Running Python scripts on an AWS EC2 Instance

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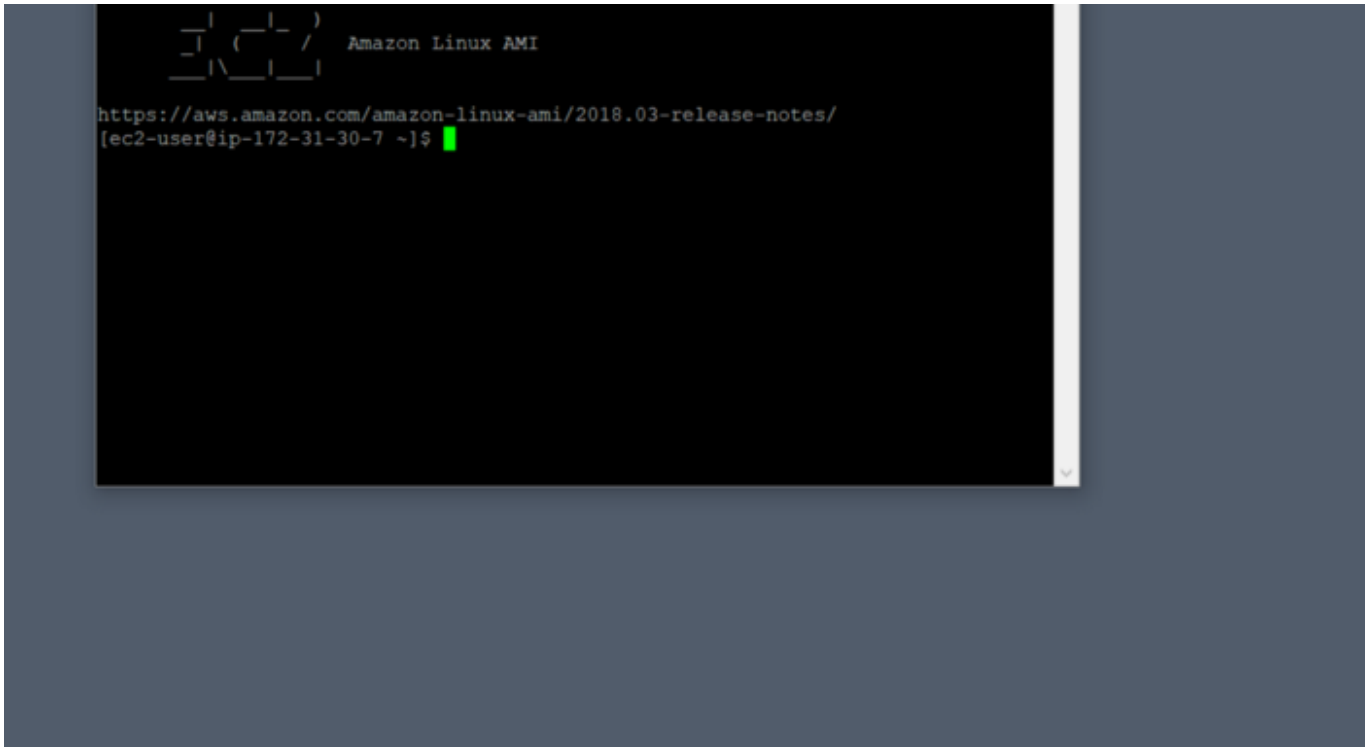
So you have an EC2 instance up and running on AWS (If you don't have it already, take a look at this post: https://medium.com/@praneeth.jm/launching-and-connecting-to-an-aws-ec2-instance-6678f660bbe6).

Now let's see how we can setup a python environment, transfer python scripts from your local machine to the remote instance and run them.



AWS EC2 Instance on Putty

To see everything that's installed in your instance, type in the following commands:

```
cd/usr/bin/
ls
```

1. You will probably see python 2.7 already installed which is the older version, so let's go ahead and **install python 3.6**

```
sudo yum install python36
```

Even after installing python 3.6, running `python --version` in the Putty terminal still points to python 2.7, let's change that.

```
alternatives --set python /usr/bin/python3.6

python --version
```

What we did there is, **change the default python to the newer version**, it should now point to python 3.6.

2. Next we want to **install pip3** that we will use to install python packages.

```
cd /tmp
curl -O https://bootstrap.pypa.io/get-pip.py
python3 get-pip.py --user
pip3 --version
```

Now we can use pip3 to install python packages. If you want to install the selenium package, run the following in your Putty terminal.

```
pip3 install selenium --user
```

Let's transfer a python script from our local machine onto the EC2 instance and try running it.

1. First **open up a windows terminal** on your machine using cmd.
2. **Use scp (Secure Copy Protocol) to transfer files between the local and the remote host.** The scp command has three arguments, the first argument is the file path to the private key "*.pem*" file, the second argument is the path to the location of the file you want to copy from your machine, and the third argument is the path to the location on the instance where you want to copy it.

```
scp -i path/to/.pem_file path/to/file
username@host_address.amazonaws.com:/path_to_copy
```

The `username@host_address.amazonaws.com` in the above code is nothing but the domain name of the instance that you can find on the "View instance" page on aws.

For Example, i have my private key file "*test.pem*" and a python script "*test.py*" in the location "*D:/ec2/*" and i want to copy them from my local machine into the home folder of the ec2 instance.

```
scp -i D:/ec2/test.pem D:/ec2/test.py ec2-user@ec2-18-191-31-0.us-
east-2.compute.amazonaws.com:/home/ec2-user
```

Make sure you run this in a windows command line terminal and not the Putty terminal,. **Note:** If you get an error saying " ***Permission denied***" or "***Permissions are too open***", then we need to **change the permissions for the "*.pem*" private key file** such that only the owner has access to it.

3. Right Click on the "*.pem*" file > Select Properties > Click on the "*Security*" tab > Click "*Advanced*" > Click on "*Disable Inheritance*". This should clear up all the Permission entries.

4. You now need to **add permissions for the owner**, So make a note of the username that shows up as owner on the screen. Then Click "*Add*" > Click on "*Select a principal*" > Type in the owner name into the text box that says "*Enter the object name to select*" > Click on "*Check Names*". Now the Owner name should appear in that box > Click OK > Check "*Full Control*" > Click OK

5. **Run the scp command again** now and you should see your files transferred to the EC2 instance.

Now **connect to the EC2 instance in Putty** and type in `ls` , this gives you the list of all files in the current working directory, you should now see the "*test.py*" file which is a python script to print "*Hello World*". Run that script using `python test.py` and you should see the output.

If you want to open the python file, see it's content and make changes to it you can use the following Linux commands in the Putty terminal.

`vi test.py` opens up the python script for viewing. If you want to edit the file hit `i` then edit the file using your keyboard, after you are done making changes, hit the escape key then type in `:wq` and hit the enter key, to write the changes to the file and quit.

You can also setup a **cron job** to automatically run python scripts at a specified interval or time in your ec2 instance. To do this:

1. **Start the cron service** `sudo service crond start`
2. **Edit the crontab file** using `crontab -e`
3. **Add the file path** of the file you want to run. Hit the "***i***" key to start editing the file and then add `0 */1 * * * python path/to/file` . Make sure you give the full path to the python script that you want to run.

The cron time string is five values separated by spaces each specifying the minute (0–59), hour(0–23), day of the month(1–31), month(1–12) and day of the week (0–7, 0 and 7 both represent Sunday).

Cron time string	Description
`30 * * * *`	Execute a command at 30 minutes past the hour, every hour.
`0 13 * * 1`	Execute a command at 1:00 p.m. UTC every Monday.
`*/5 * * * *`	Execute a command every five minutes.
`0 */2 * * *`	Execute a command every second hour, on the hour.

If you append a slash (/) and an integer to a wildcard in any of the character positions, you can configure the cron task to run at a regular interval .

If you want to do some web scraping using Selenium and ChromeDriver, check out my next post: https://medium.com/@praneeth.jm/running-chromedriver-and-selenium-in-python-on-an-aws-ec2-instance-2fb4ad633bb5

Python AWS Ec2 Tech Programming