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RFC 9306
Vendor-Specific LISP Canonical Address Format (LCAF)

Abstract

This document describes a new Locator/ID Separation Protocol (LISP) Canonical Address Format (LCAF), the Vendor-Specific LCAF. This LCAF enables organizations to have implementation-specific encodings for LCAF addresses. This document updates RFC 8060.

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 candidates for any level of Internet Standard; see 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/rfc9306.

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1. Introduction

The LISP Canonical Address Format (LCAF) [RFC8060] defines the format and encoding for different address types that can be used on deployments of the Locator/ID Separation Protocol (LISP) [RFC9300] [RFC9301]. However, certain deployments require specific format encodings that may not be applicable outside of the use case for which they are defined. This document extends [RFC8060] to introduce a Vendor-Specific LCAF that defines how organizations can create LCAF addresses to be used only on particular LISP implementations. This document also updates [RFC8060] to specify the behavior when receiving unrecognized LCAF types.

2. Requirements Notation

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. Unrecognized LCAF Types

[RFC8060] does not explain how an implementation should handle an unrecognized LCAF type. This document updates [RFC8060] to specify that any unrecognized LCAF type received in a LISP control plane message **MUST** be ignored. If all Locators are ignored, this is equivalent to a LISP

control message with Locator Count = 0, as described in [RFC9301]. If an EID-Prefix only contains unrecognized LCAF types, the LISP control message **MUST** be dropped and the event **MUST** be logged. (Here, "EID" refers to Endpoint Identifier.)

4. Vendor-Specific LCAF

The Vendor-Specific LCAF relies on using the IEEE Organizationally Unique Identifier (OUI) [IEEE.802] to prevent collisions across vendors or organizations using the LCAF. The format of the Vendor-Specific LCAF is provided below.

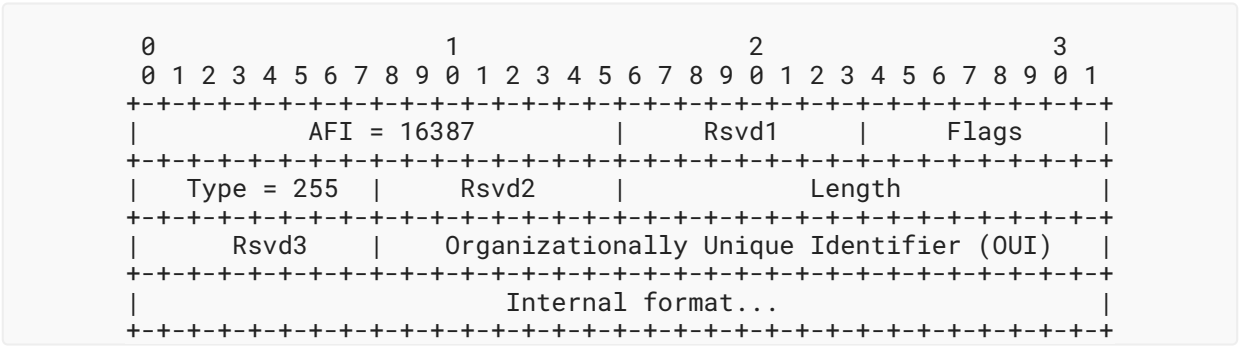

Figure 1: Vendor-Specific LCAF

The fields in the first 8 octets of the above Vendor-Specific LCAF are actually the fields defined in the general LCAF format specified in [RFC8060]. The Type field **MUST** be set 255, the value assigned by IANA to indicate that this is a Vendor-Specific LCAF; see Section 6. The Length field has to be set accordingly to the length of the internal format, plus the OUI, plus the Rsvd3 fields, as for [RFC8060]. The fields defined by the Vendor-Specific LCAF are as follows:

Rsvd3: This 8-bit field is reserved for future use. It **MUST** be set to 0 on transmit and **MUST** be ignored on receipt.

Organizationally Unique Identifier (OUI): This is a 24-bit field that carries an OUI or Company ID (CID) assigned by the IEEE Registration Authority (RA) as defined by the IEEE Std 802 [IEEE.802]

Internal format: This is a variable-length field that is left undefined on purpose. Each vendor or organization can define its own internal format(s) to use with the Vendor-Specific LCAF.

The Vendor-Specific LCAF type **SHOULD NOT** be used in deployments where different organizations interoperate. However, there may be cases where two (or more) organizations share a common deployment on which they explicitly and mutually agree to use a particular Vendor-Specific LCAF. In that case, the organizations involved need to carefully assess the interoperability concerns for that particular deployment. It is **NOT RECOMMENDED** to use an OUI not assigned to an organization.

If a LISP device receives a LISP message containing a Vendor-Specific LCAF with an OUI that it does not understand, it **MUST** drop the message and it **SHOULD** create a log message.

5. Security Considerations

This document enables organizations to define new LCAFs for their internal use. It is the responsibility of these organizations to properly assess the security implications of the formats they define. Security considerations from [RFC8060] apply to this document.

6. IANA Considerations

Following the guidelines of [RFC8126], IANA has assigned the following value for the Vendor-Specific LCAF from the "LISP Canonical Address Format (LCAF) Types" registry (defined in [RFC8060]):

Value	LISP LCAF Type Name	Reference
255	Vendor Specific	RFC 9306, Section 4

Table 1: Vendor-Specific LCAF Assignment

7. Normative References

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