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OpenStack Document

VIRTUALISATION
ASSIGNMENT3

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Introduction

In this OpenStack documentation is to show the first year student of BIT, HOW-TO create and launch a virtual machine instance on the OpenStack. In this there will be a step-by-step guide on how to setup the user account, setup the network, create an instance, launch an instance, mount the volume to the instances and setup the security group and the key pair for the instances.

Set-up the user account on OpenStack

- Open the web-browser and go to **10.118.27.64/horizon** and login as username **admin** and the password as **P@ssw0rd**
- Once you have login, click the users tab its under the Identity on the side bar on the left hand side.
- Create a user by clicking the **+ CRATE USER** button to add the user
- Leave the Domain ID and Domain Name as the Default and use your OP username for the username
- After you have created the user, go to the project by clicking the project tab which is above the users tab.
- Create a Project by clicking the **+ CRATE PROJECT** button
- Leave the domain ID and domain Name as Default and you need to assign a project member by clicking the project member tab and find your username and click the add button to assign the user to that project
- Click the **CREATE PROJECT** button to create the project
- Once you have done that logout from the admin account and login to the OpenStack as your account that you just made.

Set-up the Images

- Open another web-browser and go to the following link
 - <http://cloud-images.ubuntu.com/trusty/current/>
- Download the trusty-server-loudimg-amd64-disk1.img and it will download to your computer.
- Once you have login under your username, go to the Images tab which is under the Compute tab on the left hand side.
- Click the **CREATE IMAGE** button to add a new image.
- Make the image name as Ubuntu 14.04 and click **BROWSE** button to upload the Ubuntu image.
- Under Format, select the QCOW2 – QEMU Emulator option and set the Image Sharing as **PRIVATE**.
- Click the **CREATE IMAGE** to create the image

Set-up the Network for the OpenStack

- On the left hand side tab click the Network and under the Network, go to the Networks to create a new network.
- Click the **+ CREATE NETWORK** button to create a new network.
- Add the Network Name you want to called it and leave the Admin State to UP
- On the subnet tab add the subnet name you want and add the network address as 192.168.1.0/24. Leave IP version as the IPv4 and the gateway empty.
- Click next to go to the Subnet Details tab.
- In the Subnet Details tab, add the DNS Name server as the 10.50.1.80 and 10.50.1.82 and leave everything else empty.
- Click the **CREATE** button to create the network.
- After that click the Routers tab on the left hand side, its sitting below the Networks tab.
- Click the **+ CREATE ROUTER** button to create the router
- Add the Router Name in it, leave the Admin state as the UP and select the External Network as the provider.
- Click the **Create Router** button to create the router.

Set-up the Volumes

- On the left hand side tab click the Compute and under Compute, go to Volume to create a new volume.
- Click the **+ CRATE VOLUME** button to create a new volume.
- Add the Volume name anything you want to name it and add the Volume description.
- Leave everything else as the default.
- Click the **CRATE VOLUME** button to add the volume.

Set-up the Security and Key Pair

- Go to the Access & Security under the Compute on the left hand side tab.
- In the Security Groups, click the **+ CREATE SECURITY GROUP** button to add a security groups.
- Add the name for the security group, you should name it under SSH and the description.
- Click the **CREATE SECURITY GROUP** to add it.
- Click the MANAGE RULES and after that click the **+ ADD RULE** to add the security rule in it.
- In the Add Rule page under Rule select the SSH and leave everything else to the default and click ADD button to add the rule into it.
- After finishing adding the rule, go back to the Access & Security page.
- Under the Key Pair tab, click the **+ CREATE KEY PAIR** to add a new key pair for the instance.
- Add the name of the key pair, its can be anything you want.

- Click the **CREATE KEY PAIR** to create the new key for your instances and its will automatically download to your computer.

Create and Launch an Instance

- After finishing create a key pair, go to the Instances page which is in the side tab under Compute tab.
- To create and launch the instance, click the **LAUNCH INSTANCE** button on the instances page.
- Add the Instance name in it and leave the Availability Zone and Count as the default.
- Under the Source section, change the Volume size from 1GB to 3 GB and in the Available pick the Ubuntu 14.04 by clicking the plus button to add it.
- In the Flavor section, select the m1. tiny option by clicking the plus button to add it.
- In the Networks section under the Available, select the network that you have made by clicking the plus button to add it.
- In the Security Groups under the Available, select the SSH option or the name that you have made your security in by clicking the plus button to add it.
- In the Key Pair under the Available, select the key pair that you have made by clicking the plus button to add it.
- Once you have done everything, click the **LAUNCH INSTANCE** button to launch the instance.
- After you have launch an instance, Click the **ASSOCIATE FLOATING IP** to assign the ip to an instance.
- In the ip address option, select the first option you have to assign the ip address for your instance.
- In the port to be associated, select the option **yourinstancename:ipaddress** one.
- Click the ASSOCIATE button to associate floating IP.
- Click the down arrow beside the **CREATE SNAPSHOT** on the instance that you have create
- Select the **ATTACH VOLUME** option to attach the volume to an instance
- In the Volume ID, select the volume that you have create early on and after that click the ATTCH VOLUME button to attach the volume to an instance

SSH into an Instance

- Open the Terminal or Putty and SSH into your instance by using the ip address that start with 10 for example 10.118.27.91 and also your need to have your key pair to get into your instance

Mount and Unmount the Volume to an instance

- To mount the volume to an instance, use the following command
 - **sudo fdisk -l**
 - **sudo fdisk/dev/vdb**
 - In command prompt option select the following
 - In the command select: **n**
 - In the Partition type select: **p**
 - In the Partition number select: **1**
 - In the command select: **t**
 - In the Selected partition select: **1**
 - In the command select: **w**
 - After that make a directory, use the following command
 - **sudo mkdir mountfolder**
 - To find out the volume id of your volume that you have attach to the instance earlier, use the following command
 - **sudo blkid**
 - copy the id after **UUID** of the UUID
 - Using the following command to mount the volume to the directory that you just made
 - **sudo mount /dev/disk/by-uuid/yourvolumeid ~/mountfolder**
 - After you have mount the volume to the directory. Make a file in that directory
- To unmount the volume from the instance, use the following command
 - **sudo unmount/dev/vdb1**