

# GCloud OpenMP VM Setup

## 1 Create a New GCloud VM with OpenMP

- Create a new project in the GCP console [Figure 1]
- Choose where you will run the scripts
  - Option 1 - Cloud Shell [Figure 2]
  - Option 2 - Command line
    - \* Install and initialize the gcloud SDK on your machine (<https://cloud.google.com/sdk/docs/>)<sup>1</sup>

Run `git clone https://github.com/maxnz/gcloud-openmp-setup.git`  
Run `cd gcloud-openmp-setup`

### 1.1 setup.bash

Run `./setup.bash`. Enter the full project ID if necessary.

The script will now create the VM. Setting up the VM takes about a minute. Note that you will have to add your ssh key like any other user if you wish to use regular ssh to connect to the VM [See Section 2].

#### 1.1.1 setup.bash Command Line Options

<code>-h,</code>	<code>--help</code>	show this help message
<code>-p,</code>	<code>--project ID</code>	set the project to use (ID = full project id)
<code>-q,</code>	<code>--quiet</code>	run the script with default options (unless specified otherwise): 8 cores
	<code>--prefix</code>	specify the prefix to use when naming the VM (must start with a letter)
<code>-c</code>	<code>[1 2 4 8 16 32 64 96]</code>	set the number of cores in the VM default=8

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<sup>1</sup>Note: Scripts will not work with Windows Command Prompt (WSL is OK)

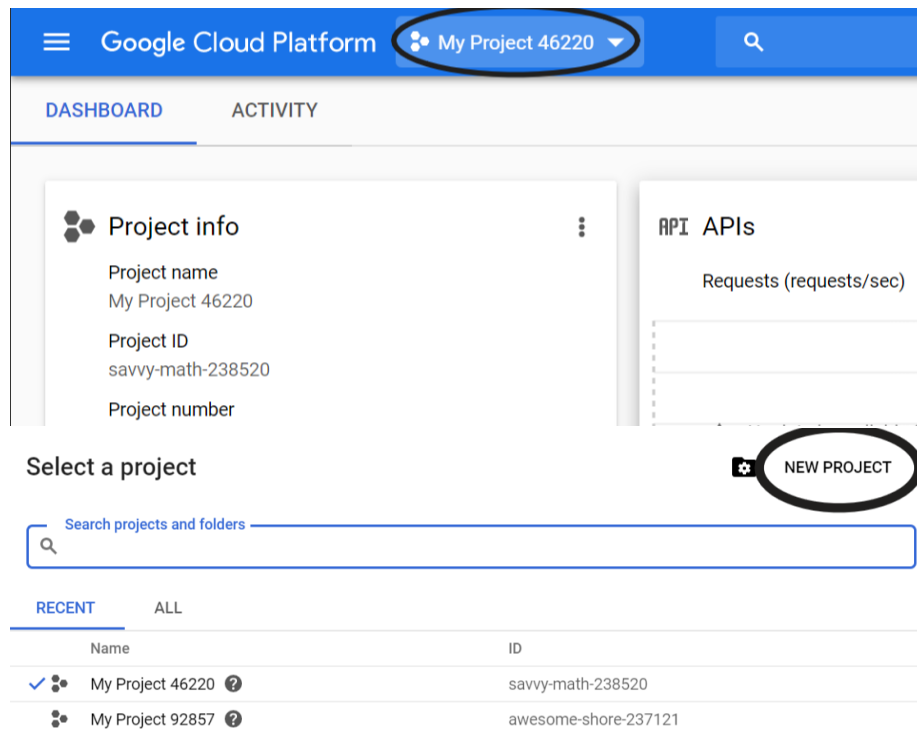


Figure 1: Create a new Project



Figure 2: Cloud Shell

## 2 Adding Users to Your VM

Run `./create_users.bash`.

At the end of the script, the IP address of the VM will be printed.

If a user already exists, the script will check if the ssh key given is already associated with that account and will add it if necessary.

This script can be run as many times as necessary as long as the VM is running.

### 2.1 Manual Entry

- Enter the full project ID if necessary
- Confirm the VM selected is correct
- For each user:
  - Enter their preferred username
  - Enter their SSH key

### 2.2 Automatic Entry

Use the `-f` flag along with the name of a `.csv` file containing the usernames and keys. If using the cloud shell, you will have to upload the `.csv` file [Figure 3]. The script will install the `csvtool` package if it isn't already, which will require `sudo` privileges.

- Enter the full project ID if necessary
- Confirm the VM selected is correct
- Specify the column in the file containing the usernames
- Specify the column in the file containing the ssh keys

#### 2.2.1 `create_users.bash` Command Line Options

<code>-h,</code>	<code>--help</code>	show this help message
<code>-p,</code>	<code>--project ID</code>	set the project to use (ID = full project id)
<code>-n,</code>	<code>--name NAME</code>	specify the name of the VM to be configured if not specified, will look for VMs starting with 'openmp-'
<code>-f</code>	<code>FILE</code>	specify the <code>.csv</code> file (FILE) to use
<code>-k</code>	<code>N</code>	specify the column number (N) with the ssh keys
<code>-u</code>	<code>N</code>	specify the column number (N) with the usernames

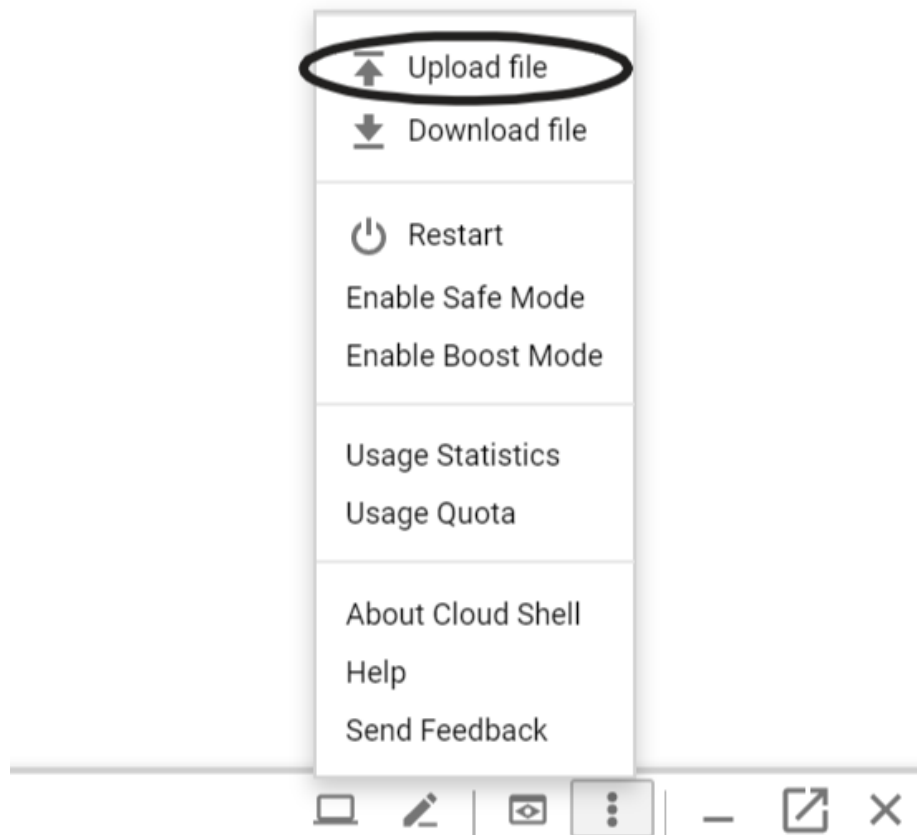


Figure 3: Upload to Cloud Shell

### 3 Connecting to the VM

Each user can connect to the VM using `ssh username@ip`, where `ip` is the IP address of the VM.

### 4 Stopping the VM

In order to save your credits, you will likely want to stop the VM from time to time.

1. Select your project [Figure 4]
2. Select Compute Engine under Resources [Figure 5]
3. Select the VM [Figure 6]

4. Click Stop [Figure 7]

5. Click Stop [Figure 8]

After a few minutes, your VM should have a stop icon next to it [Figure 9]. To restart your VM later, follow the same steps but click Start at the end.



Figure 4: Select Project

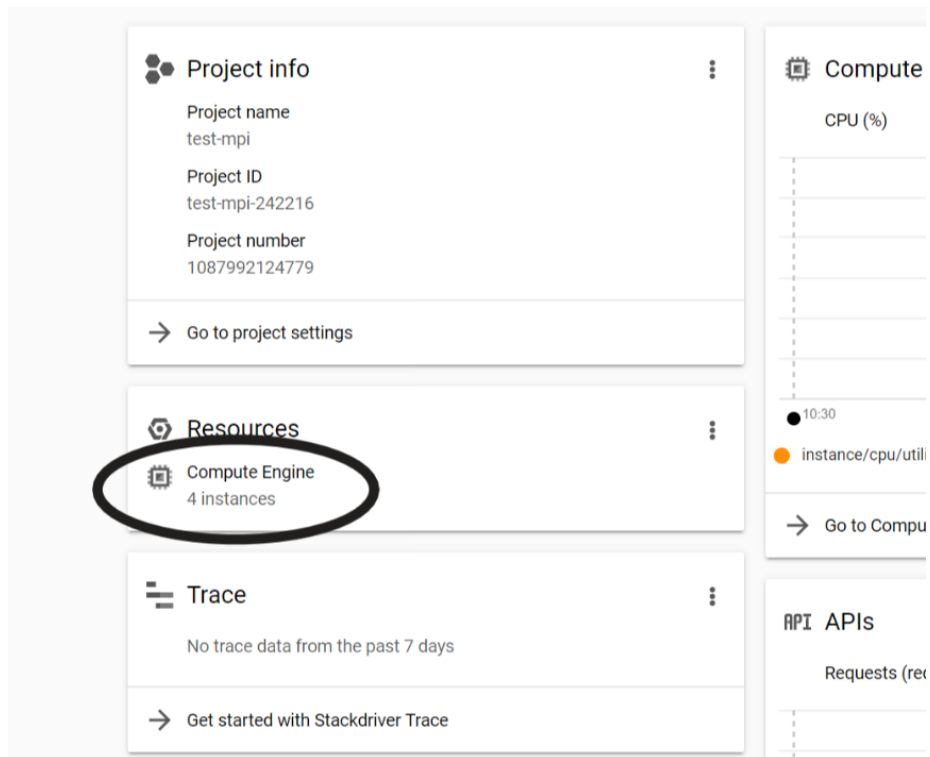


Figure 5: Select Compute Engine

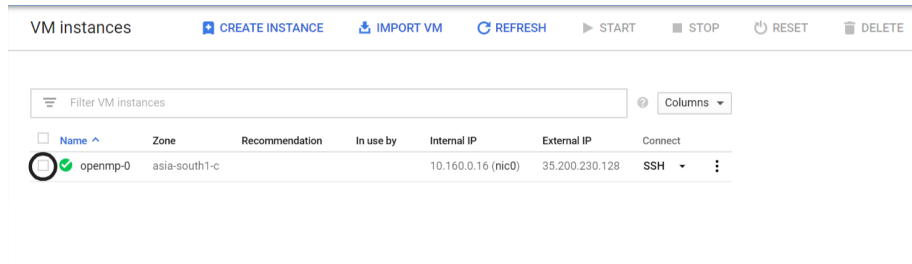


Figure 6: Select VM

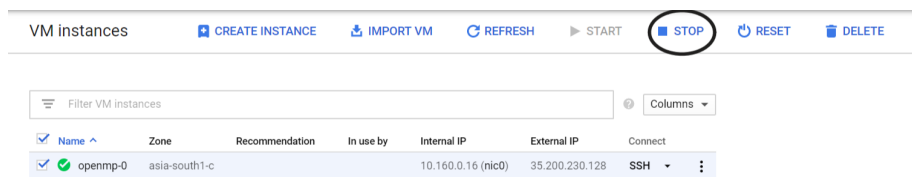


Figure 7: Click Stop

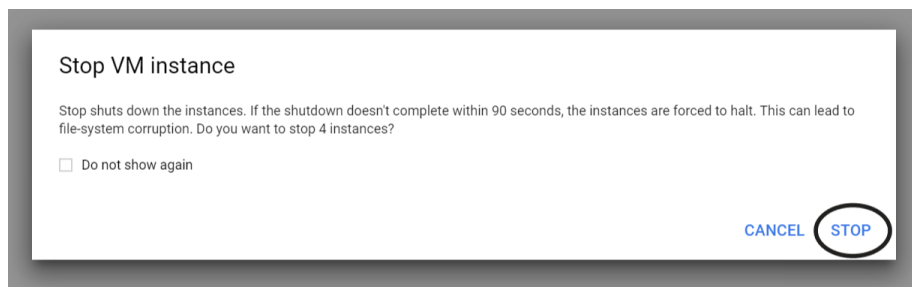


Figure 8: Click Stop

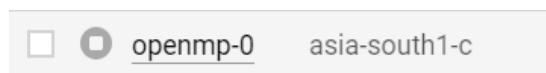


Figure 9: A Stopped VM