

# Google Cloud Skills Boost Google Cloud

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- [Google Cloud Skills Boost Google Cloud](#)
  - [02 Google Cloud Fundamentals: Core Infrastructure](#)
    - [Introducing Google Cloud](#)
    - [Resources and Access in the Cloud](#)
    - [Getting Started with VPC Networking and Google Compute Engine](#)
    - [Storage in the Cloud](#)
      - [Containers in the Cloud](#)
    - [Applications in the Cloud](#)
    - [Prompt Engineering](#)
  - [03 Essential Google Cloud Infrastructure: Foundation](#)
    - [Interacting with Google Cloud](#)
    - [Virtual Networks](#)
      - [Virtual Machines](#)
  - [Disclaimer](#)

## 02 Google Cloud Fundamentals: Core Infrastructure

### Introducing Google Cloud

1. What type of cloud computing service lets you bind your application code to libraries that give access to the infrastructure your application needs?
- ☐ Virtualized data centers
  - ☒ Platform as a service
  - ☐ Infrastructure as a service
  - ☐ Software as a service

說明：平台即服務（PaaS）讓應用程式綁定基礎設施所需的函式庫。

2. Why might a Google Cloud customer use resources in several regions around the world?
- ☐ To improve security
  - ☐ To offer localized application versions in different regions
  - ☐ To earn discounts
  - ☒ To bring their applications closer to users around the world, and for improved fault tolerance

說明：把應用程式靠近全球使用者，並提升容錯性。

3. What is the primary benefit to a Google Cloud customer of using resources in several zones within a region?
- ☐ For getting discounts on other zones
  - ☒ For improved fault tolerance
  - ☐ For expanding services to customers in new areas
  - ☐ For better performance

說明：使用多個可用區提升故障容忍度。

## Resources and Access in the Cloud

1. Choose the correct completion: Services and APIs are enabled on a per-\_\_\_\_\_ basis.

- ☐ Organization
- ☒ Project
- ☐ Billing account
- ☐ Folder

說明：服務與 API 是以專案 ( Project ) 為單位啟用的。

2. Which of these values is globally unique, permanent, and unchangeable, but can be modified by the customer during creation?

- ☐ The project name
- ☐ The project's billing credit-card number
- ☐ The project number
- ☒ The project ID

說明：專案 ID 在建立時可設定，但之後不能更改，且全球唯一。

3. Order these IAM role types from broadest to finest-grained.

- ☐ Predefined roles, custom roles, basic roles
- ☒ Basic roles, predefined roles, custom roles
- ☐ Custom roles, predefined roles, basic roles

說明：IAM 權限範圍從大到小排序：基本角色 → 預設角色 → 自訂角色。

## Getting Started with VPC Networking and Google Compute Engine

1. Which firewall rule allows the ping to mynet-r2-vm's external IP address?

- ☐ mynetwork-allow-ssh
- ☒ mynetwork-allow-icmp
- ☐ mynetwork-allow-rdp
- ☐ mynetwork-allow-custom

說明：允許 ICMP ( ping ) 流量的防火牆規則。

2. How does Cloud Load Balancing allow you to balance HTTP-based traffic?

- ☐ Across multiple physical machines in a single data center.
- ☐ Across multiple virtual machine instances in a single Compute Engine region.
- ☒ Across multiple Compute Engine regions.
- ☐ Across multiple Google Cloud Platform services.

說明：HTTP 流量可跨多個 Compute Engine 區域進行負載平衡。

3. For which of these interconnect options is a Service Level Agreement available?

- ☐ Standard Network Tier
- ☐ Direct Peering
- ☒ Dedicated Interconnect
- ☐ Carrier Peering

說明：專線互連 ( Dedicated Interconnect ) 提供服務水準協議 ( SLA ) 。

## Storage in the Cloud

1. What is the correct use case for Cloud Storage?

- ☒ Cloud Storage is well suited to providing durable and highly available object storage.
- ☐ Cloud Storage is well suited to providing RDBMS services.
- ☐ Cloud Storage is well suited to providing data warehousing services.
- ☐ Cloud Storage is well suited to providing the root file system of a Linux virtual machine.

說明：Cloud Storage 適合用來提供持久且高可用性的物件儲存。

2. Why would a customer consider the Coldline storage class?

- ☒ To save money on storing frequently accessed data.
- ☐ To improve security.
- ☐ To use the Coldline Storage API.
- ☐ To save money on storing infrequently accessed data.

說明：Coldline 適合儲存不常存取的資料，能節省成本。

3. Which relational database service can scale to higher database sizes?

- ☒ Spanner
- ☐ Firestore
- ☐ Bigtable
- ☐ Cloud SQL

說明：Spanner 可以支援更大規模的資料庫。

## Containers in the Cloud

1. What is a Kubernetes pod?

- ☐ A group of nodes
- ☐ A group of clusters
- ☒ A group of containers
- ☐ A group of VMs

說明：Pod 是一組容器。

2. Where do the resources used to build Google Kubernetes Engine clusters come from?

- ☐ Bare-metal servers
- ☐ App Engine
- ☒ Compute Engine
- ☐ Cloud Storage

說明：GKE 叢集的資源來自 Compute Engine。

## Applications in the Cloud

1. Which of these statements about Cloud Run functions are correct? Select three. 'Cloud Run functions:'

### Multi Choose

- ☒ Is a scalable functions-as-a-service platform.
- ☒ Is integrated with Cloud Logging.

- ☐ Require servers or VMs to be provisioned.
- ☒ Can be used to extend Cloud services.
- ☐ Can only be invoked by sending HTTP requests.

說明：Cloud Run Functions 是可擴展的平台，整合了 Cloud Logging，也可延伸其他雲端服務。

2. Why might a Google Cloud customer choose to use Cloud Run functions?

- ☒ Their application contains event-driven code that they don't want to provision compute resources for.
- ☐ Their application has a legacy monolithic structure that they want to separate into microservices.
- ☐ Cloud Run functions is a free service for hosting compute operations.
- ☐ Cloud Run functions is the primary way to run C++ applications in Google Cloud.

說明：如果應用程式包含事件驅動的程式碼，又不想管理運算資源，適合使用 Cloud Run Functions。

3. Which scenario is best suited for using Cloud Run instead of Cloud Run functions?

- ☐ Sending an email notification whenever a new document is added to a specific folder in Cloud Storage.
- ☐ Resizing images on demand when requested by a user through a web interface.
- ☒ Hosting a dynamic web application that allows users to upload and share photos.
- ☐ Generating thumbnails for images uploaded to a Cloud Storage bucket.

說明：如果要承載動態網頁應用，適合使用 Cloud Run。

## Prompt Engineering

1. Which of the following is not a good practice for constructing prompts?

- ☐ Avoid ambiguity.
- ☐ Vary your prompts.
- ☒ Include long and detailed sentences.
- ☐ Keep it short and simple.

說明：編寫提示 ( Prompt ) 時，長且複雜的句子不是好習慣，應避免。

2. Which one of the following is not a type of prompt?

- ☐ Zero-shot
- ☐ One-shot
- ☒ Role prompt
- ☐ Two-shot

說明：在常見的提示類型中，沒有「角色提示 ( Role prompt )」這個分類。

3. How can you avoid hallucinations when using a large language model?

- ☒ Train the model on a clean, curated dataset.
- ☐ Train the LLM on a smaller dataset.
- ☐ Do not add any context to your prompts.
- ☐ Train the model to operate with very few constraints.

說明：使用乾淨且經過整理的資料集訓練模型，可以減少產生虛構內容 ( 幻覺現象 )。

4. Generative AI is a type of artificial intelligence that can \_\_\_\_.
- ☐ Perform complex calculations and mathematical operations.
  - ☐ Generate responses on real-time data.
  - ☐ Make predictions about future events.
  - ☒ Generate text, images, or other data using generative models.

說明：生成式 AI 是一種可以利用生成模型創造文字、影像或其他資料的人工智慧。

## 03 Essential Google Cloud Infrastructure: Foundation

### Interacting with Google Cloud

1. To create a persistent state in Cloud Shell, which file would you configure?
- ☐ .my\_variables
  - ☒ .bashrc
  - ☐ .config
  - ☐ .profile

說明：在 Cloud Shell 中設定 .bashrc 可保存個人環境設定。

2. What is the difference between the Google Cloud Console and Cloud Shell?
- ☐ The Cloud Console is a command-line tool, while Cloud Shell is a graphical user interface
  - ☐ Cloud Shell is a locally installed tool, while the Cloud Console is a temporary virtual machine.
  - ☐ There is no difference as these tools are 100% identical.
  - ☒ Cloud Shell is a command-line tool, while the Cloud Console is a graphical user interface

說明：Cloud Shell 是指令列工具；Cloud Console 是圖形化介面。

3. Which of the following does not allow you to interact with Google Cloud?
- ☒ Cloud Explorer
  - ☐ REST-based API
  - ☐ Cloud Shell
  - ☐ Google Cloud Console

說明：Cloud Explorer 不是用來與 GCP 互動的正式工具。

### Virtual Networks

1. Without a VPC network, you cannot create VM instances, containers, or App Engine applications.
- ☒ True
  - ☐ False

說明：沒有 VPC 網路就無法建立虛擬機、容器或 App Engine。

2. Which firewall rule allows the ping to mynet-notus-vm's external IP address?
- ☐ mynetwork-allow-ssh
  - ☒ mynetwork-allow-icmp
  - ☐ mynetwork-allow-custom
  - ☐ mynetwork-allow-rdp

說明：允許 ICMP (例如 ping) 流量的防火牆規則。

3. Which instances should you be able to ping from mynet-us-vm using internal IP addresses? **Multi Choose**

- ☒ mynet-notus-vm
- ☐ managementnet-us-vm
- ☒ privatenet-us-vm

說明：從 mynet-us-vm 內部 IP 可以 ping 到 mynet-notus-vm 與 privatenet-us-vm。

4. Did the command prompt change to @vm-internal?

- ☒ True
- ☐ False

說明：提示符號應該會變成 @vm-internal。

5. Currently, which of your VM instances can access the image from your bucket?

- ☐ Cloud Shell
- ☒ vm-internal

說明：目前只有 vm-internal 可以存取 bucket 中的圖片。

6. What are the three types of networks offered in Google Cloud?

- ☐ Gigabit network, 10 gigabit network, and 100 gigabit network
- ☐ IPv4 unicast network, IPv4 multicast network, IPv6 network
- ☐ Zonal, regional, and global
- ☒ Default network, auto network, and custom network.

說明：Google Cloud 提供：預設網路、自動網路、客製網路。

7. What is one benefit of applying firewall rules by tag rather than by address?

- ☐ Tags on firewall rules control which ephemeral IP addresses VMs will receive.
- ☒ When a VM is created with a matching tag, the firewall rules apply irrespective of the IP address it is assigned.
- ☐ Tags in network traffic help with network sniffing.
- ☐ Tags help organizations track firewall billing.

說明：Google Cloud 提供：預設網路、自動網路、客製網路。

8. In Google Cloud, what is the minimum number of IP addresses that a VM instance needs?

- ☒ One: Only an internal IP address
- ☐ Two: One internal and one external IP address
- ☐ Three: One internal, one external and one alias IP address

說明：虛擬機至少需要一個內部 IP 位址。

## Virtual Machines

1. What are sustained use discounts?

- ☒ Automatic discounts that you get for running specific Compute Engine resources for a significant portion of the billing month
- ☐ Purchase commitments for specific resources you know you will use

- ☐ Per-second billing that starts after a 1 minute minimum
- ☐ Discounts you receive by using preemptible VM instances

說明：長期使用折扣：當資源在一個月內使用時間達標，會自動獲得折扣。

2. Which statement is true of Virtual Machine Instances in Compute Engine?

- ☒ In Compute Engine, a VM is a networked service that simulates the features of a computer.
- ☐ All Compute Engine VMs are single tenancy and do not share CPU hardware.
- ☐ A VM in Compute Engine always maps to a single hardware computer in a rack.
- ☐ Compute Engine uses VMware to create Virtual Machine Instances.

說明：Compute Engine 的虛擬機是模擬電腦功能的網路服務。

3. Which statement is true of persistent disks?

- ☐ Persistent disks are always HDDs (magnetic spinning disks).
- ☒ Persistent disks are encrypted by default.
- ☐ Persistent disks are physical hardware devices connected directly to VMs.
- ☐ Once created, a persistent disk cannot be resized.

說明：持久磁碟預設會進行加密。

## Disclaimer

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