

AI-02088 Google Cloud Ubuntu VM

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Help me create/select a vm from google cloud for an Ubuntu Server running with LAMP stack for my learning lab. Keep my cost per month under \$15. Create a step by step guide. I've already setup this lab in Azure but does not like the instability of my vm, I get a connection timeout so I'm going to try Google cloud.

Here is a step-by-step guide to help you create a **LAMP stack** on an **Ubuntu Server** VM instance in Google Cloud, keeping your monthly costs under \$15.

Choosing a VM Instance

To stay within your budget, the best option is the **e2-micro** VM instance. This instance type is part of the Google Cloud "Always Free" tier, which provides a non-preemptible e2-micro VM instance each month in select US regions (Oregon: us-west1, Iowa: us-central1, South Carolina: us-east1). This means your VM will be free as long as you use it within these specifications. The e2-micro instance comes with 1 shared vCPU and 1 GB of memory.

You should also choose a **standard persistent disk** for your boot disk, as it is also part of the free tier up to 30 GB-months. A 20 GB disk is sufficient for a learning lab and will keep you well within the free tier limits.

Step-by-Step Guide

1. Create a VM Instance

1. Go to the Google Cloud console and navigate to **Compute Engine > VM instances**.

2. Click **Create instance**.
3. Name your instance and select a region from the free tier list (**us-west1**, **us-central1**, or **us-east1**).
4. For the **Machine type**, select **e2-micro**.
5. Under **Boot disk**, click **Change**.
6. For the operating system, choose **Ubuntu** and select a recent LTS (Long Term Support) version, like **Ubuntu 22.04 LTS**. Set the **size** to **20 GB** and the **Boot disk type** to **Standard persistent disk**.
7. Under **Firewall**, check the boxes for **Allow HTTP traffic** and **Allow HTTPS traffic** to ensure your web server is accessible from the internet.
8. Click **Create** to provision your VM.

2. Connect to the VM and Install LAMP

1. Once the VM is running, return to the **VM instances** page.
2. In the row for your new VM, click the **SSH** button. This will open a browser-based terminal session to your instance.
3. Update your package list by running the following command: Bash

```
sudo apt update
```

4. Install the **Apache2** web server, **MySQL** database server, and **PHP** with the necessary MySQL module. The **y** flag automatically confirms the installation. Bash

```
sudo apt install apache2 mysql-server php libapache2-mod-php php-mysql -y
```

5. After the installation is complete, you can verify that Apache is running by visiting your VM's external IP address in a web browser. You'll find the external IP on the **VM instances** page. You should see the default Apache "It works!" page.

3. Secure MySQL (Recommended)

1. Run the MySQL security script to improve the security of your MySQL installation.Bash

```
sudo mysql_secure_installation
```

2. Follow the prompts to configure a strong password for the root user, remove anonymous users, disallow remote root login, and remove the test database.

4. Configure PHP

1. To test that PHP is working correctly, you can create a `phpinfo.php` file in your web server's root directory.Bash

```
sudo nano /var/www/html/phpinfo.php
```

2. Add the following code to the file:PHP

```
<?php  
phpinfo();  
?>
```

3. Save the file by pressing `Ctrl + X`, then `Y`, and `Enter`.
4. Now, in your browser, navigate to your VM's external IP followed by `/phpinfo.php` (e.g., `http://[your_external_ip]/phpinfo.php`). You should see a detailed page with information about your PHP installation. For security, be sure to **delete this file** when you are done.

Your LAMP stack is now set up and ready for your learning lab projects.

Deploying LAMP Stack from Google Cloud Marketplace

This video is relevant because it shows how to deploy a LAMP stack using the Google Cloud Marketplace, which is an alternative to the manual installation process described in this guide.