

Lisp Flow Mapping: Helium: Release Review

Contents

- [LISP Flow Mapping](#)
- [Features](#)
 - [Hydrogen Release](#)
 - [Helium Release](#)
- [Non-Code Aspects](#)
- [Architectural Issues](#)
- [Security Issues](#)
- [Quality Assurance \(test coverage, etc\)](#)
- [End-of-life \(API/Features EOLed in Release\)](#)
- [Bugzilla \(summary of bug situation\)](#)
- [Standards \(summary of standard compliance\)](#)
- [Schedule \(initial schedule and changes over the release cycle\)](#)

LISP Flow Mapping

Features

Hydrogen Release

- First release of Lisp Flow Mapping
- LISP Map Server with flat key-value mappings
 - Support for basic mappings including multiple RLOCs per EID, priority, and weight
 - Support for storing IPv4, IPv6, MAC, Distinguished Name, Segment ID, Traffic Engineering with Path Specification, AS Number, Application Specific Data
 - Support for Source/Destination 2-Tuple Lookups
- LISP Map Resolver
- Northbound (application facing) REST API for Map Server and Map Resolver to add/retrieve EID-RLOC (e.g. : virtual IP address to physical IP address) mappings
- Southbound (device facing) LISP API for Map Server and Map Resolver to register/request EID-RLOC mappings via LISP protocol

Helium Release

- Proactive Mapping System Pub/Sub: The mapping Service keeps a list of subscriber xTRs per mapping record (auto-subscribe at mapping request). When the mapping record is updated via NB API, mapping system sends SMR message including the updated record to the subscribing xTRs.
- Map Request Non-Proxy Support: The mapping service supports receiving non-proxy map requests, and forward them to the current xTR.
- Neutron API integration: Improved and expanded Neutron API support in LISP Flow Mapping. When a new neutron subnet is created, the subnet is added to mapping system with the Neutron net-ID as the key for the EID (subnet) prefix.
- LISP SB plugin integration with Node Inventory and GUI: Enables status integration of LISP dataplane nodes in AD-SAL node inventory and AD-SAL GUI. Not included in Karaf.
- Integration with Service Function Chaining: The mapping Service supports integration with Service Function Chaining, code is part of SFC.
- Config command : setShouldOverwriteRloc true, enables overwrite of mappings instead of appending/merging
- Port support for non proxy map request
- Key-value LCAF support
- Map-Reply in Map Request serialization. we now serialize the embedded map reply record.
- Southbound xTR support. The southbound can now listen on another port which is the xTR port, and send a notification with the received map request.
- Adding another address format: a DistinguishedName with value "<ip>:<port>"
- Netconf: API/ability to programmatically connect to a netconf server from the LISP project. Not yet a user facing feature.

Non-Code Aspects

- [Architecture Overview](#)
- [Developer Guide](#) has been updated for Helium and is present in the ASCIIDoc Developer Guide document, including a tutorial on sample use cases. Commits can be found at:
 - <https://git.opendaylight.org/gerrit/#/c/11272/> [Merged]
 - <https://git.opendaylight.org/gerrit/#/c/11538/> [Merged]
 - <https://git.opendaylight.org/gerrit/#/c/11554/> [Merged]
 - <https://git.opendaylight.org/gerrit/#/c/11561/> [Merged]
 - <https://git.opendaylight.org/gerrit/#/c/11620/> [Waiting for review]
 - <https://git.opendaylight.org/gerrit/#/c/11637/> [Waiting for review]
 - Our User Guide was moved to docs project Developer Guide as it was based on REST API and had no GUI integration.
- Documentation on the wiki:
 - [API](#)

Architectural Issues

An overview of the architecture including API documentation is posted at the [Architecture Overview](#) page.

- Mappings will expire in 4 minutes. Later versions may provide support for deleting mappings per xTR registration and differentiating between northbound and southbound registrations with priority.

Security Issues

LISP southbound plugin follows LISP RFC6830 security guidelines. A key/password is associated with every EID prefix which is used to create a MAC (Message Authentication Code) of the UDP LISP control messages for authentication and integrity protection of the UDP messages. This is implemented as specified in the LISP RFC6830. On the Northbound API, the key is passed via JSON and is tested for equality against the stored key for the EID prefix being registered. No MAC of the REST request is created.

Quality Assurance (test coverage, etc)

- Unit Tests: Unit tests are implemented and coverage is reported in [Sonar](#).
- Integration Tests: About 30 integration tests have been implemented and passed.

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

No EoL APIs/features at this release.

Bugzilla (summary of bug situation)

- No outstanding feature bugs. 2 outstanding design bugs likely to be targeted for next release.
- One critical bug. Fix was just merged. Functional testing in progress.
- [Lisp Flow Mapping project list of bugs](#)

Standards (summary of standard compliance)

The LISP implementation module and southbound plugin conforms to the IETF RFC6830 and RFC6833, with the following exceptions:

- In Map-Request message, M bit(Map-Reply Record exist in the MapRequest) is processed but any mapping data at the bottom of a Map-Request are discarded.
- LISP LCAFs are limited to only up to one level of recursion. For instance in the case of a traffic engineering policy every hop can only be a generic AFI address (IPv4, IPv6, MAC, Dist. Name, AS Number), and can not include combinations such as Segment ID, or list.

No standards exist for the LISP Mapping System northbound API as of this date.

Schedule (initial schedule and changes over the release cycle)

All features planned for this release cycle were met. Integration with AD-SAL GUI is not included in karaf. Schedule of next release cycle is in the works, and will include integration with MD-SAL node inventory and dlux.