GCP

Agenda

Question Dumps

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

Which cloud infrastructure should you recommend?

- A. Google Compute Engine unmanaged instance groups and Network Load Balancer
- B. Google Compute Engine managed instance groups with auto-scaling
- C. Google Cloud Dataproc to run Apache Hadoop jobs to process each test
- D. Google App Engine with Google StackDriver for logging

- 2)
- Your marketing department wants to send out a promotional email campaign.
 The development team wants to minimize direct operation management. They
 project a wide range of possible customer responses, from 100 to 500,000 clickthrough per day. The link leads to a simple website that explains the promotion
 and collects user information and preferences.
 Which infrastructure should you recommend? (Choose two.)
- A. Use Google App Engine to serve the website and Google Cloud Datastore to store user data.
- B. Use a Google Container Engine cluster to serve the website and store data to persistent disk

- C. Use a managed instance group to serve the website and Google Cloud Bigtable to store user data.
- D. Use a single Compute Engine virtual machine (VM) to host a web server, backend by Google Cloud SQL.
- 3) Your company just finished a rapid lift and shift to Google Compute Engine for your compute needs. You have another 9 months to design and deploy a more cloud-native solution. Specifically, you want a system that is no-ops and auto-scaling.
 - Which two compute products should you choose? (Choose two.)

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

• 4)

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

- 5)
- Your company has decided to make a major revision of their API in order to create better experiences for their developers. They need to keep the old version of the API available and deployable, while allowing new customers and testers to try out the new API. They want to keep the same SSL and DNS records in place to serve both APIs.
 What should they do?
- A. Configure a new load balancer for the new version of the API
- B. Reconfigure old clients to use a new endpoint for the new API

- C. Have the old API forward traffic to the new API based on the path
- D. Use separate backend pools for each API path behind the load balancer

- 6)
- Your company plans to migrate a multi-petabyte data set to the cloud. The data set must be available 24hrs a day. Your business analysts have experience only with using a SQL interface.
 - How should you store the data to optimize it for ease of analysis?

A. Load data into Google BigQuery

B. Insert data into Google Cloud SQL

C. Put flat files into Google Cloud Storage

• D. Stream data into Google Cloud Datastore

- 7)
- You need to reduce the number of unplanned rollbacks of erroneous production deployments in your company™€xs web hosting platform. Improvement to the QA/

Test processes accomplished an 80% reduction.

Which additional two approaches can you take to further reduce the rollbacks? (Choose two.)

- A. Introduce a green-blue deployment model
- B. Replace the QA environment with canary releases
- C. Fragment the monolithic platform into microservices

- D. Reduce the platform dependency on relational database systems
- E. Replace the platform™€xs relational database systems with a NoSQL database

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

A. Flat file

• B. NoSQL

• C. Relational

• D. Blobstore

- 9)
- You set up an autoscaling instance group to serve web traffic for an upcoming launch. After configuring the instance group as a backend service to an HTTP(S) load balancer, you notice that virtual machine (VM) instances are being terminated and re-launched every minute. The instances do not have a public IP address.

You have verified the appropriate web response is coming from each instance using the curl command. You want to ensure the backend is configured correctly.

What should you do?

• A. Ensure that a firewall rules exists to allow source traffic on HTTP/HTTPS to reach the load balancer.

- B. Assign a public IP to each instance and configure a firewall rule to allow the load balancer to reach the instance public IP.
- C. Ensure that a firewall rule exists to allow health checks to reach the instances in the instance group.
- D. Create a tag on each instance with the name of the load balancer. Configure a
 firewall rule with the name of the load balancer as the source and the instance
 tag as the destination.

- 10)
- Your customer is receiving reports that their recently updated Google App Engine application is taking approximately 30 seconds to load for some of their users.
- This behavior was not reported before the update.
 What strategy should you take?
- A. Work with your ISP to diagnose the problem
- B. Open a support ticket to ask for network capture and flow data to diagnose the problem, then roll back your application

 C. Roll back to an earlier known good release initially, then use Stackdriver Trace and Logging to diagnose the problem in a development/test/staging environment

 D. Roll back to an earlier known good release, then push the release again at a quieter period to investigate. Then use Stackdriver Trace and Logging to diagnose the problem • 11) You want to optimize the performance of an accurate, real-time, weather-charting application. The data comes from 50,000 sensors sending 10 readings a second, in the format of a timestamp and sensor reading.

Where should you store the data?

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

- 12)
- One of the developers on your team deployed their application in Google Container Engine with the Dockerfile below. They report that their application deployments are taking too long.

```
FROM ubuntu:16.04

COPY . /src

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

RUN pip install -r requirements.txt
```

- You want to optimize this Dockerfile for faster deployment times without adversely affecting the app™€xs functionality.
- Which two actions should you take? (Choose two.)

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

- 13)
- Your solution is producing performance bugs in production that you did not see in staging and test environments. You want to adjust your test and deployment procedures to avoid this problem in the future.
 What should you do?
- A. Deploy fewer changes to production
- B. Deploy smaller changes to production
- C. Increase the load on your test and staging environments
- D. Deploy changes to a small subset of users before rolling out to production

- 14)
- You are designing a large distributed application with 30 microservices. Each of your distributed microservices needs to connect to a database back-end. You want to store the credentials securely.
 Where should you store the credentials?
- A. In the source code

• B. In an environment variable

C. In a secret management system

• D. In a config file that has restricted access through ACLs

- **•** 15)
- A lead engineer wrote a custom tool that deploys virtual machines in the legacy data center. He wants to migrate the custom tool to the new cloud environment. You want to advocate for the adoption of Google Cloud Deployment Manager. What are two business risks of migrating to Cloud Deployment Manager? (Choose two.)
- A. Cloud Deployment Manager uses Python
- B. Cloud Deployment Manager APIs could be deprecated in the future

- C. Cloud Deployment Manager is unfamiliar to the company[™] € s engineers
- D. Cloud Deployment Manager requires a Google APIs service account to run
- E. Cloud Deployment Manager can be used to permanently delete cloud resources
- F. Cloud Deployment Manager only supports automation of Google Cloud resources

• 16)

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

- A. Google Kubernetes Engine, Jenkins
- B. Google Kubernetes Engine and Cloud Load Balancing
- C. Google Kubernetes Engine and Cloud Deployment Manager
- D. Google Kubernetes Engine, Jenkins, and Cloud Load Balancing

- 17)
- Your organization has a 3-tier web application deployed in the same network on Google Cloud Platform. Each tier (web, API, and database) scales independently of the others. Network traffic should flow through the web to the API tier and then on to the database tier. Traffic should not flow between the web and the database tier.

How should you configure the network?

- A. Add each tier to a different subnetwork
- B. Set up software based firewalls on individual VMs

- C. Add tags to each tier and set up routes to allow the desired traffic flow
- D. Add tags to each tier and set up firewall rules to allow the desired traffic flow
- 18)
- Your company wants to try out the cloud with low risk. They want to archive approximately 100 TB of their log data to the cloud and test the analytics features available to them there, while also retaining that data as a long-term disaster recovery backup.
 - Which two steps should you take? (Choose two.)

A. Load logs into Google BigQuery

B. Load logs into Google Cloud SQL

C. Import logs into Google Stackdriver

D. Insert logs into Google Cloud Bigtable

E. Upload log files into Google Cloud Storage

• 19)

- You created a pipeline that can deploy your source code changes to your infrastructure in instance groups for self-healing. One of the changes negatively affects your key performance indicator. You are not sure how to fix it, and investigation could take up to a week.
 What should you do?
- A. Log in to a server, and iterate on the fox locally
- B. Revert the source code change, and rerun the deployment pipeline

- C. Log into the servers with the bad code change, and swap in the previous code
- D. Change the instance group template to the previous one, and delete all instances

- **•** 20)
- Your organization wants to control IAM policies for different departments independently, but centrally.
 Which approach should you take?

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

• 21)You have an outage in your Compute Engine managed instance group: all instances keep restarting after 5 seconds. You have a health check configured, but autoscaling is disabled. Your colleague, who is a Linux expert, offered to look into the issue. You need to make sure that he can access the VMs. What should you do?

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

- 22) Google Cloud Platform resources are managed hierarchically using organization, folders, and projects. When Cloud Identity and Access Management (IAM) policies exist at these different levels, what is the effective policy at a particular node of the hierarchy?
- A. The effective policy is determined only by the policy set at the node
- B. The effective policy is the policy set at the node and restricted by the policies of its ancestors
- C. The effective policy is the union of the policy set at the node and policies inherited from its ancestors
- D. The effective policy is the intersection of the policy set at the node and policies inherited from its ancestors

- 23)
- You have an application that will run on Compute Engine. You need to design an architecture that takes into account a disaster recovery plan that requires your application to fail over to another region in case of a regional outage. What should you do?
- A. Deploy the application on two Compute Engine instances in the same project but in a different region. Use the first instance to serve traffic, and use the HTTP load balancing service to fail over to the standby instance in case of a disaster.
- B. Deploy the application on a Compute Engine instance. Use the instance to serve traffic, and use the HTTP load balancing service to fail over to an instance on your premises in case of a disaster.

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

- 24)
- You have an application deployed on Google Kubernetes Engine using a
 Deployment named echo-deployment. The deployment is exposed using a
 Service called echo-service. You need to perform an update to the application
 with minimal downtime to the application. What should you do?
- A. Use kubectl set image deployment/echo-deployment <new-image>
- B. Use the rolling update functionality of the Instance Group behind the Kubernetes cluster

- C. Update the deployment yaml file with the new container image. Use kubectl delete deployment/echo-deployment and kubectl create "€xf <yaml-file>
- D. Update the service yaml file which the new container image. Use kubectl delete service/echo-service and kubectl create "€xf <yaml-file>
- 25)
- The development team has provided you with a Kubernetes Deployment file. You have no infrastructure yet and need to deploy the application. What should you do?

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

- 26) Your web application has several VM instances running within a VPC. You want to restrict communications between instances to only the paths and ports you authorize, but you don™€xt want to rely on static IP addresses or subnets because the app can autoscale. How should you restrict communications?
- A. Use separate VPCs to restrict traffic
- B. Use firewall rules based on network tags attached to the compute instances

- C. Use service accounts and configure the web application to authorize particular service accounts to have access
- 27) You are tasked with building an online analytical processing (OLAP) marketing analytics and reporting tool. This requires a relational database that can operate on hundreds of terabytes of data. What is the Google-recommended tool for such applications?

- A. Cloud Spanner, because it is globally distributed
- B. Cloud SQL, because it is a fully managed relational database
- C. Cloud Firestore, because it offers real-time synchronization across devices
- D. BigQuery, because it is designed for large-scale processing of tabular data

• 28) You have deployed an application to Google Kubernetes Engine (GKE), and are using the Cloud SQL proxy container to make the Cloud SQL database available to the services running on Kubernetes. You are notified that the application is reporting database connection issues. Your company policies require a post-mortem. What should you do?

A. Use gcloud sql instances restart.

- B. In the GCP Console, navigate to Stackdriver Logging. Consult logs for (GKE) and Cloud SQL.
- C. In the GCP Console, navigate to Cloud SQL. Restore the latest backup. Use kubectl to restart all pods.
- 29) Your company pushes batches of sensitive transaction data from its application server VMs to Cloud Pub/Sub for processing and storage. What is the Google- recommended way for your application to authenticate to the required Google Cloud services?

 A. Ensure that VM service accounts are granted the appropriate Cloud Pub/Sub IAM roles.

- B. Generate an OAuth2 access token for accessing Cloud Pub/Sub, encrypt it, and store it in Cloud Storage for access from each VM.
- C. Create a gateway to Cloud Pub/Sub using a Cloud Function, and grant the Cloud Function service account the appropriate Cloud Pub/Sub IAM roles.

• 30) You want to automate the creation of a managed instance group. The VMs have many OS package dependencies. You want to minimize the startup time for new

VMs in the instance group.

What should you do?

- A. Use Terraform to create the managed instance group and a startup script to install the OS package dependencies.
- B. Create a custom VM image with all OS package dependencies. Use
 Deployment Manager to create the managed instance group with the VM image.

- C. Use Puppet to create the managed instance group and install the OS package dependencies.
- D. Use Deployment Manager to create the managed instance group and Ansible to install the OS package dependencies.
- 31) Your web application uses Google Kubernetes Engine to manage several workloads. One workload requires a consistent set of hostnames even after pod scaling and relaunches.
 - Which feature of Kubernetes should you use to accomplish this?

A. StatefulSets

B. Role-based access control

• C. Container environment variables

• D. Persistent Volumes

• 32) You have an App Engine application that needs to be updated. You want to test the update with production traffic before replacing the current application version.

What should you do?

- A. Deploy the update using the Instance Group Updater to create a partial rollout, which allows for canary testing.
- B. Deploy the update as a new version in the App Engine application, and split traffic between the new and current versions.
- C. Deploy the update in a new VPC, and use Google™€גs global HTTP load balancing to split traffic between the update and current applications.
- D. Deploy the update as a new App Engine application, and use Google™€xs global HTTP load balancing to split traffic between the new and current applications.