# Setting Up an Ubuntu Server on GCP

SETUP VM

* Login to Google Cloud Platform (GCP)
* Select Burger icon (Top left of screen)
* Select Compute Engine | VM Instances
* Click Create Instance from top menu
* Create instance name (all lowercase and hyphens)
* Select Region (Europe-west2 (London)
* Select GENERAL-PURPOSE, E2 series, low spec machine e2-micro or e2-small
* Select allow HTTP traffic (HTTPS won’t work without additional configuration which at the time of writing I don’t know how to do)
* Click Create

CONFIGURE VM to allow requests for port 5000

* Login to Google Cloud Platform (GCP)
* Select Burger icon (Top left of screen)
* Select VPC network | VPC networks
* Select Firewall
* Select Create Firewall Rule (from top menu)
* Give name (all lowercase and hyphens
* Scroll down to Targets and select “Specified target tags” from dropdown
* Specify a target tag name in the Target tags box. Use a name that identifies what the tag is going to be used for e.g. “allow-flask”
* Select IPv4 ranges from Source Filter
* Enter 0.0.0.0/0 (or your own IP address if you want to be more secure) in Source IPv4 ranges box
* Click TCP box and enter 5000 as a port
* Press Create

GOTO Virtual machine and apply firewall rule

* Select Burger icon (Top left of screen)
* Select Compute Engine | VM Instances
* Click on VM and select Edit option from top menu
* Scroll down to Network tags and where you see http-server and https-server add another entry of “allow-flask”
* Click Save

OPENING Console on VM

* Return to VM Instances
* Click SSH (beneath “connect” title)

CREATE FIRST APP

* Follow instructions on QA-Community
* NOTE: use nano as editor to enter the Python logic as it comes with Linux/Ubuntu

# Connecting Proper IDE (Visual Studio Code) to Ubuntu Server

## Before you begin

Before you install Cloud Code, confirm that the following tools are installed and set up on your system:

1. Install and set up [Visual Studio Code](https://code.visualstudio.com/) on your machine.
2. Install and configure language support.

The Cloud Code extension works best with the following languages:

* + NodeJS (built-in support; no action required)
  + [Go](https://marketplace.visualstudio.com/items?itemName=ms-vscode.Go)
  + [Python](https://marketplace.visualstudio.com/items?itemName=ms-python.python)
  + [Java](https://marketplace.visualstudio.com/items?itemName=vscjava.vscode-java-debug)
  + [.NET](https://marketplace.visualstudio.com/items?itemName=ms-dotnettools.vscode-dotnet-pack)

1. Install [Git](https://git-scm.com/book/en/v2/Getting-Started-Installing-Git). Git is required for copying samples to your machine.

Need to create public private key pair to link VSC to VM

* Use GitBash as terminal on local machine.
  + TOP TIP: use the TAB button to autocomplete what you type into GitBash
* Instruction set includes:
  + Touch to create a file (e.g. touch app.py)
  + Code to open app.py file in VSC (e.g. code app.py)
  + ls shows what’s in the current directory
  + ls -a includes hidden folders
  + cd to change directory (e.g. cd .ssh will change to a folder called .ssh)
  + ssh -keygen to create public private key pair (no need to rename the default name of “id\_rsa”. Hit enter for the defaults (no need for any special settings)
  + cat is a standard Unix utility that reads files sequentially, writing them to standard output.
* In GitBash try to navigate into a Git ssh folder. Secure Shell Protocol (SSH) is used to provide a secure channel over an unsecured network.
* ssh -keygen to create public private key pair (see note above)
* do ls to show all files and note the id\_rsa.pub which contains just the public key which we will use in GCP to make the connection.
* Now need to display the content of id\_rsa.pub and copy its exact content and paste content as new key in the GSP page
* Type cat id\_rsa.pub
* Use mouse to highlight the file content (ignoring any white space before or after) and right-click and copy.
* Head back to GCP .
* Select VM instance and Edit.
* Scroll down to Security and access section.
* Click Add item and paste public key.
* Click Save
* Go back to VM Instances and select and copy public IP address.
* Return to gitbash and type ssh xxx@<aaaaaa>  
  where xxx is your user name (see start of gitbash prompt (mine is p\_beh from **p\_beh**@DESKTOP-6JHCMSQ)  
  and aaaaa is the IP address of the VM
* IF all is well, GitBash will then point to a folder on the remote server. In my case it will be at a folder called p\_beh@vm-instance-name: and, although not shown it may well be a folder called home/p\_beh.
* Start up Visual Studio Code
* Install VSC extension called Remote – SSH
* Click the Green button that should appear at bottom left of VSC (Open a remote window)
* Select open SSH configuration files, select the config file that lies in the folder GitBash created the id\_rsa file in (C:\Users\p\_beh\.ssh\config)
  + Specify anything for the Host name (it’s just the name that will appear if you ever want to edit the file again later
  + Use the server’s public IP addresss for the Hostname
  + For User specify the user name displayed as part of the name shown in GitBash (**p\_beh**@<server instance>:~$
* CSave the file
* Click the Green button again (at bottom left of VSC) and select connect to host. Choose the server name you set up in GCP.
* Select Linux
* Select File | Add Folder to Workspace and add a folder called “flask-introduction”

# Configuring MySQL Database server

* Burger
* SQL
* Create Instance
* MySQL
* Instance-id
* Password: Pa$$w0rd Need to remember this.
* Single Zone Europe West London
* Expand configuration options
* Connections
* Add Network (call it my-connection)
* CIDR notation 0.0.0.0/0 (Or mc’s public IP Address)
* CLICK DONE (for connection)
* Click Create Instance (wait for around 4 mins)
* Don’t save password
* Wait for db to be created and copy the public IP address
* To test the set up works open up MySQL Workbench and create a new connection and paste the IP address as the hostname.