

Assignment - 8 : Launching Virtual Machine using TryStack from OpenStack

Step 1: Create Network

1. Go to **Network > Networks** and then click **Create Network**.
2. In **Network** tab, fill **Network Name** for example `internal` and then click **Next**.
3. In **Subnet** tab,
 1. Fill **Network Address** with appropriate CIDR, for example `192.168.1.0/24`.
Use private network CIDR block as the best practice.
 2. Select **IP Version** with appropriate IP version, in this case `IPv4`.
 3. Click **Next**.
4. In **Subnet Details** tab, fill **DNS Name Servers** with `8.8.8.8` (Google DNS) and then click **Create**.

Step 2: Create Instance

Now, we will create an instance. The instance is a virtual machine in the cloud, like AWS EC2. You need the instance to connect to the network that we just created in the previous step.

1. Go to **Compute > Instances** and then click **Launch Instance**.
2. In **Details** tab,
 1. Fill **Instance Name**, for example `Ubuntu 1`.
 2. Select **Flavor**, for example `m1.medium`.
 3. Fill **Instance Count** with `1`.
 4. Select **Instance Boot Source** with **Boot from Image**.
 5. Select **Image Name** with **Ubuntu 14.04 amd64 (243.7 MB)** if you want install Ubuntu 14.04 in your virtual machine.
3. In **Access & Security** tab,
 1. Click **[+]** button of **Key Pair** to import key pair. This key pair is a public and private key that we will use to connect to the instance from our machine.
 2. In **Import Key Pair** dialog,
 1. Fill **Key Pair Name** with your machine name (for example `Edward-Key`).
 2. Fill **Public Key** with your **SSH public key** (usually is in `~/.ssh/id_rsa.pub`).
See description in Import Key Pair dialog box for more information. If you are using Windows, you can use **Puttygen** to generate key pair.
 3. Click **Import key pair**.
 3. In **Security Groups**, mark/check **default**.
4. In **Networking** tab,
 1. In **Selected Networks**, select network that have been created in Step 1, for example `internal`.
5. Click **Launch**.
6. If you want to create multiple instances, you can repeat step 1-5. I created one more instance with instance name `Ubuntu 2`.

Step 3: Create Router

To make sure our network has an internet connection, we need a router that running as the gateway to the internet.

1. Go to **Network > Routers** and then click **Create Router**.
2. Fill **Router Name** for example router1 and then click **Create router**.
3. Click on your **router name link**, for example router1, **Router Details** page.
4. Click **Set Gateway** button in upper right:
 1. Select **External networks** with **external**.
 2. Then **OK**.
5. Click **Add Interface** button.
 1. Select **Subnet** with the network that you have been created in Step 1.
 2. Click **Add interface**.
6. Go to **Network > Network Topology**. You will see the network topology. In the example, there are two network, i.e. external and internal, those are bridged by a router. There are instances those are joined to internal network.

Step 4: Configure Floating IP Address

Floating IP address is public IP address. It makes your instance is accessible from the internet. When you launch your instance, the instance will have a private network IP, but no public IP. In OpenStack, the public IPs is collected in a pool and managed by admin (in our case is TryStack). You need to request a public (floating) IP address to be assigned to your instance.

1. Go to **Compute > Instance**.
2. In one of your instances, click **More > Associate Floating IP**.
3. In **IP Address**, click Plus [+].
4. Select **Pool** to **external** and then click **Allocate IP**.
5. Click **Associate**.
6. Now you will get a public IP, e.g. 8.21.28.120, for your instance.

Step 5: Configure Access & Security

OpenStack has a feature like a firewall. It can whitelist/blacklist your in/out connection. It is called *Security Group*.

1. Go to **Compute > Access & Security** and then open **Security Groups** tab.
2. In **default** row, click **Manage Rules**.
3. Click **Add Rule**, choose **ALL ICMP** rule to enable ping into your instance, and then click **Add**.
4. Click **Add Rule**, choose **HTTP** rule to open HTTP port (port 80), and then click **Add**.
5. Click **Add Rule**, choose **SSH** rule to open SSH port (port 22), and then click **Add**.
6. You can open other ports by creating new rules.

Step 6: SSH to Your Instance

Now, you can SSH your instances to the floating IP address that you got in the step 4. If you are using Ubuntu image, the SSH user will be ubuntu.