

Network Working Group
Internet-Draft
Intended status: Informational
Expires: October 8, 2016

L. Iannone
Telecom ParisTech
R. Jorgensen
Bredbandsfylket Troms
D. Conrad
Virtualized, LLC
G. Huston
APNIC - Asia Pacific Network
Information Center
April 6, 2016

LISP EID Block Management Guidelines
draft-ietf-lisp-eid-block-mgmt-07.txt

Abstract

This document proposes a framework for the management of the LISP EID Address Block. The framework described relies on hierarchical distribution of the address space, granting temporary usage of prefixes of such space to requesting organizations.

Status of this Memo

This Internet-Draft is submitted in full conformance with the provisions of [BCP 78](#) and [BCP 79](#).

Internet-Drafts are working documents of the Internet Engineering Task Force (IETF). Note that other groups may also distribute working documents as Internet-Drafts. The list of current Internet-Drafts is at <http://datatracker.ietf.org/drafts/current/>.

Internet-Drafts are draft documents valid for a maximum of six months and may be updated, replaced, or obsoleted by other documents at any time. It is inappropriate to use Internet-Drafts as reference material or to cite them other than as "work in progress."

This Internet-Draft will expire on October 8, 2016.

Copyright Notice

Copyright (c) 2016 IETF Trust and the persons identified as the document authors. All rights reserved.

This document is subject to [BCP 78](#) and the IETF Trust's Legal Provisions Relating to IETF Documents (<http://trustee.ietf.org/license-info>) in effect on the date of publication of this document. Please review these documents

carefully, as they describe your rights and restrictions with respect to this document. Code Components extracted from this document must include Simplified BSD License text as described in Section 4.e of the Trust Legal Provisions and are provided without warranty as described in the Simplified BSD License.

Table of Contents

1.	Requirements Notation	3
2.	Introduction	3
3.	Definition of Terms	3
4.	EID Prefix Registration Policy	3
5.	EID Prefixes Registration Requirements	4
6.	EID Prefix Request Template	5
7.	Policy Validity Period	6
8.	Security Considerations	7
9.	IANA Considerations	7
10.	Procedures to be followed by RIPE NCC	8
11.	Acknowledgments	8
12.	References	9
12.1.	Normative References	9
12.2.	Informative References	9
Appendix A.	Document Change Log	10
	Authors' Addresses	12

1. Requirements Notation

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 [\[RFC2119\]](#).

2. Introduction

The Locator/ID Separation Protocol (LISP - [\[RFC6830\]](#)) and related mechanisms ([\[RFC6831\]](#), [\[RFC6832\]](#), [\[RFC6833\]](#), [\[RFC6834\]](#), [\[RFC6835\]](#), [\[RFC6836\]](#), [\[RFC6837\]](#)) separate the IP addressing space into two logical spaces, the End-point IDentifier (EID) space and the Routing LOcator (RLOC) space. The first space is used to identify communication end-points, while the second is used to locate EIDs in the Internet routing infrastructure topology.

The document [\[I-D.ietf-lisp-eid-block\]](#) requested an IPv6 address block reservation exclusively for use as EID prefixes in the LISP experiment. The rationale, intent, size, and usage of the EID address block are described in [\[I-D.ietf-lisp-eid-block\]](#).

This document proposes a management framework for the registration of EID prefixes from that block, allowing the requesting organization exclusive use of those EID prefixes limited to the duration of the LISP experiment.

3. Definition of Terms

This document does not introduce any new terms related to the set of LISP Specifications ([\[RFC6830\]](#), [\[RFC6831\]](#), [\[RFC6832\]](#), [\[RFC6833\]](#), [\[RFC6834\]](#), [\[RFC6835\]](#), [\[RFC6836\]](#), [\[RFC6837\]](#)), but assumes that the reader is familiar with the LISP terminology.

[\[I-D.ietf-lisp-introduction\]](#) provides an introduction to the LISP technology, including its terminology. .

4. EID Prefix Registration Policy

The request for registration of EID prefixes MUST be done under the following policies:

1. EID prefixes are made available in the reserved space on a temporary basis and for experimental uses. The requester of an experimental prefix MUST provide a short description of the intended use or experiment that will be carried out (see [Section 6](#)). If the prefix will be used for activities not

documented in the original description, the renewal of the registration may be denied.

2. EID prefix registrations MUST be renewed on a regular basis to ensure their use by active participants in the experiment. The registration period is 12 months. A renewal SHOULD NOT cause a change in the EID prefix registered in the previous request. The conditions of registration renewal are the same as the conditions of first EID prefix registration request.
3. It is preferable not to reuse EID prefixes whose registration is expired. When an EID prefix registration is removed from the registry, then the reuse of the EID prefix in a subsequent registration on behalf of a different end user should be avoided where possible. If the considerations of overall usage of the EID block prefix requires reuse of a previously registered EID prefix, then a minimum delay of at least one week between removal and subsequent registration SHOULD be applied by the registry operator.
4. All registrations of EID prefixes cease at the time of the expiration of the reserved experimental LISP EID Block. The further disposition of these prefixes and the associated registry entries is to be specified in the announcement of the cessation of this experiment.

5. EID Prefixes Registration Requirements

All EID prefix registrations MUST respect the following requirements:

1. All EID prefix registrations MUST use a globally unique EID prefix.
2. The EID Prefix registration information, as specified in [Section 6](#), MUST be collected upon initial registration and renewal, and made publicly available through interfaces allowing both retrieval of specific registration details (search) and enumeration of the entire registry contents (e.g., [[RFC7481](#)], WHOIS, HTTP, or similar access methods).
3. The registry operator MUST permit the delegation of EID prefixes in the reverse DNS space to holders of registered EID prefixes.
4. Anyone can obtain an entry in the EID prefix registry, on the understanding that the prefix so registered is for the exclusive use in the LISP experimental network, and that their registration details (as specified in [Section 6](#)) are openly published in the

EID prefix registry.

6. EID Prefix Request Template

The following is a basic request template for prefix registration so to ensure a uniform process. Such a template is inspired by the IANA Private Enterprise Number online request form (<http://pen.iana.org/pen/PenApplication.page>).

Note that all details in this registration become part of the registry and will be published in the LISP EID Prefix Registry.

The EID Prefix Request template MUST at minimum contain:

1. Organization (In the case of individuals requesting an EID prefix this section can be left empty)
 - (a) Organization Name
 - (b) Organization Address
 - (c) Organization Phone
 - (d) Organization WebSite
2. Contact Person (Mandatory)
 - (a) Name
 - (b) Address
 - (c) Phone
 - (d) Fax (optional)
 - (e) Email
3. EID Prefix Request (Mandatory)
 - (a) Prefix Size
 - + Expressed as an address prefix length.

(b) Prefix Size Rationale

(c) Lease Period

- + Note Well: All EID Prefix registrations will be valid until the earlier date of 12 months from the date of registration or MMMM/YYYYY3.
- + All registrations may be renewed by the applicant for further 12 month periods, ending on MMMM/YYYYY3.
- + According to the 3+3 year experimentation plan, defined in [[I-D.ietf-lisp-eid-block](#)], all registrations MUST end by MMMM/YYYYY3, unless the IETF community decides to grant a permanent LISP EID address block. In the latter case, registrations following the present document policy MUST end by MMMM/YYYYY6 and a new policy (to be decided - see [Section 7](#)) will apply afterwards.

4. Experiment Description

(a) Experiment and Deployment Description

(b) Interoperability with existing LISP deployments

(c) Interoperability with Legacy Internet

5. Reverse DNS Servers (Optional)

(a) Name server name:

(b) Name server address:

(c) Name server name:

(d) Name server address:

(Repeat if necessary)

[7.](#) Policy Validity Period

Policy outlined in the present document is tied to the existence of the experimental LISP EID block requested in [[I-D.ietf-lisp-eid-block](#)] and valid until MMMM/YYYYY3.

If the IETF decides to transform the block in a permanent allocation, the LISP EID block reserved usage period will be extended for three

years (until MMMM/YYYY6) so as to give time to the IETF to define, following the policies outlined in [RFC5226], the final size of the EID block and create a transition plan, while the policy in the present document will still apply.

Note that, as stated in [I-D.ietf-lisp-eid-block], the transition of the EID block into a permanent allocation has the potential to pose policy issues (as recognized in [RFC2860], section 4.3) and hence discussion with the IANA, the RIR communities, and the IETF community will be necessary to determine appropriate policy for permanent EID prefix management, which will be effective after MMMM/YYYY6.

[RFC Editor: please replace MMMM and all its occurrences in the document with the month of publication of [I-D.ietf-lisp-eid-block] as RFC.]

[RFC Editor: please replace YYYY0 and all its occurrences in the document with the year of publication of [I-D.ietf-lisp-eid-block] as RFC.]

[RFC Editor: please replace YYYY3 and all its occurrences in the document with the year of publication of [I-D.ietf-lisp-eid-block] as RFC plus 3 years, e.g., if published in 2016 then put 2019.]

[RFC Editor: please replace YYYY6 and all its occurrences in the document with the year of publication of [I-D.ietf-lisp-eid-block] as RFC plus 6 years, e.g., if published in 2016 then put 2022.]

8. Security Considerations

This document does not introduce new security threats in the LISP architecture nor in the Legacy Internet architecture.

For accountability reasons and in line with the security considerations in [RFC7020], each registration request MUST contain accurate information on the requesting entity (company, institution, individual, etc.) and valid and accurate contact information of a referral person (see [Section 6](#)).

9. IANA Considerations

IANA allocated the following IPv6 address block for experimental use as LISP EID prefix [I-D.ietf-lisp-eid-block]:

- o Address Block: 2001:5::/32
- o Name: EID Space for LISP
- o RFC: [[I-D.ietf-lisp-eid-block](#)]
- o Further Details at: <http://www.iana.org/assignments/iana-ipv6-special-registry/iana-ipv6-special-registry.xhtml>

In order to grant requesting organisations and individuals exclusive use of EID prefixes out of such reserved block (limited to the duration of the LISP experiment as outlined in [Section 7](#)) there is an operational requirement for an EID registration service.

Provided that the policies and requirements outlined in [Section 4](#), [Section 5](#), and [Section 6](#) are respected, EID prefix registration is accorded based on a "First Come First Served" basis.

There is no hard limit in the number of registrations an organization or individual can submit as long as information described in [Section 6](#) is provided, in particular point 4: "Experiment Description".

For the duration defined in [[I-D.ietf-lisp-eid-block](#)] RIPE NCC will manage the the LISP EID prefix as described herein. Therefore, this document has no IANA actions.

[10.](#) Procedures to be followed by RIPE NCC

RIPE NCC will provide the registration service following the EID Prefix Registration Policy ([Section 4](#)) and the EID Prefix Registration Requirements ([Section 5](#)) provided in this document. The request form provided by RIPE NCC will include at least the information from the template in [Section 6](#). RIPE NCC will make publicly available all received requests. While this document does not suggests any minimum allocation size, RIPE NCC is allowed to introduce such minimum size for management purposes.

[11.](#) Acknowledgments

Thanks to A. Retana, J. Arko, P. Yee, A. de la Haye, A. Cima, A Pawlik, J. Curran, A. Severin, B. Haberman, T. Manderson, D. Lewis, D. Farinacci, M. Binderberger, D. Saucez, E. Lear, for their helpful comments.

The work of Luigi Iannone has been partially supported by the ANR-13-

INFR-0009 LISP-Lab Project (www.lisp-lab.org) and the EIT KIC ICT-Labs SOFNETS Project.

12. References

12.1. Normative References

- [I-D.ietf-lisp-eid-block]
Iannone, L., Lewis, D., Meyer, D., and V. Fuller, "LISP EID Block", [draft-ietf-lisp-eid-block-13](#) (work in progress), February 2016.
- [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>>.

12.2. Informative References

- [I-D.ietf-lisp-introduction]
Cabellos-Aparicio, A. and D. Saucez, "An Architectural Introduction to the Locator/ID Separation Protocol (LISP)", [draft-ietf-lisp-introduction-13](#) (work in progress), April 2015.
- [RFC2860] Carpenter, B., Baker, F., and M. Roberts, "Memorandum of Understanding Concerning the Technical Work of the Internet Assigned Numbers Authority", [RFC 2860](#), DOI 10.17487/RFC2860, June 2000, <<http://www.rfc-editor.org/info/rfc2860>>.
- [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>>.
- [RFC6831] Farinacci, D., Meyer, D., Zwiebel, J., and S. Venaas, "The Locator/ID Separation Protocol (LISP) for Multicast Environments", [RFC 6831](#), DOI 10.17487/RFC6831, January 2013, <<http://www.rfc-editor.org/info/rfc6831>>.
- [RFC6832] Lewis, D., Meyer, D., Farinacci, D., and V. Fuller,

- "Interworking between Locator/ID Separation Protocol (LISP) and Non-LISP Sites", [RFC 6832](#), DOI 10.17487/RFC6832, January 2013, <<http://www.rfc-editor.org/info/rfc6832>>.
- [RFC6833] Fuller, V. and D. Farinacci, "Locator/ID Separation Protocol (LISP) Map-Server Interface", [RFC 6833](#), DOI 10.17487/RFC6833, January 2013, <<http://www.rfc-editor.org/info/rfc6833>>.
- [RFC6834] Iannone, L., Saucez, D., and O. Bonaventure, "Locator/ID Separation Protocol (LISP) Map-Versioning", [RFC 6834](#), DOI 10.17487/RFC6834, January 2013, <<http://www.rfc-editor.org/info/rfc6834>>.
- [RFC6835] Farinacci, D. and D. Meyer, "The Locator/ID Separation Protocol Internet Groper (LIG)", [RFC 6835](#), DOI 10.17487/RFC6835, January 2013, <<http://www.rfc-editor.org/info/rfc6835>>.
- [RFC6836] Fuller, V., Farinacci, D., Meyer, D., and D. Lewis, "Locator/ID Separation Protocol Alternative Logical Topology (LISP+ALT)", [RFC 6836](#), DOI 10.17487/RFC6836, January 2013, <<http://www.rfc-editor.org/info/rfc6836>>.
- [RFC6837] Lear, E., "NERD: A Not-so-novel Endpoint ID (EID) to Routing Locator (RLOC) Database", [RFC 6837](#), DOI 10.17487/RFC6837, January 2013, <<http://www.rfc-editor.org/info/rfc6837>>.
- [RFC7020] Housley, R., Curran, J., Huston, G., and D. Conrad, "The Internet Numbers Registry System", [RFC 7020](#), DOI 10.17487/RFC7020, August 2013, <<http://www.rfc-editor.org/info/rfc7020>>.
- [RFC7481] Hollenbeck, S. and N. Kong, "Security Services for the Registration Data Access Protocol (RDAP)", [RFC 7481](#), DOI 10.17487/RFC7481, March 2015, <<http://www.rfc-editor.org/info/rfc7481>>.

[Appendix A](#). Document Change Log

Version 07 Posted April 2016.

- o Addressed editorial issues raised in Gen-Art review by Peter Yee.

- o Removed "Definition of Terms" section as suggested by Peter Yee in the Gen-Art review.
- o Section "IANA Considerations" has been re-written to fix issue raised by IESG, IANA, and P. Yee.
- o Deleted bullet allowing multiple operators in the requirements section. Due to the limited duration of the experiment one single registration operator (RIPE) is sufficient.
- o Modified the dates, introducing variables, so to allow RFC Editor to easily update dates by publication as RFC.

Version 06 Posted August 2015.

- o Fixed Authors addresses and typo in [section 10](#).

Version 05 Posted July 2015.

- o Added explicit text about RIPE NCC providing the registration service during the temporary experiment.

Version 04 Posted December 2014.

- o Added two clarification sentences to address the comments of E. Lear and D. Saucez during WG LC.

Version 03 Posted October 2014.

- o Re-worded the document so to avoid confusion on "allocation" and "assignement". The document now reffers to "registration". As for comments by G. Huston and M. Binderberger.

Version 02 Posted July 2014.

- o Deleted the trailing paragraph of [Section 4](#), as for discussion in the mailing list.
- o Deleted the fees policy as of suggestion of G. Huston and discussion during 89th IETF.
- o Re-phrased the availability of the registration information requirement avoiding putting specific numbers (previously requiring 99% up time), as of suggestion of G. Huston and discussion during 89th IETF.

Version 01 Posted February 2014.

- o Dropped the reverse DNS requirement as for discussion during the 88th IETF meeting.
- o Dropped the minimum allocation requirement as for discussion during the 88th IETF meeting.
- o Changed [Section 7](#) from "General Consideration" to "Policy Validity Period", according to J. Curran feedback. The purpose of the section is just to clearly state the period during which the policy applies.

Version 00 Posted December 2013.

- o Rename of [draft-iannone-lisp-eid-block-mgmt-03.txt](#).

Authors' Addresses

Luigi Iannone
Telecom ParisTech
France

Email: ggx@gigix.net

Roger Jorgensen
Bredbandsfylket Troms
Norway

Email: rogerj@gmail.com

David Conrad
Virtualized, LLC
USA

Email: drc@virtualized.org

Geoff Huston
APNIC - Asia Pacific Network Information Center
Australia

Email: gih@apnic.net

