

Instance management with Vagrant*

Distributed Data Processing Environments

Lab Guide 3

This session aims at setting up Google Cloud instances with Vagrant. It uses the Free Tier¹ and should not consume credits.

Steps Setup Vagrant for use with Google Cloud:

1. Use one of these options to obtain an initial working environment:
 - You already have Linux or MacOS; or
 - start a Docker container with Ubuntu 24.04 LTS; or
 - start a local Ubuntu 24.04 LTS with Vagrant (see Lab 0); or
 - create a cloud instance and login with SSH.
2. Download Vagrant 2.4.1 (deb/amd64) to the instance and install it with:²
`sudo apt install ./vagrant_2.4.1-1_amd64.deb`
3. Confirm that command `vagrant version` runs and prints the correct version number.
4. Install the Google plugin with:
`vagrant plugin install vagrant-google --plugin-version 2.7.0`
5. Follow the steps in the plugin documentation here: <https://github.com/mitchellh/vagrant-google/tree/release-2.7.0?tab=readme-ov-file#google-cloud-platform-setup>

Create a Vagrant configuration for a cloud instance:

1. Create, start, and configure a VM with Ubuntu Linux:
 - Create an empty folder with `mkdir` and enter it with `cd`.
 - Copy the sample `Vagrantfile` into this folder.
 - Edit `Vagrantfile` and insert all needed information (see `FIXME`) obtained in step 5 above.
 - Run: `vagrant up`
 - Connect to the VM with: `vagrant ssh`
2. Test the VM by installing Python tools and running a simple program.
3. At the end of the session:
 - Destroy the VM and cleanup with: `vagrant destroy`
 - Navigate to the Compute Engine > Instances page on Cloud Console and delete the working environment, if running in the cloud.

Learning Outcomes Apply Vagrant to automate creation of VMs in the cloud.

* Avoid AI tools in the second part.

¹<https://cloud.google.com/free/docs/free-cloud-features#free-tier>

²Change accordingly if using MacOS.