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RFC 9304
Locator/ID Separation Protocol (LISP): Shared Extension Message and IANA Registry for Packet Type Allocations

Abstract

This document specifies a Locator/ID Separation Protocol (LISP) shared message type for defining future extensions and conducting experiments without consuming a LISP Packet Type codepoint for each extension.

This document obsoletes RFC 8113.

Status of This Memo

This is an Internet Standards Track document.

This document is a product of the Internet Engineering Task Force (IETF). It represents the consensus of the IETF community. It has received public review and has been approved for publication by the Internet Engineering Steering Group (IESG). Further information on Internet Standards is available in Section 2 of RFC 7841.

Information about the current status of this document, any errata, and how to provide feedback on it may be obtained at https://www.rfc-editor.org/info/rfc9304.

Copyright Notice

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1. Introduction

The Locator/ID Separation Protocol (LISP) base specification, [RFC9301], defines a set of primitives that are identified with a packet type code. Several extensions have been proposed to add more LISP functionalities. It is expected that additional LISP extensions will be proposed in the future.

The "LISP Packet Types" IANA registry (see Section 5) is used to ease the tracking of LISP message types.

Because of the limited type space [RFC9301] and the need to conduct experiments to assess new LISP extensions, this document specifies a shared LISP extension message type and describes a procedure for registering LISP shared extension sub-types (see Section 3). Concretely, one single LISP message type code is dedicated to future LISP extensions; sub-types are used to uniquely identify a given LISP extension making use of the shared LISP extension message type. These identifiers are selected by the author(s) of the corresponding LISP specification that introduces a new LISP extension message type.

2. Requirements Language

The key words "**MUST**", "**MUST NOT**", "**REQUIRED**", "**SHALL**", "**SHALL NOT**", "**SHOULD**", "**SHOULD NOT**", "**RECOMMENDED**", "**NOT RECOMMENDED**", "**MAY**", and "**OPTIONAL**" in this document are to be interpreted as described in BCP 14 [RFC2119] [RFC8174] when, and only when, they appear in all capitals, as shown here.

3. LISP Shared Extension Message Type

Figure 1 depicts the common format of the LISP shared extension message. The type field **MUST** be set to 15 (see Section 5).

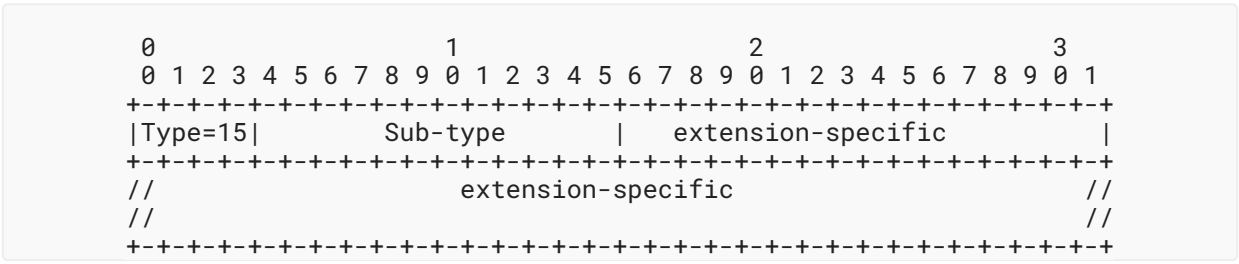

Figure 1: LISP Shared Extension Message Type

The 'Sub-type' field conveys a unique identifier that **MUST** be registered with IANA (see Section 5.2).

The exact structure of the 'extension-specific' portion of the message is specified in the corresponding specification document.

4. Security Considerations

This document does not introduce any additional security issues other than those discussed in [RFC9301].

5. IANA Considerations

5.1. LISP Packet Types

IANA has created a registry titled "LISP Packet Types", numbered 0-15.

Values can be assigned via Standards Action [RFC8126]. Documents that request for a new LISP Packet Type may indicate a preferred value in the corresponding IANA sections.

IANA has replaced the reference to RFC 8113 with the RFC number of this document.

Also, IANA has updated the table as follows:

OLD:

Message	Code	Reference
LISP Shared Extension Message	15	[RFC8113]

Table 1

NEW:

Message	Code	Reference
LISP Shared Extension Message	15	RFC 9304

Table 2

5.2. Sub-Types

IANA has created the "LISP Shared Extension Message Type Sub-types" registry. IANA has updated that registry by replacing the reference to RFC 8113 with the RFC number of this document.

The values in the range 0-1023 are assigned via Standards Action. This range is provisioned to anticipate, in particular, the exhaustion of the LISP Packet Types.

The values in the range 1024-4095 are assigned on a First Come, First Served (FCFS) basis. The registration procedure is to provide IANA with the desired codepoint and a point of contact; providing a short description (together with an acronym, if relevant) of the foreseen usage of the extension message is also encouraged.

6. Changes from RFC 8113

The following changes were made from RFC 8113:

- Changed the status from Experimental to Standards Track.
- Indicated explicitly that the shared extension is used for two purposes: extend the type space and conduct experiments to assess new LISP extensions.
- Deleted pointers to some examples illustrating how the shared extension message is used to extend the LISP protocol.
- IANA has updated the "IANA LISP Packet Types" and "LISP Shared Extension Message Type Sub-types" registries to point to this document instead of RFC 8113.

7. Normative References

[RFC2119] Bradner, S., "Key words for use in RFCs to Indicate Requirement Levels", BCP 14, RFC 2119, DOI 10.17487/RFC2119, March 1997, <https://www.rfc-editor.org/info/rfc2119>.

[RFC8126] Cotton, M., Leiba, B., and T. Narten, "Guidelines for Writing an IANA Considerations Section in RFCs", BCP 26, RFC 8126, DOI 10.17487/RFC8126, June 2017, <https://www.rfc-editor.org/info/rfc8126>.

[RFC8174] Leiba, B., "Ambiguity of Uppercase vs Lowercase in RFC 2119 Key Words", BCP 14, RFC 8174, DOI 10.17487/RFC8174, May 2017, <https://www.rfc-editor.org/info/rfc8174>.

[RFC9301] Farinacci, D., Maino, F., Fuller, V., and A. Cabellos, Ed., "Locator/ID Separation Protocol (LISP) Control Plane", RFC 9301, DOI 10.17487/RFC9301, October 2022, <https://www.rfc-editor.org/info/rfc9301>.

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