

Tutorial 12

Google Cloud VM

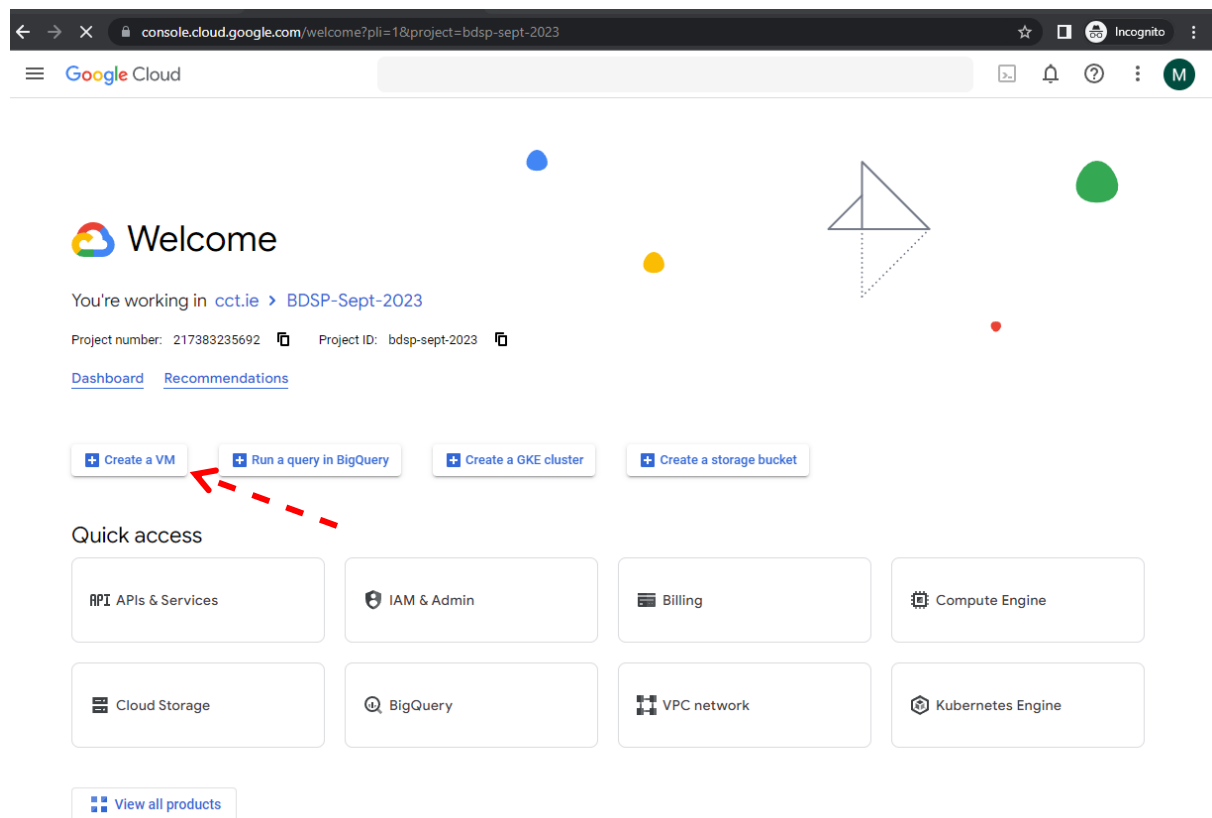
1) Open a private browser (New incognito window in google/ New InPrivate window in Microsoft Edge) and log into your CCT student email address before google credit claim.

2) Open Moodle page and claim the google credits from the following link as

[Claim \\$50 Credit](#)

Create a new project after successful claim of credits.

3) Open the google cloud link (**console.cloud.google.com**) and switch to your college CCT account as mentioned below



Click on the icon pointed by red arrow as “**Create a VM**” and the next screen will appear on your browser as

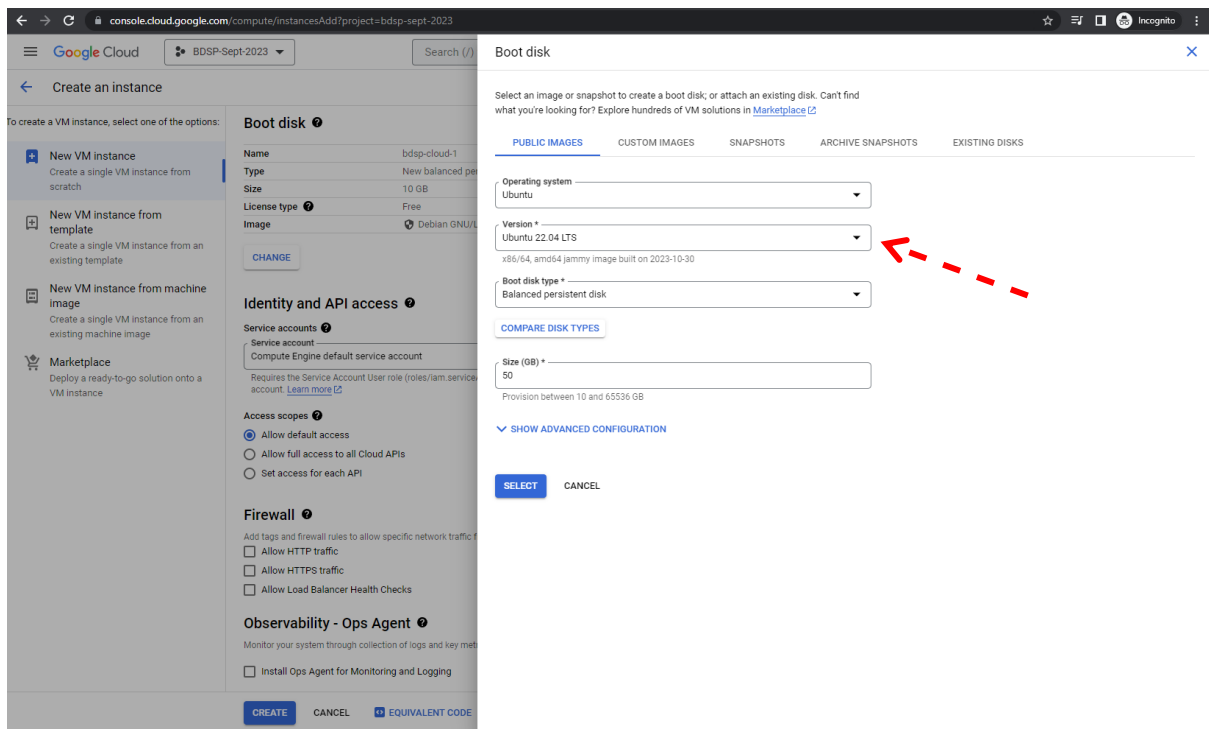
The screenshot shows the Google Cloud console interface for creating a VM instance. The left sidebar contains navigation links for Virtual machines, Storage, Instance groups, Marketplace, and Release Notes. The main content area is titled 'Create a VM instance' and 'Choose a starting point'. It offers two main paths: 'Custom VMs' and 'Workload-optimized VMs'. Under 'Custom VMs', there is a 'NEW VM' button highlighted with a red arrow. Below this, there are three preset VMs: 'Web server' (2 vCPUs + 4 GB memory, \$25.46), 'Application server' (2 vCPUs + 8 GB memory, \$50.34), and 'In-memory database' (4 vCPUs + 8 GB memory, \$130.83). A 'Machine learning model' preset is also visible. The 'Workload-optimized VMs' section is marked as 'NEW' and suggests selecting a preset VM optimized for specific workloads.

Click on NEW VM as shown with red arrow and the following screen will appear as

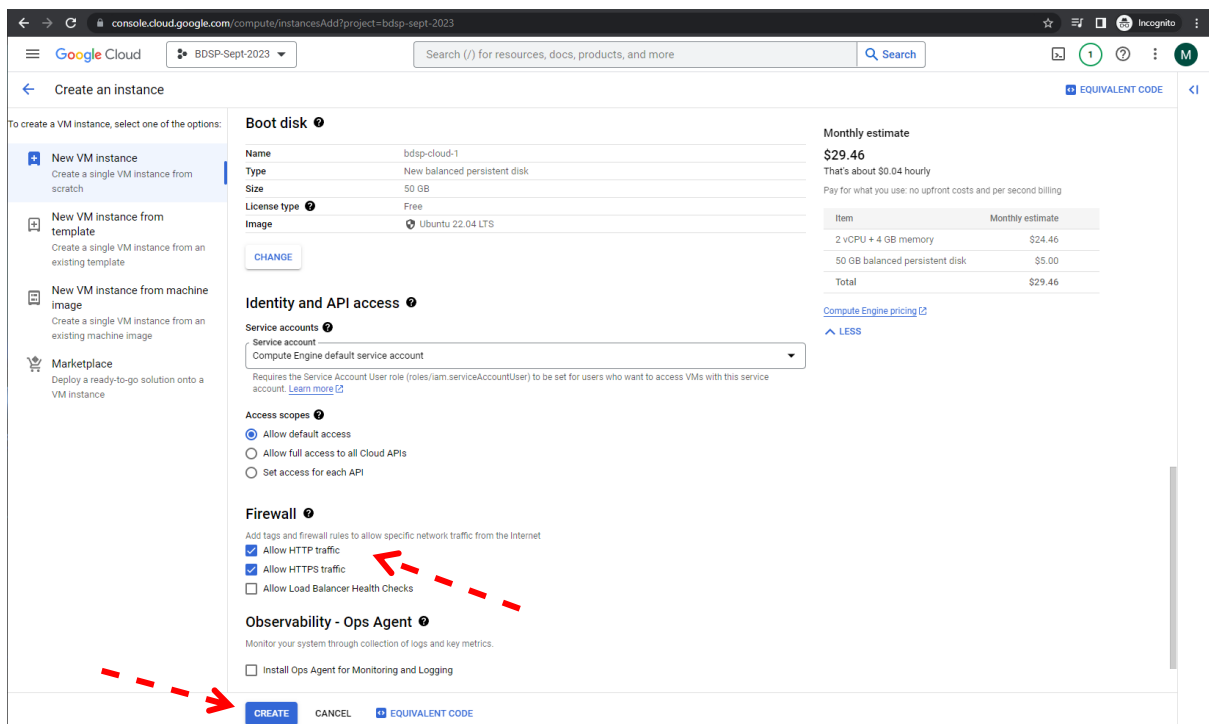
The screenshot shows the 'Create an instance' configuration page in the Google Cloud console. The left sidebar lists options for creating a VM instance: 'New VM instance' (highlighted), 'New VM instance from template', 'New VM instance from machine image', and 'Marketplace'. The main content area is titled 'Create an instance' and 'To create a VM instance, select one of the options:'. It shows the configuration for a new VM instance. The 'Name' field is set to 'bdsp-cloud-1' and is highlighted with a red arrow. The 'Region' is set to 'us-central1 (Iowa)' and the 'Zone' is set to 'us-central1-a'. The 'Machine configuration' section shows the 'General purpose' tab selected, with a table of machine types. The 'Machine type' section shows the 'e2-medium (2 vCPU, 1 core, 4 GB memory)' selected. The 'Monthly estimate' is \$25.46. The 'CREATE' button is visible at the bottom.

Series	Description	vCPUs	Memory	Platform
C3	Consistently high performance	4 - 176	8 - 1,408 GB	Intel Sapphire Rapids
C3D	Consistently high performance	4 - 360	8 - 2,880 GB	AMD Genoa
E2	Low cost, day-to-day computing	0.25 - 32	1 - 128 GB	Based on availability
N2	Balanced price & performance	2 - 128	2 - 864 GB	Intel Cascade and Ice Lake
N2D	Balanced price & performance	2 - 224	2 - 896 GB	AMD EPYC
T2A	Scale-out workloads	1 - 48	4 - 192 GB	Ampere Altra Arm
T2D	Scale-out workloads	1 - 60	4 - 240 GB	AMD EPYC Milan
N1	Balanced price & performance	0.25 - 96	0.6 - 624 GB	Intel Skylake

4) Provide your VM name in the box as pointed by red arrow. Scroll down the web page to see further options. Change the options in the **Boot disk** as shown below



Change the Boot disk option from default “Debian” to “Ubuntu” and version will be X86/64 22.04 LTS. After all updates to Boot disk pane, the following screen will appear as



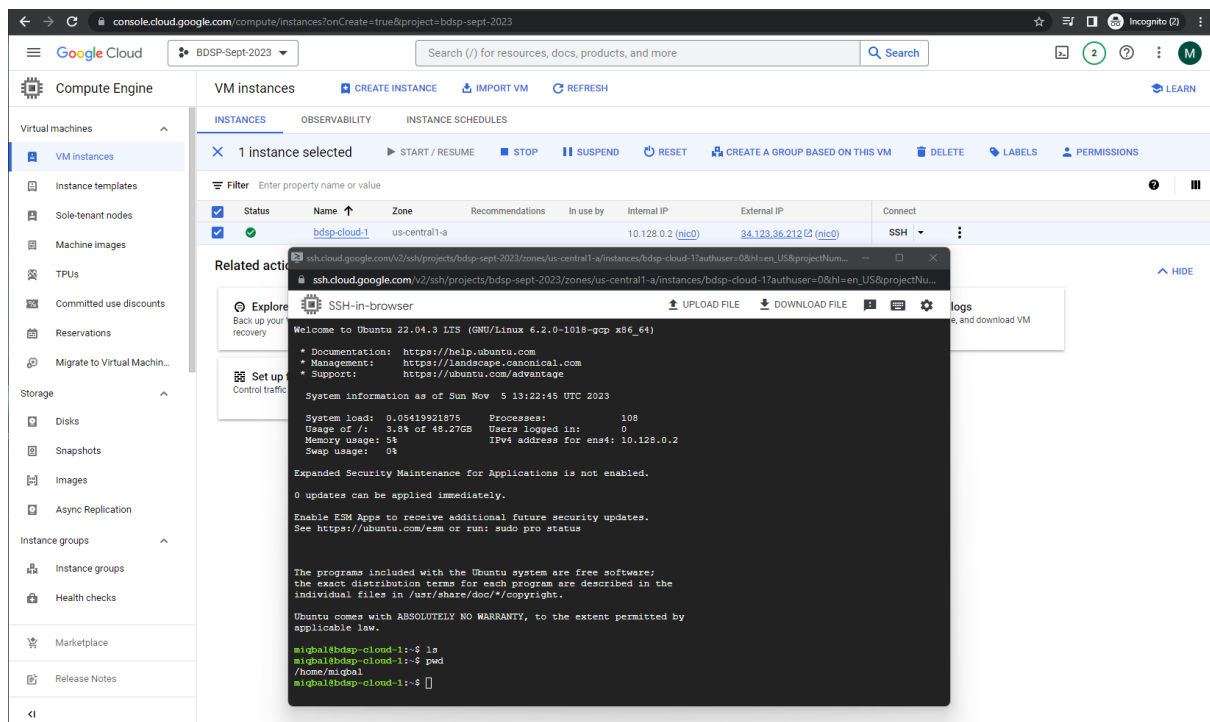
Check the two boxes under the heading of **Firewall** and press the button to create the VM. The VM is created, and following screen will appear as

The screenshot shows the Google Cloud Console interface for the project 'BDSP-Sept-2023'. The left sidebar contains navigation links for Compute Engine, Storage, and Instance groups. The main content area is titled 'VM instances' and shows a table with one instance, 'bdsp-cloud-1', in the 'us-central1-a' zone. The 'Connect' column for this instance shows 'SSH'. A red dashed arrow points to the 'SSH' button. Below the table, there are several 'Related actions' cards, including 'Explore Backup and DR', 'View billing report', 'Monitor VMs', 'Explore VM logs', 'Set up firewall rules', 'Patch management', and 'Load balance between VMs'.

Right click on the connect (SSH) and open in the browser as pointed by the red arrow.

This screenshot shows the same Google Cloud Console interface, but with the 'SSH' button in the 'Connect' column of the 'bdsp-cloud-1' instance table right-clicked. A context menu is open, showing several options. A red dashed arrow points to the 'Open in browser window' option. The context menu also includes options like 'Open in browser window on custom port', 'Open in browser window using provided private SSH key', 'View cloud command', 'Use another SSH client', and 'Explore VM logs'.

This step takes some time depending on your internet connection.



5) Open the tutorial 2 (Hadoop Installation) and install Hadoop on the cloud VM.

References:

- Google Cloud Education Credits for Students is appreciated for giving the CCT students a \$50 educational award.