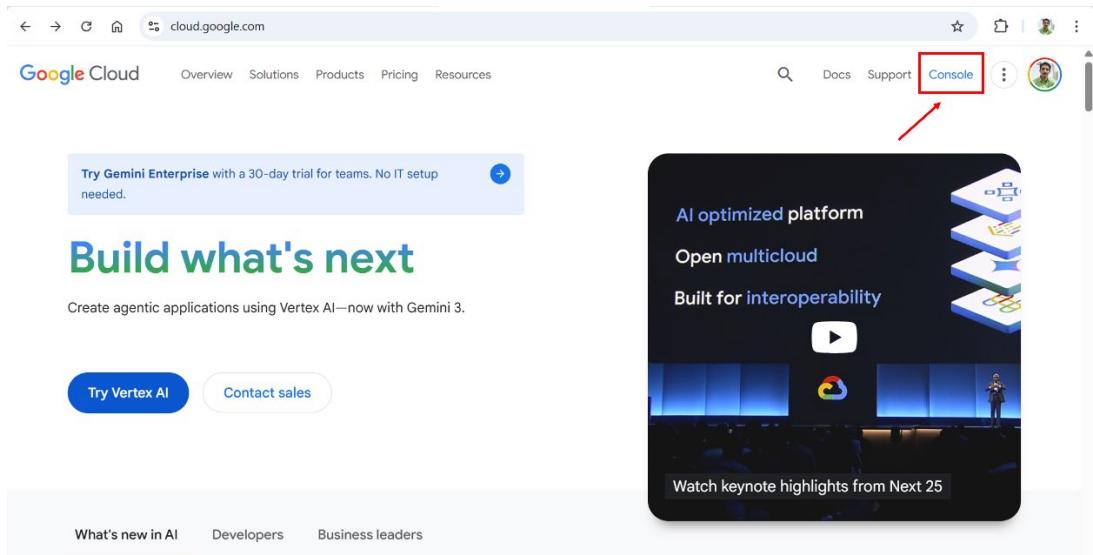


CLOUD COMPUTING LABORATORY

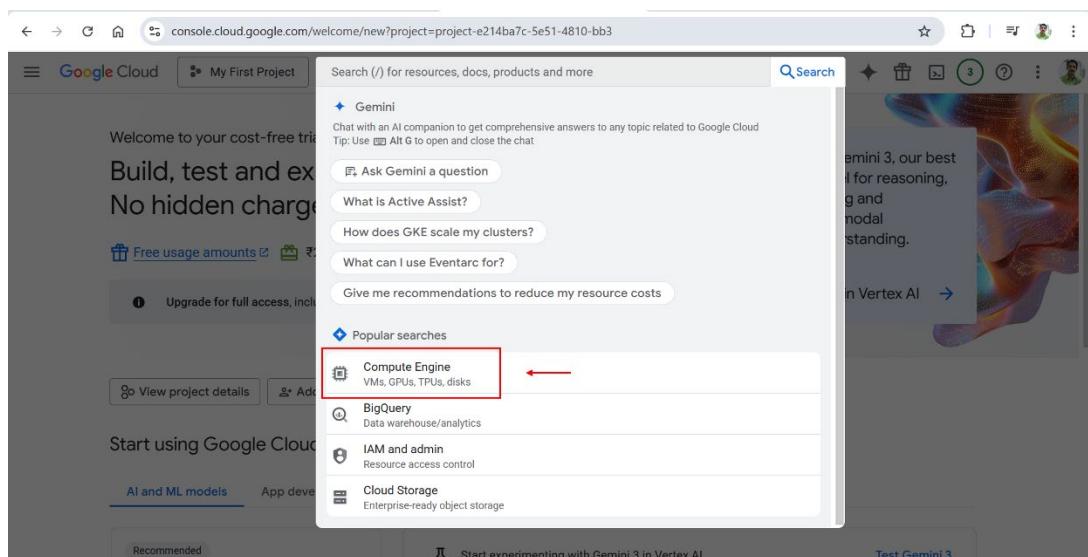
Experiment – 1:

Creating a Virtual Machine: Configure and deploy a virtual machine with specific CPU and memory requirements in Google Cloud.

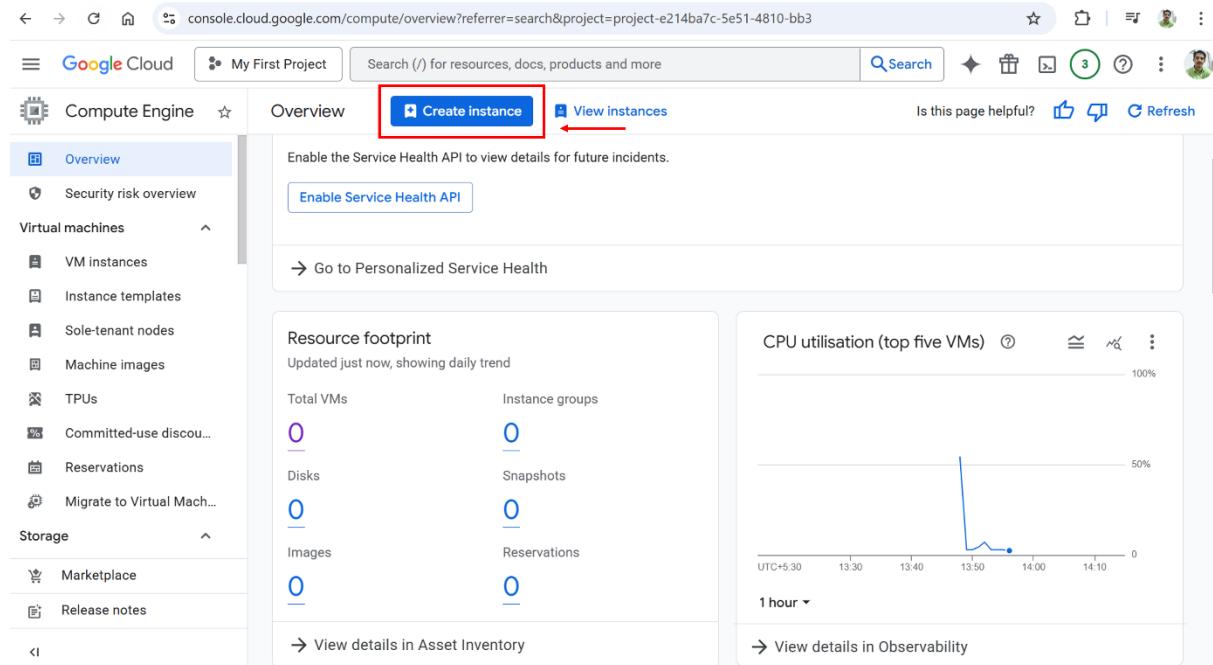
Step 1: From the Google Cloud homepage, click on **Console** to open the Google Cloud Console.



Step 2: In the welcome/search screen, select **Compute Engine** to access virtual machine services.



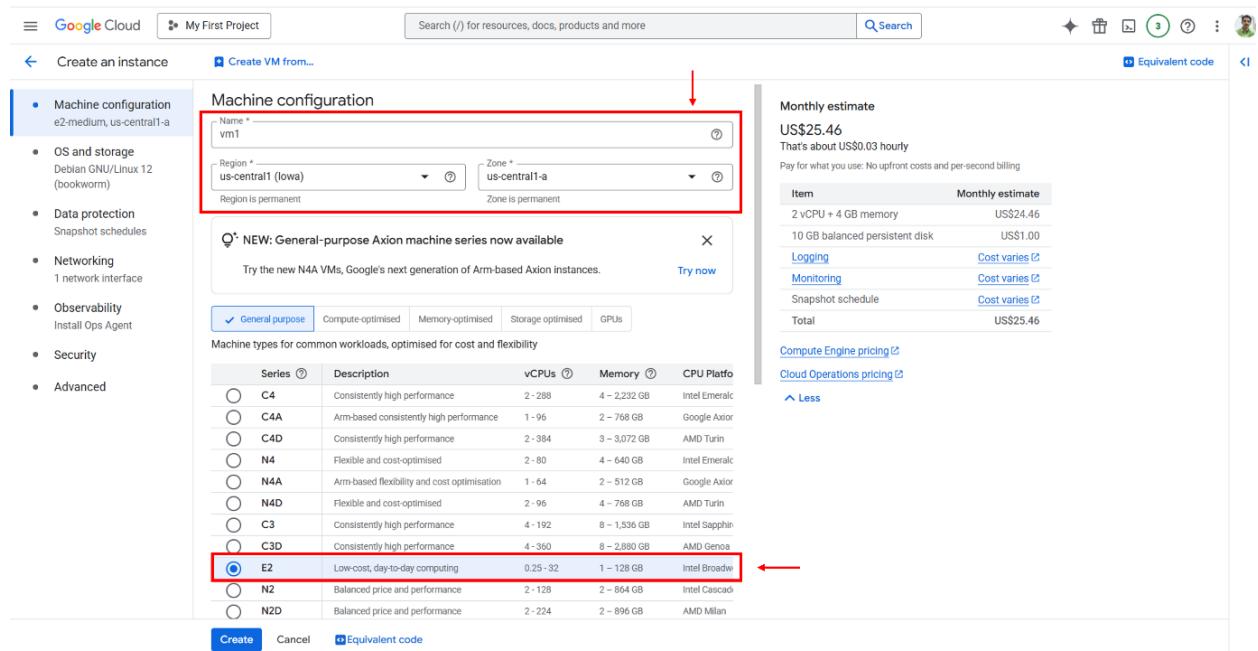
Step 3: On the Compute Engine overview page, click **Create instance** to begin virtual machine creation.



The screenshot shows the Google Cloud Compute Engine Overview page. On the left, there's a sidebar with navigation links for Overview, Security risk overview, Virtual machines (VM instances, Instance templates, Sole-tenant nodes, Machine images, TPUs, Committed-use discounts, Reservations, Migrate to Virtual Machine), Storage (Marketplace, Release notes), and Help (Enable Service Health API, Go to Personalized Service Health, View details in Asset Inventory, View details in Observability). The main area has a heading 'Resource footprint' with statistics for Total VMs (0), Disks (0), Images (0), Instance groups (0), Snapshots (0), and Reservations (0). To the right is a chart titled 'CPU utilisation (top five VMs)' showing usage over a 1-hour period. At the top right, there are 'Is this page helpful?' and 'Refresh' buttons.

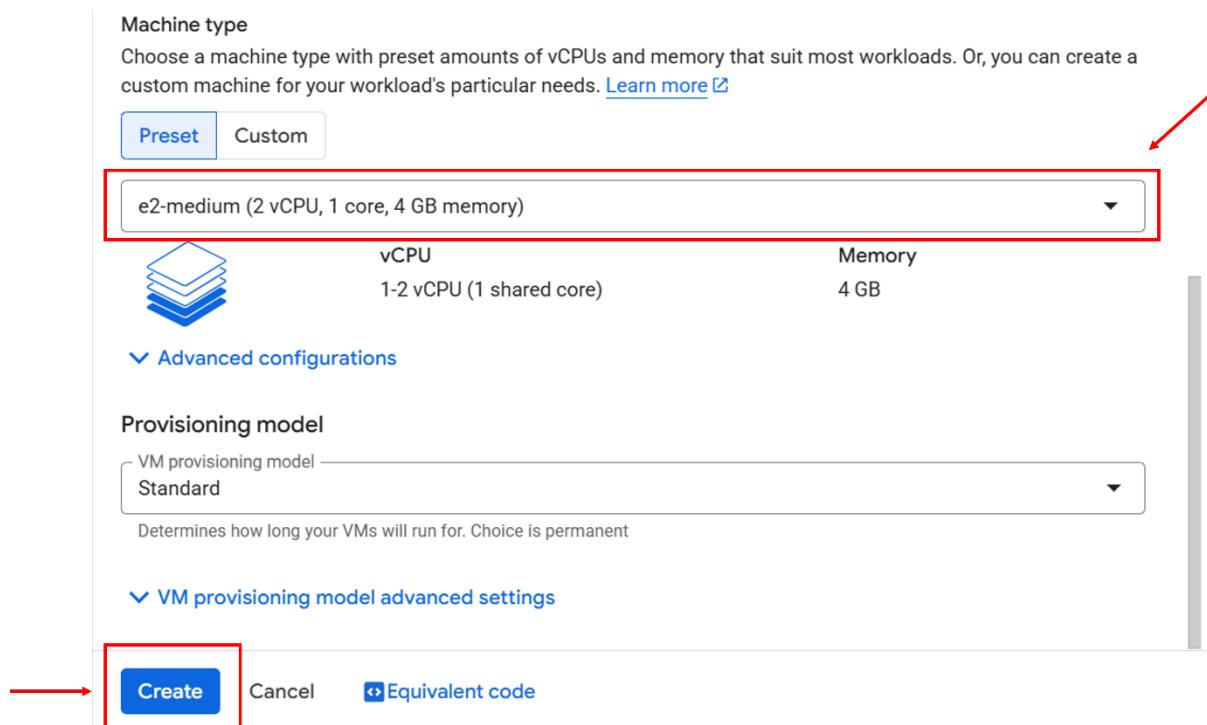
Step 4: In the machine configuration section, enter the required **VM name**, **region**, and **zone**.

- While selecting the machine series, keep the default **E2 series** unchanged unless a different series is required.



The screenshot shows the 'Create an instance' wizard. On the left, a sidebar lists steps: Machine configuration (selected), OS and storage, Data protection, Networking, Observability, Security, and Advanced. The main area has a 'Machine configuration' section with fields for Name (vm1), Region (us-central1 (Iowa)), and Zone (us-central1-a). A note says 'Region is permanent'. Below this is a 'Machine types for common workloads, optimised for cost and flexibility' table. The table has columns: Series, Description, vCPUs, Memory, and CPU Platform. It lists several series: C4, C4D, N4, N4A, N4D, C3, C3D, E2, N2, and N2D. The 'E2' row is highlighted with a red box and a red arrow. The table also shows memory ranges (e.g., 2-288, 1-96, 2-384, 1-64, 2-96, 4-192, 4-360, 2-128, 2-224) and CPU platforms (Intel Emeal, Google Axior, AMD Turin, Intel Sapphir, AMD Genoa, Intel Broadwell, Intel Cascad, AMD Milan). To the right, there's a 'Monthly estimate' table showing costs for various items like vCPUs, memory, and disk. At the bottom, there are 'Create', 'Cancel', and 'Equivalent code' buttons.

- In the machine type section, use the **default e2-medium (2 vCPU, 4 GB RAM)** unless CPU or memory specifications need modification.



Step 5: After creation, the **vm1** entry in the VM instances list confirms that the virtual machine is running.

VM instances		Create instance	Import VM	Refresh	Learn								
Instances		Observability		Instance schedules									
VM instances													
Filter Enter property name or value													
Status	Name ↑	Zone	Recommendations	In use by	Internal IP	External IP							
<input checked="" type="checkbox"/>	vm1	us-central1-a			10.128.0.4 (nic0)	34.72.6.176 (nic0)							
					SSH	⋮							

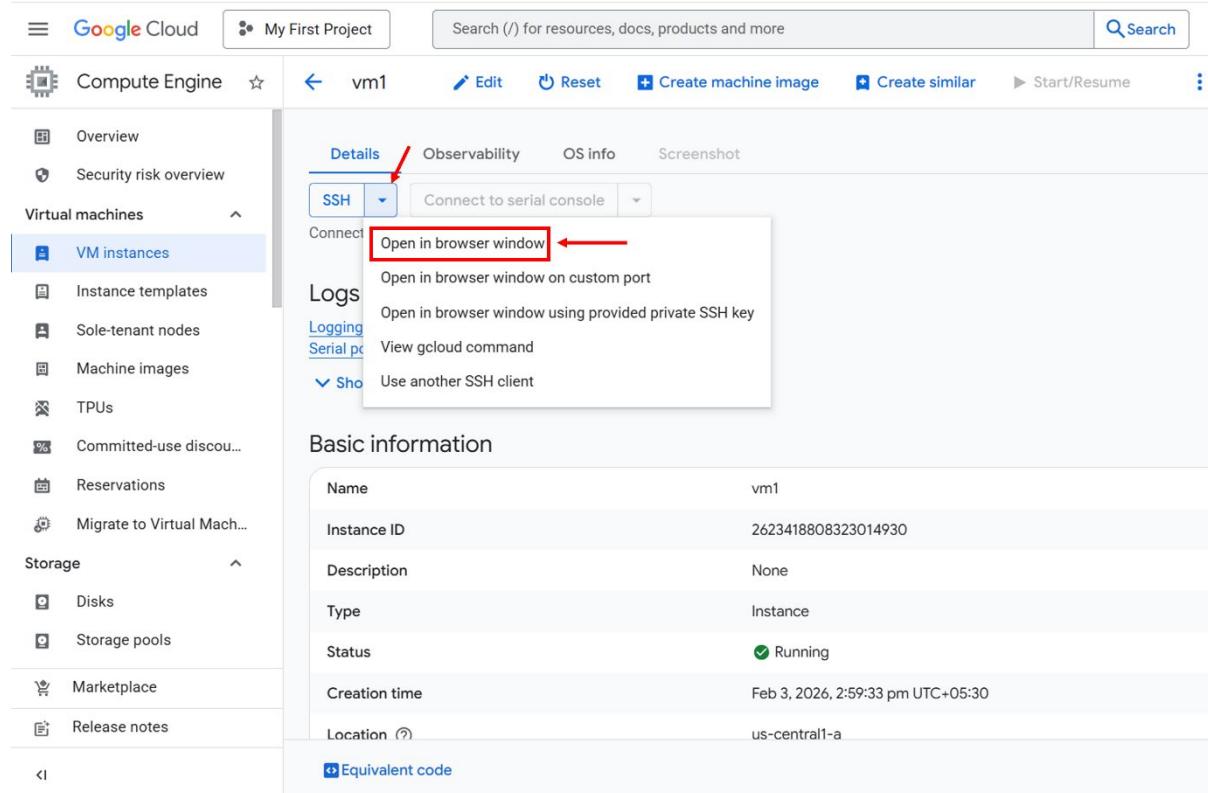
Related actions

[Protect with backup and DR](#)
Get centralised, immutable data protection with backup and DR service. Start your 30-day trial today

[View billing report](#)
View and manage your Compute Engine billing

[Monitor VMs](#)
View outlier VMs across metrics like CPU and network

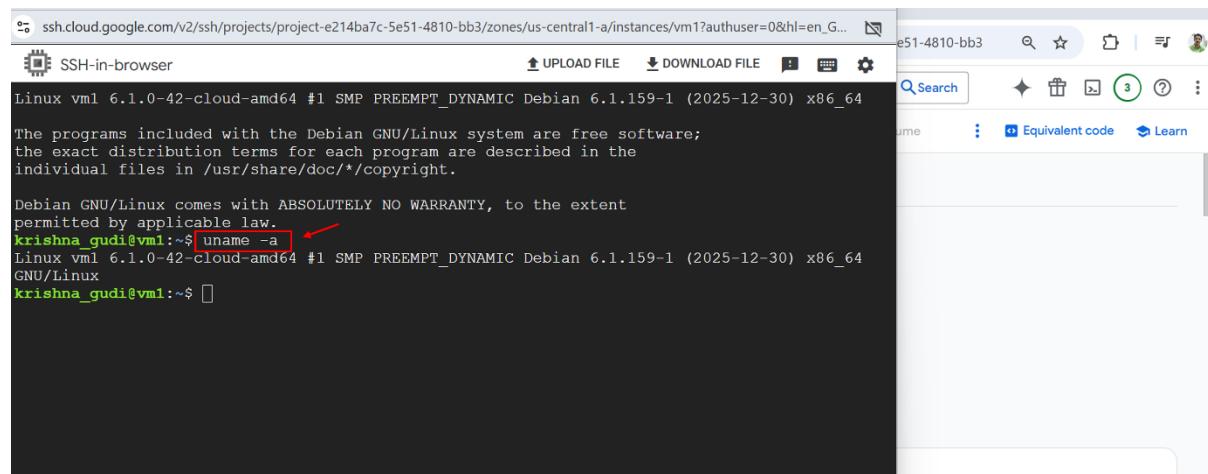
Step 6: From the VM details page, click on SSH and select **Open in browser window** from the dropdown to connect to the virtual machine.



The screenshot shows the Google Cloud Compute Engine interface. On the left, a sidebar lists 'Compute Engine' under 'My First Project', with sections for 'Overview', 'Security risk overview', 'Virtual machines' (selected), 'Instance templates', 'Sole-tenant nodes', 'Machine images', 'TPUs', 'Committed-use discou...', 'Reservations', 'Migrate to Virtual Mach...', 'Storage' (with 'Disks' and 'Storage pools' sub-options), 'Marketplace', and 'Release notes'. The main content area is titled 'vm1' and shows the 'Details' tab selected. Under 'SSH', a dropdown menu is open with options: 'Open in browser window' (highlighted with a red box and a red arrow), 'Open in browser window on custom port', 'Open in browser window using provided private SSH key', and 'Use another SSH client'. Below this is a 'Logs' section with 'Logging' and 'Serial port' sub-options, and a 'Show' dropdown. The 'Basic information' section lists the following details:

Name	vm1
Instance ID	2623418808323014930
Description	None
Type	Instance
Status	Running
Creation time	Feb 3, 2026, 2:59:33 pm UTC+05:30
Location	us-central1-a

Step 7: In the SSH terminal, execute **uname -a**, **ls**, **pwd**, **hostname**, and **whoami** to verify the operating system and VM environment.



The screenshot shows an SSH session in a browser window titled 'SSH-in-browser'. The terminal window displays the following output:

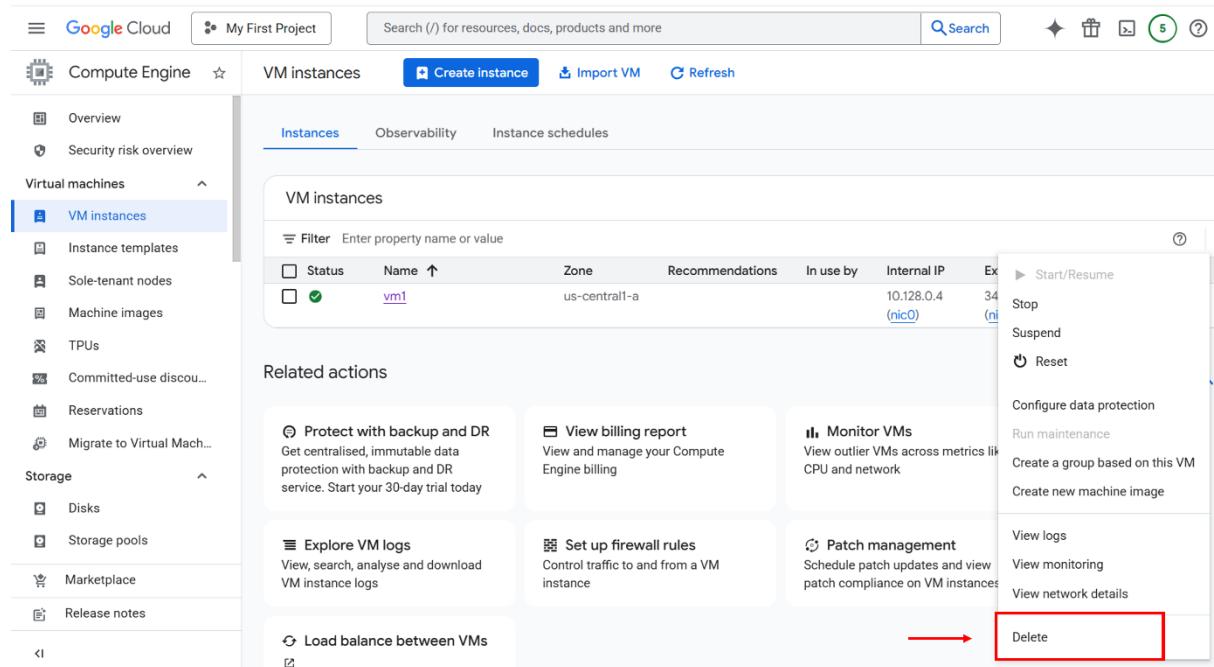
```

ssh.cloud.google.com/v2/ssh/projects/project-e214ba7c-5e51-4810-bb3/zones/us-central1-a/instances/vm1?authuser=0&hl=en_G...
SSH-in-browser
Linux vm1 6.1.0-42-cloud-amd64 #1 SMP PREEMPT_DYNAMIC Debian 6.1.159-1 (2025-12-30) x86_64
The programs included with the Debian GNU/Linux system are free software;
the exact distribution terms for each program are described in the
individual files in /usr/share/doc/*/*copyright.

Debian GNU/Linux comes with ABSOLUTELY NO WARRANTY, to the extent
permitted by applicable law.
krishna_gudi@vm1:~$ uname -a
Linux vm1 6.1.0-42-cloud-amd64 #1 SMP PREEMPT_DYNAMIC Debian 6.1.159-1 (2025-12-30) x86_64
GNU/Linux
krishna_gudi@vm1:~$ 

```

Step: 8: After completing the experiment, delete the virtual machine from the VM instances actions menu.



The screenshot shows the Google Cloud Compute Engine VM instances page. The left sidebar is collapsed. The main header includes the Google Cloud logo, 'My First Project', a search bar, and a notifications icon with 5 notifications. The 'VM instances' tab is selected. The main content area shows a table of VM instances with one row selected: 'vm1'. A context menu is open over this row, with the 'Delete' option highlighted by a red box and an arrow pointing to it. The menu also includes options like Start/Resume, Stop, Suspend, Reset, and Configure data protection.

Status	Name	Zone	Recommendations	In use by	Internal IP	External IP
Green checkmark	vm1	us-central1-a			10.128.0.4 (nic0)	34.125.123.123 (nic0)

Related actions

- Protect with backup and DR
- View billing report
- Monitor VMs
- Explore VM logs
- Set up firewall rules
- Patch management
- Load balance between VMs

Actions menu (highlighted):

- Start/Resume
- Stop
- Suspend
- Reset
- Configure data protection
- Run maintenance
- Create a group based on this VM
- Create new machine image
- View logs
- View monitoring
- View network details
- Delete
