



Avi LBaaS Driver Installation Instructions for Contrail

Avi Technical Reference (v17.1)

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This article details installation of the Avi LBaaS driver in an OpenStack + Contrail environment. There are two mutually exclusive modes:

- a. Neutron-based Avi LBaaS driver: In this mode, the Avi LBaaS driver derives off Neutron and resides in the Neutron-server process. This mode allows multiple Neutron LBaaS providers to co-exist.
- b. Contrail-based Avi LBaaS driver. In this mode, the Avi LBaaS driver derives off Contrail and resides in the service-monitor process. This mode allows multiple Contrail LBaaS providers to co-exist.

The Avi Vantage cloud configuration is exactly the same in both modes. Note that in a Contrail environment, you cannot have a mix of Contrail LBaaS and Neutron LBaaS; and thus must pick a mode that is compatible with the current environment.

Avi LBaaS Neutron Driver Installation Instructions for Contrail

The following steps are to be performed on Neutron-server host.

1. Determine Contrail plugin version:

```
$ contrail-version neutron-plugin-contrail
Package Version
-----
neutron-plugin-contrail 3.0.2.0-51
```

2. Adjust `neutron.conf` database connection URL:

```
$ vi /etc/neutron/neutron.conf
# if using mysql
connection = mysql+pymysql://neutron:c0ntrail123@127.0.0.1/neutron
```

3. Populate/upgrade Neutron database schema:

```
# to upgrade to head
$ neutron-db-manage upgrade head
# to upgrade to a specific version
$ neutron-db-manage --config-file /etc/neutron/neutron.conf upgrade liberty
```

4. Drop foreign key constraints:

```
# obtain current mysql token
$ cat /etc/contrail/mysql.token
fabe17d9dd5ae798f7ea
```

```

$ mysql -u root -p
Enter password: fabel7d9dd5ae798f7ea

mysql> use neutron;

mysql> show create table vips;
# CONSTRAINT `vips_ibfk_1` FOREIGN KEY (`port_id`) REFERENCES `ports` (`id`) - ports table is not used by Contrail
mysql> alter table vips drop FOREIGN KEY vips_ibfk_1;

mysql> show create table lbaas_loadbalancers;
# CONSTRAINT `fk_lbaas_loadbalancers_ports_id` FOREIGN KEY (`vip_port_id`) REFERENCES `ports` (`id`)
mysql> alter table lbaas_loadbalancers drop FOREIGN KEY fk_lbaas_loadbalancers_ports_id;

```

5. Continue with steps from README file for the Avi LBaaS plugin installation.

5.a. For a local installation:

```

# LBaaS v1 driver
$ ./install.sh --aname avi_adc --aip

<controller_ip|controller_vip>
  --auser
<avi-admin-tenant-user>
  --apass
<avi-admin-tenant-password>
  # LBaaS v2 driver $ ./install.sh --aname avi_adc_v2 --aip
  <controller_ip|controller_vip>
    --auser
  <avi-admin-tenant-user>
    --apass
  <avi-admin-tenant-password>
    --v2
  </avi-admin-tenant-password>
  </avi-admin-tenant-user>
</controller_ip|controller_vip>
</avi-admin-tenant-password>
</avi-admin-tenant-user>
</controller_ip|controller_vip>

```

5.b. For manual steps:

```

# LBaaS v1 driver
$ vi /etc/neutron/neutron.conf

#service_plugins = neutron_plugin_contrail.plugins.opencontrail.loadbalancer.plugin.LoadBalancerPlugin
service_plugins = neutron_lbaas.services.loadbalancer.plugin.LoadBalancerPlugin

[service_providers]
service_provider = LOADBALANCER:Avi_ADC:neutron_lbaas.services.loadbalancer.drivers.avi.avi_driver.AviLbaasDriver

```

```

[avi_adc]
address=10.1.11.4
user=admin
password=avi123
cloud=jcos

# LBaaS v2 driver
$ vi /etc/neutron/neutron.conf
#service_plugins = neutron_plugin_contrail.plugins.opencontrail.loadbalancer.plugin.LoadBalancerPlugin
service_plugins = neutron_lbaas.services.loadbalancer.plugin.LoadBalancerPluginv2
[service_providers]
service_provider = LOADBALANCERV2:avi_adc_v2:neutron_lbaas.drivers.avi.driver.AviDriver

[avi_adc_v2]
controller_ip=10.1.11.3
username=admin
password=avi123

$ service neutron-server restart
$ neutron service-provider-list

```

Avi LBaaS Contrail Driver Installation Instructions for Contrail

These steps are exclusive of Neutron-LBaaS mode and thus any changes from that mode would need to be undone apriori. The following steps should be performed on the Neutron-server/Contrail `api-server` host.

1. Determine Contrail-plugin version:

```

$ contrail-version neutron-plugin-contrail
Package Version
-----
neutron-plugin-contrail 3.0.2.0-51

```

2. Driver installation:

```

# LBaaS v2 driver
$ ./install.sh --aname ocavi_adc_v2 --aip

<controller_ip|controller_vip>
--auser
<avi-admin-tenant-user>
--apass
<avi-admin-tenant-password>
--v2 --no-restart --no-confmodify
</avi-admin-tenant-password>
</avi-admin-tenant-user>
</controller_ip|controller_vip>

```

3. Setup service-appliance-set:

```
$ /opt/contrail/utils/service_appliance_set.py --api_server_ip 10.10.10.100 --api_server_port 8082 --oper add --admin_u
```

NOTE: In the event 'neutron_lbaas' doesn't exist on the api-server node, the driver path should be adjusted to the correct path spec.

4. Delete service-appliance-set:

```
$ /opt/contrail/utils/service_appliance_set.py --api_server_ip 10.10.10.100 --api_server_port 8082 --oper del --admin_u
```

Avi Controller Configuration

1. If OpenStack endpoints are private IPs and Contrail provides a public/front-end IP to those endpoints, then use iptables to DNAT.

```
# on AviController only - perform iptable nat to reach the private IPs.
$ iptables -t nat -I OUTPUT --dest 172.16.11.50 -j DNAT --to-dest 10.10.10.100
```

2. Cloud configuration:

During cloud configuration, select the "Integration with Contrail" checkbox and provide the endpoint URL of the Contrail VNC api-server. The Keystone credentials from the OpenStack configuration will be used to authenticate with the api-server service.

/# Example configuration settings

```
: > show cloud jcos
+-----+
| Field          | Value                                     |
+-----+
| uuid           | cloud-104bb7e6-a9d2-4b34-a4c5-d94be659bb91 |
| name           | jcos                                     |
| vtype          | CLOUD_OPENSTACK                         |
| openstack_configuration |
|   username     | admin                                     |
|   admin_tenant | demo                                     |
|   keystone_host | 172.16.11.50                             |
|   mgmt_network_name | mgmtnw                                   |
|   privilege     | WRITE_ACCESS                             |
|   use_keystone_auth | True                                     |
|   region        | RegionOne                                 |
|   hypervisor    | KVM                                       |
|   tenant_se     | True                                     |
|   import_keystone_tenants | True                                     |
```

anti_affinity	True	
port_security	False	
security_groups	True	
allowed_address_pairs	True	
free_floatingips	True	
img_format	OS_IMG_FMT_AUTO	
use_admin_url	True	
use_internal_endpoints	False	
config_drive	True	
insecure	True	
intf_sec_ips	False	
external_networks	False	
neutron_rbac	True	
nuage_port	8443	
contrail_endpoint	http://10.10.10.100:8082	
apic_mode	False	
dhcp_enabled	True	
mtu	1500 bytes	
prefer_static_routes	False	
enable_vip_static_routes	False	
license_type	LIC_CORES	
tenant_ref	admin	
+-----+		