

Lab 5.1: The OpenStack Dashboard

IN720 Virtualisation

Introduction

We will start exploring OpenStack's features by working with its web based dashboard. Using it, we will upload an ssh key pair, launch a VM instance from an image, and associate a public IP address with it so that we can log into it remotely. Then we will create an attach a volume to our VM, format it, and mount it on the VM.

Note that you should have received an invitation to the paper's OpenStack project via your student email.

1 Create and upload a key

In order to ssh into our VM later, we need to create an encryption key pair and upload our public key. You can carry out the steps below on `kate`, or on your own machine if you use Linux or OS X.

Create the key pair with the command

```
ssh-keygen -t rsa -f openstack.key
```

This will create two files `openstack.key` and `openstack.key.pub`. Use `cat` to output the contents of `openstack.key.pub` and copy it to your clipboard.

Log onto our OpenStack dashboard. On the web dashboard, select "Key Pairs" from the left side menu and then click "Import Key Pair". In the resulting dialogue, name your key pair `<your-username>-key` and copy the key text into the text area box.

2 Launch a VM instance

Now we are ready to launch a VM. Select "Instances" from the left side menu and then click "Launch Instance" at the top right. You will be walked through a set of dialogues.

1. Details: Name your instance `<your-username>-vm`.
2. Source: Do **not** create a new volume. Scroll down the list of source images and choose the Ubuntu 18.04 image.
3. Flavor: Choose the `c1.c1r1` flavor.
4. Networks: The `private-net` network should be selected.
5. Network Ports: Do nothing here.
6. Security Groups: Choose `lab5-secgrp`.
7. Key Pair: Select the key pair you created earlier.

The remaining options don't need to be changed, click "Launch Instance". You should see your running instance in the list shortly.

3 Associate a floating IP address

Before you can ssh into your VM, you need to give in a public IP address. Find your VM instance on the list. From the "Actions" dropdown at the right of the row, select "Associate Floating IP" and follow the prompts.

Once this is done, you should be able to ssh into your VM with the command

```
ssh -i openstack.key ubuntu@<your-floating-ip>
```

4 Create and attach a volume

From the left side menu, select "Volumes" and then click "Create Volume". The only option you need to set is the name; name it <your-username>-vol. Then go back to the instances list and find your instance. From the actions dropdown, choose "Attach Volume" and select your volume.

The volume will be connected to your VM at `/dev/vdb`. But before you can mount and use the volume, you must initialise it and create a file system on it. This process is documented at <http://docs.catalystcloud.io/block-storage/using-volumes.html>.

5 Cleaning up

Once you have finished this lab, delete your VM instance, delete your volume, and release your floating IP address.