Linux Academy

Live! Lab

Create a New Subnet in an Existing Tenant Network

Contents

Lab Connection Information

- Labs may take up to five minutes to build
- Access to the Horizon Dashboard is provided on the Live! Lab page, along with your login credentials
- SSH information is provided on the Live! Lab page
- Labs will automatically end once the alloted amount of time finishes

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Introduction

OpenStack gives users the power to create their own networks, both on the administrative and user-level, depending on settings. This lab looks at reviewing existing networks, and also creating new networks as the *demo* user.

Review Existing Subnets

Log in to the web GUI as the *admin* user, and navigate to the **Networks** page, located under **System**. Two networks are already created, a *private* network for the demo tenant, and a *public* network under the admin tenant. What makes a network a public network? Public networks can access outside environments.

Switch to your terminal and log into the server. Run `ifconfig` to view all the interfaces set up. At the top, the bridge adapter, *br-ex*, sets an IP address range. This is the same range as the *public* network provided in the lab.

Create a Tenant-Level Subnet

Log out of the Horizon Dashboard as the *admin* user, and log back in as *demo* with the *demo* tenant selected. Navigate to the **Networks** page, under the **Network** tab. The same private network we viewed as admin is available. However, what if we want to create another subnet?

Create Network Via the GUI

Still on the Networks page of the Horizon Dashboard, select the **+Create Network** button. We named ours *private2*. Press **Next** to create a subnet, *private2-sub*, with a **Network Address** of *10.1.0.0/24*. **Next**. Ensure *Enable DHCP* is selected, then select **Create**.

We now want to create a virtual machine to run on this network. Go to **Compute**, then **Instances**. Press **Launch Instance**, then give the instance a name (we choose *test*), a **Flavor** of *m1.tiny*, **Instance Count** of *1*, **Boot Source** as *Boot from Image*, and **Image Name** of *cirros*. Navigate to the **Networking** tab, and select your *private2* subnet. **Launch**.

Create a second image with the same details and name of your choice (ours is *test2*).

Create Network Via the CLI

Return to your terminal and source your *demo.sh* file (more details about this in previous labs).

Create a new network:

```
root@openstack:~# neutron net-create private3
Created a new network:
+-----------------------+--------------------------------------+
| Field                 | Value                                |
+-----------------------+--------------------------------------+
| admin_state_up        | True                                 |
| id                    | 48dd4ae4-501a-4a08-a605-2685a9176125 |
| mtu                   | 1450                                 |
| name                  | private3                             |
| port_security_enabled | True                                 |
| router:external       | False                                |
| shared                | False                                |
| status                | ACTIVE                               |
| subnets               |                                      |
| tenant_id             | ab78aea6c044423d8ce24d2f9165c59f     |
+-----------------------+--------------------------------------+
```

Then create a new subnet within that network:

```
root@openstack:~# neutron subnet-create --name private3-sub private3 10.2.0.0/24
Created a new subnet:
+-------------------+--------------------------------------------+
| Field             | Value                                      |
+-------------------+--------------------------------------------+
| allocation_pools  | {"start": "10.2.0.2", "end": "10.2.0.254"} |
| cidr              | 10.2.0.0/24                                |
| dns_nameservers   |                                            |
| enable_dhcp       | True                                       |
| gateway_ip        | 10.2.0.1                                   |
| host_routes       |                                            |
| id                | bb7d2f36-0b8f-4ab0-9477-fd1c28228420       |
| ip_version        | 4                                          |
| ipv6_address_mode |                                            |
| ipv6_ra_mode      |                                            |
| name              | private3-sub                               |
| network_id        | 48dd4ae4-501a-4a08-a605-2685a9176125       |
| subnetpool_id     |                                            |
| tenant_id         | ab78aea6c044423d8ce24d2f9165c59f           |
+-------------------+--------------------------------------------+
```

private3 being the name of the network this subnet is located under, and *10.2.0.0/24* the CIDR notation of the IP space.

As before, we want to create some test virtual machines under this subnet. Check the available images, flavors, and subnets:

```
root@openstack:~# nova image-list
+--------------------------------------+---------------------------------+--------+--------+
| ID                                   | Name                            | Status | Server |
+--------------------------------------+---------------------------------+--------+--------+
| 7dd25a-de20-413e-bda6-407dcc542d5d | cirros-0.3.4-x86_64-uec         | ACTIVE |        |
| 6e747c-6e48-48a9-b04a-737b5de9c74d | cirros-0.3.4-x86_64-uec-kernel  | ACTIVE |        |
```

```
| ace451-779e-4004-a16b-590f18b798a4 | cirros-0.3.4-x86_64-uec-ramdisk | ACTIVE |        |
+--------------------------------------+---------------------------------+--------+--------+
root@openstack:~# nova flavor-list
+-----+-----------+----------+------+-----------+------+-------+-------------+-----------+
| ID  | Name      | MemoryMB | Disk | Ephemeral | Swap | VCPUs | RXTX_Factor | Is_Public |
+-----+-----------+----------+------+-----------+------+-------+-------------+-----------+
| 1   | m1.tiny   | 512      | 1    | 0         |      | 1     | 1.0         | True      |
| 2   | m1.small  | 2048     | 20   | 0         |      | 1     | 1.0         | True      |
| 3   | m1.medium | 4096     | 40   | 0         |      | 2     | 1.0         | True      |
| 4   | m1.large  | 8192     | 80   | 0         |      | 4     | 1.0         | True      |
| 42  | m1.nano   | 64       | 0    | 0         |      | 1     | 1.0         | True      |
| 451 | m1.heat   | 512      | 0    | 0         |      | 1     | 1.0         | True      |
| 5   | m1.xlarge | 16384    | 160  | 0         |      | 8     | 1.0         | True      |
| 84  | m1.micro  | 128      | 0    | 0         |      | 1     | 1.0         | True      |
+-----+-----------+----------+------+-----------+------+-------+-------------+-----------+
root@openstack:~# nova net-list
+--------------------------------------+----------+------+
| ID                                   | Label    | CIDR |
+--------------------------------------+----------+------+
| 48dd4ae4-501a-4a08-a605-2685a9176125 | private3 | None |
| 97eaf4ca-1f1a-4c26-b6be-f3819a13e82f | private  | None |
| 2192ed5e-d54e-46e6-9e09-2b734d7c7c2c | public   | None |
| fd05e24f-f9b7-4229-9209-c461d450d478 | private2 | None |
+--------------------------------------+----------+------+
```

These are the options we have with which to work. Make note of the IDs for the image and network names, then create the image:

```
root@penstack:~# nova boot --flavor m1.tiny --image 7dd1b25a-de20-413e-bda6-407dcc542d5d
--nic net-id=48dd4ae4-501a-4a08-a605-2685a9176125 test4
+--------------------------------------+----------------------------------------------------+
| Property                             | Value                                              |
+--------------------------------------+----------------------------------------------------+
| OS-DCF:diskConfig                    | MANUAL                                             |
| OS-EXT-AZ:availability_zone          |                                                    |
| OS-EXT-STS:power_state               | 0                                                  |
| OS-EXT-STS:task_state                | scheduling                                         |
| OS-EXT-STS:vm_state                  | building                                           |
| OS-SRV-USG:launched_at               | -                                                  |
| OS-SRV-USG:terminated_at             | -                                                  |
| accessIPv4                           |                                                    |
| accessIPv6                           |                                                    |
| adminPass                            | C9BgxyTUbDEB                                       |
| config_drive                         |                                                    |
| created                              | 2016-06-08T20:09:22Z                               |
| flavor                               | m1.tiny (1)                                        |
| hostId                               |                                                    |
| id                                   | 84e86827-79b8-4b45-a0eb-25e0c9ec6b2e               |
| image                                | cirros-0.3.4-x86_64-uec (7dd1b25a-407dcc542d5d)    |
| key_name                             | -                                                  |
| metadata                             | {}                                                 |
| name                                 | test4                                              |
| os-extended-volumes:volumes_attached | []                                                 |
| progress                             | 0                                                  |
```

```
| security_groups                      | default                                          |
| status                               | BUILD                                            |
| tenant_id                            | ab78aea6c044423d8ce24d2f9165c59f                 |
| updated                              | 2016-06-08T20:09:22Z                             |
| user_id                              | b1948f4d826f47539f52928395ddd96a                 |
+--------------------------------------+--------------------------------------------------+
```

Following previous naming conventions, we called ours *test4*. To confirm, run `nova list` again, or review the **Instances** page on the Horizon Dashboard. You can also look at the **Network Topology** page to review the virtual machines and associated networks.