts that, although semantically different, are intrinsically related from the standpoint of security. The intent behind both is to prevent people from having higher privilege levels than they actually need

Reference: https://cloud.google.com/kms/docs/separation-of-duties

QUESTION NO: 2

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A few days after JencoMart migrates the user credentials database to Google Cloud Platform and shuts down the old server, the new database server stops responding to SSH connections. It is still serving database requests to the application servers correctly.

What three steps should you take to diagnose the problem? (Choose three.)

A.
Delete the virtual machine (VM) and disks and create a new one

B.
Delete the instance, attach the disk to a new VM, and investigate

C.
Take a snapshot of the disk and connect to a new machine to investigate

D.
Check inbound firewall rules for the network the machine is connected to

E.
Connect the machine to another network with very simple firewall rules and investigate

F.
Print the Serial Console output for the instance for troubleshooting, activate the interactive console, and investigate

Answer: C,D,F
Explanation:

D: Handling "Unable to connect on port 22" error message

Possible causes include:

F: Handling "Could not connect, retrying..." error

You can verify that the daemon is running by navigating to the serial console output page and looking for output lines prefixed with the accounts-from-metadata: string. If you are using a standard image but you do not see these output prefixes in the serial console output, the daemon might be stopped. Reboot the instance to restart the daemon.

Reference:

https://cloud.google.com/compute/docs/ssh-in-browser

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QUESTION NO: 3

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JencoMart has decided to migrate user profile storage to Google Cloud Datastore and the application servers to Google Compute Engine (GCE). During the migration, the existing infrastructure will need access to Datastore to upload the data.

What service account key-management strategy should you recommend?

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

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

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

D.

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

Answer: C

Explanation:

Migrating data to Google Cloud Platform

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

Reference:

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

QUESTION NO: 4

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term success. This model will allow us to respond to increasing customer demand during peak periods and reduce costs.

JencoMart has built a version of their application on Google Cloud Platform that serves traffic to Asia. You want to measure success against their business and technical goals.

Which metrics should you track?

A.
Error rates for requests from Asia

B.
Latency difference between US and Asia

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

D.
Total visits and average latency for users from Asia

E.
The number of character sets present in the database

Answer: D
Explanation:

From scenario:

Business Requirements include: Expand services into Asia

Technical Requirements include: Decrease latency in Asia

QUESTION NO: 5

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