Managing and provisioning a solution Infrastructure

Completed on 27-January-2021

Attempt	Marks Obtained	Your score	Time Taken	Result
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Domains wise Quiz Performance Report

No	Domain	Total Question	Correct	Incorrect	Unattempted	Marked as Review
1	Other	20	1	0	19	0
Total	All Domain	20	1	0	19	0

Review the Answers

Sorting by All

Question 1 **Unattempted**

Domain : Other

For this question, refer to the Dress4Win case study: https://cloud.google.com/certification/guides/cloud-architect/casestudy-dress4win-rev2
How will you achieve multiple private connections between the production data center and cloud environment?

A. Use Cloud Interconnect

B. Use Cloud VPC Peering

C. Use Direct Peering

D. Use Cloud VPN ✓

Explanation:

Answer : D
Since they want multiple private connections between the production data center and cloud env Cloud VPN is the best choice
They will be using a cloud site as a disaster recovery site and cloud VPN will be used to sync the on-prem data with cloud site

https://cloud.google.com/network-connectivity/docs/vpn/concepts/overview

Option A is incorrect because they have not mentioned any specific bandwidth and latency requirement and multiple private connections with cloud interconnect will be more costly
Option B is used for VPC to VPC communication
Option C is used to connect on-premise location to Google's Point of presence location(PoP)

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Question 2 **Unattempted**

Domain : Other

You are working for a company that is planning to migrate its entire application to GCP. During the initial phase of migration, there is a requirement to set up a site-to-site VPN connection between on-prem and GCP which provides 99.99 availability on the GCP side connection. Which service will you use?

A. Cloud HA VPN ✓

B. Cloud Classic VPN

C. Direct Peering

D. Configure Openswan on two compute engine instances and create two VPN tunnels

Explanation:

Answer : A
Cloud HA VPN provides an SLA of 99.99% service availability.

https://cloud.google.com/network-connectivity/docs/vpn/how-to/creating-ha-vpn2?hl=nl

Option B is incorrect because Cloud classic VPN provides 99.9 availability.
Option C is used to connect on-premise location to Google's Point of presence location(PoP)
Option D can also work but there will be lots of management work so it is not preferable. GCP has its fully managed service i.e. Cloud HA VPN

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Question 3 **Unattempted**

Domain : Other

You are working for a large enterprise as a Solutions Architect. One of your application is running on-premise. There is a requirement that an application running on google cloud needs to access a few APIs of the on-premise applications without exposing them to the internet. Which type of topology will you implement to fulfill the requirements?

A. Meshed topology

B. Gated egress topology

C. Gated egress and ingress topology

D. Gated Ingress topology

Explanation:

Answer : B

This type of topology is useful when you want to expose on-premise application API's to the workload running on Google Cloud without exposing them to internet
Please refer to below link for different hybrid and multi-cloud network topologies

https://cloud.google.com/solutions/hybrid-and-multi-cloud-network-topologies

Option A is incorrect because Meshed topology is used to establish flat network connectivity where every system can communicate with each other
Option C is incorrect because Gated egress and ingress topology is used when you have to expose a few API's from on-premise to cloud and from cloud to on-premise in a secure way
Option D is incorrect because it used when you want to expose a few API's from an application which is running on Google Cloud to On-premise in a secure way

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Question 4 **Unattempted**

Domain : Other

You are working for a large finance company as a Solutions Architect. As per the FINRA compliance regulation, the data stored in GCS buckets must be retained for 5 years.
How can you ensure that the current objects or any objects uploaded to the buckets are not deleted for at least 5 years?

A. Apply Lifecycle rules to buckets

B. Apply retention policy to buckets

C. Apply IAM policy with appropriate roles

D. Enable versioning on buckets

Explanation:

Answer : B
when you set a retention policy on the bucket you cannot delete any objects in that bucket for the specified period of time mentioned in a retention policy

https://cloud.google.com/storage/docs/using-bucket-lock

Option A is incorrect because lifecycle rules are used to move objects between different storage classes

Option C is incorrect because it is used to control access management
Option D is incorrect because versioning is used to create multiple versions of a single object

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Question 5 **Unattempted**

Domain : Other

You are working for a company that has several applications running on a compute engine. Daily files are uploaded to the GCS bucket from these instances.
These files are accessed once a month by developers for analysis. After 1 year all the files are accessed only once a year but must be retained for 5 years as per compliance. How will you configure data storage in a cost-effective way?

A. **Set the default storage class of the bucket to the near line and create a lifecycle rule to move objects older than 1 year to Coldline storage class** ✓

B. **Set the default storage class of the bucket to standard and create a lifecycle rule to move objects older than 1 year to nearline storage class**

C. **Set the default storage class of the bucket to standard and create a lifecycle rule to move objects older than 1 year to Coldline storage class**

D. **Set the default storage class of the bucket to Coldline storage.**

Explanation:

Answer : A
Set the default class to Nearline
Nearline Storage is the best choice when you want to access objects stored in the bucket once a month
After one year as the files stored in the bucket will be accessed only once a year then you should create lifecycle rule to migrate nearline objects to cold line storage

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

Option B & Option C are incorrect because standard storage is used for objects which are accessed very frequently
Option D is incorrect because Coldline storage is used for objects which are accessed once a year
Note – GCP has launched a new storage class called Archival storage which was Generally available on January 08, 2020. This may reflect in exam

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

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Question 6 **Unattempted**

Domain : Other

You are working for a Company as a Solutions architect. They want to develop a new application that will have two environments development and Production. The initial requirement is that all the resources deployed in development and Production must be able to communicate with each other using the same RFC-1918 Address space. How will you fulfill the requirement considering the least privilege principle?

A. **Create a separate project for each environment and Use shared VPC**

B. **Create a single GCP project and single VPC for both environments**

C. **Create a separate project for each environment and create individual VPC in each project with VPC peering**

D. **Create a separate project and use direct peering**

Explanation:

Ansawer : A
Shared VPC allows you to share a single VPC in one project with another project within an organization called service project. By using shared VPC, the resources in service project can be deployed in shared VPC and they will use the same IP range from shared VPC
The main advantage of Shared VPC is that we can delegate administrative responsibilities, such as creating and managing resources which will use one common VPC that allows each team to manage their own resources individually with proper access control
In our case, we will create a VPC in production project which will be called a host project, and share it with the development project which will be called a service project.

https://cloud.google.com/vpc/docs/shared-vpc

Option B is incorrect because if we use Single project and VPC for both environments we cannot segregate the access control for example if you want to give someone access to create resources only for staging, not production. Such kind of access control is not possible if we are using Single Project and the same VPC
Option C is incorrect because we want the Same RFC-1918 address space. VPC peering is

used to connect two different VPC
Option D is incorrect because direct peering is a connection between the on-prem network and Google's edge network

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Question 7 **Unattempted**

Domain : Other

You have been hired by a large enterprise as a Solutions Architect. The development team came to you with a requirement that they want a global load balancing solution that can support Non-HTTPS traffic and SSL termination at the load-balancing level. Which load balancer will you recommend?

A. HTTPS

B. SSL Proxy

C. TCP Proxy

D. Internal TCP/UDP

Explanation:

Answer : B

SSL Proxy load balancer is the best choice for non-https traffic and can also handler SSL termination. It is a Global load-balancing Solution Provided by GCP

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

Option A is incorrect because HTTPS load balancer is used for HTTP traffic
Option C is incorrect because the requirement is to terminate the SSL at the load balancing level. TCP proxy does not support SSL termination
Option D is incorrect because Internal TCP/UDP load balancer is used to load balancer internal traffic inside a VPC

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Question 8 **Unattempted**

Domain : Other

You are working for a company that is using GCP for their production workload. One of the applications is using Cloud CDN for static content caching in front of the https load balancer. As per the cloud logging, you see lower than expected cache hit ratios. How will you increase the cache-hit ratio?

A. **Use custom cache keys** ✓

B. **Increase the cache expiration time**

C. **Use cache invalidation frequently**

D. **Decrease cache expiration time**

Explanation:

Answer : A
To improve the cache hit ratio you should reduce the cache key by removing host and protocol information. This final URL is called a custom cache key
For e.g. https://demo.com/test/cloud.jpg and https://demo2.com/test/cloud.jpg have the same image i.e. cloud.jpg but URL is different you can remove protocol and host information from the cache key

https://cloud.google.com/cdn/docs/best-practices

Option B is incorrect it used to define the time that how long content is cached at PoP location
Option C is incorrect because it is used to clear cache entry manually
Option D is used to when you have an application where content is frequently updated
So you can keep low cache expiration time on cache contents

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Question 9 **Unattempted**

Domain : Other

You have been hired as a Solutions Architect by a large enterprise. They are planning to migrate an application that is running in the AWS cloud to the GCP cloud. During the initial phase of migration, there is a requirement to create RFC-1918 connectivity with a minimum of 5Gbps bandwidth between AWS VPC and GCP VPC for secure migration. What service you will

use at the GCP side with the least management work ahead?

A. Use a Cloud VPN with 2 tunnels ✓

B. Use an OpenSwan VPN solution on the Compute engine with more CPU

C. Use VPC Peering

D. Use Cloud Interconnect

Explanation:

Answer : A

Cloud VPN is a fully managed service that is used to connect two networks using IPsec connection.
A single VPN tunnel can support bandwidth up to 3gbps. By creating two VPN total bandwidth will be 6gbps which will fulfill our requirement

https://cloud.google.com/solutions/automated-network-deployment-multicloud

Option B also can be used to connect two networks, but we want a managed service

Option C is not correct because it is used to connect VPC's within Google Cloud

Option D is not correct because it used to connect the on-prem network with Google cloud VPC using dedicated link

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Question 10 **Unattempted**

Domain : Other

You are running Apache Kafka on a compute engine for real-time data processing pipeline. The machine size is n1-standard-4 with 1TB of SSD persistent disk and as per the monitoring, you are not getting the desired disk throughput required for the job to do. What configuration will you change to increase disk performance?

A. Increase the machine to n1-standard-8 ✓

B. Increase the disk size to 2TB

C. Increase the machine memory

D. change the storage type to standard persistent disk

Explanation:

Answer : A

Disk performance depends on its size, instance vCPU count and I/o block size In our case, we are already having a large disk size i.e. 1TB which can support 480 Mbps read/write throughput. But as per our machine size i.e. n1-standard-4 (4vcpu), the disk is only limited 240mbps read/write throughput. We need to increase the CPU count to 8 or above to support desired disk performance

https://cloud.google.com/compute/docs/disks/performance#machine-type-disk-limits

Option B is incorrect because we already have large disk size, the bottleneck was CPU

Option C is incorrect because RAM does not limit the disk performance

Option D will more degrade the performance. see above URL for comparison

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Question 11 **Unattempted**

Domain : Other

For this question, refer to the Dress4Win case study: https://cloud.google.com/certification/guides/cloud-architect/casestudy-dress4win-rev2
Which storage option will you use on GCP for Dress4Win's Fiber channel SAN storage appliance?

A. Persistent Disk

B. Local SSD

C. cloud storage

D. Cloud datastore

Explanation:

Answer : A

SAN stands for Storage area network and it is basically a block store. So persistent disk is the best choice
Option B is incorrect because it is also a block store but it is not a persistent storage option. All data gets deleted after restart or shutdown
Option C is incorrect because cloud storage is Object Store
Option D is incorrect because Cloud datastore is a NoSQL database

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Question 12 **Unattempted**

Domain : Other

You are working for a large enterprise as a Solutions Architect. The development team is building a new application that will be deployed on Compute Engine. How will you set compute engine VM configuration in such a way that there is no downtime when GCP performs periodic infrastructure maintenance on the compute engine?

A. **Set the on-host maintenance option to Migrate VM instance**

B. **Set the Automatic restart option to ON**

C. **You need to restart VM when there is such kind of maintenance activity from GCP**

D. **Set the on-host maintenance option to Terminate VM instance**

Explanation:

Answer : A

GCP performs maintenance activity on compute engine infrastructure which includes. Host kernel upgrades, hardware repair, or upgrade. This activity occurs once every two weeks. You can configure compute engine VM to perform live migration to another host in case of such maintenance activity without downtime. You just need to set instance On host maintenance property to Migrate VM instance and the entire process is handled by GCP on your behalf. You can see compute. instances. migrateOnHostMaintenance operation type performed in Stackdriver logging when such activity is carried out.

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

https://cloud.google.com/compute/docs/instances/setting-instance-scheduling-options

Option B is incorrect because it is used when the host machine crashes which holds your VM. If this property is enabled, whenever there is a host machine failure. Your compute engine will be automatically restarted
Option C is incorrect because there is no need to perform any kind of operation from your side
Option D is incorrect because if the property is set to Terminate VM instance, GCP will terminate your VM when there is a maintenance event.

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Question 13 **Unattempted**

Domain : Other

You have been hired as DevSecOps Engineer by a finance firm. They are developing a new application that will be used for financial transactions thus needs to be PCI compliant and will be deployed on a compute engine. As per the security team, the infrastructure on which the application will run must be hardened by security controls to protect against rootkits and bootkit. Which compute engine option you will use?

A. Enable encryption on the Boot disk

B. Use Sole-Tenant VM

C. Use Shielded VM

D. Use Preemptible VM

Explanation:

Answer : C
Shielded VM is an option in a compute engine instance that comes with a set of security controls which helps to protect against rootkits and bootkits. For an application which required hardened OS, Shielded VM is a good option

https://cloud.google.com/shielded-vm

Option A is incorrect because by enabling encryption on the boot disk will only encrypt the data. It will protect against rootkits and bootkit
Option B is incorrect because this option provides us a dedicated physical server, which is allotted to us only for running compute engine instances

Option D is incorrect because Preemptible instances are short-lived instance which can run for max 24 hour and provide huge cost saving as compared to standard instances

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Question 14 **Unattempted**

Domain : Other

You are working for a large enterprise as a Solutions architect. They are running several applications on the Compute Engine in Development, Staging, and Production environments. The CTO has informed you that Development and Staging environments are not used on weekends and must be shut down on weekends for cost savings. How will you automate this procedure?

A. Apply appropriate tags on development and staging environments. Write a Cloud function that will shut down compute engine VM's as per applied the tags. Write a Cron Job in Cloud Scheduler which will invoke cloud functions endpoint on weekends only. ✓

B. Apply appropriate tags on development and staging environments. Write a Cloud function that will shut down compute engine VM's as per the tags. Write a Cron Job in Cloud Tasks which will invoke cloud functions endpoint on weekends only.

C. Apply appropriate tags on development and staging environments. Write a Cloud function that will shut down compute engine VM's as per the applied tags. Write a Cron Job in Cloud build which will invoke cloud functions endpoint on weekends only.

D. Apply appropriate tags on development and staging environments. Write a Cloud function that will shut down compute engine VM's as per the applied tags. Write a Cron Job in Cloud Run which will invoke cloud functions endpoint on weekends only.

Explanation:

Answer : A

Apply tags to the development and staging Compute Engine VM's. Write a Cloud Functions using any preferred language which will filter the VM's based on applied tags and will shut down them. Select the trigger type as HTTP while configuring cloud function and write a cronjob in Cloud Scheduler which will trigger the HTTP endpoint only on a weekly basis.

https://www.google.com/search?client=firefox-b-d&q=gcp+cloud+scheduler

Option B is incorrect because Cloud Task is used for management of a large number of distributed tasks
Option C is incorrect because Cloud Build is used to create CICD pipelines

Option D is incorrect because Cloud Run is used to run Containers where the entire infrastructure management is fully handled by GCP

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Question 15 **Unattempted**

Domain : Other

For this question, refer to the Dress4Win case study: https://cloud.google.com/certification/guides/cloud-architect/casestudy-dress4win-rev2
According to their technical requirements which IaC tools can be used for creating a Reproducible environment. Please select any two.

A. Chef

B. Terraform

C. Ansible

D. Cloud Deployment manager

E. Cloud Build

Explanation:

Answer : B&D
Terraform is a very Popular IaC tool which is used for automating the provisioning of infrastructure resources for any cloud provider
Cloud Deployment Manager is service provided by GCP which is used for provisioning of infrastructure resources for only Google Cloud
Options A & C are incorrect because those are Configuration management tools
Option E is incorrect because it is a CI/CD service provided by GCP

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Question 16 **Unattempted**

Domain : Other

For this question, refer to the Dress4Win case study: https://cloud.google.com/certification/guides/cloud-architect/casestudy-dress4win-rev2
Based on the existing infrastructure of Dress4win which GCP managed service will you use in place of RabbitMQ servers which are used for messaging, social notifications, and events

A. **Cloud MemoryStore**

B. **Pub/Sub** ✓

C. **App Engine**

D. **Configure RabbitMQ Clusters on Compute Engine**

Explanation:

Answer : B
Pub/Sub is an asynchronous messaging service that can be used for sending and receiving messages between independent application components. It is both Push/Pull based service.
Cloud Pub/Sub is the only possible replacement of RabbitMQ on GCP
Option A is incorrect because it is a fully managed in-memory cache service based on Redis and Memcached
Option C is correct because the App Engine is a PaaS service used for hosting the web application
Option D is a possible answer but since they want a managed service you can replace RabbitMQ with Cloud Pub/Sub

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Question 17 **Unattempted**

Domain : Other

You are working for a company as a Solutions architect. The Development team is developing a new stateful application that will be deployed on the Google Kubernetes Engine. What type of Kubernetes resource will you create for stateful application?

A. **Pods**

B. StatefulSets

C. Deployments

D. DaemonSets

Explanation:

Answer : B
StatefulSets are used for stateful applications where you want to persist application data. When you create StatefulSet, replica pods are created in order and each replica pod have its unique id, own PVC and state

https://cloud.google.com/kubernetes-engine/docs/concepts/statefulset

Option A is incorrect because the pod is the smallest unit of Kubernetes and mostly managed by Kubernetes objects like deployment, replica set, and StatefulSet
Option C is incorrect deployments are mostly used for stateless application
Option D is incorrect because DaemonSets are used when you want a run a copy of each pod on each node in Kubernetes

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Question 18 **Unattempted**

Domain : Other

Your team has developed an application that will be deployed on the Google Kubernetes Engine. There a requirement to persist the application data on the Kubernetes pods.
How will you persist the data beyond the lifetime of the pods?

A. Ingress

B. Deployments

C. ReplicaSets

D. PersistentVolumes

Explanation:

Answer : D

PersistentVolumes(PV) is cluster-wide storage which is used to store data.
Persistent Volume has a lifecycle independent of any pod that uses the persistent Volume.
When we create a persistent Volume in GKE a compute engine persistent disk is created

https://kubernetes.io/docs/concepts/storage/persistent-volumes/

Option A is incorrect because it used to expose a Kubernetes service to the public internet
Option B is incorrect because deployment is a Kubernetes object which is used to run multiple replicas of your pod and will automatically replace any failed or unresponsive pod
Option C incorrect because it used to manage the number pods running in a deployment

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Question 19 **Unattempted**

Domain : Other

There is a new requirement to Deploy a web application on Google Kubernetes Engine which will be accessed by multiple users around the world. How will you enable autoscaling on the application which will scale automatically based on the CPU Utilization?

A. **Create a HorizontalPodAutoscaler with CPU as target and enable autoscaling on your GKE cluster**

B. **Create a HorizontalPodAutoscaler with CPU as target and enable autoscaling on your managed instance group**

C. **Create a Deployment with the max unavailable and max surge properties and enable autoscaling on your GKE cluster**

D. **Create a Deployment with the max unavailable and max surge properties and enable autoscaling on your managed instance group**

Explanation:

Answer : A
Horizontal Pod Autoscaler is used to automatically scale the pods in a deployment based on the CPU utilization or memory utilization
Kubectl autoscale command is used to create HorizontalPodAutoscaler kubectl autoscale deployment example-app --max 5--min 2--cpu-percent 60

You can also enable autoscaling on your GKE cluster which can add or remove nodes from

node pool based on the demands of your workloads
You can use gcloud command to enable autoscaling on your GKE cluster gcloud container clusters update example-cluster --enable-autoscaling \ --min-nodes 2--max-nodes 6--zone compute-zone --node-pool default-pool

Option B is incorrect because you need to enable autoscaling on GKE cluster not managed instance group

Options C & D is incorrect because deployment is a Kubernetes object which is used to run multiple replicas of your pod and will automatically replace any failed or unresponsive pod

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Question 20 **Correct**

Domain : Other

For this question, refer to the TerramEarth case study: https://cloud.google.com/certification/guides/cloud-architect/casestudy-terramearth-rev2
Initially, TerramEarth will be testing BigQuery service as the preferred replacement of their On-Premise data warehouse system. During the testing phase, they only want access to the most recent data on BigQuery. Any data older than 15 days must be deleted to optimize storage use. How will you fulfill this requirement?

A. **Set the default table expiration to 15 days**

B. **Create a script using bq that removes records older than 15 days**

C. **Take advantage of BigQuery long-term storage**

✓ D. **Make the tables Date-partitioned, and configure the partition expiration at 15 days**

Explanation:

Answer : D

As TerramEarth will be testing BigQuery initially, they don't want data older than 15 days
You can partition the table based on date and set the default table expiration to 15 days which will automatically delete data older than 15 days providing you the most recent data.

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

Option B is incorrect because there is no read to write a script, it can be done by the default table expiration feature on BigQuery

Option C is incorrect because this is used when you have a table that is not edited for the last 90 Days. After 90 days the storage price drops by 50% which is similar to Nearline storage pricing

Option A is incorrect because it will directly set the default table expiration time to 15 days which will delete data older than 15 days.

Please refer to https://cloud.google.com/bigquery/docs/managing-tables for more information

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