



# OpenStack Network Configuration for Avi Controller Cluster

Avi Technical Reference (v17.2)

# OpenStack Network Configuration for Avi Controller Cluster

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This article explains how to configure a cluster in Avi Vantage for an OpenStack cloud. To provide Avi Controller high availability (HA), add two additional Controller nodes to create a 3-node Controller cluster. For more details on deploying a cluster, refer to [Deploying an Avi Controller Cluster](#).

## Prerequisites for Cluster Deployment

There are certain prerequisites defined for the leader and follower nodes in a cluster. For complete information, refer to [Prerequisites for Cluster Deployment](#).

From an OpenStack perspective, consider the following: 1. A Neutron port is created and is available for cluster VIP. 2. A floating IP is available for Neutron port.

## Deploying an Avi Controller Cluster

For complete information on configuring Controller's management interfaces and cluster IP, refer to [Deploying an Avi Controller Cluster](#). The following steps are for creating OpenStack floating IP and binding that with the cluster IP:

### Write Mode

#### 1. Access OpenStack Horizon CLI.

##### a) List the Network

neutron net-list ? This indicates the configured requisite networks.

```
root@openstack-mitaka:/root# neutron net-list
+-----+-----+-----+
| id                | name          | subnets          |
+-----+-----+-----+
| 10a514a3-d843-499d-80fd-28274d4a4912 | webserver-net | 3ebfb2ef-9b47-44f7-9da5-5245e1d0ed53 192.168.10.0/24 |
| 5dd0b1cb-ebba-4ff9-84fd-74dcf13c7f86 | client-net    | a9a00d61-6ee8-4fac-80df-4e0bb8c8b4f3 192.168.11.0/24 |
| c1c045f5-2d0f-43e3-ab43-55f990cde9b7 | provider1     | 1b65c0da-38c7-4c85-88a9-30c52c6a4558 10.130.128.0/18 |
| dd9dab27-9228-4765-96f2-d56194136ba0 | avimgmt       | 5785c1cf-a222-4b0a-9343-003153f37a65 172.16.0.0/24 |
+-----+-----+-----+
```

##### b) Create a floating IP

neutron floatingip-create provider1 ? *provider1* is the network used.

```
root@openstack-mitaka:/root# neutron floatingip-create provider1
```

New floating IP is created.

```
+-----+-----+
| Field            | Value        |
+-----+-----+
| description      |              |
```

```

| fixed_ip_address | |
| floating_ip_address | 10.130.170.86 |
| floating_network_id | c1c045f5-2d0f-43e3-ab43-55f990cde9b7 |
| id | 4ec57a12-7357-461a-80f6-d87ae7536335 |
| port_id | |
| router_id | |
| status | DOWN |
| tenant_id | 904fb201a92f443297bffca3b354d52d |
+-----+-----+

```

c) Get the port-id for cluster IP.

```

root@openstack-mitaka:/root# neutron port-list | grep 172.16.0.65
| 95665123-64a4-453a-abde-70fdb3d2ae2a | AviClusterIp:cluster-02d33104-1f0f-46fa-9afd-15592d76dec4:cloud-b47ca5

```

d) Associate the cluster IP with the floating IP.

Using the port-id from the command above (95665123-64a4-453a-abde-70fdb3d2ae2a in this case), associate it with the floating IP created in step b.

```

root@openstack-mitaka:/root# neutron floatingip-associate 4ec57a12-7357-461a-80f6-d87ae7536335 95665123-64a4-45

```

```

+-----+-----+
| Field          | Value |
+-----+-----+
| description    | |
| fixed_ip_address | 172.16.0.65 |
| floating_ip_address | 10.130.170.86 |
| floating_network_id | c1c045f5-2d0f-43e3-ab43-55f990cde9b7 |
| id             | 4ec57a12-7357-461a-80f6-d87ae7536335 |
| port_id        | 95665123-64a4-453a-abde-70fdb3d2ae2a |
| router_id      | 2d3b93a2-7804-4841-90c4-be15b148d099 |
| status         | ACTIVE |
| tenant_id      | 904fb201a92f443297bffca3b354d52d |
+-----+-----+

```

2. Add the cluster IP and the secondary IP for the cluster leader. As shown in Figure 1, 172.16.0.65 is the cluster IP which is added as the secondary IP for the cluster leader.

### Edit Controller Configuration ✕

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**Cluster Information**

Controller Cluster IP ?



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**Cluster Nodes**

Hostname/IP*	Name
<input style="width: 95%;" type="text" value="172.16.0.66"/>	<input style="width: 95%;" type="text" value="Avi-Controller-Node-1"/>
Hostname/IP	Name
<input style="width: 95%;" type="text" value="172.16.0.64"/>	<input style="width: 95%;" type="text" value="Avi-Controller-Node-2"/>
Hostname/IP	Name
<input style="width: 95%;" type="text" value="172.16.0.63"/>	<input style="width: 95%;" type="text" value="Avi-Controller-Node-3"/>

Save

**Figure 1. OpenStack Cluster Configuration**

```

root@172-16-0-66:~# ip a
eth0:
<broadcast,multicast,up,lower_up>
  mtu 1500 qdisc mq state UP group default qlen 1000 link/ether 00:50:56:bd:5a:0f brd ff:ff:ff:ff:ff:ff inet 172.16.0.66/24
</broadcast,multicast,up,lower_up>
</cluster ip < code>
</cluster>
</broadcast,multicast,up,lower_up>
    
```

**No-Access Mode**

For OpenStack No-Access cloud type, the AAP entries need to be configured manually using the following command. An example is shown in the code block below.

```

root@openstack-mitaka:/root# neutron port-update Controller_Port --allowed-address-pairs type=dict list=true ip_address=cluster_ip
    
```

```

output="1-100"><code> root@openstack-mitaka:/root# neutron port-update d0bf0bda-02e2-46bf-
abd2-0d05cc4654df --allowed-address-pairs type=dict list=true ip_address=172.16.0.133
root@openstack-mitaka:/root# neutron port-show d0bf0bda-02e2-46bf-abd2-0d05cc4654df
+-----+
+-----+
| Field | Value | +-----+
+-----+
| admin_state_up | True | | allowed_address_pairs | {"ip_address": "172.16.0.131",
"mac_address": "fa:16:3e:47:6b:70"} | | binding:host_id | openstack-mitaka | | binding:
profile | {} | | binding:vif_details | {"port_filter": true} | | binding:vif_type | bridge
| | binding:vnic_type | normal | | created_at | 2018-01-12T13:58:02 | | description | | |
device_id | 2adedfc3-75d6-4296-ad18-bfc38873485c | | device_owner | compute:nova | |
extra_dhcp_opts | | | fixed_ips | {"subnet_id": "5785c1cf-a222-4b0a-9343-003153f37a65",
"ip_address": "172.16.0.133"} | | id | d0bf0bda-02e2-46bf-abd2-0d05cc4654df | |
mac_address | fa:16:3e:47:6b:70 | | name | | | network_id | dd9dab27-9228-4765-96f2-
d56194136ba0 | | port_security_enabled | True | | security_groups | 3cc1092e-538c-4ff7-
b4ac-eeff84731f75 | | status | ACTIVE | | tenant_id | 904fb201a92f443297bffca3b354d52d | |
updated_at | 2018-01-12T14:19:06 | +-----+
+-----+
</code> </pre></li> <li><p>Create the neutron port for the VIP by using the following
command. <br></p> <pre pre=" " data-output="1-100"><code> root@openstack-mitaka:/root#
neutron port-create "neutron_network_name" --allowed-address-pairs type=dict list=true
mac_address="controller_mac1",ip_address="controller_ip1" mac_address="controller_mac2",
ip_address="controller_ip2" mac_address="controller_mac3",ip_address="controller_ip3" --
fixed-ip ip_address="cluster_ip" --tenant-id "tenant_uuid" </code> </pre> <pre pre=" " data-
output="1-100"><code> root@openstack-mitaka:/root# neutron port-create "avimgmt" --allowed-
address-pairs type=dict list=true mac_address="fa:16:3e:52:81:03",ip_address="172.16.0.63"
mac_address="fa:16:3e:52:81:04",ip_address="172.16.0.64" mac_address="fa:16:3e:52:81:06",
ip_address="172.16.0.66" --fixed-ip ip_address="172.16.0.65" --tenant-id
"904fb201a92f443297bffca3b354d52d" </code> </pre></li> </ol> <p><strong>Note:</strong>
When the leader Controller fails (or reboots), a follower Controller will take over the
cluster IP (in this case 172.16.0.65), and the mapping between floating IP (10.130.170.86)
and cluster IP (172.16.0.65) will not change. Therefore, without intervention, the
floating IP and cluster IP association will work as expected.</p>

```