Unimgr: Beryllium: Release Review

Contents

Project Name

UNI Manager plug-in

Features

- Northbound REST interface to receive requests for Ethernet Private Line service with UNI locations and Class of Service ID
- Obtains Class of Service parameters from northbound Class of Service Manager API implementation (see OPNFV Connectivity Services LSO project)
- Configures two specified OVS instances with two bridged ports through the OpenDaylight OVSDB southbound API, emulating User Network Interface (UNI) functionality in the OVS instances
- Creates GRE tunnel between two specified OVS instances through the OVSDB southbound API, emulating an Ethernet Virtual Connection (EVC)
- Integrated with ODL Topology Manager: updates ODL Topology with UNI and EVC attributes:
    - When a UNI is created it is added to the ODL Network Topology with UNI Manager schema
    - When an EVC is created it is added to the ODL Network Topology with EVC schema

Non-Code Aspects (user docs, examples, tutorials, articles)

- Release notes: https://wiki.opendaylight.org/view/Unimgr:BerylliumReleaseNotes
- Installation Guide(s) (if applicable)
- User Guide(s):
- Developer Guide(s): Patch is here: https://git.opendaylight.org/gerrit/#/c/34682/

Architectural Issues

A set of service-layer API implementations were developed to use the UNI Manager capabilities for a proof-of-concept implementation. The service layer APIs were contributed to OPNFV and used to initiate the OPNFV Connectivity Services LSO (LSOAPI) project. UNI Manager does not require the LSOAPI northbound API implementations but with a web UI developed for the purpose they were used to realize an end-to-end demo/proof of concept that validates UNI Manager features.

Security Considerations

In addition to RESTCONF basic authentication this project could better align with the Group Policy initiative to address some of the security concerns. Only authenticated and authorized applications should be permitted to use UNI Manager to configure network equipment for UNI operation and initiate connections between them.

Quality Assurance

- Approximately 50% unit test coverage complete
    - Jacoco plug-in used for unit tests works with the Mockito test framework but does not work well with Power Mockito framework so reporting is not necessarily accurate.
- Some integration tests have been completed
    - Reference: https://github.com/opendaylight/unimgr/blob/master/it/src/test/java/org/opendaylight/unimgr/it/UnimgrIT.java
- System tests completed
    - System tests are defined in the Integration/Test Project
    - Patch: https://git.opendaylight.org/gerrit/#/c/34362/
- Distribution Test: UNI Manager feature has been added to the distribution test
- End-to-end testing has been done with development and verification platform comprised of web UI, OPNFV Connectivity Services LSO project API implementations, and ODL UNI Manager plug-in all running on an Ubuntu laptop; two instances of OVS running in Raspberry Pis; and a client laptop connected to each of the OVS instances. When the GRE tunnel is created by UNI Manager traffic is exchanged between the client laptops through the Raspberry Pis/OVS.

End-of-life (API/Features EOLed in Release)

There are no end-of-life APIs or features of UNI Manager in the Beryllium release.

Bugzilla (summary of bug situation)

All UNI Manager Beryllium release bugs

Standards (summary of standard compliance)

UNI Manager complies partially with Metro Ethernet Forum (MEF) *7.2 Carrier Ethernet Management Information Model* and MEF 10.3 *Ethernet Services Attributes Phase 3* specifications. The initial, experimental implementation of UNI Manager is limited in scope and defers full MEF specification implementation to later OpenDaylight releases.

Schedule (initial schedule and changes over the release cycle)

The project completed the initial planned scope for Beryllium release primarily with contracted resources. Near the end of the Beryllium release cycle support for an additional feature, UPDATE, was added and the feature was validated in the proof-of-concept/demonstration platform shown at CableLabs 2016 Winter Conference February 10 - 11, 2016. The UPDATE feature allows an application to change the maximum rate of data transfer between clients connected through the tunnel created between OVS instances by the UNI Manager plug in.