Create Project and Launch VM

Create Project and Launch VM

The information provided in this section is generic to OpenStack and it is provided here for your convenience with the exception of ConfigProfile, which is Cisco Fabric specific.

Known Caveats

Following are the known caveats:

- The Bulk Create and Delete functionality of VMs is not completely supported. (Refer the Known Limitations and Caveats section.)
- Do not give space for a network name or project name or a VM name.

Steps to Create a Project

Follow the steps to create a project:

1. Login to Horizon as admin, use the password you put into the OpenStack config file.
2. Click **projects** and then **create project**.
3. Click **Create Project**.

Note The project name is used as the vrfName in the fabric (vrfName = “project_name:CTX”) for fabric auto-configuration. The fabric limits the size of vrfName string to be 32 characters long currently. So make sure the project name length is less than 29 characters when creating the project. Do not use hyphens in the project name.

DCI Support

You can use OpenStack to configure DC Inter-connect. Note that we support only L3 DCI with Cisco Prime DCNM 7.1(1) release and Cisco NX-OS 7.1(0)N1(1) release or later.

As part of the project name string, type xyx:dci_id:129 to create it (“129” used here is just an example). Type xyz or xyz:dci_id:0 to remove the DCI support for this project.

The integer entered is the DCI ID. Cisco Prime DCNM uses it as an indication that user desires to auto-configure the border leaves with this VRF and extend to the DCI edge devices (s). A zero value is interpreted by Cisco Prime DCNM to remove the VRF configurations from border leaf and the configurations to extend the VRF from border leaf to DC Edge devices.

Steps to Create a User for the Project

Follow the steps to create a user for the project:

1. Click **Users** and then **Create User**.
2. Fill in all the fields, select the project you just created and select the role as 'admin'. The network information will not be populated to DCNM correctly, if you fail to specify the role as 'admin'.

Steps to Create the Network

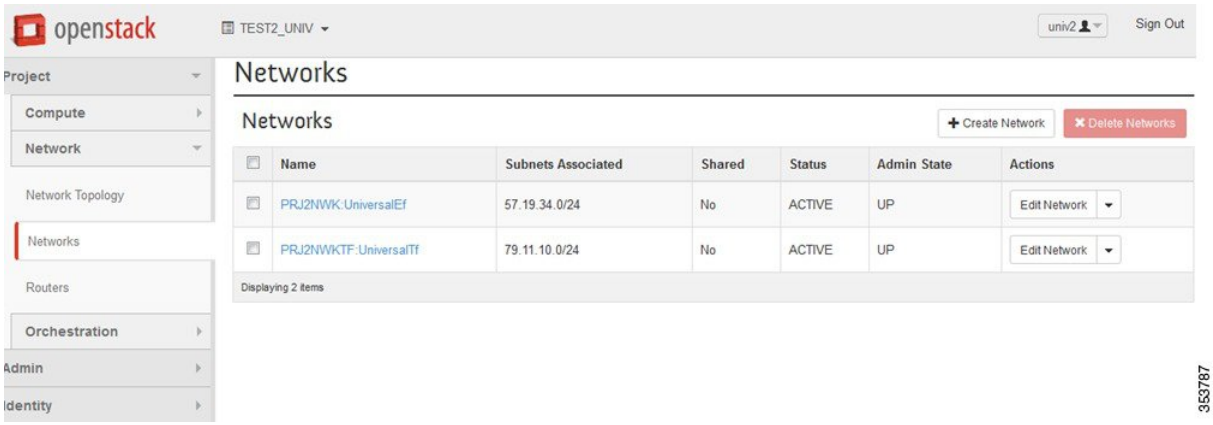
Follow the steps to create the network:

1. Login as the user created by the admin.
2. Click the **project** tab.
3. Click **Networks** and then click **Create Network**. Specify a Name for the network and go to the subnet tab. This is mandatory.
4. Specify a Network Address for the subnet.

Use non-default network profiles

By default for DCNM with version 7.1, defaultNetworkUniversalEfProfile will be the network profile automatically used by the system. Additionally defaultNetworkUniversalTfProfile can be specified too when creating network in OpenStack:

Figure 1: Default Network



Following are the supported network profiles with DCNM 7.1(1):

- defaultNetworkUniversalEfProfile
- defaultNetworkUniversalTfProfile
- defaultNetworkL2Profile

If it is an upgrade from version 7.0(1) or 7.0(2) to 7.1(1), the default profile will be defaultNetworkIpv4EfProfile and the supported profiles will be the sum of profiles for versions 7.0(1), 7.0(2) and 7.1(1) or later:

- defaultNetworkIpv4EfProfile
- defaultNetworkIpv4TfProfile
- defaultNetworkL2Profile
- defaultNetworkUniversalEfProfile
- defaultNetworkUniversalTfProfile
- defaultNetworkL2Profile

The syntax to specify the non-default profiles is the following when creating network in OpenStack by specifying the following name of network (“network_name” in the examples below) and a sub-string of the profile name:

- network_name:L2
- network_name: Ipv4Ef
- network_name: Ipv4Tf
- network_name: UniversalTf
- network_name: UniversalEf

Use defaultNetworkL2Profile

If this profile is chosen when a network is created in OpenStack, DCNM DHCP server will not assign IP address for the VM associated with this network. User is required to configure static IP address for the VM. Additionally, the following command needs to be run on the OpenStack control node:

```
$fabric_enabler_cli
Cisco Nexus Fabric Command Line Interface
(Nexus-Fabric) set_static_ip --mac fa:16:3e:72:ab:dc --ip 136.10.0.16
```

MAC address is of VNIC of the VM and IP address of the statically configured VM IP address. When a VM is removed from OpenStack, the above entry is automatically removed by the system.

Create networks from DCNM

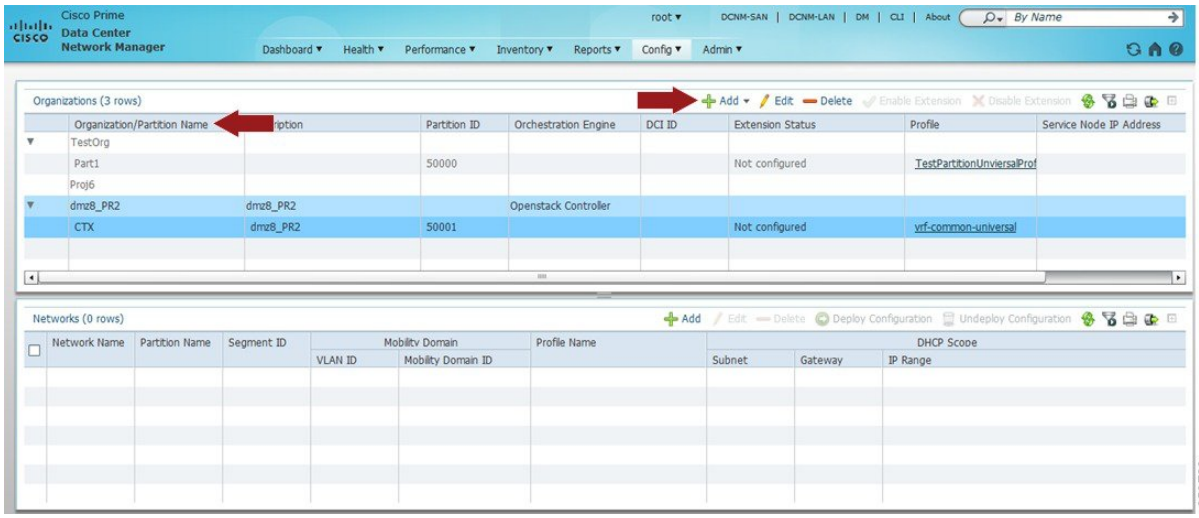
In an OpenStack and Nexus Fabric powered cloud deployment, it is sometimes more desirable for some users to maintain management separation between servers and networks. This is possible by creating networks through DCNM, which is for network/fabric management primarily. First the project/tenant is created from OpenStack and then gets registered with DCNM. Then you can create network from DCNM.

Select Config and Auto-Configuration under Fabric as shown below:

Figure 2: Auto-Configuration

Then select the organization/partition in the following window:

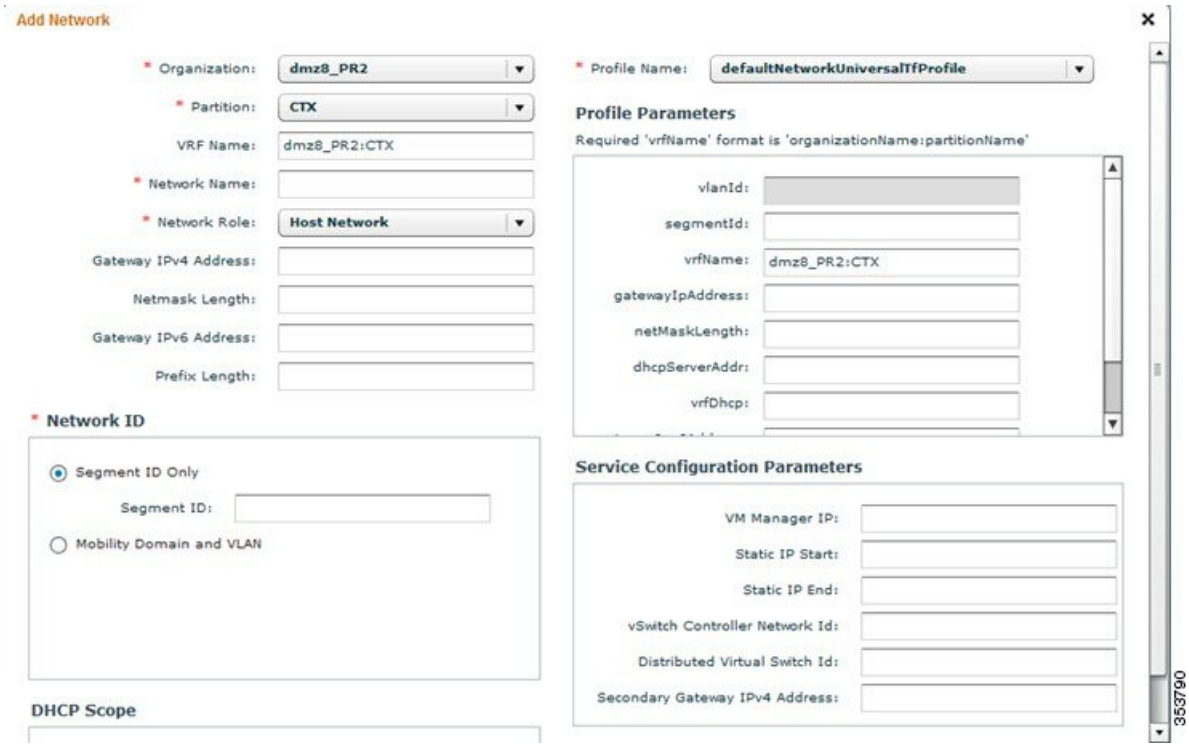
Figure 3: Organization/Partition



Select dmz8_PR2 and click **Add** to add a network. Network created in DCNM can be deleted by selecting the network in the lower panel and click **Delete**. When performing **Add Network**, ensure Organization and Partition are the same as the project/tenant name in OpenStack and make sure the segment ID is in the same

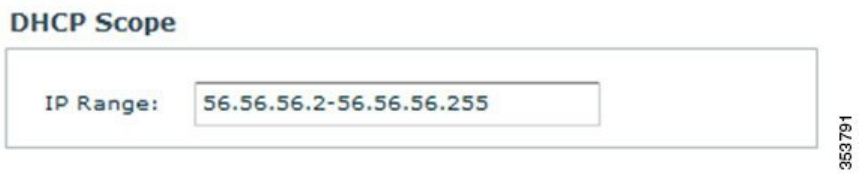
range as set in the *enabler_conf.ini* file and it is not used by any existing networks. The *vrfName* with the correct format must be filled.

Figure 4: Add Network



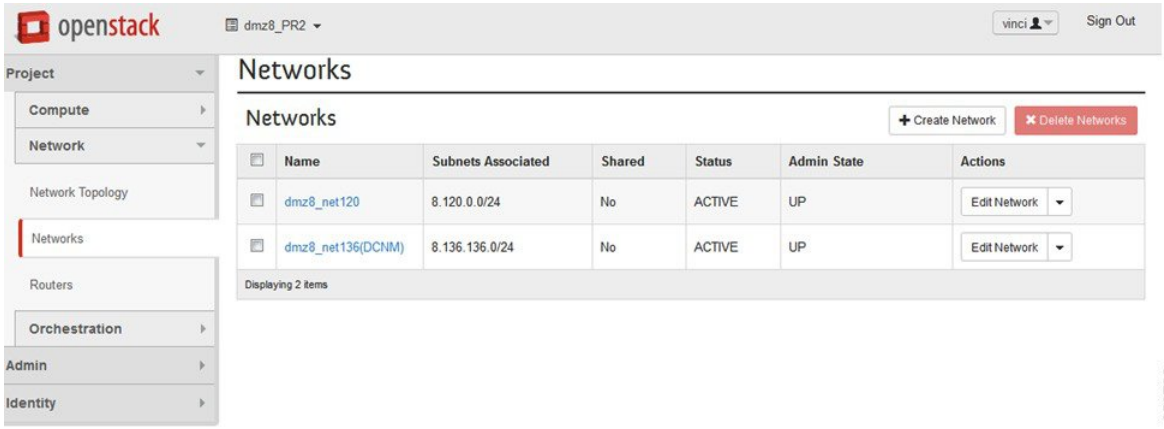
Also scroll down to add the DHCP range – this will make sure the VM will get DHCP IP address from this DCNM.

Figure 5: DHCP Scope



Click **OK** to save it. Log into OpenStack Horizon for that project/tenant and you can see network dmz6_net136 (2nd entry) is created with a suffix (DCNM) in the network name:

Figure 6: OpenStack

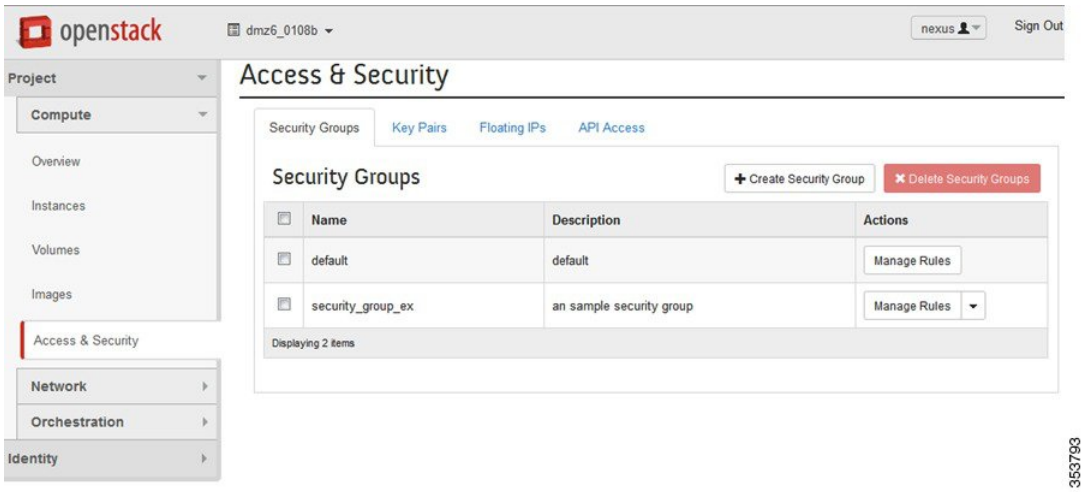


This network is now available for you to associate when creating VMs. It is strongly recommended that the networks created by DCNM must be removed by DCNM after you remove all the VMs using this network.

Steps to Create Security Group

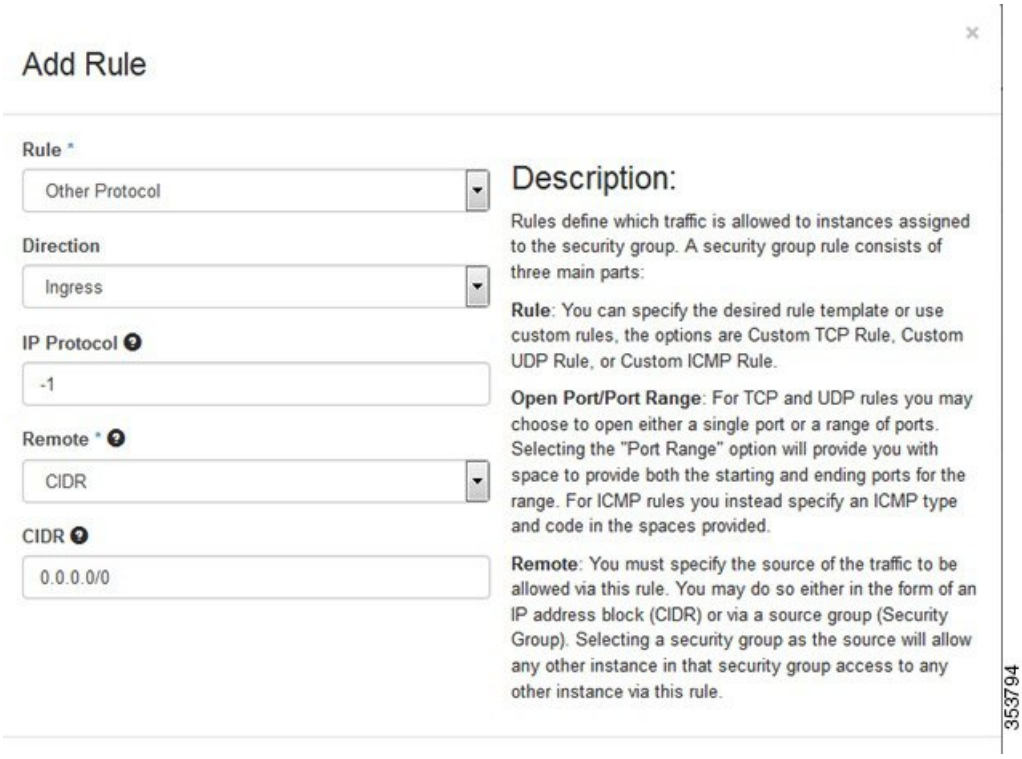
A security group with appropriate rules needs to be created and added before you can launch the VM. Create a security group and rules that allows DHCP (from DCNM) and your data traffic to go through. After logging into Horizon as a user, click **Project** > **Compute** > **Access Security**. Use the **Create Security Group** tab to create sample security group *security_group_ex* in the figure below.

Figure 7: Access and Security



Click **Manage Rules** for the security group you just created and add new rules. For example, if the following rule is added for the security group created, it will allow all traffic:

Figure 8: Add Rule



Steps to Launch the VM

Follow the steps to launch the VM:

1. Click **Instances** and then click **Launch Instance**.
2. Click **Image** drop-down menu and select the image.

   There will be cirros image by default.
3. Specify a name for the Instance.
4. Select **Security** tab and choose the security group created (it is recommended to uncheck the default rule and select the one you specified).
5. Click **Networking** tab and select the network from the **Available network** list.
6. Click **Launch**.