

## Scope

This document describes Brocade/ADX driver for LBaaS. The feature scope is for the Open Stack Havana version.

## Overview

Implementation comprise of Plugin Driver and Device Driver. The Plugin Driver implements the Plugin Driver interface and forwards the requests to the Device Driver.

A simple file based device inventory component supports the hardware load balancer devices. The device information (IP, User and Password) along with the list of Subnets served by the load balancer device are specified in JSON format in a file.

Note: The file based device inventory component will be replaced with the generic device inventory support provided by the framework post Havana

The Plugin Driver selects a device based on the Subnet Id of the Pool and forwards the request to the Device Driver with the device context.

The Device Driver is implemented according to [Neutron/LBaaS/DriverAPI](#). The device driver communicates with the Brocade ADX Load Balancer Device via SOAP/XML APIs. The device driver use SUDs python module for the SOAP/XML API calls.

## Features

- Protocols: HTTPS, HTTP, TCP
- LB Algorithms: ROUND\_ROBIN, LEAST\_CONNECTIONS
- Session persistence: SOURCE\_IP
- Health Monitoring: TCP, HTTP, HTTPS
- Stats retrieval
- CRUD on Pool, Member, Health Monitor, Vip
- Associate/Disassociate Monitors to/from Pool

## Data Model Support

### VIP

Attribute	Support in Core API	Support in Brocade ADX Driver
Name	Create/Update	Create
Description	Create/Update	Create
Address	Create	Create

protocol_port	Create	Create
Protocol	Create	Create
session_persistence (SOURCE_IP)	Create/Update	Create/Update
session_persistence (HTTP_COOKIE/APP_COOKIE)	Create/Update	Not Supported
connection_limit	Create/Update	Not Supported
admin_state_up	Create/Update	Create/Update
pool_id	Create/Update	Create/Update

Note: Supported session\_persistence type: SOURCE\_IP

### Member

Attribute	Support in Core API	Support in Brocade ADX Driver
Address	Create	Create
protocol_port	Create	Create
Weight	Create/Update	Create/Update
admin_state_up	Create/Update	Create/Update
pool_id	Create/Update	Create/Update

### Pool

Attribute	Support in Core API	Support in Brocade ADX Driver
Name	Create/Update	Create
Description	Create/Update	Not Supported
Protocol	Create	Create
lb_method	Create/Update	Create/Update
admin_state_up	Create/Update	Not Supported
health_monitors	Create/Update	Create/Update

Note:

Only one Health Monitor per Pool supported in ADX Device.

Supported lb\_method: ROUND\_ROBIN, LEAST\_CONNECTIONS

### Health Monitor

Attribute	Support in Core API	Support in Brocade ADX Driver


## Brocade LBaaS Plugin Driver

Brocade LBaaS Plugin Driver extends/implements the framework abstract plugin driver (LoadBalancerAbstractDriver defined in neutron.servcies.loadbalancer.drivers.abstract\_driver.py) class.

- create\_vip
- delete\_vip
- update\_vip
- create\_pool
- delete\_pool
- update\_pool
- create\_member
- delete\_member
- update\_member
- create\_pool\_health\_monitor
- delete\_pool\_health\_monitor
- update\_health\_monitor

Plugin Driver selects a device (from the file based device inventory manager) based on the Subnet Id of the Pool and forwards the request to the device driver with the device context.

Plugin Driver updates the status of the entity (Vip/Member/Pool /Health Monitor etc) to ACTIVE/ERROR in DB based on whether the device driver was able to successfully push the configuration to the load balancer device.

## Brocade LBaaS Device Driver

Brocade LBaaS Device Driver uses the SUDs client library for invoking the WSDL/SOAP APIs. Brocade LBaaS Device Driver converts the request to the appropriate SOAP/WSDL data structures and pushes the configuration to the device invoking appropriate WSDL/SOAP APIs exposed by the Brocade ADX load balancer device.

Features currently supported:

- Session Persistence – Supports only SOURCE\_IP
- Health Monitors – Only one Health Monitor can be associated to a Pool. Device Driver currently supports only HTTP, HTTPS and TCP health monitors.
- Some properties defined in the core LBaaS data model are not supported on the Brocade ADX Load Balancer Device. They will be ignored if they are part of the request.

## Exceptions

Brocade LBaaS Device Driver will raise one of the following exceptions

- ConfigError – Raised when a configuration exception occurs on the load balancer device
- UnsupportedFeature – Raised when a particular feature is not yet supported by the Device Driver (For example, Session Persistence for APP\_COOKIE/HTTP\_COOKIE)
- UnsupportedOption – Raised when an unsupported value is specified for an attribute.