Q&As

Professional Cloud Architect on Google Cloud Platform

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QUESTION 1

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

A. Create a shutdown script named k99.shutdown in the /etc/rc.6.d/ directory.

B. Create a shutdown script registered as a xinetd service in Linux and configure a Stackdnver endpoint check to call the service.

C. Create a shutdown script and use it as the value for a new metadata entry with the key shutdown-script in the Cloud Platform Console when you create the new virtual machine instance.

D. Create a shutdown script, registered as a xinetd service in Linux, and use the gcloud compute instances add-metadata command to specify the service URL as the value for a new metadata entry with the key shutdown-script-url

Correct Answer: C

QUESTION 2

Your customer is moving an existing corporate application to Google Cloud Platform from an on-premises data center. The business owners require minimal user disruption. There are strict security team requirements for storing passwords. What authentication strategy should they use?

A. Use G Suite Password Sync to replicate passwords into Google.

B. Federate authentication via SAML 2.0 to the existing Identity Provider.

C. Provision users in Google using the Google Cloud Directory Sync tool.

D. Ask users to set their Google password to match their corporate password.

Correct Answer: B

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

QUESTION 3

The operations team in your company wants to save Cloud VPN log events or one year You need to configure the cloud infrastructure to save the logs What should you do?

A. Set up a filter in Cloud Logging and a topic in Pub/Sub to publish the logs

B. Set up a Cloud Logging Dashboard titled Cloud VPN Logs, and then add a chart that queries for the VPN metrics over a one-year time period

C. Enable the Compute Engine API and then enable logging on the firewall rules that match the traffic you want to save

D. Set up a filter in Cloud Logging and a Cloud Storage bucket as an export target for the logs you want to save

Correct Answer: D

QUESTION 4

Your company recently acquired a company that has infrastructure in Google Cloud. Each company has its own Google Cloud organization Each company is using a Shared Virtual Private Cloud (VPC) to provide network connectivity tor its applications Some of the subnets used by both companies overlap In order for both businesses to integrate, the applications need to have private network connectivity. These applications are not on overlapping subnets. You want to provide connectivity with minimal re-engineering. What should you do?

A. Set up VPC peering and peer each Shared VPC together

B. Configure SSH port forwarding on each application to provide connectivity between applications i the different Shared VPCs

C. Migrate the protects from the acquired company into your company\\'s Google Cloud organization Re launch the instances in your companies Shared VPC

D. Set up a Cloud VPN gateway in each Shared VPC and peer Cloud VPNs

Correct Answer: B

QUESTION 5

An application development team has come to you for advice.They are planning to write and deploy an HTTP(S) API using Go 1.12. The API will have a very unpredictable workload and must remain reliable during peaks in traffic. They want to minimize operational overhead for this application. What approach should you recommend?

A. Use a Managed Instance Group when deploying to Compute Engine

B. Develop an application with containers, and deploy to Google Kubernetes Engine (GKE)

C. Develop the application for App Engine standard environment

D. Develop the application for App Engine Flexible environment using a custom runtime

Correct Answer: C

https://cloud.google.com/appengine/docs/the-appengine-environments

QUESTION 6

For this question, refer to the Helicopter Racing League (HRL) case study. A recent finance audit of cloud infrastructure noted an exceptionally high number of Compute Engine instances are allocated to do video encoding and transcoding. You suspect that these Virtual Machines are zombie machines that were not deleted after their workloads completed. You need to quickly get a list of which VM instances are idle. What should you do?

A. Log into each Compute Engine instance and collect disk, CPU, memory, and network usage statistics for analysis.

B. Use the gcloud compute instances list to list the virtual machine instances that have the idle: true label set.

C. Use the gcloud recommender command to list the idle virtual machine instances.

D. From the Google Console, identify which Compute Engine instances in the managed instance groups are no longer responding to health check probes.

Correct Answer: C

Reference: https://cloud.google.com/compute/docs/instances/viewing-and-applying-idle-vm-recommendations

QUESTION 7

Your company uses Google Kubernetes Engine (GKE) as a platform for all workloads. Your company has a single large GKE cluster that contains batch, stateful, and stateless workloads. The GKE cluster is configured with a single node pool with 200 nodes. Your company needs to reduce the cost of this cluster but does not want to compromise availability. What should you do?

A. Create a second GKE cluster for the batch workloads only. Allocate the 200 original nodes across both clusters.

B. Configure a HorizontalPodAutoscaler for all stateless workloads and for all compatible stateful workloads. Configure the cluster to use node auto scaling.

C. Configure CPU and memory limits on the namespaces in the cluster. Configure all Pods to have a CPU and memory limits.

D. Change the node pool to use spot VMs.

Correct Answer: C

One way to reduce the cost of a Google Kubernetes Engine (GKE) cluster without compromising availability is to use horizontal pod autoscalers (HPA) and node auto scaling. HPA allows you to automatically scale the number of Pods in a deployment based on the resource usage of the Pods. By configuring HPA for stateless workloads and for compatible stateful workloads, you can ensure that the number of Pods is automatically adjusted based on the actual resource usage, which can help to reduce costs. Node auto scaling allows you to automatically add or remove nodes from the node pool based on the resource usage of the cluster. By configuring node auto scaling, you can ensure that the cluster has the minimum number of nodes needed to meet the resource requirements of the workloads, which can also help to reduce costs.

QUESTION 8

You are managing several projects on Google Cloud and need to interact on a daily basis with BigQuery, Bigtable and Kubernetes Engine using the gcloud CLI tool

You are travelling a lot and work on different workstations during the week

You want to avoid having to manage the gcloud CLI manually

What should you do?

A. Use a package manager to install gcloud on your workstations instead of installing it manually

B. Create a Compute Engine instance and install gcloud on the instance Connect to this instance via SSH to always use the same gcloud installation when interacting with Google Cloud

C. Install gcloud on all of your workstations Run the command gcloud components auto-update on each workstation

D. Use Google Cloud Shell in the Google Cloud Console to interact with Google Cloud

Correct Answer: D

This option allows you to use the gcloud CLI tool without having to install or manage it manually on different workstations. Google Cloud Shell is a browser-based command-line tool that provides you with a temporary Compute Engine virtual machine instance preloaded with the Cloud SDK, including the gcloud CLI tool. You can access Google Cloud Shell from any web browser and use it to interact with BigQuery, Bigtable and Kubernetes Engine using the gcloud CLI tool. The other options are not optimal for this scenario, because they either require installing and updating the gcloud CLI tool on multiple workstations (A, C), or creating and maintaining a Compute Engine instance for the sole purpose of using the gcloud CLI tool (B). References: https://cloud.google.com/shell/docs/overview https://cloud.google.com/sdk/gcloud/

QUESTION 9

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

A. Create a scheduled job in Cloud Run to invoke a container every minute. The container will check the application URL. If the application is down, switch the URL to the "Site is unavailable" page, and notify the Ops team.

B. Create a cron job on a Compute Engine VM that runs every minute. The cron job invokes a Python program to check the application URL. If the application is down, switch the URL to the "Site is unavailable" page, and notify the Ops team.

C. Create a Cloud Monitoring uptime check to validate the application URL. If it fails, put a message in a Pub/Sub queue that triggers a Cloud Function to switch the URL to the "Site is unavailable" page, and notify the Ops team.

D. Use Cloud Error Reporting to check the application URL. If the application is down, switch the URL to the "Site is unavailable" page, and notify the Ops team.

Correct Answer: C

https://cloud.google.com/blog/products/management-tools/how-to-usepubsub-as-a-cloud-monitoring-notification-channel

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QUESTION 10

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

A. Use BigQuery as the data warehouse. Connect all vehicles to the network and stream data into BigQuery using Cloud Pub/Sub and Cloud Dataflow. Use Google Data Studio for analysis and reporting.

B. Use BigQuery as the data warehouse. Connect all vehicles to the network and upload gzip files to a Multi-Regional Cloud Storage bucket using gcloud. Use Google Data Studio for analysis and reporting.

C. Use Cloud Dataproc Hive as the data warehouse. Upload gzip files to a MultiRegional Cloud Storage bucket. Upload this data into BigQuery using gcloud. Use Google data Studio for analysis and reporting.

D. Use Cloud Dataproc Hive as the data warehouse. Directly stream data into prtitioned Hive tables. Use Pig scripts to analyze data.

Correct Answer: A

QUESTION 11

For this question, refer to the EHR Healthcare case study. You are responsible for designing the Google Cloud network architecture for Google Kubernetes Engine. You want to follow Google best practices. Considering the EHR Healthcare business and technical requirements, what should you do to reduce the attack surface?

A. Use a private cluster with a private endpoint with master authorized networks configured.

B. Use a public cluster with firewall rules and Virtual Private Cloud (VPC) routes.

C. Use a private cluster with a public endpoint with master authorized networks configured.

D. Use a public cluster with master authorized networks enabled and firewall rules.

Correct Answer: A

https://cloud.google.com/kubernetes-engine/docs/concepts/private-clusterconcept#overview

QUESTION 12

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.

Correct Answer: C

QUESTION 13

Your company has sensitive data in Cloud Storage buckets. Data analysts have Identity Access Management (IAM) permissions to read the buckets. You want to prevent data analysts from retrieving the data in the buckets from outside the office network. What should you do?

A. 1. Create a VPC Service Controls perimeter that includes the projects with the buckets.

2. Create an access level with the CIDR of the office network.

B. 1. Create a firewall rule for all instances in the Virtual Private Cloud (VPC) network for source range.

2. Use the Classless Inter-domain Routing (CIDR) of the office network.

C. 1. Create a Cloud Function to remove IAM permissions from the buckets, and another Cloud Function to add IAM permissions to the buckets.

2. Schedule the Cloud Functions with Cloud Scheduler to add permissions at the start of business and remove permissions at the end of business.

D. 1. Create a Cloud VPN to the office network.

2. Configure Private Google Access for on-premises hosts.

Correct Answer: A

For all Google Cloud services secured with VPC Service Controls, you can ensure that:

Resources within a perimeter are accessed only from clients within authorized VPC networks using Private Google Access with either Google Cloud or on-premises. https://cloud.google.com/vpc-service-controls/docs/overview https://

cloud.google.com/vpc-service-controls/docs/overview. You create a service control across your VPC and any cloud bucket or any project resource to restrict access. Anything outside of it can\\'t access the resources within service control

perimeter

QUESTION 14

You are building a continuous deployment pipeline for a project stored in a Git source repository and want to ensure that code changes can be verified deploying to production. What should you do?

A. Use Spinnaker to deploy builds to production using the red/black deployment strategy so that changes can easily be rolled back.

B. Use Spinnaker to deploy builds to production and run tests on production deployments.

C. Use Jenkins to build the staging branches and the master branch. Build and deploy changes to production for 10% of users before doing a complete rollout.

D. Use Jenkins to monitor tags in the repository. Deploy staging tags to a staging environment for testing. After testing, tag the repository for production and deploy that to the production environment.

Correct Answer: D

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

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QUESTION 15

Your company has decided to build a backup replica of their on-premises user authentication PostgreSQL database on Google Cloud Platform. The database is 4 TB, and large updates are frequent. Replication requires private address

space communication.

Which networking approach should you use?

A. Google Cloud Dedicated Interconnect

B. Google Cloud VPN connected to the data center network

C. A NAT and TLS translation gateway installed on-premises

D. A Google Compute Engine instance with a VPN server installed connected to the data center network

Correct Answer: A

https://cloud.google.com/docs/enterprise/best-practices-for-enterprise-organizations Google Cloud Dedicated Interconnect provides direct physical connections and RFC 1918 communication between your on-premises network and Google\\'s

network. Dedicated Interconnect enables you to transfer large amounts of data between networks, which can be more cost effective than purchasing additional bandwidth over the public Internet or using VPN tunnels.

Benefits:

Traffic between your on-premises network and your VPC network doesn\\'t traverse the public Internet. Traffic traverses a dedicated connection with fewer hops, meaning there are less points of failure where traffic might get dropped or

disrupted.

Your VPC network\\'s internal (RFC 1918) IP addresses are directly accessible from your on-premises network. You don\\'t need to use a NAT device or VPN tunnel to reach internal IP addresses. Currently, you can only reach internal IP

addresses over a dedicated connection. To reach Google external IP addresses, you must use a separate connection.

You can scale your connection to Google based on your needs. Connection capacity is delivered over one or more 10 Gbps Ethernet connections, with a maximum of eight connections (80 Gbps total per interconnect). The cost of egress

traffic from your VPC network to your on-premises network is reduced. A dedicated connection is generally the least expensive method if you have a high-volume of traffic to and from Google\\'s network.

References: https://cloud.google.com/interconnect/docs/details/dedicated