RFE\_ADD\_RPC\_QUERY\_API\_TO\_L2POP\_FOR\_FDB\_RESYNC

Problem Description

Layer 2 population (l2pop) provides L2populationRpcCallBackMixin(in /neutron/plugins/ml2/drivers/l2pop/rpc\_manager/l2population\_rpc.py) as a general mixin class of l2pop RPC callback. The following methods are called through RPC: add\_fdb\_entries(), remove\_fdb\_entries(), update\_fdb\_entries(). And the following methods are used in an agent as internal methods: fdb\_add(), fdb\_remove(), fdb\_update().

For now L2 agent (OVS agent and Linuxbridge agent) inherits the class L2populationRpcCallBackMixin and implement their own fdb\_add(), fdb\_remove() and fdb\_update(). However, some agents in other subprojects can also inherits the class L2populationRpcCallBackMixin to enable l2pop in their networks. These agents only need to register the l2pop related topics and implement the add\_fdb\_entries(), remove\_fdb\_entries(), update\_fdb\_entries(), fdb\_add(), fdb\_remove() and fdb\_update().

But in some scenarios, the agent needs to get full FDB from Neutron. For example: agent restart and adding new agent. To address the above scenarios, l2pop mechanism driver will check the port number on the agent or agent uptime after updating some port. If the number equals 1 or agent uptime less than agent\_boot\_time, l2pop mechanism driver will send full FDBs to the agent. This mechanism works fine with l2 agent. However if other agents which try to implement l2pop don’t have ports, then l2pop mechanism driver won’t be triggered to check port number on the agent or agent uptime. As a result of that, no FDB will be sent to the agent in the scenarios that agent restart and adding new agent.

Based on the above analysis, we proposed to add a new mechanism to cover the scenario (agent restart and adding new agent) for other agents that may implement l2pop.

Proposed Change

The idea is to extend the l2pop RPC handles to allow an agent to query the full FDB for a list of network\_id values. Class L2populationRpcQueryMixin should be used by agent to query the full FDB. The agent should inherit the class L2populationRpcQueryMixin and calling the following method:

get\_fdb\_entries(self, context, network\_ids, host=None, source=None)

This method will send RPC request to topic “q-plugin-l2population-query”. This method should be used to retrieve the FDB entries required to populate the FDB on a given host. If “source” is specified as a requestor then no records from that source are included in the results. If host is not supplied then the full set of FDB entries for the network is returned.

Listeners should be created in l2pop mechanism driver to consume the topic “q-plugin-l2population-query”. The RPC request to the topic “q-plugin-l2population-query” should be processed by these listeners. The following method in the mech\_driver.py will be called:

get\_fdb\_entries(self, context, network\_ids, host=None, source=None):

Finally full FDB entries can be returned to the agent.

All changes can be viewed through the link below:  
https://review.openstack.org/#/c/620929/

Data Model Impact

None

REST API Impact

None

Command Line Client Impact

None

Other Impact

None

Other Deployer Impact

None

Performance Impact

None

Implementation

Assignee(s)

Work Items

* Add class L2populationRpcCallBackMixin to neutron\plugins\ml2\drivers\l2pop\rpc\_manager\l2population\_rpc.py.
* Add class L2populationServerQueryAPI to neutron\plugins\ml2\drivers\l2pop\rpc.py
* Add L2populationServer, method get\_fdb\_entries and \_get\_fdb\_entries to L2populationMechanismDriver in neutron\plugins\ml2\drivers\l2pop\mech\_driver.py
* Add related tests.

Dependencies

None

Testing

Unit tests are necessary.

Documentation Impact

None.

References

None