



# Kemp LBaaS Driver for OpenStack

## **Installation Guide**

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# 1 Introduction

OpenStack is a cloud computing software platform. It is primarily deployed as an Infrastructure as a Service (IaaS) solution. The technology consists of a series of interrelated projects that control pools of processing, storage and networking resources throughout a data center. This can be managed through a web-based dashboard, command-line tools or a RESTful API.

OpenStack lets users deploy Virtual Machines and other instances that handle different tasks for managing a cloud environment on the fly. With OpenStack, horizontal scaling is easy – more instances can be spun up in order to serve more users, as needed.

The Kemp Load Balancer as a Service (LBaaS) OpenStack driver allows the Kemp LoadMaster to be deployed in OpenStack.

## 1.1 Document Purpose

This document explains how to install the Kemp LBaaS driver in OpenStack and how to deploy a LoadMaster instance in OpenStack.

## 1.2 Intended Audience

This document is for anyone who is interested in finding out how to install and use the Kemp LBaaS OpenStack driver.

## 2 Kemp LBaaS OpenStack Driver

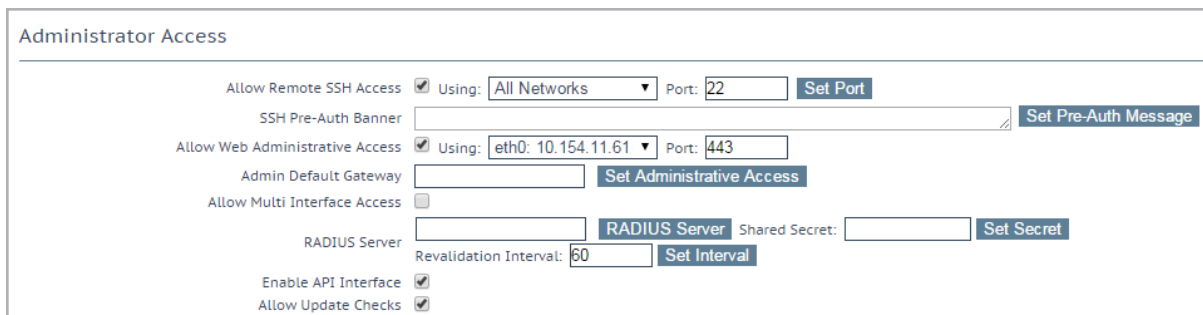
For instructions on how to install and use the Kemp LBaaS OpenStack driver, refer to the sections below.

### 2.1 Prerequisites

The following prerequisites must be in place before following these steps:

- OpenStack 8.0 (Liberty release) must be deployed.
- A LoadMaster must be deployed within OpenStack.
- Some of the commands in this document may require sudo or root access.
- The Application Program Interface (API) must be enabled on the LoadMaster. For instructions on how to do this, refer to the steps below:

a) In the LoadMaster Web User Interface (WUI), go to **Certificates & Security > Remote Access**.



The screenshot shows the 'Administrator Access' configuration page in the LoadMaster WUI. The page has a title bar 'Administrator Access' and a list of settings:

- Allow Remote SSH Access**: Checked. Using: All Networks. Port: 22. [Set Port]
- SSH Pre-Auth Banner**: [Text area] [Set Pre-Auth Message]
- Allow Web Administrative Access**: Checked. Using: eth0: 10.154.11.61. Port: 443.
- Admin Default Gateway**: [Text field] [Set Administrative Access]
- Allow Multi Interface Access**: Unchecked.
- RADIUS Server**: [Text field] [RADIUS Server] Shared Secret: [Text field] [Set Secret]
- Revalidation Interval**: 60 [Set Interval]
- Enable API Interface**: Checked.
- Allow Update Checks**: Checked.

b) Select the **Enable API Interface** check box.

### 2.2 Install the Kemp LBaaS OpenStack Driver Package

The package can either be installed automatically (if a network connection is in place) or manually. Refer to the relevant section below for further information.

#### 2.2.1 Enable LBaaS in OpenStack

To enable LBaaS, open the Command Line Interface (CLI) and follow the steps below:

1. Edit the **local\_settings.py** file:

```
vim /etc/openstack-dashboard/local_settings.py
```

2. Find the following block of code:

```
OPENSTACK_NEUTRON_NETWORK = {  
  
'enable_lb': False }
```

3. Change **False** to **True**:

```
OPENSTACK_NEUTRON_NETWORK = {  
  
'enable_lb': True }
```

---

**True** is case sensitive and the case should be exactly as it is in this document.

---

4. Save the file.

5. Restart the web server:

```
service apache2 restart
```

### 2.2.2 Automatically Install the Driver Package

To automatically install the driver package, open the Command Line Interface (CLI) and enter the following command:

```
pip install <NameOfKempOpenStackDriver>
```

For example:

```
pip install kemptech-openstack-lbaas
```

### 2.2.3 Manually Install the Driver Package

To manually install the driver package, follow the steps below:

1. Go to the following link: <https://pypi.python.org/pypi/kemptech-openstack-lbaas/>.
2. Download the .tar.gz file provided.
3. Extract the .tar.gz file.
4. In the CLI, find the relevant Python path by running the following commands:

```
python
```

```
import sys
```

**sys.path**


---

The default path is usually **/usr/lib/python2.7/dist-packages**.

---

5. Copy the downloaded **kemptech\_openstack\_lbaas** folder into the **dist-packages** folder.

---

If updating the Kemp driver package, overwrite the existing files.

---

## 2.2.4 Enable LBaaS Neutron with the Kemp LoadMaster Driver

Configure the **neutron.conf** and **neutron\_lbaas.conf** files to use the Kemp LBaaS plugin. To do this, follow the steps below:

1. Edit the **neutron.conf** configuration file:

```
vim /etc/neutron/neutron.conf
```

2. Find the **service\_plugins** line and add **neutron\_lbaas.services.loadbalancer.plugin.LoadBalancerPluginv2**, for example:

```
service_plugins = router,neutron_  
lbaas.services.loadbalancer.plugin.LoadBalancerPluginv2
```

---

A comma (,) is used to separate different service plugins.

---

3. At the bottom of the file, add the following:

```
[kemptechnologies]
```

```
lm_address = <LoadMasterIPAddress>
```

```
lm_username = <LoadMasterUsername>
```

```
lm_password = <LoadMasterPassword>
```

For example:

```
[kemptechnologies]
```

```
lm_address = 172.16.2.129
```

```
lm_username = bal
```

```
lm_password = test1234
```

4. Save the changes made to the edited file.

5. Edit the **neutron\_lbaas.conf** configuration file:

```
vim /etc/neutron/neutron_lbaas.conf
```

6. Save the changes made to the edited file.

7. Go down to the **[service\_providers]** section and add (or append, as needed) the following line:

```
service_provider = LOADBALANCERV2:kemptechnologies:neutron_  
lbaas.drivers.kemptechnologies.driver_v2.KempLoadMasterDriver:default
```

---

This is case sensitive.

---

---

If there are other LBaaS entries in the list, ensure the Kemp one is set as the default.

---

8. Restart Neutron by running the following command:

```
service neutron-server restart
```

## 2.3 Topology Setup

Refer to the commands below to find out how to create a load balancer, listener, pool, members and health monitor:

- Get the Universally Unique Identifier (UUID) of the private subnet:

```
neutron subnet-list
```

- Create a load balancer:

```
neutron lbaas-loadbalancer-create --name lb1 private-subnet
```

- Create a listener (health check):

```
neutron lbaas-listener-create --loadbalancer lb1 --protocol HTTP --protocol-port 80 --  
name listener1
```

- Create a pool and associate it with the previously created listener:

```
neutron lbaas-pool-create --lb-algorithm ROUND_ROBIN --listener listener1 --protocol  
HTTP --name pool1
```

- Create members (Real Servers):



```
neutron lbaas-member-create --subnet private-subnet --address <ServerIPAddress> --  
protocol-port 80 pool1
```

- Create a health monitor and associate it with the pool:

```
neutron lbaas-healthmonitor-create --delay 3 --type HTTP --max-retries 3 --timeout 3 -  
-pool pool1
```

## 2.4 Updating the Driver Package

To update the driver package, refer to the relevant point below:

- **Automatic:** Run the following command in the CLI:

```
pip install -U <NameOfKempOpenStackDriver>
```

For example:

```
pip install --upgrade kemptech-openstack-lbaas
```

- **Manual:** To manually update the driver package, follow the steps in the **Manually Install the Driver Package** section but overwrite the existing files.

# Last Updated Date

This document was last updated on 27 July 2023.