

Task 1:

Create and Manage Cloud Resources

- a) Tour of Google Cloud
- b) Creating a Virtual Machine
- c) Getting Started with Cloud Shell and g cloud

a) Tour of Google Cloud

1. Sign Up for Google Cloud

Go to the Google Cloud Console

<https://console.cloud.google.com/>

If you don't have an account, sign up for one. Google offers a free tier with credits for new users.

Once signed in, you'll be in the Google Cloud Console, which is the web-based management interface for Google Cloud.

2. Explore the Google Cloud Console

Navigation Menu: Located on the top left (three horizontal lines), this menu gives you access to all GCP services such as Compute Engine, Cloud Storage, BigQuery, etc.

Dashboard: The main dashboard provides an overview of your resources, billing information, and project information.


Projects: GCP organizes resources under projects. You can create multiple projects to manage different environments or applications.

IAM & Admin: Manage user permissions and access control here.

Billing: Monitor your usage and costs associated with your projects.

APIs & Services: Manage API usage, enable or disable APIs, and access API credentials.

 Cloud overview >

 Solutions >

PINNED PRODUCTS



API APIs & Services  >



 Billing 

 IAM & Admin  >

 Marketplace 

 Vertex AI  >

 Compute Engine  >

 Kubernetes Engine  >

 Cloud Storage  >

3. Explore Documentation and Support

Access the documentation through the “Documentation” link in the console. This is a valuable resource for learning more about specific services.

The “Help” option offers various support options, including community forums and direct support (depending on your support plan).

The image shows two screenshots of the Google Cloud documentation interface. The top screenshot is the 'Google Cloud Documentation' homepage. It features a left sidebar with a 'Filter' button and a list of links: 'Google Cloud Documentation home', 'Get started with Google Cloud', 'Product list', 'Integrated AI assistance with Gemini for Google Cloud', 'Recent release notes', 'Cloud Customer Care', 'Cross-product tools', 'Generative AI', 'AI and ML', and 'Application development'. The main content area has a header 'Google Cloud Documentation' with a sub-header 'Find user guides, quickstarts, tutorials, use cases, code samples, and more.' Below this is a blue button 'View free product offers' and a green box titled 'Keep exploring with 20+ always-free products' with text 'Access 20+ free products for common use cases, including AI APIs, VMs, data warehouses, and more.' Further down is a 'Discover' section with the text 'Learn about Google Cloud, find prescriptive guidance, and explore migration resources.' and three cards: 'Google Cloud overview' (Learn about Google Cloud, including), 'Cloud Architecture Center' (Plan and design your infrastructure), and 'Start free' (Start building in the console with \$300).

The bottom screenshot is the 'Compute Engine documentation' page. The left sidebar shows a breadcrumb trail: 'Application hosting' > 'Compute' > 'Virtual machines' > 'Compute Engine'. The main content area has a header 'Compute Engine documentation' with a blue button 'View all product documentation'. Below this is a paragraph: 'Compute Engine is a [computing and hosting service](#) that lets you create and run virtual machines on Google infrastructure. Compute Engine offers scale, performance, and value that lets you easily launch large compute clusters on Google's infrastructure. There are no upfront investments, and you can run thousands of virtual CPUs on a system that offers quick, consistent performance. [Learn more](#)'.

b) Creating a Virtual Machine

Navigate to Compute Engine

In the Google Cloud Console, click on the Navigation Menu (top left).

Select Compute Engine > VM instances.

2. Create a New VM Instance

Click on the Create Instance button.

Name your instance something identifiable (e.g., my-vm-instance).

Region and Zone: Select a region close to your user base or requirements. The zone is a specific data center within a region.

Machine Configuration:

Choose a machine family (e.g., General-purpose).

Select a machine type (e.g., e2-medium with 2 vCPUs and 4 GB RAM).

Boot Disk:

The default is a Debian Linux image, but you can choose other operating systems.

Set the disk size (default is 10 GB).

Firewall: You can allow HTTP and HTTPS traffic if you plan to run a web server.

Identity and API access: Choose default service account or a specific service account for the VM.

Click Create to launch your virtual machine.

3. Accessing Your VM

Once the VM is created, it will appear in the VM instances list.

Click on the SSH button next to your VM to open a terminal session directly in your browser.

4. Stop/Delete VM (When Not in Use)

To avoid charges, remember to stop or delete your VM when it's not needed. You can do this from the VM instances page by clicking on the three-dot menu next to your instance.

c) Getting Started with Cloud Shell and gcloud

1. Open Cloud Shell

In the Google Cloud Console, look for the Cloud Shell icon in the upper right

corner (a terminal icon).

Click the icon to open a Cloud Shell session. This gives you access to a Debianbased

shell with gcloud and other tools pre-installed.

Cloud Shell is free to use, with a small amount of persistent storage.

2. Initialize the gcloud CLI

Cloud Shell will automatically authenticate with your Google account and set up the gcloud CLI.

You can check your gcloud configuration by running:

```
gcloud config list
```

If needed, set the project you're working on:

```
gcloud config set project [PROJECT_ID]
```

3. Basic gcloud Commands

List Available Zones:

```
gcloud compute zones list
```