Chameleon Cloud Tutorial

Setting up OpenStack Development Sandbox on Chameleon Bare Metal Servers

DevStack on Chameleon Cloud

Objectives

In this tutorial, we will show you how to install and access DevStack on a Chameleon Cloud bare metal server.

Tutorial Action	Time Required
Step 1: Create Chameleon server You will begin by logging into Chameleon Cloud's "Ironic" interface and creating a new server instance to run the new DevStack sandbox on.	5 minutes
Step 2: Create a Dedicated DevStack User DevStack comes configured out-of-the-box to utilize a dedicated "stack" user, which we will create and configure.	5 minutes
Step 3: Launch DevStack You will finish by creating a single configuration file, then launching DevStack by running a script.	20 minutes

Prerequisites

The following prerequisites are expected for successful completion of this tutorial:

- Chameleon Cloud account (http://chameleoncloud.org/user/register/)
- SSH client (for Windows users, download PuTTY from here: http://www.chiark.greenend.org.uk/~sgtatham/putty/download.html)
- A basic knowledge of Linux

Installation Process

1. Create a Chameleon Server

Login to https://ironic.chameleon.tacc.utexas.edu/dashboard/project/instances/ and create a new Chameleon Cloud server from the “Ironic” web interface with the following attributes. If no valid reservation exists, please refer to the Chameleon User Guide or this video for help on how to create one. See figure 1 for instance creation details.

1. Instance name: **devstack-demo**
2. Availability zone: **Any Availability Zone**
3. Reservation: **<any valid reservation>**
4. Flavor: **baremetal**
5. Instance count: **1**
6. Instance boot source: **Boot from image**
7. Image name: **CC-CentOS7**
8. Click on the “**Access & Security**” tab
9. Select a pre-installed SSH key from the list, or, install one by clicking on “**+**”
10. Click: **Launch**

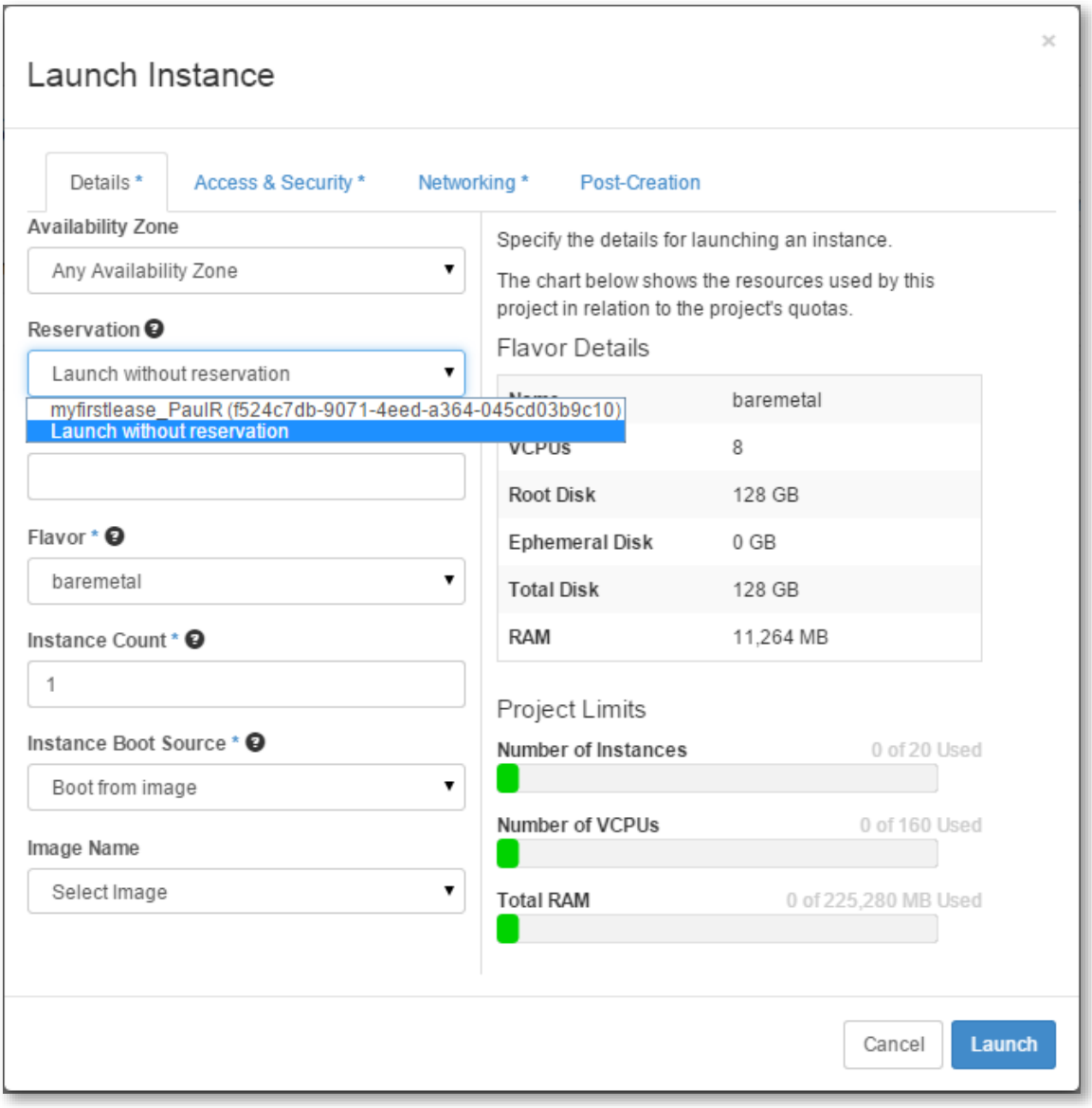

Figure 1 - Create the Chameleon Cloud Server

The Chameleon Cloud server will begin building. When the server becomes available, click on the "Associate Floating IP" button at the end of its row. Select an available IP address from the list and click on "**Associate**". See figure 2 below for details. Make note of this new IP address, as we will need it to complete the next step.

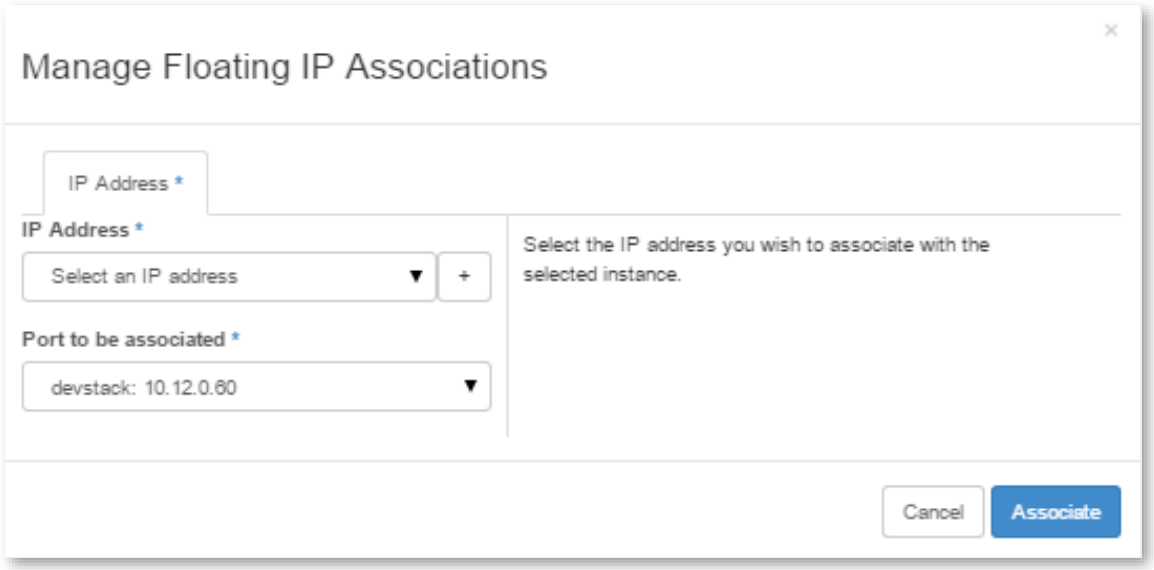

Figure 2 – Associate a Floating IP Address dialog box

Now we can connect to the new server via SSH using the floating IP address we just assigned. If you are a Linux or Mac user, type the following command in a new Terminal window (Windows users: follow along using PuTTY):

```
ssh cc@Floating.IP.Address
```

2. Add a dedicated DevStack user

We need to add a user with sudo privileges in order to install DevStack. Use the following commands to accomplish these tasks:

```
sudo adduser stack
sudo sh -c 'echo "stack ALL=(ALL) NOPASSWD: ALL" >> /etc/sudoers'
```

We now need to copy our SSH public key to the new user, allowing us to login to that account.

```
sudo mkdir /home/stack/.ssh
sudo cp ~/.ssh/authorized_keys /home/stack/.ssh/
sudo chown -R stack:stack /home/stack/.ssh
```

From here on, we should use the new `stack` user we just created. We can now log out of the `cc` user account, and log back into the server as the `stack` user, as seen below:

```
ssh stack@Floating.IP.Address
```

3. Launch DevStack

Once we get logged back onto the server as the `stack` user, we will execute the following commands in order to download DevStack to its own folder in our home directory.

```
cd ~
git clone https://git.openstack.org/openstack-dev/devstack
cd devstack
```

Next, we want to create a `local.conf` configuration file inside the `devstack` directory, and ensure its contents appear exactly as shown below, except where indicated. In order to create and edit this file, we can either use the built-in text editor `vi`, or download the significantly more user friendly editor named `nano`. If you do not have prior experience using `vi` it is recommended you execute the following instruction in order to download and use `nano` to create the configuration file. Otherwise, create the file using `vi` if you are comfortable doing so.

```
sudo yum -y install nano
nano ~/devstack/local.conf
```

local.conf	
[[local|localrc]]	
FLOATING_RANGE=10.12.0.240/28	Range specifying which IP addresses will be dedicated to using as floating IP's
FIXED_RANGE=192.168.1.0/24	Address range of the local network
FIXED_NETWORK_SIZE=256	
FLAT_INTERFACE=eno1	Name of network interface we wish DevStack to use
SERVICE_TOKEN=azertytoken	
ADMIN_PASSWORD=secret	System passwords. These values should be replaced with better, secret passwords
MYSQL_PASSWORD=secretdb	
RABBIT_PASSWORD=stackqueue	
SERVICE_PASSWORD=$ADMIN_PASSWORD	
HOST_IP=Your.Server.IP.Address	(Local) IP address of your server instance

Ensure that your server's IP address is accurately reflected in the `HOST_IP` field of the configuration file. Note that this is different from the floating IP address we associated with the server. The host IP address can be seen in the Chameleon dashboard directly *above* your instance's floating IP address, and should begin with "`10.`".

Finally, launch DevStack by executing the script:

```
./stack.sh
```

Approximately 20 minutes later, your installation should be finished, and you should receive a message similar to the following:

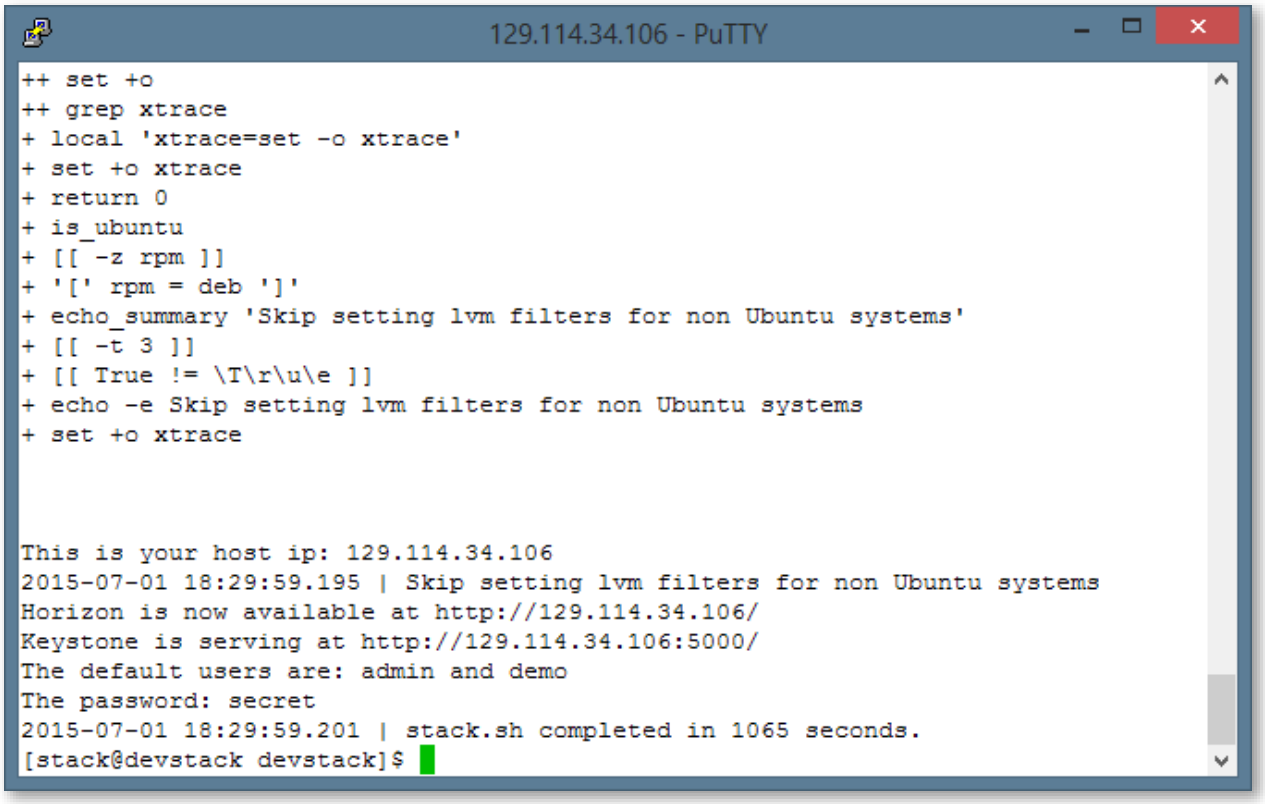

Figure 3 – Final output of `stack.sh` script

You're DevStack sandbox is now up and running. You can connect to it using your web browser and the "Horizon is now available at" web address displayed in the output.