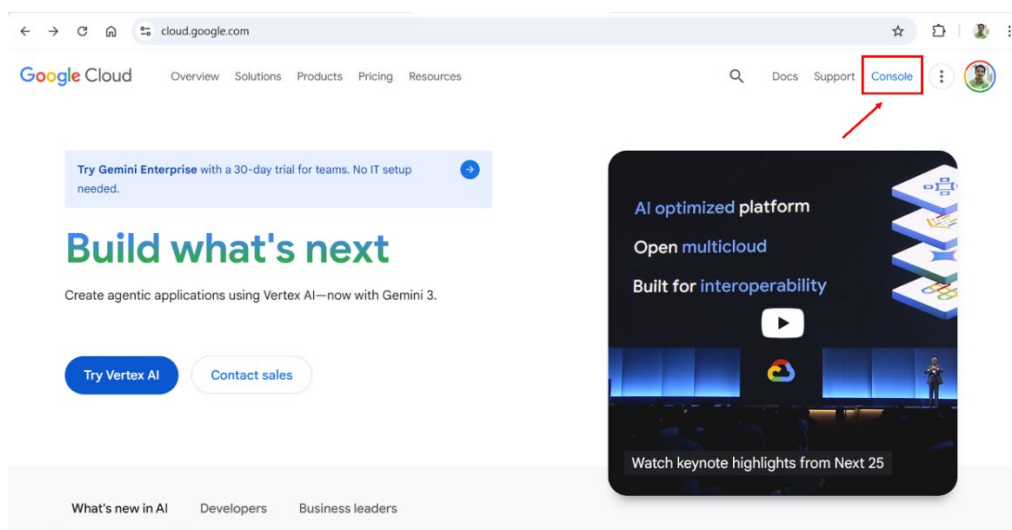


CLOUD COMPUTING LABORATORY

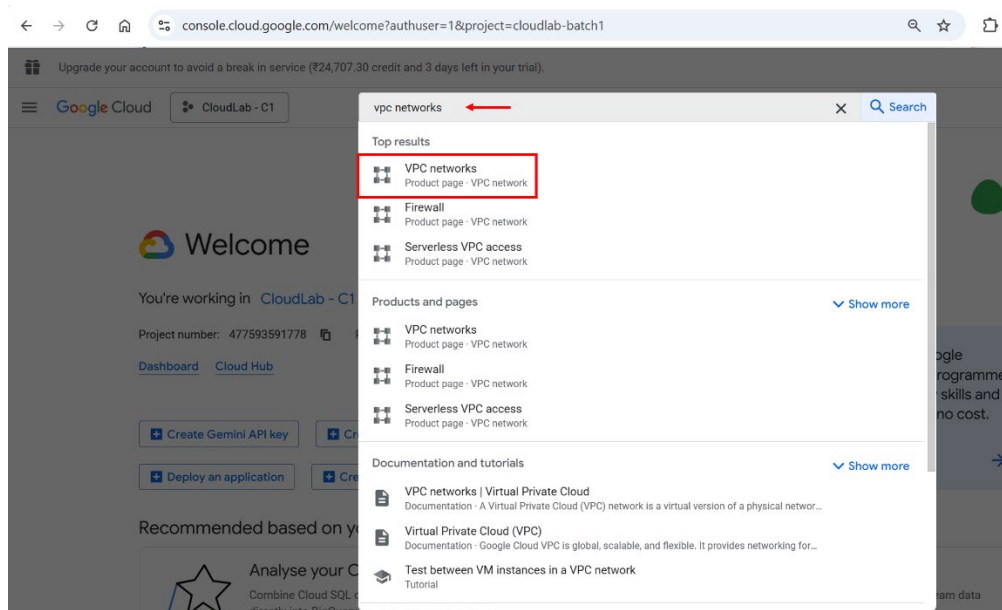
Experiment – 8:

Explore benefits of using multiple VPC networks in Google Cloud for organizing and isolating resources.

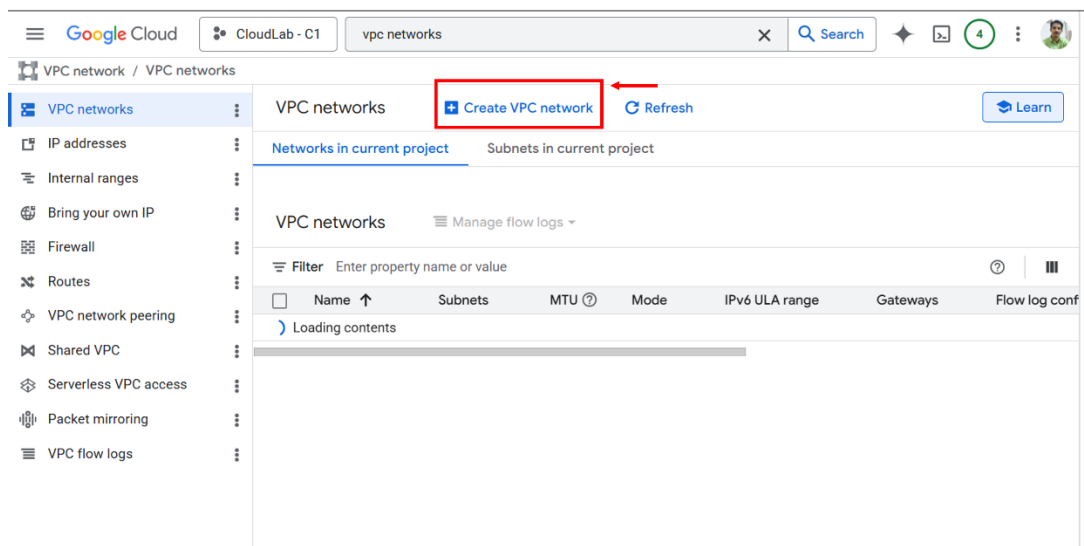
Step 1: From the Google Cloud homepage, click on **Console** to open the Google Cloud Console.



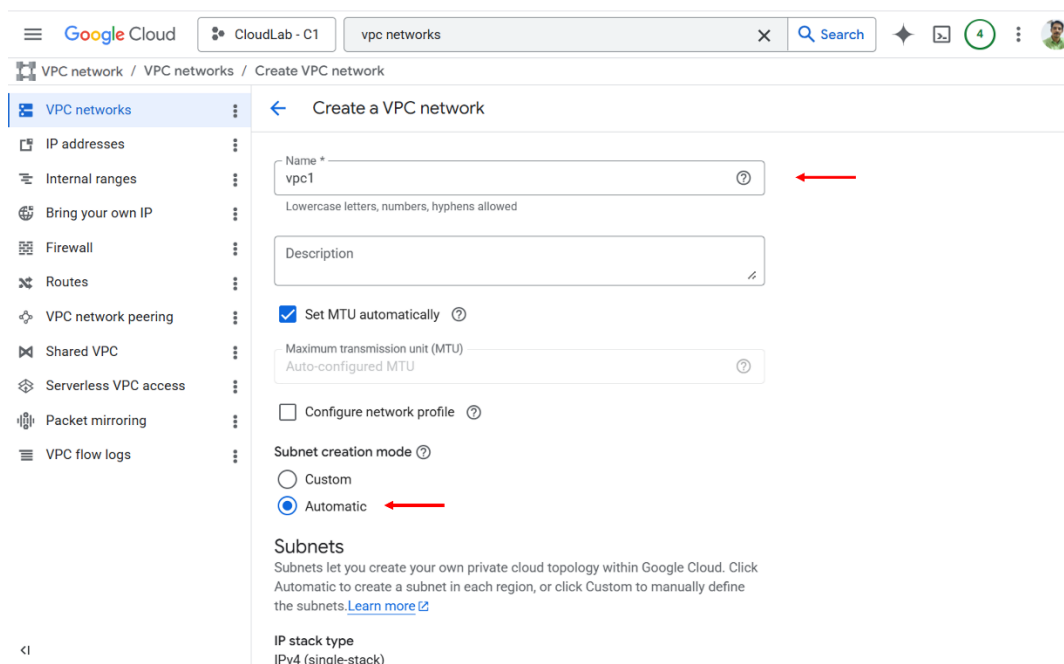
Step 2: In the Google Cloud Console search bar, type **VPC networks** and select **VPC networks** from the search results.



Step 3: On the VPC networks page, click **Create VPC network** to create a new network.



Step 4: Enter the VPC name as **vp1**, keep the subnet creation mode as **Automatic**, and click **Create**.



Step 5: Keep the dynamic routing mode as **Regional** and best path selection mode as **Legacy (default)**. Click **Create** to create the VPC network.

The screenshot shows the 'Create a VPC network' configuration page in the Google Cloud console. The left sidebar lists various network-related services. The main content area is titled 'Advanced dynamic routing configuration' and includes the following settings:

- Dynamic routing mode:** Regional (Cloud Routers will learn routes only in the region in which they were created) and Global (Global routing lets you learn routes dynamically to and from all regions with a single VPN or interconnect and Cloud Router).
- Best path selection mode:** Legacy (default) and Standard.
- DNS configuration (optional):** A note states that the DNS API needs to be enabled to add DNS server policy and DNS zones to the VPC network.

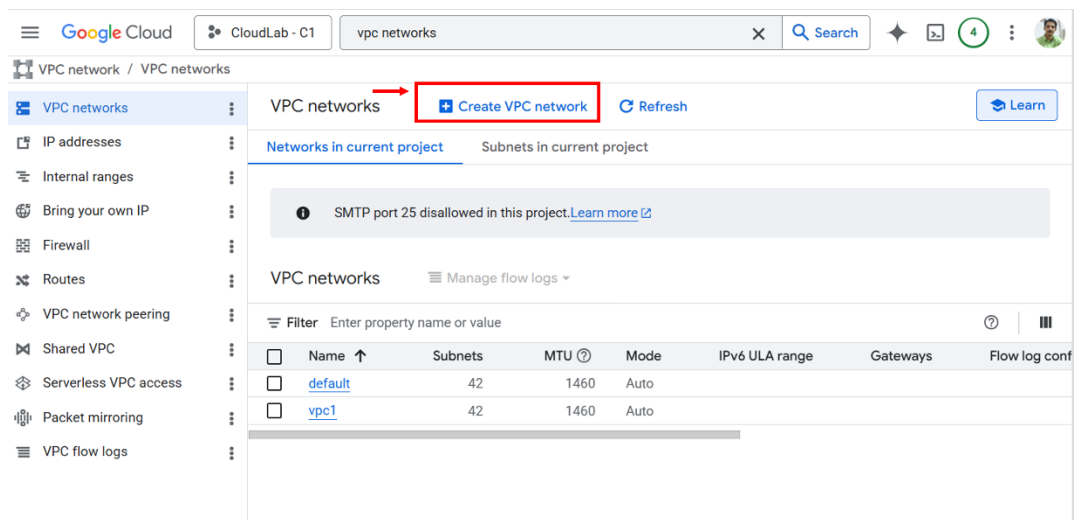
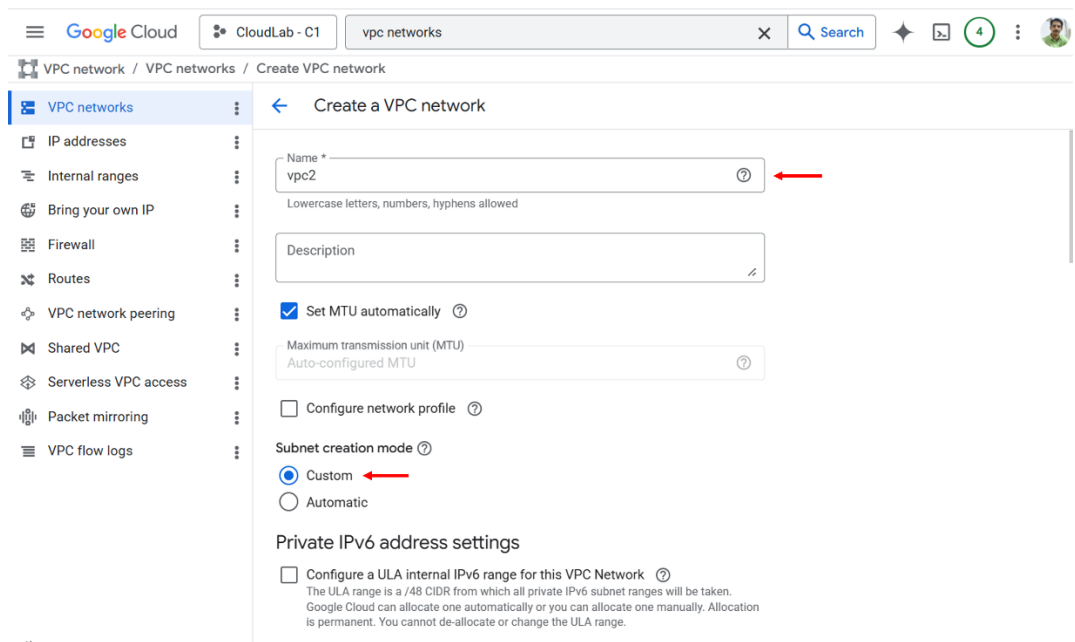
At the bottom, there are 'Create' and 'Cancel' buttons. A red arrow points to the 'Create' button.

Step 6: Verify that **vpc1** is successfully created and listed under **VPC networks**.

The screenshot shows the 'VPC networks' page in the Google Cloud console. The left sidebar is visible. The main content area shows a list of VPC networks. A table displays the following data:

Name	Subnets	MTU	Mode	IPv6 ULA range	Gateways	Flow log conf
default	42	1460	Auto			
vpc1	42	1460	Auto			

The 'vpc1' row is highlighted with a red box. Below the table, a dark notification box displays the message: 'Successfully created network vpc1.'

Step 7: Click Create VPC network again to create another VPC network.**Step 8: Enter the VPC name as vpc2** and select **Custom** under subnet creation mode.

Step 9: Enter the subnet name as **mysubnet**, select the region as **us-central1 (Iowa)**, and set the IPv4 range as **10.0.0.0/24**.

The screenshot shows the 'Create a VPC network' page in the Google Cloud console. The 'Edit subnet' section is active, and the following fields are filled out:

- Name:** mysubnet
- Region:** us-central1 (Iowa)
- IP stack type:** IPv4 (single-stack)
- Primary IPv4 range:** 10.0.0.0/24

Step 10: Select the required firewall rule for the custom subnet.

The screenshot shows the 'Create a VPC network' page in the Google Cloud console, specifically the 'Firewall rules' section. A table of IPv4 firewall rules is displayed, with the 'vpc2-allow-custom' rule selected.

Name	Type	Targets	Filters	Protocols/ports	Action	Priority	Direction
<input checked="" type="checkbox"/> vpc2-allow-custom	Ingress	Apply to all	IP ranges: 10.0.0.0/24	all	Allow	65,534	Egress
<input type="checkbox"/> vpc2-allow-icmp	Ingress	Apply to all	IP ranges: 0.0.0.0/0	icmp	Allow	65,534	Egress
<input type="checkbox"/> vpc2-allow-rdp	Ingress	Apply to all	IP ranges: 0.0.0.0/0	tcp:3389	Allow	65,534	Egress
<input type="checkbox"/> vpc2-allow-ssh	Ingress	Apply to all	IP ranges: 0.0.0.0/0	tcp:22	Allow	65,534	Egress
<input type="checkbox"/> vpc2-deny-all-ingress	Ingress	Apply to all	IP ranges: 0.0.0.0/0	all	Deny	65,535	Egress

Step 11: Keep the dynamic routing mode as **Regional** and best path selection mode as **Legacy (default)**, then click **Create**.

The screenshot shows the 'Create a VPC network' configuration page in the Google Cloud console. The left sidebar lists various network-related options. The main content area shows the following settings:

- Dynamic routing mode:** Regional (Cloud Routers will learn routes only in the region in which they were created) and Global.
- Best path selection mode:** Legacy (default) and Standard.
- DNS configuration (optional):** A note states that the DNS API needs to be enabled to add DNS server policy and DNS zones.

At the bottom, there are 'Create' and 'Cancel' buttons. A red arrow points to the 'Create' button. Below the buttons are links for 'Equivalent command line' and 'Equivalent REST'.

Step 12: Verify that **vpc2** is successfully created and listed under **VPC networks** with custom subnet mode.

The screenshot shows the 'VPC networks' page in the Google Cloud console. The table below lists the VPC networks in the current project:

Name	Subnets	MTU	Mode	IPv6 ULA range	Gateways	Flow log conf
default	42	1460	Auto			
vpc1	42	1460	Auto			
vpc2	1	1460	Custom			

The 'vpc2' row is highlighted with a red border. Below the table, a dark notification box displays the message: 'Successfully created network vpc2.'

Step 13: Open vpc2, click **Delete VPC network**, type vpc2 for confirmation, and click **Delete**.

