How To Assign a Floating IP Address to an Instance in OpenStack

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You want to assign an OpenStack Instance a floating IP address from your public network?. When an virtual instance is created in OpenStack, it is automatically assigned a fixed IP in the network to which it is assigned . This IP address is permanently associated with the instance until the instance is terminated.

OpenStack also gives you an option to use floating IP address created from external network's subnet. A "**floating IP**" is an IP address that can be dynamically added to a running virtual instance. The floating IP association can be modified at any time regardless of the state of the instance in question.

Here is the process you'll use to create a floating IP Address in OpenStack and assign it to an instance.

Step 1: Create an Instance on private network

First create a Virtual instance from OpenStack horizon dashboard or CLI in a private network.

I have two networks – public and private. The instance will be created on the private subnet.

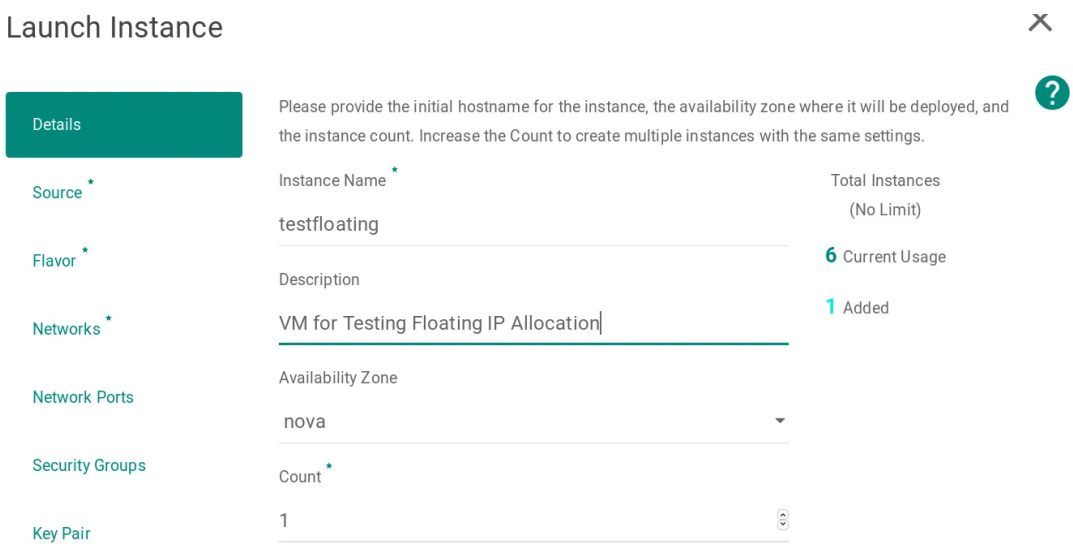
```
$ openstack network list
+--------------------------------------+---------+------------------
------------------+
| ID                                   | Name    | Subnets
|
+--------------------------------------+---------+------------------
------------------+
| b94431cb-08cf-42ea-be61-55f5cf459276 | private | 57601b99-ea64-
41a8-a927-fbd591ae3f2b |
| f7ccac3b-73eb-49bf-a4ec-af750216b819 | public  | 7536e4a8-6aa8-
45dc-aed6-1a98afcf416d |
+--------------------------------------+---------+------------------
------------------+
```

```
$ openstack subnet list
+--------------------------------------+---------------+------------
-------------------------+---------------+
| ID                                   | Name          | Network
| Subnet         |
+--------------------------------------+---------------+------------
-------------------------+---------------+
| 57601b99-ea64-41a8-a927-fbd591ae3f2b | private_subnet | b94431cb-
08cf-42ea-be61-55f5cf459276 | 10.10.1.0/24   |
| 7536e4a8-6aa8-45dc-aed6-1a98afcf416d | public_subnet  | f7ccac3b-
73eb-49bf-a4ec-af750216b819 | 96.220.99.8/29 |
+--------------------------------------+---------------+------------
-------------------------+---------------+
```

I'll create an Instance called **testfloating** from Ubuntu 18.04 template.

```
openstack server create \
 --image Ubuntu-18 \
 --key-name jmutai \
 --flavor m1.small \
 --security-group  7fffea2a-b756-473a-a13a-219dd0f1913a  \
 --network private  \
 testfloating
```

VM creation can be done from your OpenStack Dashboard.



After creation, confirm the server is running.

```
$ openstack server show testfloating
+--------------------------------------+-----------------------------
---------------------------+
```

```
| Field                                | Value
|
+--------------------------------------+------------------------------
----------------------------+
| OS-DCF:diskConfig                    | MANUAL
|
| OS-EXT-AZ:availability_zone          | nova
|
| OS-EXT-SRV-ATTR:host                 | server1.computingforgeeks.com
|
| OS-EXT-SRV-ATTR:hypervisor_hostname | server1.computingforgeeks.com
|
| OS-EXT-SRV-ATTR:instance_name        | instance-0000002e
|
| OS-EXT-STS:power_state               | Running
|
| OS-EXT-STS:task_state                | None
|
| OS-EXT-STS:vm_state                  | active
|
| OS-SRV-USG:launched_at               | 2019-09-22T07:13:40.000000
|
| OS-SRV-USG:terminated_at             | None
|
| accessIPv4                           |
|
| accessIPv6                           |
|
| addresses                            | private=10.10.1.185
|
| config_drive                         |
|
| created                              | 2019-09-22T07:13:35Z
|
| flavor                               | m1.small (1)
|
| hostId                               |
da0a05ef20a03e97f301563551bab9b669ef04adbce232d941519946 |
| id                                   | a731e48d-d3b5-4fcf-8fc7-
f8f280b51b44                      |
| image                                | Ubuntu-18 (7bd462ad-cc11-
4d89-8b85-9aab0cfe114b)         |
| key_name                             | jmutai
```

```
|
| name                                | testfloating
|
| progress                            | 0
|
| project_id                          |
06bcc3c56ab1489282b65681e782d7f6                          |
| properties                          |
|
| security_groups                     | name='default'
|
| status                              | ACTIVE
|
| updated                             | 2019-09-22T07:13:40Z
|
| user_id                             |
336acbb7421f47f8be4891eabf0c9cc8                          |
| volumes_attached                    |
|
+-------------------------------------+------------------------------
----------------------------+
```

Step 2: Reserve a floating IP address from external network pool.

You need to reserve a floating IP address from external network subnet pool. This can be done from the web dashboard or CLI.

From CLI:

```
openstack floating ip create --project admin --subnet public_subnet
public
```

Where:

- **admin** is the Owner's project. Created floating IP will be available for association in this project.
- **public_subnet** is the name of the subnet on which you want to create the floating IP.
- **public** is the name of the network to allocate floating IP from.

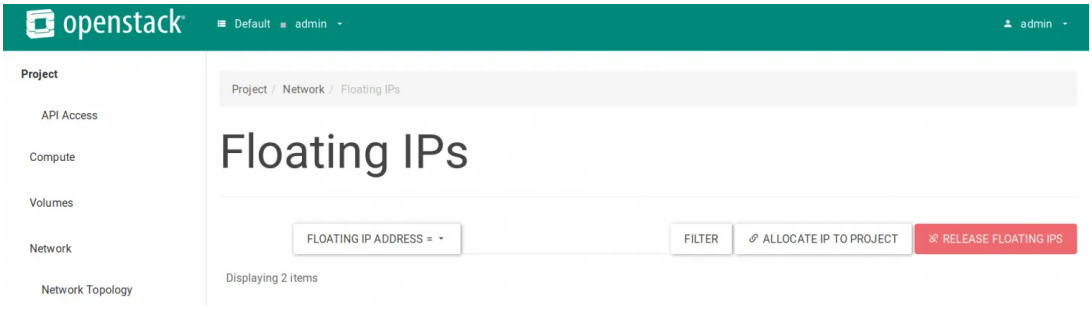
See all options by typing:

```
$ openstack floating ip create --help
```

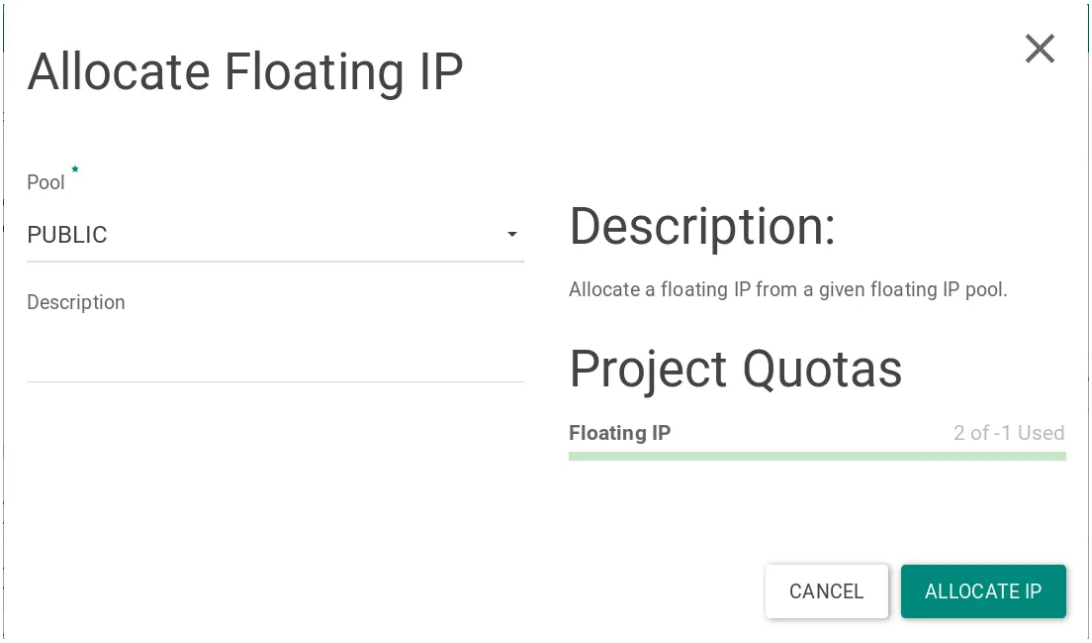
From Dashboard:

Log in to the dashboard as a user that has the Member role. The navigate to:

Project > Network > Floating IPs



Click on the **"ALLOCATE IP TO PROJECT"** button. On the new window, select a Pool, provide description and click on "**ALLOCATE IP**".



Step 3: Associate the reserved floating IP address with the instance.

Once the floating IP address is reserved, we can associate it with an instance.

From CLI:

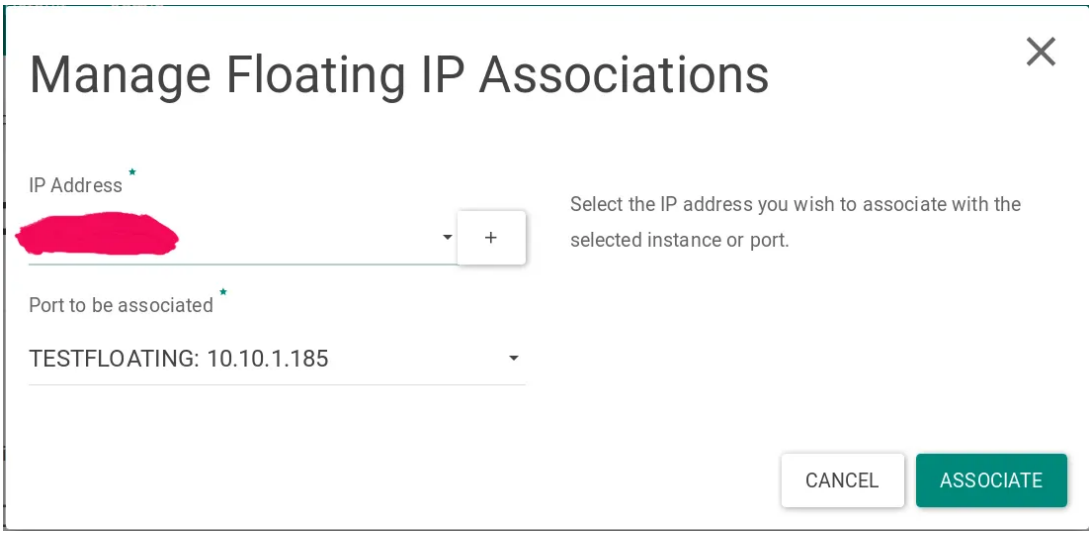
```
$ openstack floating ip list
$ openstack server list
$ openstack server add floating ip <server> <ip-address>
```

```
# Example:
$ openstack server add floating ip testfloating 96.220.99.11
```

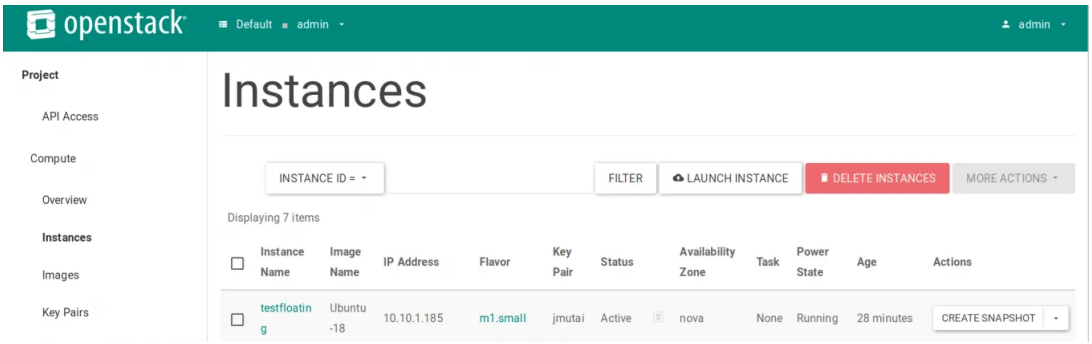
From dashboard:

Option 1: **Project > Network > Floating IPs > Select IP > Associate**

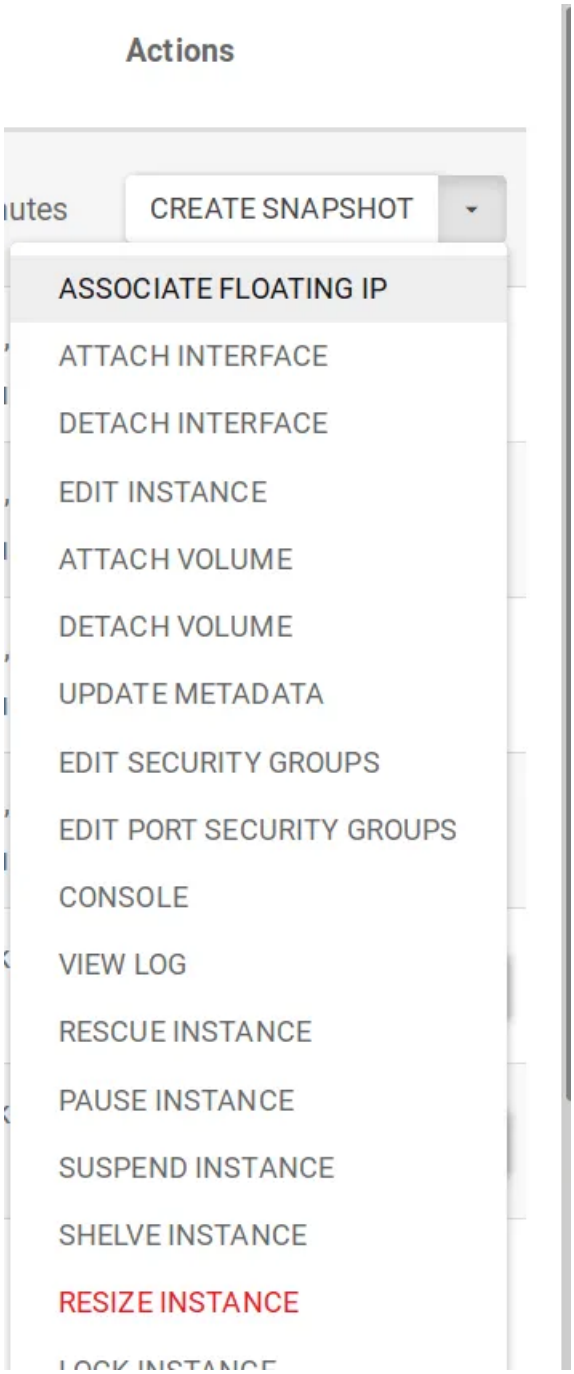
Pick a floating IP, an instance and a port to associate.



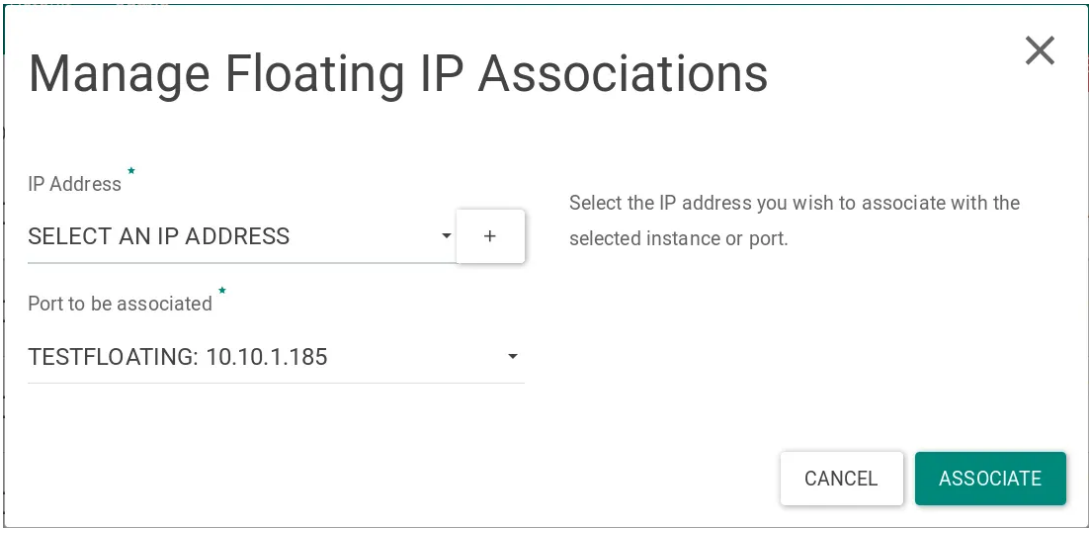
Option 2: **Project > Compute > Instances**



Under **actions,** select "**ASSOCIATE FLOATING IP"**



Select an IP address and click "**ASSOCIATE".**



Disassociate a floating IP Address

To disassociate IP address, use either of below methods:

CLI:

```
$ openstack server remove floating ip <server> <ip-address>
```

Dashboard:

- Project > Network > Floating IPs > DISASSOCIATE
- Project > Compute > Instances > Actions > DISASSOCIATE FLOATING IP

That's all on how to associate a floating IP address to an instance running on OpenStack.

Other OpenStack guides:

How To Create OpenStack Instance With a Fixed / Static IP Address

How To Create OpenStack projects, users and roles

How To Migrate OpenStack Instance from one Compute Host to Another

How To Resize OpenStack Instance / Virtual Machine

How To Configure OpenStack Instances / VMs to Autostart after Nova compute reboot

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