

LISP Data and Control Plane Discussion (RFC6830bis and RFC 6833bis)

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Scope & Context

The LISP WG is chartered to continue work on the LISP base protocol and produce standard-track documents. In order to produce a coherent set of documents, **the first (and high priority) work item of the LISP Working Group is to develop a standard-track solution based on the completed Experimental RFCs** and the experience gained from early deployments. This work will include reviewing the existing set of Experimental RFCs and doing the necessary enhancements to support a base set of standards track RFCs. The group will review the current set of Working Group documents to identify potential standards-track documents and do the necessary enhancements to support standards-track.

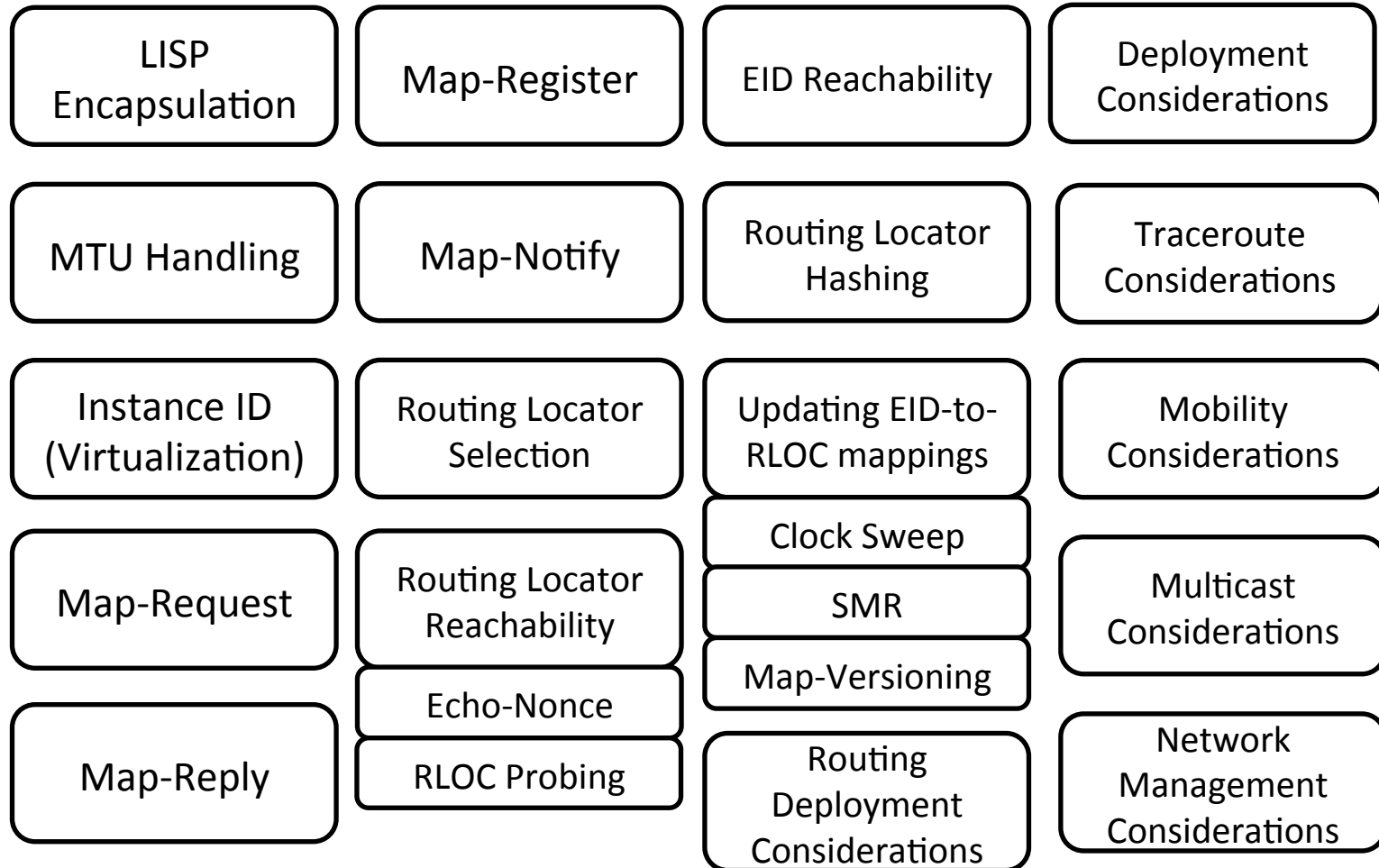
Scope & Context

- Apr 2017 Submit a LISP unicast data-plane specification (6830bis) document to the IESG for consideration as Proposed Standard
- Jul 2017 Submit a LISP control-plane specification (6833bis) document to the IESG for consideration as Proposed Standard

In this presentation:

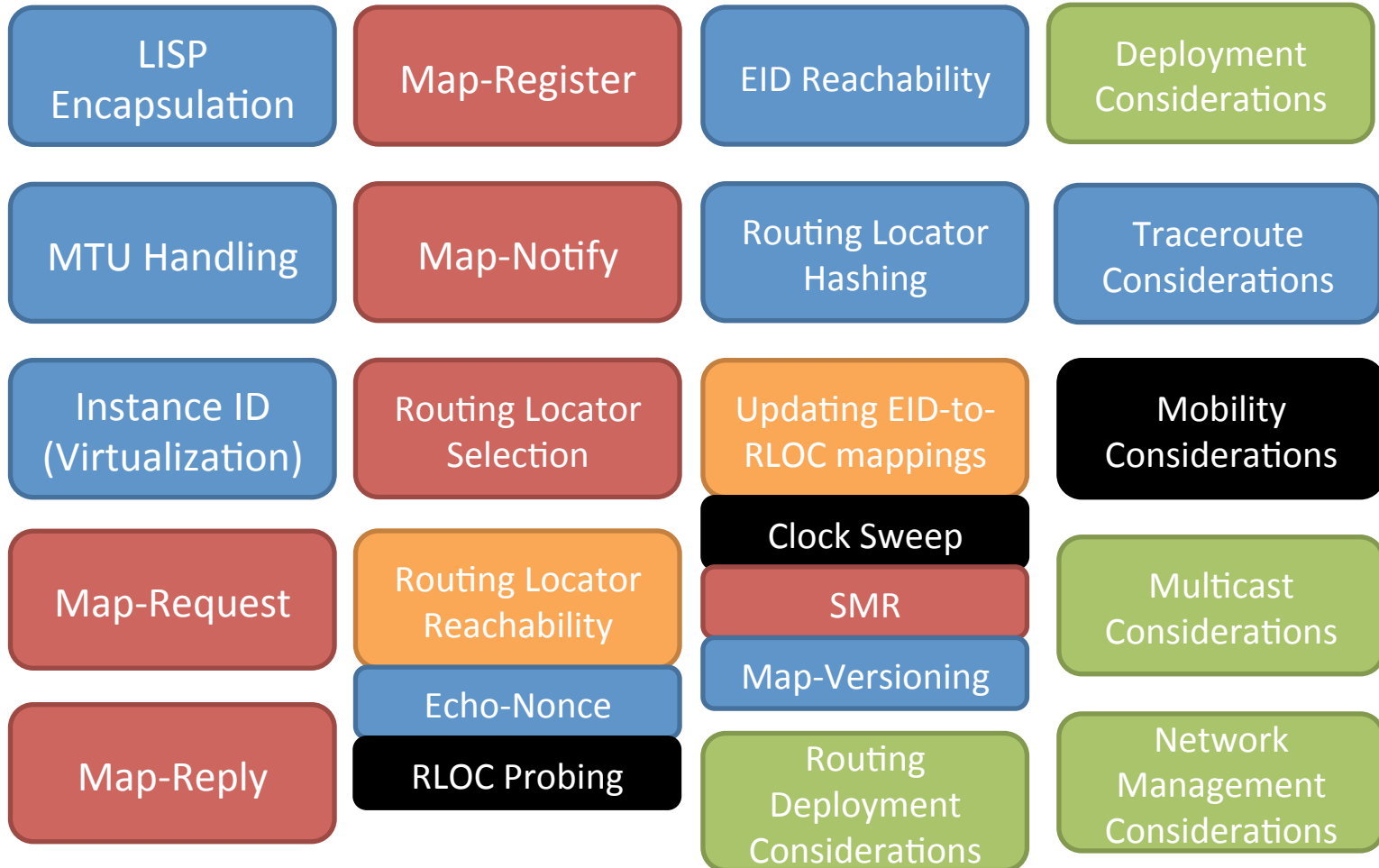
- Review the contents of RFC6830 (LISP) and RFC6833 (LISP Map-Server Interface)
- Trigger discussion on the Table of Contents of the LISP (RFC6830bis) and LISP Control-Plane (RFC6833bis) specs
- Rationale: Mostly an editorial work, include fixes and lessons learnt from experimentation

RFC6830 - LISP



- RFC 6830bis (LISP Data-Plane)
- RFC 6833bis (LISP Control-Plane)
- Other

- Split 6830bis and 6833bis
- Requires further discussion



LISP (Data-Plane) (RFC6830bis) Table of Contents

RFC6830bis – LISP Table of Contents (1)

"Locator/ID Separation Protocol".

1. Introduction

Remove description of the scalability of the BGP DFZ, describe the LISP protocol as an overlay solution.

Indicate early in the document that many different data-planes can use the control-plane interface.

Add reference to RFC7215 (deployment considerations)

Considerations for network management tools exist so the LISP protocol suite can be operationally managed. These mechanisms can be found in [LISP-MIB] and [RFC6835].

2. Requirements Notation

3. Definition of Terms

Add RTRs

RFC6830bis – LISP Table of Contents (2)

4. Basic Overview

Mention RTRs and point to the right spec.

4.1. Packet Flow Sequence

Mention that the ITR checks its Map-Cache to obtain the RLOCs. If not RLOC, then triggers a mapping retrieval. A way to do so is 33bis.

RFC6830bis – LISP Table of Contents (3)

5. LISP Encapsulation Details

Add how a source-port of 4341 may need to be used for NAT-traversal when doing encapsulation. Make reference that work in progress for NAT-traversal. But do not reference NAT-traversal Internet Draft.

5.1. LISP IPv4-in-IPv4 Header Format

5.2. LISP IPv6-in-IPv6 Header Format

5.3. Tunnel Header Field Descriptions

RFC6830bis – LISP Table of Contents (4)

6. LISP Map-Cache

Specify the Map-Cache, describe (not specify) how RFC6830bis interacts with RFC6833bis.

7. Dealing with Large Encapsulated Packets

Fix Joel comment in MTU Handling section.

7.1. A Stateless Solution to MTU Handling

7.2. A Stateful Solution to MTU Handling

RFC6830bis – LISP Table of Contents (5)

8. Using Virtualization and Segmentation with LISP

Indicate how the instance-ID is 32 bits in control-plane and 24-bits in the data-plane akin to what was put in the LISP-DDT spec.

9. Routing Locator Selection

10. Routing Locator Reachability

Fix the text regarding the 'R' bit. Having a route to a locator does not mean that the locator is up. The current text states otherwise.

Specify the Echo Nonce Algorithm

RLOC-Probing (requires further discussion)

RFC6830bis – LISP Table of Contents (6)

11.- Routing Locator Hashing

14.3. Fast Endpoint Mobility

12. Changing the Contents of EID-to-RLOC Mappings

14.4. Fast Network Mobility

Database Map-Versioning

14.5. LISP Mobile Node

13. Traceroute Considerations

Mobility

Keep it temporarily, WG has to be aware that the text will move to a different place.

14. Mobility Considerations

14.1. Site Mobility

14.2. Slow Endpoint Mobility

RFC6830bis – LISP Table of Contents (7)

11.- Routing Locator Hashing

13.1. Site Mobility

12. Traceroute Considerations

13.2. Slow Endpoint Mobility

12.1. IPv6 Traceroute

13.3. Fast Endpoint Mobility

12.2. IPv4 Traceroute

13.4. Fast Network Mobility

12.3. Traceroute Using Mixed
Locators

13.5. LISP Mobile Node
Mobility

13. Mobility Considerations

Requires further discussion

RFC6830bis – LISP Table of Contents (8)

14. Security Considerations

Add reference to lisp-threats

Add reference to lisp-crypto

Add reference to LISP-SEC

15. IANA Considerations

15.2. LISP Address Type Codes

15.3. LISP UDP Port Numbers

16. References

16.1. Normative References

16.2. Informative References

LISP Control-Plane (RFC6833bis) Table of Contents

RFC6833bis – LISP Table of Contents (1)

Change name “LISP Map-Server Interface” to “LISP Control-Plane” and make abstract reflect this.

1. Introduction

Indicate early in the document that many different data-planes can use the control-plane interface.

2. Definition of Terms

3. Basic Overview

Indicate there may be nodes in the mapping system that are not MRs or MSs, that is a ALT-node or a DDT-node.

RFC6833bis – LISP Table of Contents (2)

4. EID-to-RLOC Mapping

4.1. LISP IPv4 and IPv6 Control-Plane Packet Formats

4.1.1. LISP Packet Type Allocations

4.1.2. Map-Request Message Format

Document these new first longword bits in the Map-Request header:

```
+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+
|Type=1 |A|M|P|S|p|s|m| Reserved  |L|D|   IRC   | Record Count  |
+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+
```

RFC6833bis – LISP Table of Contents (3)

- 4.1.3. EID-to-RLOC UDP Map-Request Message
- 4.1.4. Map-Reply Message Format
- 4.1.5. EID-to-RLOC UDP Map-Reply Message
- 4.1.6. Map-Register Message Format

Document these new first longword bits in the Map-Register header:

```
+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+
|Type=3  |P|S|I|          Reserved          |F|T|a|m|M| Record Count  |
+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+
```

RFC6833bis – LISP Table of Contents (4)

4.1.7. Map-Notify Message Format

Indicate Map-Notify-Ack messages exist for Map-Notify reliability.

4.1.8. Map-Referral Message Format

Add Map-Referral to control-plane codepoints since this is document will refer to DDT.

4.1.8. Encapsulated Control Message Format

Document these new first longword bits in the ECM header:

```
+---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+
|Type=8 |S|D|E|M|                               Reserved                               |
+---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+
```

RFC6833bis – LISP Table of Contents (5)

5. Changing the Contents of EID-to-RLOC Mappings

5.1. Clock Sweep

(Requires further discussion)

5.2. SMR

6. Interactions with Other LISP Components

6.1. ITR EID-to-RLOC Mapping Resolution

6.2. EID-Prefix Configuration and ETR Registration

6.3. Map-Server Processing

6.4. Map-Resolver Processing

Include LISP-DDT and concept of Map-Resolvers have a referral-cache.

6.4.1. Anycast Map-Resolver Operation

6. Security Considerations

Reference lisp-threats

7. References

7.1. Normative References

7.2. Informative References