       **LISP Shared Extension Message & IANA Registry for LISP Packet Type
                                Allocations**
                      draft-ietf-lisp-type-iana-04

Abstract

   This document defines a registry for LISP Packet Type allocations.
   It also specifies a LISP shared message type for defining future
   extensions and conducting experiments without consuming a LISP packet
   type codepoint for each extension.

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 RFC 2119 [RFC2119].

Table of Contents

1. Introduction

The Locator/ID Separation Protocol (LISP, [RFC6830]) base
specification 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
[I-D.ietf-lisp-ddt], [I-D.zhao-lisp-mn-extension],
[I-D.boucadair-lisp-bulk], [I-D.ermagan-lisp-nat-traversal], or
[I-D.boucadair-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 4).

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 2).
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. 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 4).

```
    0                   1                   2                   3
    0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1
   +-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+
   |Type=15|      Sub-type       |      extension-specific         |
   +-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+
   //                     extension-specific                     //
   //                                                            //
   +-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+
```
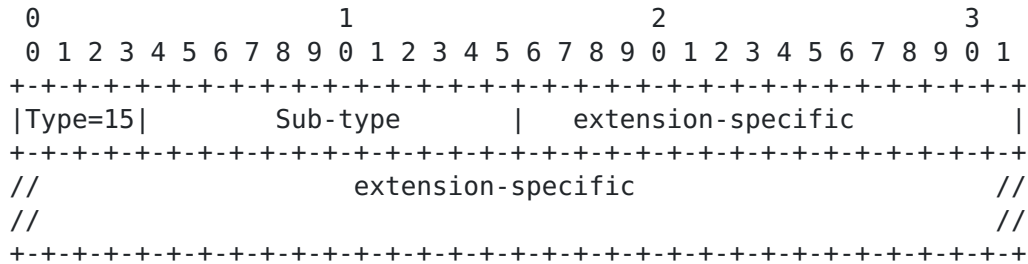
Figure 1: LISP Shared Extension Message Type

The "Sub-type" field conveys a unique identifier that is assigned on
a First Come, First Served (FCFS) basis [RFC5226]. These identifiers
are registered with IANA (see Section 4.2).

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

3. Security Considerations

This document does not introduce any additional security issues other
than those discussed in [RFC6830].

4. IANA Considerations

4.1. LISP Packet Types

IANA is requested to create a new protocol registry for LISP Packet
Types, numbered 0-15. The registry must be 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	[This document]

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.

The value 15 is reserved for Experimental Use [RFC5226].

4.2. Sub-Types

IANA is requested to create a "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.

Entries are assigned on a 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.

5. Acknowledgments

This work is partly funded by ANR LISP-Lab project #ANR-13-INFR-
009-X.

Many thanks to Luigi Iannone and Dino Farinacci for the review.

Thanks to Geoff Huston for the RtgDir directorate review.

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>.

[RFC6830] Farinacci, D., Fuller, V., Meyer, D., and D. Lewis, "The
           Locator/ID Separation Protocol (LISP)", RFC 6830,
           DOI 10.17487/RFC6830, January 2013,
           <http://www.rfc-editor.org/info/rfc6830>.

6.2. Informative References

   [I-D.boucadair-lisp-bulk]
              Boucadair, M. and C. Jacquenet, "LISP Mapping Bulk
              Retrieval", draft-boucadair-lisp-bulk-03 (work in
              progress), July 2016.

   [I-D.boucadair-lisp-subscribe]
              Boucadair, M. and C. Jacquenet, "LISP Subscription",
              draft-boucadair-lisp-subscribe-03 (work in progress), July
              2016.

   [I-D.ermagan-lisp-nat-traversal]
              Ermagan, V., Farinacci, D., Lewis, D., Skriver, J., Maino,
              F., and C. White, "NAT traversal for LISP", draft-ermagan-
              lisp-nat-traversal-11 (work in progress), August 2016.

   [I-D.ietf-lisp-ddt]
              Fuller, V., Lewis, D., Ermagan, V., Jain, A., and A.
              Smirnov, "LISP Delegated Database Tree", draft-ietf-lisp-
              ddt-08 (work in progress), September 2016.

   [I-D.zhao-lisp-mn-extension]
              Wang, J., Meng, Y., and N. Zhao, "LISP Mobile Node
              extension", draft-zhao-lisp-mn-extension-02 (work in
              progress), October 2011.

Authors' Addresses

   Mohamed Boucadair
   Orange
   Rennes 35000
   France

   EMail: mohamed.boucadair@orange.com

   Christian Jacquenet
   Orange
   Rennes 35000
   France

   EMail: christian.jacquenet@orange.com