Setting Up GCP VSCode for SSH

Overview

These are the instructions for a simple way to SSH into the GCP VM through VS Code.

Using this way you should be able to run the different local projects such as grading_feature and scoring_page in our Github.

Prerequisites

Before starting, make sure you have the following:
- Make sure you are connected to UW Madison VPN (Global Protect)
- VS Code installed and running
- Remote SSH extension within VS Code installed
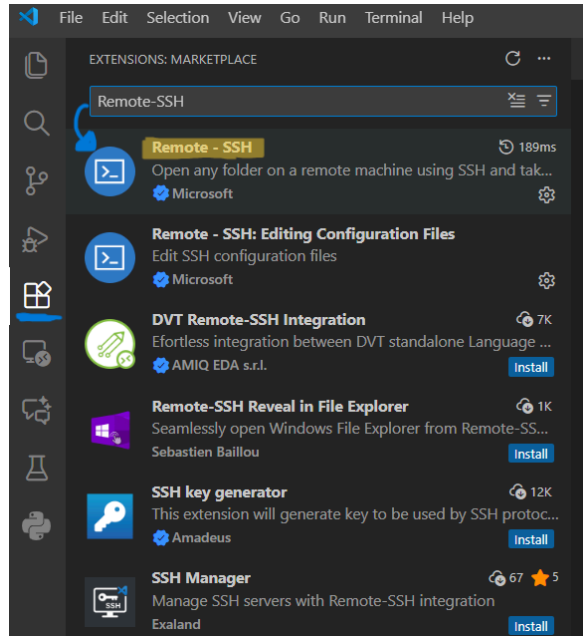- Your GCP VM username (ex: user_wisc_edu)
- VM's external IP address
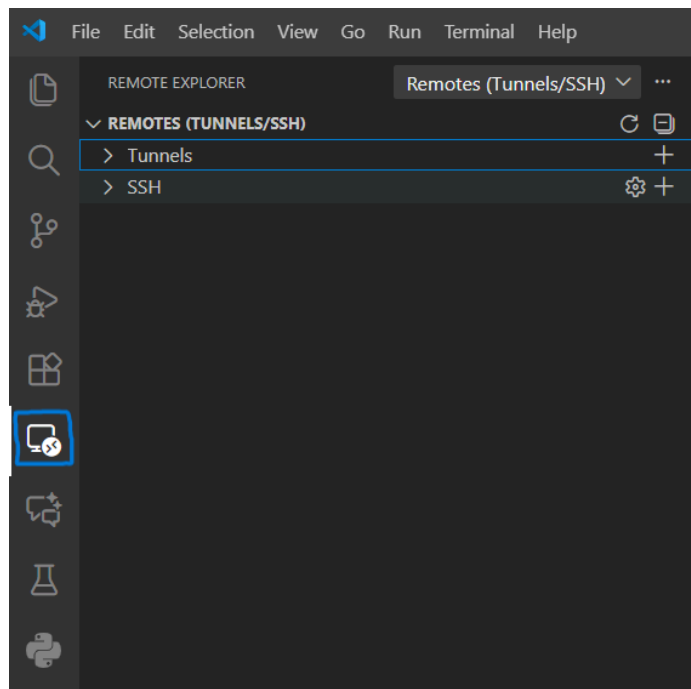
Steps for Prerequisites

Step 1: Installing VS Code

Download here: https://code.visualstudio.com/

Step 2: Install Remote-SSH Extension

- Look up "Remote SSH" on the extensions search function, install the first one that shows up like below:
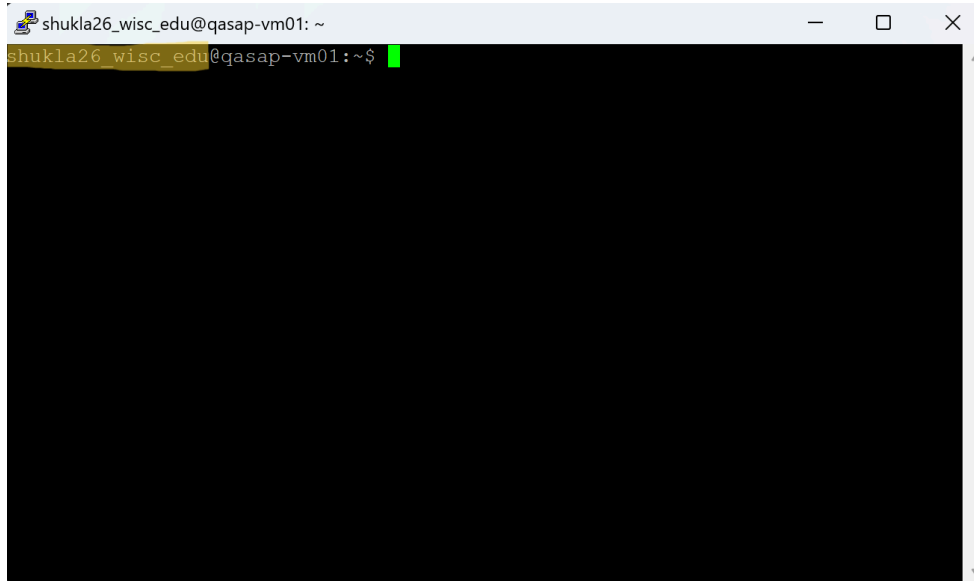

  - **Reload** VS Code by exiting out of it!

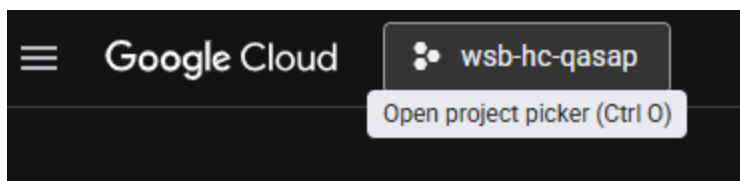- After opening it up you should see:

Step 3: Seeing Your GCP Username

- Follow the steps to open a Google Cloud SDK Shell using docs/vm_setup/cli_setup.md
- After logging into the GCP VM you should be able to see this:
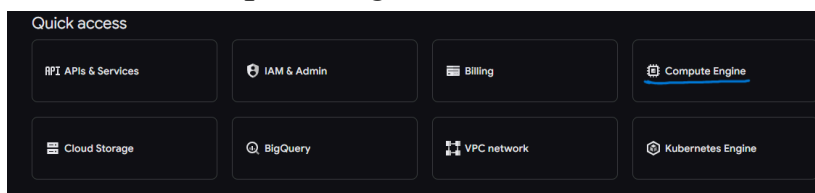 - The highlighted part before the '@' is the username

Step 4: Finding the External IP Address
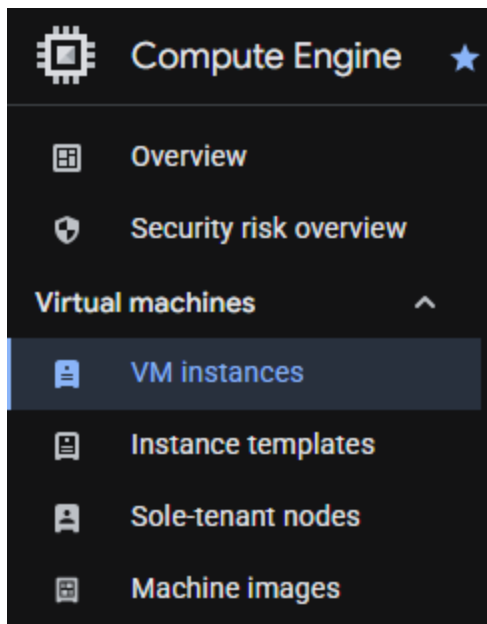
- Login to https://console.cloud.google.com/
- Go to your specific project in the top task bar

- Click on "Compute Engine"

- Go into VM Instances

- Go to your specific VM and there's the external IP Address

Create an SSH Key (if you don't already have one)

Everyone connecting to the VM must have their own SSH keypair.

Generate a keypair on your laptop

Run this command in your terminal (Mac/Linux) or PowerShell (Windows):

```
ssh-keygen -t rsa -b 4096 -f ~/.ssh/google_compute_engine
```

- Press **Enter** for all prompts
- This will create:
  - **Private key:** ~/.ssh/google_compute_engine
  - **Public key:** ~/.ssh/google_compute_engine.pub
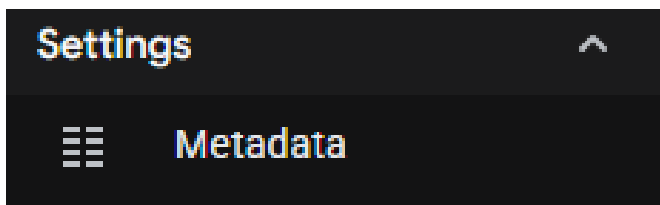
⚠️ *Never share the private key.*

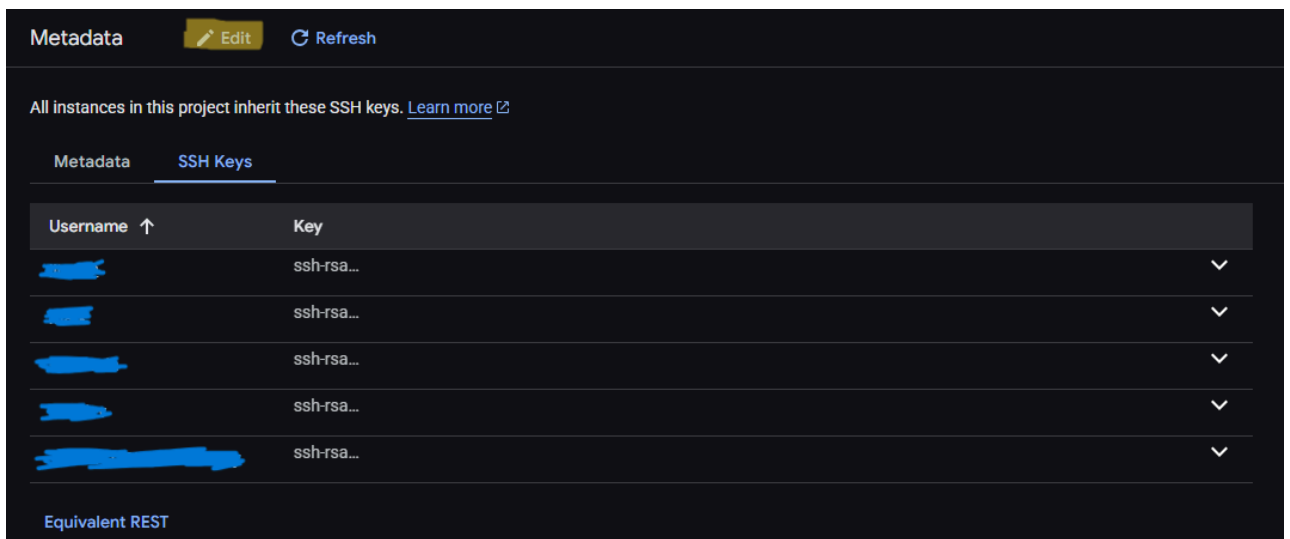# Add Your Public Key to the GCP VM

Open your public key

- cat ~/.ssh/google_compute_engine.pub
- **Copy** the full line, it starts with `ssh-rsa`

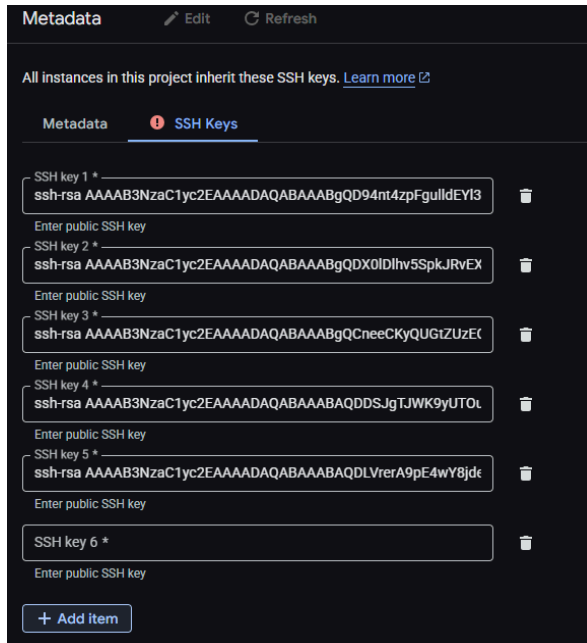## Add Key into Metadata GCP

- Head to the "Compute Engine" page
- Scroll down the left panel and go into "Metadata"

- After pressing Metadata, you see all of the ssh keys → Press "Edit"
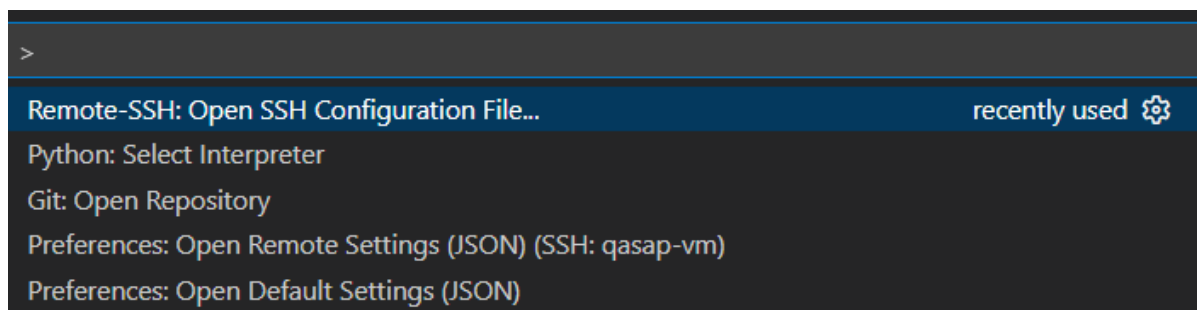
● After pressing Edit, this shows up and you add your copied **public** ssh-key into the empty box and press save:
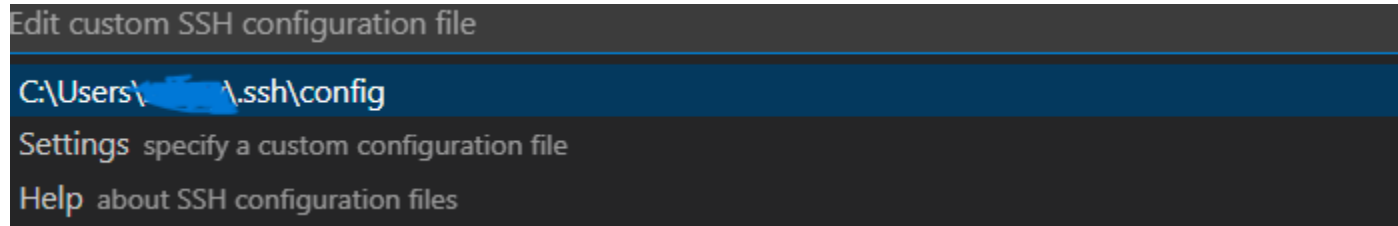

Connect through VS Code

Step 1: Open Config File

● Press `Control + Shift + P` and type in Remote SSH: Open Configuration File

- Click into the first one that looks like this:

Edit custom SSH configuration file

C:\Users\ ____ \.ssh\config

Settings specify a custom configuration file

Help about SSH configuration files

- After this add this into the top of the config file:
  - Make sure to have your IP address and username from the steps above

```
1    Host qasap-vm
2        HostName <VM_EXTERNAL_IP>
3        User <your_vm_username>
4        IdentityFile ~/.ssh/google_compute_engine
5        IdentitiesOnly yes
6
```
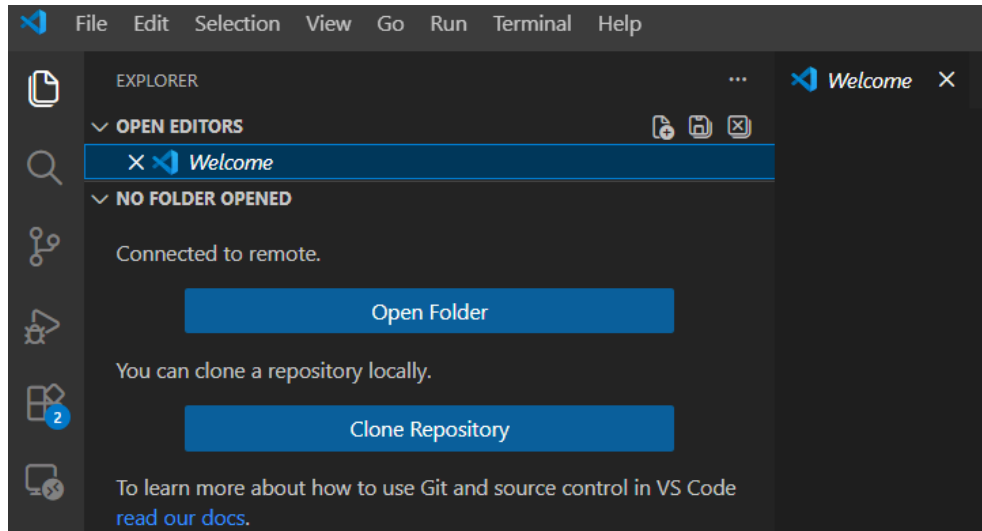
Step 2: SSH into the VM

- Expand the SSH dropdown, and then connect using either the 2 icons on the right

∨ SSH

∨ 🖥 qasap-vm   → 🖥

Step 3: Open Specific Folder in the VM after connecting

- Click the Folder tab and then open the specified folder!

All Connected!

Note: If any issues arise, use Gen AI to solve them.