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**Locator/ID Separation Protocol (LISP):
Shared Extension Message & 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. It also defines a registry for LISP Packet Type allocations, thus updating RFC 6830.

Status of This Memo

This document is not an Internet Standards Track specification; it is published for examination, experimental implementation, and evaluation.

This document defines an Experimental Protocol for the Internet community. 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). Not all documents approved by the IESG are a candidate for any level of Internet Standard; see Section 2 of RFC 7841.

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1. Introduction

The Locator/ID Separation Protocol (LISP) base specification, [RFC6830], defines a set of primitives that are identified with a packet type code. Several extensions have been proposed to add more LISP functionalities. For example, new message types are proposed in [LISP-DDT], [LISP-MN-EXT], [LISP-BULK], [NAT-LISP], or [LISP-SUBSCRIBE]. It is expected that additional LISP extensions will be proposed in the future.

In order to ease the tracking of LISP message types, this document proposes to create a "LISP Packet Types" IANA registry (see Section 5).

Because of the limited type space [RFC6830] and the need to conduct experiments to assess new LISP extensions, this document specifies a shared LISP extension message type and proposes 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", "MAY", and "OPTIONAL" in this document are to be interpreted as described in [RFC2119].

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).

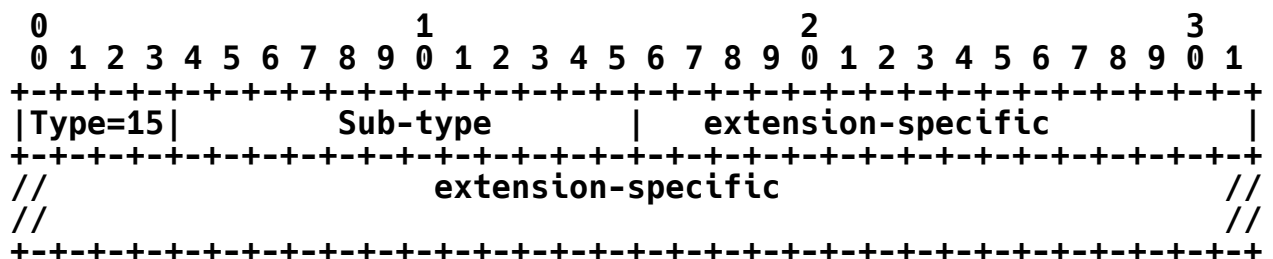


Figure 1: LISP Shared Extension Message Type

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 [RFC6830].

5. IANA Considerations

5.1. LISP Packet Types

IANA has created a new protocol registry for LISP Packet Types, numbered 0-15. The registry is initially populated with the following values:

Message	Code	Reference
=====	=====	=====
Reserved	0	[RFC6830]
LISP Map-Request	1	[RFC6830]
LISP Map-Reply	2	[RFC6830]
LISP Map-Register	3	[RFC6830]
LISP Map-Notify	4	[RFC6830]
LISP Encapsulated Control Message	8	[RFC6830]
LISP Shared Extension Message	15	[RFC8113]

The values in the ranges 5-7 and 9-14 can be assigned via Standards Action [RFC5226]. Documents that request for a new LISP packet type may indicate a preferred value in the corresponding IANA sections.

5.2. Sub-Types

IANA has created the "LISP Shared Extension Message Type Sub-types" registry. No initial values are assigned at the creation of the registry; (0-4095) are available for future assignments.

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 should 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. References

6.1. 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, <<http://www.rfc-editor.org/info/rfc2119>>.
- [RFC5226] Narten, T. and H. Alvestrand, "Guidelines for Writing an IANA Considerations Section in RFCs", BCP 26, RFC 5226, DOI 10.17487/RFC5226, May 2008, <<http://www.rfc-editor.org/info/rfc5226>>.
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6.2. Informative References

- [LISP-BULK] Boucadair, M. and C. Jacquenet, "LISP Mapping Bulk Retrieval", Work in Progress, draft-boucadair-lisp-bulk-04, February 2017.
- [LISP-DDT] Fuller, V., Lewis, D., Ermagan, V., Jain, A., and A. Smirnov, "LISP Delegated Database Tree", Work in Progress, draft-ietf-lisp-ddt-09, January 2017.
- [LISP-MN-EXT] Wang, J., Meng, Y., and N. Zhao, "LISP Mobile Node extension", Work in Progress, draft-zhao-lisp-mn-extension-02, October 2011.
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- [NAT-LISP] Ermagan, V., Farinacci, D., Lewis, D., Skriver, J., Maino, F., and C. White, "NAT traversal for LISP", Work in Progress, draft-ermagan-lisp-nat-traversal-11, August 2016.

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