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Vendor Specific LISP Canonical Address Format (LCAF)
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Abstract

This document describes a new LISP Canonical Address Format (LCAF), the Vendor Specific LCAF. This LCAF enables organizations to have internal encodings for LCAF addresses.

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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 LISP [[I-D.ietf-lisp-rfc6830bis](#)] [[I-D.ietf-lisp-rfc6833bis](#)] deployments. However, certain deployments require specific format encodings that may not be applicable outside of the use-case for which they are defined. The Vendor Specific LCAF allows organizations to create LCAF addresses to be used only internally on particular LISP deployments.

[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.](#) Vendor Specific LCAF

The Vendor Specific LCAF relies on using the IEEE Organizationally Unique Identifier (OUI) [[IEEE.802_2001](#)] to prevent collisions across vendors or organizations using the LCAF. The format of the Vendor Specific LCAF is provided below.

```

      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
+---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+
|           AFI = 16387           |   Rsvd1   |   Flags   |
+---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+
|   Type = 255   |   Rsvd2   |           Length           |
+---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+
|   Rsvd3   |   Organizationally Unique Identifier (OUI)   |
+---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+
|           Internal format...           |
+---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+

```

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 to the value 255 to indicate that this is a Vendor Specific LCAF. The fields defined by the Vendor Specific LCAF are:

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 the IEEE OUI [\[IEEE.802_2001\]](#) of the organization.

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.

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.

4. 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.

5. Acknowledgments

The authors would like to thank Joel Halpern and Luigi Iannone for their suggestions and guidance regarding this document.

6. IANA Considerations

Following the guidelines of [RFC8126], this document requests IANA to update the "LISP Canonical Address Format (LCAF) Types" Registry defined in [RFC8060] to allocate the following assignment:

Value #	LISP LCAF Type Name	Reference
255	Vendor Specific	Section 3

Table 1: Vendor Specific LCAF assignment

7. Normative References

- [I-D.ietf-lisp-rfc6830bis]
Farinacci, D., Fuller, V., Meyer, D., Lewis, D., and A. Cabellos-Aparicio, "The Locator/ID Separation Protocol (LISP)", [draft-ietf-lisp-rfc6830bis-32](#) (work in progress), March 2020.
- [I-D.ietf-lisp-rfc6833bis]
Farinacci, D., Maino, F., Fuller, V., and A. Cabellos-Aparicio, "Locator/ID Separation Protocol (LISP) Control-Plane", [draft-ietf-lisp-rfc6833bis-27](#) (work in progress), January 2020.
- [IEEE.802_2001]
IEEE, "IEEE Standard for Local and Metropolitan Area Networks: Overview and Architecture", IEEE 802-2001, DOI 10.1109/ieeestd.2002.93395, July 2002, <<http://ieeexplore.ieee.org/servlet/opac?punumber=7732>>.
- [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>>.
- [RFC8060] Farinacci, D., Meyer, D., and J. Snijders, "LISP Canonical Address Format (LCAF)", [RFC 8060](#), DOI 10.17487/RFC8060, February 2017, <<https://www.rfc-editor.org/info/rfc8060>>.

[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>>.

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