

Network Working Group
Internet-Draft
Intended status: Experimental
Expires: December 24, 2012

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June 22, 2012

LISP MIB
draft-ietf-lisp-mib-04

Abstract

This document defines managed objects for the Locator/ID Separation Protocol (LISP). These objects provide information useful for monitoring LISP devices, including basic configuration information, LISP status, and operational statistics.

Status of This Memo

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LISP MIB

June 2012

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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

This draft describes the Management Information Base (MIB) module for use with network management protocols in the Internet community. Specifically, the MIB for managing Locator/ID Separation Protocol (LISP) devices is described.

LISP [[LISP](#)] specifies a network-based architecture and mechanisms that implement a new semantic for IP addressing using two separate name spaces: Endpoint Identifiers (EIDs), used within sites, and Routing Locators (RLOCs), used on the transit networks that make up the Internet infrastructure. To achieve this separation, LISP defines protocol mechanisms for mapping from EIDs to RLOCs.

From a data plane perspective, LISP traffic is handled exclusively at the network layer by devices performing Ingress Tunnel Router (ITR) and Egress Tunnel Router (ETR) LISP functions. Data plane operations performed by these devices are described in [[LISP](#)]. Additionally, data plane interworking between legacy (Internet) and LISP sites is implemented by devices performing Proxy ITR (PITR) and Proxy ETR (PETR) functions. The data plane operations of these devices is described in [[INTERWORK](#)].

From a control plane perspective, LISP employs mechanisms related to creating, maintaining, and resolving mappings from EIDs to RLOCs. LISP ITRs, ETRs, PITRs, and PETRs perform specific control plane functions, and these control plane operations are described in [[LISP](#)]. Additionally, LISP infrastructure devices supporting LISP control plane functionality include Map-Servers and Map-Resolvers, and the control plane operations of these devices are described in

[[LISP-MS](#)]. Finally, while not specifically required, this document assumes the existence of a database to store and propagate those mappings globally.

3. The Internet-Standard Management Framework

For a detailed overview of the documents that describe the current Internet-Standard Management Framework, please refer to [section 7 of RFC 3410](#) [[RFC3410](#)].

Managed objects are accessed via a virtual information store, termed the Management Information Base or MIB. MIB objects are generally

accessed through the Simple Network Management Protocol (SNMP). Objects in the MIB are defined using the mechanisms defined in the Structure of Management Information (SMI). This memo specifies a MIB module that is compliant to the SMIV2, which is described in STD 58, [RFC 2578](#) [[RFC2578](#)], STD 58, [RFC 2579](#) [[RFC2579](#)] and STD 58, [RFC 2580](#) [[RFC2580](#)].

4. Definition of Terms

Endpoint ID (EID): a 32-bit (for IPv4) or 128-bit (for IPv6) value used in the source and destination address fields of the first (inner-most) IP header of a LISP packet. A source EID is allocated to a host from an EID-prefix block associated with the site where the host is located. A host determines a destination address in the same way that it determines a destination address today, for example through a DNS lookup or SIP exchange.

Routing Locator (RLOC): a 32-bit (for IPv4) or 128-bit (for IPv6) value used in the source and destination address fields of the second (outer-most) IP header of a LISP packet. RLOC addresses are allocated to an egress tunnel router (ETR) and numbered from topologically-aggregatable blocks assigned to a site at each point to which it attaches to the global Internet.

EID-to-RLOC Map-Cache: a short-lived, on-demand table maintained locally in an ITR or Pitr that stores, tracks, and is responsible for timing-out and otherwise validating EID-to-RLOC mappings. This table is distinct from the full "database" of EID-to-RLOC mappings in that it is dynamic and relatively small. At a given

moment in time, it consists only of entries for those sites to which the ITR or PITR is currently communicating or has communicated with within the configured TTL period.

EID-to-RLOC Mapping-Database: a global distributed database that contains all known EID-to-RLOC mappings. Each potential ETR typically contains a small piece of the database consisting of only the EID-to-RLOC mappings for the EID prefix(es) for which the ETR is "authoritative" and the RLOC(s) by which those EID prefix(es) are reachable from the global Internet.

Ingress Tunnel Router (ITR): a router that accepts an IP packet with a single IP header (more precisely, an IP packet that does not contain a LISP header), treats this "inner" IP destination address as an EID and performs an EID-to-RLOC mapping lookup, and then prepends an "outer" IP header with one of its own globally-routable RLOCs in the source address field and the RLOC resulting from the mapping lookup in the destination address field. That is, in general an ITR receives an IP packet from site end-systems

on one side and sends a LISP-encapsulated IP packet toward the Internet on the other side.

Egress Tunnel Router (ETR): a router that accepts an IP packet where the destination address in the "outer" IP header is one of its own RLOCs, strips the "outer" header, and forwards the packet based on the next IP header found. That is, in general an ETR receives LISP-encapsulated IP packets from the Internet on one side and sends decapsulated IP packets toward site end-systems on the other side.

xTR: a term of general reference to an ITR or ETR when direction of data flow is not part of the context description. xTR refers to the router that is the tunnel endpoint and performs both ITR and ETR functionality. For example, "An xTR can be located at the Customer Edge (CE) router," meaning both ITR and ETR functionality is activated at the CE router.

Proxy ITR (PITR): a router that acts like an ITR but does so on behalf of non-LISP sites which send packets to destinations at LISP sites. The PITR, also known as a PTR, is defined and described in [[INTERWORK](#)].

Proxy ETR (PETR): a router that acts like an ETR but does so on behalf of LISP sites which send packets to destinations at non-LISP sites. The PETR is defined and described in [[INTERWORK](#)].

LISP Site: a set of routers in an edge network that are under a single technical administration. LISP routers which reside in the edge network are the demarcation points to separate the edge network from the core network.

Map-Server: a LISP network infrastructure component which learns EID-to-RLOC mapping entries from an authoritative source such as an ETR through static configuration, or another out-of-band mechanism. A Map-Server advertises these mappings into the distributed mapping database.

Map-Resolver: a LISP network infrastructure component which accepts LISP Encapsulated Map-Requests, typically from an ITR, and quickly determines whether or not the destination IP address is part of the EID namespace. If it is, the Map-Resolver finds the appropriate EID-to-RLOC mapping by consulting the distributed mapping database. If it is not, a Negative Map-Reply is immediately returned.

Map-Request: a LISP Map-Request message type sent by an ITR or PITR to a Map-Resolver when it needs a mapping for an EID, wants to test an RLOC for reachability, or wants to refresh a mapping before TTL expiration.

Map-Reply: a LISP Map-Reply message type returned in response to a Map-Request for a destination EID that exists in the mapping database and contains the locator-set and associated policy for the queried EID. Information returned in a Map-Reply is stored in the EID-to-RLOC Map-Cache.

Negative Map-Reply: a LISP Map-Reply message type that contains an empty locator-set. Returned in response to a Map-Request if the destination EID does not exist in the mapping database. Typically, this means that the "EID" being requested is an IP

address connected to a non-LISP site. Information returned in a Negative Map-Reply is stored in the EID-to-RLOC Map-Cache.

5. LISP MIB Objectives

The objectives for defining this LISP MIB module are as follows:

- o Provide a means for obtaining a list of enabled LISP features and the current status of configuration attributes related to those features. As an example, LISP capabilities which could be enabled include ITR, ETR, PITR, PETR, MS or MR support for IPv4 or IPv6 address families. Other examples include, indicating whether rloc-probing is enabled, and indicating the configured map-cache limit value.
- o Provide a means for obtaining the current attributes of various LISP tables, such as the EID-to-RLOC policy data contained in the Map-Cache, or the local EID-to-RLOC policy data contained in the Mapping-Database.
- o Provide a means for obtaining the current operational statistics of various LISP functions, such as the number of packets encapsulated and decapsulated by the device. Other counters of operational interest, depending on LISP function, include things like the current number of map-cache entries, and the total number and rate of map-requests received and sent.

6. Structure of LISP MIB Module

6.1. Overview of Defined Notifications

No LISP MIB notifications are defined.

6.2. Overview of Defined Tables

The LISP MIB module is composed of the following tables of objects:

`lispFeatures` - This table provides information representing the various lisp features that can be enabled on LISP devices.

`lispMappingDatabase` - This table represents the EID-to-RLOC database

that contains the EID-prefix to RLOC mappings configured on an ETR. In general, this table would be representative of all such mappings for a given site that this device belongs to.

`lispMappingDatabaseLocator` - This table represents the set of routing locators contained in the EID-to-RLOC database configured on an ETR.

`lispMapCache` - This table represents the short-lived, on-demand table on an ITR that stores, tracks, and is responsible for timing-out and otherwise validating EID-to-RLOC mappings.

`lispMapCacheLocator` - This table represents the set of locators per EID prefix contained in the map-cache table of an ITR.

`lispEidRegistration` - This table provides the properties of each EID prefix that is registered with this device when configured to be a Map-Server.

`lispEidRegistrationEtr` - This table provides the properties of the different ETRs that send registers, for a given EID prefix, to this device when configured to be a Map-Server.

`lispEidRegistrationLocator` - This table provides the properties of the different locators per EID prefix that is registered with this device when configured to be a Map-Server.

`lispUseMapServer` - This table provides the properties of all Map-Servers that this device is configured to use.

`lispUseMapResolver` - This table provides the properties of all Map-Resolvers that this device is configured to use.

`lispUseProxyEtr` - This table provides the properties of all Proxy ETRs that this device is configured to use.

LISP-MIB DEFINITIONS ::= BEGIN

IMPORTS

MODULE-IDENTITY, OBJECT-TYPE,
mib-2, Unsigned32, Counter64,
Integer32, TimeTicks FROM SNMPv2-SMI -- [RFC2578]
TruthValue, TEXTUAL-CONVENTION FROM SNMPv2-TC -- [RFC2579]
MODULE-COMPLIANCE, OBJECT-GROUP FROM SNMPv2-CONF -- [RFC2580]
AddressFamilyNumbers
FROM IANA-ADDRESS-FAMILY-NUMBERS-MIB; -- [IANA]

lispMIB MODULE-IDENTITY

LAST-UPDATED "201206200000Z" -- 20 June 2012

ORGANIZATION

"IETF Locator/ID Separation Protocol (LISP) Working Group"

CONTACT-INFO

"Email: lisp@ietf.org

WG charter:

<http://www.ietf.org/html.charters/lisp-charter.html>"

DESCRIPTION

"Locator/ID Separation Protocol (LISP) MIB Textual
Conventions module. The LISP MIB is intended for
management of LISP routers.

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REVISION "201206200000Z" -- 20 June 2012

DESCRIPTION "Initial version of the IETF LISP-MIB module"

::= { mib-x xxx }

--

-- Textual Conventions

--

lispAddressType ::= TEXTUAL-CONVENTION

STATUS current

DESCRIPTION

"LISP architecture can be applied to a wide variety of
address-families. This textual-convention is a
generalization for representing addresses that belong
to those address-families. For convenience, this
document refers to any such address as a lisp address.
lispAddressType textual-convention consists of
the following four-tuple:

1. IANA Address Family Number: A field of length
2-octets, whose value is of the form following the

assigned AddressFamilyNumbers textual-convention described in [IANA]. The enumerations are listed in [IANA]. Note that this list of address family numbers is maintained by IANA.

2. Length of LISP address: A field of length 1-octet, whose value indicates the octet-length of the next (third) field of this LispAddressType four-tuple.
3. Lisp address: A field of variable length as indicated in the previous (second) field, whose value is an address of the IANA Address Family indicated in the first field of this LispAddressType four-tuple. Note that any of the IANA Address Families can be represented. Particularly when the address family is LISP Canonical Address Format (LCAF) [LCAF] with IANA assigned Address Family Number 16387, then the first octet of this field indicates the LCAF type, and the rest of this field is same as the encoding format of the LISP Canonical Address after the length field, as defined in [LCAF].
4. Mask-length of address: A variable-length field comprised of the remaining octets of this LispAddressType four-tuple, whose value is the mask-length to be applied to the lisp address specified in the previous (third) field.

To illustrate the use of this object, consider the LISP MIB Object below entitled lispMapCacheEntry. This object begins with the following entities:

```
lispMapCacheEntry ::= SEQUENCE {
    lispMapCacheEidLength      INTEGER,
    lispMapCacheEid           LispAddressType,
    ... [skip] ...
```

Example 1: Suppose that the IPv4 EID prefix stored is 10.10.10.0/24. In this case, the values within lispMapCacheEntry would be:

```
lispMapCacheEidLength = 8
lispMapCacheEid = 1, 4, 10.10.10.0, 24
... [skip] ...
```

where 8 is the total length in octets of the next object (lispMapCacheEID of type LispAddressType). Then, the value 1 indicates the IPv4 AF (per [IANA]), the value 4 indicates that the AF is 4-octets in length,

10.10.10.0 is the IPv4 address, and the value 24 is the mask-length in bits. Note that the `lispMapCacheEidLength`

value of 8 is used to compute the length of the fourth (last) field in `lispMapCacheEid` to be 1 octet - as computed by $8 - (2 + 1 + 4) = 1$.

Example 2: Suppose that the IPv6 EID prefix stored is `2001:db8:a::/48`. In this case, the values within `lispMapCacheEntry` would be:

```
lispMapCacheEidLength = 20
lispMapCacheEid = 2, 16, 2001:db8:a::, 48
... [skip] ...
```

where 20 is the total length in octets of the next object (`lispMapCacheEID` of type `LispAddressType`). Then, the value 2 indicates the IPv4 AF (per [\[IANA\]](#)), the value 16 indicates that the AF is 16-octets in length, `2001:db8:a::` is the IPv6 address, and the value 48 is the mask-length in bits. Note that the `lispMapCacheEidLength` value of 20 is used to compute the length of the fourth (last) field in `lispMapCacheEid` to be 1 octet - as computed by $20 - (2 + 1 + 16) = 1$.

Example 3: As an example where LCAF is used, suppose that the IPv4 EID prefix stored is `10.10.10.0/24` and it is part of LISP instance id 101. In this case, the values within `lispMapCacheEntry` would be:

```
lispMapCacheEidLength = 11
lispMapCacheEid = 16387, 7, 2, 101, 1, 10.10.10.0, 24
... [skip] ...
```

where 11 is the total length in octets of the next object (`lispMapCacheEID` of type `LispAddressType`). Then, the value 16387 indicates the LCAF AF (see [\[IANA\]](#)), the value 7 indicates that the LCAF AF is 7-octets in length in this case, 2 indicates that LCAF Type 2 encoding is used (see [\[LCAF\]](#)), 101 gives the instance id, 1 gives the AFI (per [\[IANA\]](#)) for an IPv4 address, `10.10.10.0` is the IPv4 address, and 24 is the mask-length in bits. Note that the

lispMapCacheEidLength value of 11 octets is used to compute the length of the last field in lispMapCacheEid to be 1 octet, as computed by $11 - (2 + 1 + 1 + 1 + 1 + 1 + 4) = 1$."

REFERENCE "[[LISP](#)]"

SYNTAX OCTET STRING (SIZE (0..1024))

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--

-- Top level components of this MIB.

--

lisp OBJECT IDENTIFIER ::= { lispMIB 1 }

lispFeaturesTable OBJECT-TYPE

SYNTAX SEQUENCE OF LispFeaturesEntry

MAX-ACCESS not-accessible

STATUS current

DESCRIPTION

"This table represents the various lisp features that can be enabled on lisp devices."

REFERENCE "[[LISP](#)]"

::= { lisp 1 }

lispFeaturesEntry OBJECT-TYPE

SYNTAX LispFeaturesEntry

MAX-ACCESS not-accessible

STATUS current

DESCRIPTION

"An entry (conceptual row) in the lispFeaturesTable."

INDEX { lispInstanceID,
lispAddressFamily }

::= { lispFeaturesTable 1 }

LispFeaturesEntry ::= SEQUENCE {

lispFeaturesInstanceID

Unsigned32

lispFeaturesAddressFamily

AddressFamilyNumbers,

lispFeaturesItrEnabled

TruthValue,

lispFeaturesEtrEnabled	TruthValue,
lispFeaturesProxyItrEnabled	TruthValue,
lispFeaturesProxyEtrEnabled	TruthValue,
lispFeaturesMapServerEnabled	TruthValue,
lispFeaturesMapResolverEnabled	TruthValue,
lispFeaturesMapCacheSize	Unsigned32,
lispFeaturesMapCacheLimit	Unsigned32,
lispFeaturesEtrMapCacheTtl	Unsigned32,
lispFeaturesRlocProbeEnabled	TruthValue,
lispFeaturesEtrAcceptMapDataEnabled	TruthValue,
lispFeaturesEtrAcceptMapDataVerifyEnabled	TruthValue,
lispFeaturesMapRequestsIn	Counter64,
lispFeaturesMapRequestsOut	Counter64,
lispFeaturesMapRepliesIn	Counter64,
lispFeaturesMapRepliesOut	Counter64,
lispFeaturesMapRegistersIn	Counter64,

```

    lispFeaturesMapRegistersOut          Counter64
}

```

lispFeaturesInstanceID OBJECT-TYPE

SYNTAX Unsigned32

MAX-ACCESS not-accessible

STATUS current

DESCRIPTION

"This represents the Instance ID of the LISP header. An Instance ID in the LISP address encoding helps uniquely identify the AFI-based address space to which a given EID belongs. It's default value is 0."

::= { lispFeaturesEntry 1 }

lispFeaturesAddressFamily OBJECT-TYPE

SYNTAX AddressFamilyNumbers

MAX-ACCESS not-accessible

STATUS current

DESCRIPTION

"The address family number that the lisp device is enabled to lisp process a packet for as a destination address family."

::= { lispFeaturesEntry 2 }

lispFeaturesItrEnabled OBJECT-TYPE
SYNTAX TruthValue
MAX-ACCESS read-only
STATUS current
DESCRIPTION
 "Indicates the status of ITR role on this device
 (0 = ITR disabled; 1 = ITR enabled)."
::= { lispFeaturesEntry 3 }

lispFeaturesEtrEnabled OBJECT-TYPE
SYNTAX TruthValue
MAX-ACCESS read-only
STATUS current
DESCRIPTION
 "Indicates the status of ETR role on this device
 (0 = ETR disabled; 1 = ETR enabled)."
::= { lispFeaturesEntry 4 }

lispFeaturesProxyItrEnabled OBJECT-TYPE
SYNTAX TruthValue
MAX-ACCESS read-only
STATUS current
DESCRIPTION

 "Indicates the status of Proxy-ITR role on this
 device (0 = PITR disabled; 1 = PITR enabled)."
::= { lispFeaturesEntry 5 }

lispFeaturesProxyEtrEnabled OBJECT-TYPE
SYNTAX TruthValue
MAX-ACCESS read-only
STATUS current
DESCRIPTION
 "Indicates the status of Proxy-ETR role on this
 device (0 = PETR disabled; 1 = PETR enabled)."
::= { lispFeaturesEntry 6 }

lispFeaturesMapServerEnabled OBJECT-TYPE
SYNTAX TruthValue
MAX-ACCESS read-only
STATUS current
DESCRIPTION

"Indicates the status of Map Server role on this device (0 = MS disabled; 1 = MS enabled)."
 ::= { lispFeaturesEntry 7 }

lispFeaturesMapResolverEnabled OBJECT-TYPE

SYNTAX TruthValue

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"Indicates the status of Map Resolver role on this device (0 = MR disabled; 1 = MR enabled)."

::= { lispFeaturesEntry 8 }

lispFeaturesMapCacheSize OBJECT-TYPE

SYNTAX Unsigned32

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"Size of EID-to-RLOC map cache on this device."

::= { lispFeaturesEntry 9 }

lispFeaturesMapCacheLimit OBJECT-TYPE

SYNTAX Unsigned32

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"Maximum permissible size of EID-to-RLOC map cache on this device."

::= { lispFeaturesEntry 10 }

lispFeaturesEtrMapCacheTtl OBJECT-TYPE

SYNTAX Unsigned32

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"Time in minutes this device will store the EID-to-RLOC map record in the map cache."

::= { lispFeaturesEntry 11 }

lispFeaturesRlocProbeEnabled OBJECT-TYPE

SYNTAX TruthValue

MAX-ACCESS read-only
STATUS current
DESCRIPTION
"Indicates the status of rloc-probing feature
on this device (0 = disabled; 1 = enabled)."
::= { lispFeaturesEntry 12 }

lispFeaturesEtrAcceptMapDataEnabled OBJECT-TYPE
SYNTAX TruthValue
MAX-ACCESS read-only
STATUS current
DESCRIPTION
"Indicates the status of accepting piggybacked
mapping data received in a map-request on
this device (0 = disabled; 1 = enabled)."
::= { lispFeaturesEntry 13 }

lispFeaturesEtrAcceptMapDataVerifyEnabled OBJECT-TYPE
SYNTAX TruthValue
MAX-ACCESS read-only
STATUS current
DESCRIPTION
"Indicates the status of verifying accepted
piggybacked mapping data received in a
map-request on this device (0 = disabled;
1 = enabled)."
::= { lispFeaturesEntry 14 }

lispFeaturesMapRequestsIn OBJECT-TYPE
SYNTAX Counter64
MAX-ACCESS read-only
STATUS current
DESCRIPTION
"Total number of map requests received by this
device for any EID prefix of the given address
family."
::= { lispFeaturesEntry 15 }

lispFeaturesMapRequestsOut OBJECT-TYPE
SYNTAX Counter64
MAX-ACCESS read-only
STATUS current

DESCRIPTION

"Total number of map requests sent by this device for any EID prefix of the given address family."

::= { lispFeaturesEntry 16 }

lispFeaturesMapRepliesIn OBJECT-TYPE

SYNTAX Counter64

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"Total number of map replies received by this device for any EID prefix of the given address family."

::= { lispFeaturesEntry 17 }

lispFeaturesMapRepliesOut OBJECT-TYPE

SYNTAX Counter64

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"Total number of map replies sent by this device for any EID prefix of the given address family."

::= { lispFeaturesEntry 18 }

lispFeaturesMapRegistersIn OBJECT-TYPE

SYNTAX Counter64

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"Total number of map registers received by this device for any EID prefix of the given address family."

::= { lispFeaturesEntry 19 }

lispFeaturesMapRegistersOut OBJECT-TYPE

SYNTAX Counter64

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"Total number of map registers sent by this device for any EID prefix of the given address family."

```
::= { lispFeaturesEntry 20 }
```

lispMappingDatabaseTable OBJECT-TYPE

SYNTAX SEQUENCE OF LispMappingDatabaseEntry

MAX-ACCESS not-accessible

STATUS current

DESCRIPTION

"This table represents the EID-to-RLOC mapping database that contains the EID-prefix to RLOC mappings configured on an ETR. In general, this table would be representative of all such mappings for the given lisp site to which this device belongs."

REFERENCE "[[LISP](#)]"

```
::= { lisp 2 }
```

lispMappingDatabaseEntry OBJECT-TYPE

SYNTAX LispMappingDatabaseEntry

MAX-ACCESS not-accessible

STATUS current

DESCRIPTION

"An entry (conceptual row) in the lispMappingDatabaseTable."

INDEX { lispMappingDatabaseEidLength,
lispMappingDatabaseEid }

```
::= { lispMappingDatabaseTable 1 }
```

LispMappingDatabaseEntry ::= SEQUENCE {

lispMappingDatabaseEidLength Integer32,

lispMappingDatabaseEid LispAddressType,

lispMappingDatabaseLsb Unsigned32,

lispMappingDatabaseEidPartitioned TruthValue,

lispMappingDatabaseDecapOctets Counter64,

lispMappingDatabaseDecapPackets Counter64,

lispMappingDatabaseEncapOctets Counter64,

lispMappingDatabaseEncapPackets Counter64

}

lispMappingDatabaseEidLength OBJECT-TYPE

SYNTAX Integer32 (0..1024)

MAX-ACCESS not-accessible

STATUS current

DESCRIPTION

"This object gives the octet-length of lispMappingDatabaseEid."

```
::= { lispMappingDatabaseEntry 1 }
```

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```
lispMappingDatabaseEid OBJECT-TYPE
    SYNTAX      LispAddressType
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
        "The EID prefix of the mapping database."
    ::= { lispMappingDatabaseEntry 2 }

lispMappingDatabaseLsb OBJECT-TYPE
    SYNTAX      Unsigned32
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "The locator status bits for this EID prefix."
    ::= { lispMappingDatabaseEntry 3 }

lispMappingDatabaseEidPartitioned OBJECT-TYPE
    SYNTAX      TruthValue
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Indicates if this device is partitioned from
         the site that contains this EID prefix
         (0 = not partitioned; 1 = partitioned)."
    ::= { lispMappingDatabaseEntry 4 }

lispMappingDatabaseDecapOctets OBJECT-TYPE
    SYNTAX      Counter64
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "The number of octets of Lisp packets that
         were decapsulated by this device addressed
         to a host within this EID-prefix."
    ::= { lispMappingDatabaseEntry 5 }

lispMappingDatabaseDecapPackets OBJECT-TYPE
    SYNTAX      Counter64
    MAX-ACCESS  read-only
    STATUS      current
```

DESCRIPTION

"The number of Lisp packets that were decapsulated by this device addressed to a host within this EID-prefix."

::= { lispMappingDatabaseEntry 6 }

lispMappingDatabaseEncapOctets OBJECT-TYPE

SYNTAX Counter64

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MAX-ACCESS read-only

STATUS current

DESCRIPTION

"The number of octets of Lisp packets, that were encapsulated by this device, whose inner header source address matched this EID prefix."

::= { lispMappingDatabaseEntry 7 }

lispMappingDatabaseEncapPackets OBJECT-TYPE

SYNTAX Counter64

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"The number of Lisp packets that were encapsulated by this device that whose inner header source address matched this EID prefix."

::= { lispMappingDatabaseEntry 8 }

lispMappingDatabaseLocatorTable OBJECT-TYPE

SYNTAX SEQUENCE OF LispMappingDatabaseLocatorEntry

MAX-ACCESS not-accessible

STATUS current

DESCRIPTION

"This table represents the set of routing locators per EID prefix contained in the EID-to-RLOC database configured on this ETR."

REFERENCE "[[LISP](#)]"

::= { lisp 3 }

lispMappingDatabaseLocatorEntry OBJECT-TYPE

SYNTAX LispMappingDatabaseLocatorEntry

MAX-ACCESS not-accessible

```

STATUS      current
DESCRIPTION
    "An entry (conceptual row) in the
       lispMappingDatabaseLocatorTable."
INDEX { lispMappingDatabaseEidLength,
        lispMappingDatabaseEid,
        lispMappingDatabaseLocatorRlocLength,
        lispMappingDatabaseLocatorRloc }
 ::= { lispMappingDatabaseLocatorTable 1 }

```

```

LispMappingDatabaseLocatorEntry ::= SEQUENCE {
    lispMappingDatabaseLocatorRlocLength      Integer32,
    lispMappingDatabaseLocatorRloc           LispAddressType,
    lispMappingDatabaseLocatorRlocPriority    Integer32,
    lispMappingDatabaseLocatorRlocWeight    Integer32,

```

```

    lispMappingDatabaseLocatorRlocMPriority    Integer32,
    lispMappingDatabaseLocatorRlocMWeight     Integer32,
    lispMappingDatabaseLocatorRlocState       INTEGER,
    lispMappingDatabaseLocatorRlocLocal       INTEGER,
    lispMappingDatabaseLocatorRlocDecapOctets Counter64,
    lispMappingDatabaseLocatorRlocDecapPackets Counter64,
    lispMappingDatabaseLocatorRlocEncapOctets Counter64,
    lispMappingDatabaseLocatorRlocEncapPackets Counter64
}

```

lispMappingDatabaseLocatorRlocLength OBJECT-TYPE

```

SYNTAX      Integer32
MAX-ACCESS not-accessible
STATUS      current
DESCRIPTION

```

```

    "This object is used to get the octet-length of
       lispMappingDatabaseLocatorRloc, the next object."
 ::= { lispMappingDatabaseLocatorEntry 1 }

```

lispMappingDatabaseLocatorRloc OBJECT-TYPE

```

SYNTAX      LispAddressType
MAX-ACCESS not-accessible
STATUS      current
DESCRIPTION

```

```

    "This object is a locator for the given EID prefix
       in the mapping database."

```

```
::= { lispMappingDatabaseLocatorEntry 2 }
```

```
lispMappingDatabaseLocatorRlocPriority OBJECT-TYPE
```

```
SYNTAX      Integer32
```

```
MAX-ACCESS  read-only
```

```
STATUS      current
```

```
DESCRIPTION
```

```
    "The unicast priority of the RLOC."
```

```
::= { lispMappingDatabaseLocatorEntry 3 }
```

```
lispMappingDatabaseLocatorRlocWeight OBJECT-TYPE
```

```
SYNTAX      Integer32
```

```
MAX-ACCESS  read-only
```

```
STATUS      current
```

```
DESCRIPTION
```

```
    "The unicast weight of the RLOC."
```

```
::= { lispMappingDatabaseLocatorEntry 4 }
```

```
lispMappingDatabaseLocatorRlocMPriority OBJECT-TYPE
```

```
SYNTAX      Integer32
```

```
MAX-ACCESS  read-only
```

```
STATUS      current
```

```
DESCRIPTION
```

```
    "The multicast priority of the RLOC."
```

```
::= { lispMappingDatabaseLocatorEntry 5 }
```

```
lispMappingDatabaseLocatorRlocMWeight OBJECT-TYPE
```

```
SYNTAX      Integer32
```

```
MAX-ACCESS  read-only
```

```
STATUS      current
```

```
DESCRIPTION
```

```
    "The multicast weight of the RLOC."
```

```
::= { lispMappingDatabaseLocatorEntry 6 }
```

```
lispMappingDatabaseLocatorRlocState OBJECT-TYPE
```

```
SYNTAX      INTEGER {  
                down (0),  
                up (1),  
                unreachable (2)  
            }
```

```
MAX-ACCESS  read-only
```

STATUS current
DESCRIPTION
"The state of this RLOC as per this device.
(0 = RLOC is down; 1 = RLOC is up;
2 = RLOC is unreachable)."
::= { lispMappingDatabaseLocatorEntry 7 }

lispMappingDatabaseLocatorRlocLocal OBJECT-TYPE
SYNTAX INTEGER {
 sitelocal (0),
 siteself (1)
}
MAX-ACCESS read-only
STATUS current
DESCRIPTION
"Indicates whether the RLOC is local to this
device (or remote, meaning local to another
device in the same lisp site). (0 = RLOC is
an address on another device; 1 = RLOC is an
address on this device)."
::= { lispMappingDatabaseLocatorEntry 8 }

lispMappingDatabaseLocatorRlocDecapOctets OBJECT-TYPE
SYNTAX Counter64
MAX-ACCESS read-only
STATUS current
DESCRIPTION
"The number of octets of Lisp packets that were
addressed to this RLOC of the EID-prefix and

 were decapsulated."
::= { lispMappingDatabaseLocatorEntry 9 }

lispMappingDatabaseLocatorRlocDecapPackets OBJECT-TYPE
SYNTAX Counter64
MAX-ACCESS read-only
STATUS current
DESCRIPTION
"The number of Lisp packets that were addressed
to this RLOC of the EID-prefix and were
decapsulated."
::= { lispMappingDatabaseLocatorEntry 10 }

lispMappingDatabaseLocatorRlocEncapOctets OBJECT-TYPE
SYNTAX Counter64
MAX-ACCESS read-only
STATUS current
DESCRIPTION
"The number of octets of Lisp packets that were encapsulated by this device using this RLOC address as the source, and that were sourced by an address of this EID-prefix."
::= { lispMappingDatabaseLocatorEntry 11 }

lispMappingDatabaseLocatorRlocEncapPackets OBJECT-TYPE
SYNTAX Counter64
MAX-ACCESS read-only
STATUS current
DESCRIPTION
"The number of Lisp packets that were encapsulated by this device using this RLOC address as the source, and that were sourced by an address of this EID-prefix."
::= { lispMappingDatabaseLocatorEntry 12 }

lispMapCacheTable OBJECT-TYPE
SYNTAX SEQUENCE OF LispMapCacheEntry
MAX-ACCESS not-accessible
STATUS current
DESCRIPTION
"This table represents the short-lived, on-demand table on an ITR that stores, tracks, and is responsible for timing-out and otherwise validating EID-to-RLOC mappings."
REFERENCE "[[LISP](#)]"
::= { lisp 4 }

lispMapCacheEntry OBJECT-TYPE
SYNTAX LispMapCacheEntry
MAX-ACCESS not-accessible
STATUS current
DESCRIPTION


```

        "An entry (conceptual row) in the lispMapCacheTable."
INDEX      { lispMapCacheEidLength,
             lispMapCacheEid }
 ::= { lispMapCacheTable 1 }

lispMapCacheEntry ::= SEQUENCE {
    lispMapCacheEidLength      Integer32,
    lispMapCacheEid           LispAddressType,
    lispMapCacheEidUpTime     TimeTicks,
    lispMapCacheEidExpiryTime TimeTicks,
    lispMapCacheEidState      TruthValue,
    lispMapCacheEidAuthoritative TruthValue,
    lispMapCacheDecapOctets   Counter64,
    lispMapCacheDecapPackets  Counter64,
    lispMapCacheEncapOctets   Counter64,
    lispMapCacheEncapPackets  Counter64
}

lispMapCacheEidLength OBJECT-TYPE
SYNTAX      Integer32
MAX-ACCESS not-accessible
STATUS      current
DESCRIPTION
    "This object is used to get the octet-length of
     lispMapCacheEid, the next object."
 ::= { lispMapCacheEntry 1 }

lispMapCacheEid OBJECT-TYPE
SYNTAX      LispAddressType
MAX-ACCESS not-accessible
STATUS      current
DESCRIPTION
    "The EID prefix in the mapping cache."
 ::= { lispMapCacheEntry 2 }

lispMapCacheEidUpTime OBJECT-TYPE
SYNTAX      TimeTicks
MAX-ACCESS read-only
STATUS      current
DESCRIPTION
    "The up time of the EID prefix."
 ::= { lispMapCacheEntry 3 }

```

lispMapCacheEidExpiryTime OBJECT-TYPE

SYNTAX TimeTicks

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"The time remaining before the ITR times-out
this EID prefix."

::= { lispMapCacheEntry 4 }

lispMapCacheEidState OBJECT-TYPE

SYNTAX TruthValue

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"This object is used to indicate the activity
of this EID prefix (0 = EID prefix is idle;
1 = EID prefix is active)."

::= { lispMapCacheEntry 5 }

lispMapCacheEidAuthoritative OBJECT-TYPE

SYNTAX TruthValue

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"This object is used to indicate whether the
EID prefix was installed by an authoritative
map-reply (0 = EID prefix was not installed by
an authoritative map-reply; 1 = EID prefix was
installed by an authoritative map-reply)."

::= { lispMapCacheEntry 6 }

lispMapCacheDecapOctets OBJECT-TYPE

SYNTAX Counter64

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"The number of octets of Lisp packets that were
decapsulated by this device and were sourced
from a remote host within this EID-prefix."

::= { lispMapCacheEntry 7 }

lispMapCacheDecapPackets OBJECT-TYPE

SYNTAX Counter64

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"The number of Lisp packets that were
decapsulated by this device and were sourced

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```
        from a remote host within this EID-prefix."
 ::= { lispMapCacheEntry 8 }
```

```
lispMapCacheEncapOctets OBJECT-TYPE
```

```
SYNTAX      Counter64
```

```
MAX-ACCESS read-only
```

```
STATUS      current
```

```
DESCRIPTION
```

```
    "The number of octets of Lisp packets that were
    encapsulated by this device using the given
    EID-prefix in the map cache."
```

```
 ::= { lispMapCacheEntry 9 }
```

```
lispMapCacheEncapPackets OBJECT-TYPE
```

```
SYNTAX      Counter64
```

```
MAX-ACCESS read-only
```

```
STATUS      current
```

```
DESCRIPTION
```

```
    "The number of Lisp packets that were encapsulated
    by this device using the given EID-prefix in the
    map cache."
```

```
 ::= { lispMapCacheEntry 10 }
```

```
lispMapCacheLocatorTable OBJECT-TYPE
```

```
SYNTAX      SEQUENCE OF LispMapCacheLocatorEntry
```

```
MAX-ACCESS not-accessible
```

```
STATUS      current
```

```
DESCRIPTION
```

```
    "This table represents the set of locators per EID
    prefix contained in the map-cache table of an ITR."
```

```
REFERENCE "[LISP]"
```

```
 ::= { lisp 5 }
```

```
lispMapCacheLocatorEntry OBJECT-TYPE
```

```
SYNTAX      LispMapCacheLocatorEntry
```

```
MAX-ACCESS not-accessible
```

```
STATUS      current
```

```
DESCRIPTION
```

```
    "An entry (conceptual row) in the
    lispMapCacheLocatorTable."
```

```
INDEX      { lispMapCacheEidLength,
```

```
        lispMapCacheEid,  
        lispMapCacheLocatorRlocLength,  
        lispMapCacheLocatorRloc }  
 ::= { lispMapCacheLocatorTable 1 }
```

```
LispMapCacheLocatorEntry ::= SEQUENCE {
```

```
    lispMapCacheLocatorRlocLength      Integer32,  
    lispMapCacheLocatorRloc           LispAddressType,  
    lispMapCacheLocatorRlocPriority    Integer32,  
    lispMapCacheLocatorRlocWeight     Integer32,  
    lispMapCacheLocatorRlocMPriority  Integer32,  
    lispMapCacheLocatorRlocMWeight   Integer32,  
    lispMapCacheLocatorRlocState      INTEGER,  
    lispMapCacheLocatorRlocUpTime     TimeTicks,  
    lispMapCacheLocatorRlocLastPriorityChange TimeTicks,  
    lispMapCacheLocatorRlocLastWeightChange TimeTicks,  
    lispMapCacheLocatorRlocLastMPriorityChange TimeTicks,  
    lispMapCacheLocatorRlocLastMWeightChange TimeTicks,  
    lispMapCacheLocatorRlocLastStateChange TimeTicks,  
    lispMapCacheLocatorRlocRtt       TimeTicks,  
    lispMapCacheLocatorRlocDecapOoctets Counter64,  
    lispMapCacheLocatorRlocDecapPackets Counter64,  
    lispMapCacheLocatorRlocEncapOoctets Counter64,  
    lispMapCacheLocatorRlocEncapPackets Counter64  
}
```

```
lispMapCacheLocatorRlocLength OBJECT-TYPE
```

```
SYNTAX      Integer32
```

```
MAX-ACCESS not-accessible
```

```
STATUS      current
```

```
DESCRIPTION
```

```
    "This object is used to get the octet-length of  
    lispMapCacheLocatorRloc, the next object."
```

```
 ::= { lispMapCacheLocatorEntry 1 }
```

```
lispMapCacheLocatorRloc OBJECT-TYPE
```

```
SYNTAX      LispAddressType
```

```
MAX-ACCESS not-accessible
```

```
STATUS      current
```

```
DESCRIPTION
```

```
    "The locator for the EID prefix in the mapping cache."
```

```
::= { lispMapCacheLocatorEntry 2 }
```

```
lispMapCacheLocatorRlocPriority OBJECT-TYPE
```

```
SYNTAX      Integer32
```

```
MAX-ACCESS  read-only
```

```
STATUS      current
```

```
DESCRIPTION
```

```
    "The unicast priority of the RLOC for this EID prefix  
    (0-255) lower more preferred. "
```

```
::= { lispMapCacheLocatorEntry 3 }
```

```
lispMapCacheLocatorRlocWeight OBJECT-TYPE
```

```
SYNTAX      Integer32
```

```
MAX-ACCESS  read-only
```

```
STATUS      current
```

```
DESCRIPTION
```

```
    "The unicast weight of the RLOC for this EID prefix  
    (0 - 100) percentage. "
```

```
::= { lispMapCacheLocatorEntry 4 }
```

```
lispMapCacheLocatorRlocMPriority OBJECT-TYPE
```

```
SYNTAX      Integer32
```

```
MAX-ACCESS  read-only
```

```
STATUS      current
```

```
DESCRIPTION
```

```
    "The multicast priority of the RLOC for this EID prefix."
```

```
::= { lispMapCacheLocatorEntry 5 }
```

```
lispMapCacheLocatorRlocMWeight OBJECT-TYPE
```

```
SYNTAX      Integer32
```

```
MAX-ACCESS  read-only
```

```
STATUS      current
```

```
DESCRIPTION
```

```
    "The multicast weight of the RLOC for this EID prefix."
```

```
::= { lispMapCacheLocatorEntry 6 }
```

```
lispMapCacheLocatorRlocState OBJECT-TYPE
```

```
SYNTAX      INTEGER {  
                down (0),  
                up (1)  
            }
```

MAX-ACCESS read-only
STATUS current
DESCRIPTION
 "The state of this RLOC as per this device
 (0 = RLOC is down; 1 = RLOC is up)."
::= { lispMapCacheLocatorEntry 7 }

lispMapCacheLocatorRlocUpTime OBJECT-TYPE
SYNTAX TimeTicks
MAX-ACCESS read-only
STATUS current
DESCRIPTION
 "The up-time of this RLOC."
::= { lispMapCacheLocatorEntry 8 }

lispMapCacheLocatorRlocLastPriorityChange OBJECT-TYPE
SYNTAX TimeTicks
MAX-ACCESS read-only
STATUS current
DESCRIPTION

 "Time since the last change of the unicast priority
 of the RLOC for this EID prefix."
::= { lispMapCacheLocatorEntry 9 }

lispMapCacheLocatorRlocLastWeightChange OBJECT-TYPE
SYNTAX TimeTicks
MAX-ACCESS read-only
STATUS current
DESCRIPTION
 "Time since the last change of the unicast weight of
 the RLOC for this EID prefix."
::= { lispMapCacheLocatorEntry 10 }

lispMapCacheLocatorRlocLastMPriorityChange OBJECT-TYPE
SYNTAX TimeTicks
MAX-ACCESS read-only
STATUS current
DESCRIPTION
 "Time since the last change of the multicast priority
 of the RLOC for this EID prefix."
::= { lispMapCacheLocatorEntry 11 }

lispMapCacheLocatorRlocLastMWeightChange OBJECT-TYPE
SYNTAX TimeTicks
MAX-ACCESS read-only
STATUS current
DESCRIPTION
"Time since the last change of the multicast weight
of the RLOC for this EID prefix."
::= { lispMapCacheLocatorEntry 12 }

lispMapCacheLocatorRlocLastStateChange OBJECT-TYPE
SYNTAX TimeTicks
MAX-ACCESS read-only
STATUS current
DESCRIPTION
"Time since the last change of the up/down state of
the RLOC for this EID prefix."
::= { lispMapCacheLocatorEntry 13 }

lispMapCacheLocatorRlocRtt OBJECT-TYPE
SYNTAX TimeTicks
MAX-ACCESS read-only
STATUS current
DESCRIPTION
"Round trip time of RLOC probe and map-reply for
this RLOC address for this prefix."
::= { lispMapCacheLocatorEntry 14 }

lispMapCacheLocatorRlocDecapOctets OBJECT-TYPE
SYNTAX Counter64
MAX-ACCESS read-only
STATUS current
DESCRIPTION
"The number of octets of Lisp packets that were
decapsulated by this device and were sourced
from a remote host within this EID-prefix and
were encapsulated for this RLOC."
::= { lispMapCacheLocatorEntry 15 }

lispMapCacheLocatorRlocDecapPackets OBJECT-TYPE
SYNTAX Counter64
MAX-ACCESS read-only

STATUS current
DESCRIPTION
"The number of Lisp packets that were decapsulated
by this device and were sourced from a remote host
within this EID-prefix and were encapsulated for
this RLOC."
::= { lispMapCacheLocatorEntry 16 }

lispMapCacheLocatorRlocEncapOctets OBJECT-TYPE

SYNTAX Counter64
MAX-ACCESS read-only
STATUS current
DESCRIPTION
"The number of octets of Lisp packets that matched
this EID-prefix and were encapsulated using this
RLOC address."
::= { lispMapCacheLocatorEntry 17 }

lispMapCacheLocatorRlocEncapPackets OBJECT-TYPE

SYNTAX Counter64
MAX-ACCESS read-only
STATUS current
DESCRIPTION
"The number of Lisp packets that matched this EID
prefix and were encapsulated using this RLOC address."
::= { lispMapCacheLocatorEntry 18 }

lispEidRegistrationTable OBJECT-TYPE

SYNTAX SEQUENCE OF LispEidRegistrationEntry
MAX-ACCESS not-accessible
STATUS current
DESCRIPTION
"This table provides the properties of each lisp EID

prefix that is registered with this device when
configured to be a Map-Server."

REFERENCE "[[LISP](#)]"

::= { lisp 6 }

lispEidRegistrationEntry OBJECT-TYPE

SYNTAX LispEidRegistrationEntry


```

MAX-ACCESS not-accessible
STATUS      current
DESCRIPTION
    "An entry (conceptual row) in the lispEidRegistrationTable."
INDEX       { lispEidRegistrationEidLength,
              lispEidRegistrationEid }
 ::= { lispEidRegistrationTable 1 }

lispEidRegistrationEntry ::= SEQUENCE {
    lispEidRegistrationEidLength      Integer32,
    lispEidRegistrationEid           LispAddressType,
    lispEidRegistrationSiteName      OCTET STRING,
    lispEidRegistrationSiteDescription OCTET STRING,
    lispEidRegistrationIsRegistered  TruthValue,
    lispEidRegistrationFirstRegisterTime TimeTicks,
    lispEidRegistrationLastRegisterTime TimeTicks,
    lispEidRegistrationLastRegisterSenderLength Integer32,
    lispEidRegistrationLastRegisterSender LispAddressType,
    lispEidRegistrationRouteTag      Unsigned32
    lispEidRegistrationAuthenticationErrors Counter64,
    lispEidRegistrationRlocsMismatch Counter64
}

lispEidRegistrationEidLength OBJECT-TYPE
SYNTAX      Integer32
MAX-ACCESS not-accessible
STATUS      current
DESCRIPTION
    "This object is used to get the octet-length of
    lispEidRegistrationEid, the next object."
 ::= { lispEidRegistrationEntry 1 }

lispEidRegistrationEid OBJECT-TYPE
SYNTAX      LispAddressType
MAX-ACCESS not-accessible
STATUS      current
DESCRIPTION
    "The EID prefix that is being registered."
 ::= { lispEidRegistrationEntry 2 }

lispEidRegistrationSiteName OBJECT-TYPE

```

```
SYNTAX      OCTET STRING (SIZE(0..63))
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
    "Site name used by a Map-Server to distinguish
    different lisp sites that are registering with it."
 ::= { lispEidRegistrationEntry 3 }

lispEidRegistrationSiteDescription OBJECT-TYPE
SYNTAX      OCTET STRING (SIZE(0..255))
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
    "Description for a site name used by a Map-Server. The EID
    prefix that is being registered belongs to this site."
 ::= { lispEidRegistrationEntry 4 }

lispEidRegistrationIsRegistered OBJECT-TYPE
SYNTAX      TruthValue
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
    "Indicates the registration status of the
    given EID prefix (0 = EID prefix is not
    registered; 1 = EID prefix is registered)."
 ::= { lispEidRegistrationEntry 5 }

lispEidRegistrationFirstRegisterTime OBJECT-TYPE
SYNTAX      TimeTicks
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
    "Time since a first valid register message for
    the given EID prefix was received by this device."
 ::= { lispEidRegistrationEntry 6 }

lispEidRegistrationLastRegisterTime OBJECT-TYPE
SYNTAX      TimeTicks
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
    "Time since the last valid register message for
    the given EID prefix was received by this device."
 ::= { lispEidRegistrationEntry 7 }

lispEidRegistrationLastRegisterSenderIdLength OBJECT-TYPE
SYNTAX      Integer32
MAX-ACCESS  read-only
```

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```
STATUS      current
DESCRIPTION
    "This object is used to get the octet-length of
    lispEidRegistrationLastRegisterSender, the next object."
 ::= { lispEidRegistrationEntry 8 }

lispEidRegistrationLastRegisterSender OBJECT-TYPE
SYNTAX      LispAddressType
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
    "Source address of the last valid register message
    for the given EID prefix that was received by
    this device."
 ::= { lispEidRegistrationEntry 9 }

lispEidRegistrationRouteTag OBJECT-TYPE
SYNTAX      Unsigned32
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
    "Value of the routing table tag assigned to the
    given EID prefix."
 ::= { lispEidRegistrationEntry 10 }

lispEidRegistrationAuthenticationErrors OBJECT-TYPE
SYNTAX      Counter64
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
    "Count of total authentication errors of
    map-registers received for the given EID
    prefix."
 ::= { lispEidRegistrationEntry 11 }

lispEidRegistrationRlocsMismatch OBJECT-TYPE
SYNTAX      Counter64
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
    "Count of total map-registers received that had at
    least one RLOC that was not in the allowed list of
    RLOCs for the given EID prefix."
```

```
::= { lispEidRegistrationEntry 12 }
```

```
lispEidRegistrationEtrTable OBJECT-TYPE  
SYNTAX SEQUENCE OF LispEidRegistrationEtrEntry
```

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```
MAX-ACCESS not-accessible  
STATUS current  
DESCRIPTION
```

```
"This table provides the properties of ETRs that register  
the given EID prefix with this device when configured to  
be a Map-Server."
```

```
REFERENCE "[LISP]"
```

```
::= { lisp 7 }
```

```
lispEidRegistrationEtrEntry OBJECT-TYPE  
SYNTAX LispEidRegistrationEtrEntry  
MAX-ACCESS not-accessible  
STATUS current  
DESCRIPTION
```

```
"An entry (conceptual row) in the lispEidRegistrationTable."
```

```
INDEX { lispEidRegistrationEidLength,  
        lispEidRegistrationEid,  
        lispEidRegistrationEtrSenderLength,  
        lispEidRegistrationEtrSender }
```

```
::= { lispEidRegistrationEtrTable 1 }
```

```
LispEidRegistrationEtrEntry ::= SEQUENCE {  
    lispEidRegistrationEtrSenderLength Integer32,  
    lispEidRegistrationEtrSender LispAddressType,  
    lispEidRegistrationEtrLastRegisterTime TimeTicks,  
    lispEidRegistrationEtrTtl TimeTicks,  
    lispEidRegistrationEtrProxyReply TruthValue,  
    lispEidRegistrationEtrWantsMapNotify TruthValue  
}
```

```
lispEidRegistrationEtrSenderLength OBJECT-TYPE  
SYNTAX Integer32  
MAX-ACCESS not-accessible  
STATUS current  
DESCRIPTION
```

```
"This object is used to get the octet-length of
```

```
        lispEidRegistrationEtrSender, the next object."
 ::= { lispEidRegistrationEtrEntry 1 }
```

```
lispEidRegistrationEtrSender OBJECT-TYPE
SYNTAX      LispAddressType
MAX-ACCESS  not-accessible
STATUS      current
DESCRIPTION
    "Source address of the ETR that is sending valid register
    messages for this EID prefix to this device."
 ::= { lispEidRegistrationEtrEntry 2 }
```

```
lispEidRegistrationEtrLastRegisterTime OBJECT-TYPE
SYNTAX      TimeTicks
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
    "Time since the last valid register message from this ETR
    for the given EID prefix was received by this device."
 ::= { lispEidRegistrationEtrEntry 3 }
```

```
lispEidRegistrationEtrTtl OBJECT-TYPE
SYNTAX      TimeTicks
MAX-ACCESS  read-only
STATUS      current
    "Time in minutes of the Record TTL of the
    registering ETR device for this EID prefix."
 ::= { lispEidRegistrationEtrEntry 4 }
```

```
lispEidRegistrationEtrProxyReply OBJECT-TYPE
SYNTAX      TruthValue
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
    "Indicates proxy-replying status of the registering
    ETR for this EID prefix. (0 = Map-Server should not
    proxy-reply; 1 = Map-Server may proxy-reply)."
 ::= { lispEidRegistrationEtrEntry 5 }
```

```
lispEidRegistrationEtrWantsMapNotify OBJECT-TYPE
SYNTAX      TruthValue
```

MAX-ACCESS read-only
 STATUS current
 DESCRIPTION
 "Indicates whether the EID prefix wants
 Map-Notifications (0 = EID prefix does not want
 Map-Notifications; 1 = EID prefix wants
 Map-Notifications)."
 ::= { lispEidRegistrationEtrEntry 6 }

lispEidRegistrationLocatorTable OBJECT-TYPE
 SYNTAX SEQUENCE OF LispEidRegistrationLocatorEntry
 MAX-ACCESS not-accessible
 STATUS current
 DESCRIPTION
 "This table provides the properties of all locators
 per lisp site that are served by this device when
 configured to be a Map-Server."
 REFERENCE "[[LISP](#)]"

::= { lisp 8 }

lispEidRegistrationLocatorEntry OBJECT-TYPE
 SYNTAX LispEidRegistrationLocatorEntry
 MAX-ACCESS not-accessible
 STATUS current
 DESCRIPTION
 "An entry (conceptual row) in the
 lispEidRegistrationLocatorTable."
 INDEX { lispEidRegistrationEidLength,
 lispEidRegistrationEid,
 lispEidRegistrationEtrSenderLength,
 lispEidRegistrationEtrSender,
 lispEidRegistrationLocatorRlocLength,
 lispEidRegistrationLocatorRloc }
 ::= { lispEidRegistrationLocatorTable 1 }

LispEidRegistrationLocatorEntry ::= SEQUENCE {
 lispEidRegistrationLocatorRlocLength Integer32,
 lispEidRegistrationLocatorRloc LispAddressType,
 lispEidRegistrationLocatorRlocState INTEGER,
 lispEidRegistrationLocatorIsLocal TruthValue,

```

    lispEidRegistrationLocatorPriority          Integer32,
    lispEidRegistrationLocatorWeight          Integer32,
    lispEidRegistrationLocatorMPriority       Integer32,
    lispEidRegistrationLocatorMWeight        Integer32
}

```

lispEidRegistrationLocatorRlocLength OBJECT-TYPE

SYNTAX Integer32

MAX-ACCESS not-accessible

STATUS current

DESCRIPTION

"This object is used to get the octet-length of
lispEidRegistrationLocatorRloc, the next object."

::= { lispEidRegistrationLocatorEntry 1 }

lispEidRegistrationLocatorRloc OBJECT-TYPE

SYNTAX LispAddressType

MAX-ACCESS not-accessible

STATUS current

DESCRIPTION

"The locator of the given EID prefix being registered by
the given ETR with this device."

::= { lispEidRegistrationLocatorEntry 2 }

lispEidRegistrationLocatorRlocState OBJECT-TYPE

SYNTAX INTEGER {

```

        down (0),
        up (1)
    }

```

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"The cached state of this RLOC received in
map-register from the ETR by the device, in the
capacity of a Map-Server. Value 0 refers to down,
value 1 refers to up."

::= { lispEidRegistrationLocatorEntry 3 }

lispEidRegistrationLocatorIsLocal OBJECT-TYPE

SYNTAX TruthValue

MAX-ACCESS read-only

STATUS current
DESCRIPTION
"Indicates if the given locator is local to the
registering ETR. Value 1 implies local, value 0
implies not local."
::= { lispEidRegistrationLocatorEntry 4 }

lispEidRegistrationLocatorRlocPriority OBJECT-TYPE
SYNTAX Integer32
MAX-ACCESS read-only
STATUS current
DESCRIPTION
"The unicast priority of the RLOC for this EID prefix
in the register message sent by the given ETR."
::= { lispEidRegistrationLocatorEntry 5 }

lispEidRegistrationLocatorRlocWeight OBJECT-TYPE
SYNTAX Integer32
MAX-ACCESS read-only
STATUS current
DESCRIPTION
"The unicast weight of the RLOC for this EID prefix
in the register message sent by the given ETR."
::= { lispEidRegistrationLocatorEntry 6 }

lispEidRegistrationLocatorRlocMPriority OBJECT-TYPE
SYNTAX Integer32
MAX-ACCESS read-only
STATUS current
DESCRIPTION
"The multicast priority of the RLOC for this EID prefix
in the register message sent by the given ETR."
::= { lispEidRegistrationLocatorEntry 7 }

lispEidRegistrationLocatorRlocMWeight OBJECT-TYPE
SYNTAX Integer32
MAX-ACCESS read-only
STATUS current
DESCRIPTION
"The multicast weight of the RLOC for this EID prefix
in the register message sent by the given ETR."
::= { lispEidRegistrationLocatorEntry 8 }


```

lispUseMapServerTable OBJECT-TYPE
    SYNTAX      SEQUENCE OF LispMapServersEntry
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
        "This table provides the properties of the
         map-server(s) with which this device is
         configured to register."
    REFERENCE "[LISP]"
    ::= { lisp 9 }

```

```

lispUseMapServerEntry OBJECT-TYPE
    SYNTAX      LispMapServersEntry
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
        "An entry (conceptual row) in the lispUseMapServerTable."
    INDEX       { lispUseMapServerAddressLength,
                  lispUseMapServerAddress }
    ::= { lispUseMapServerTable 1 }

```

```

LispMapServersEntry ::= SEQUENCE {
    lispUseMapServerAddressLength Integer32,
    lispUseMapServerAddress      LispAddressType,
    lispUseMapServerState        INTEGER
}

```

```

lispUseMapServerAddressLength OBJECT-TYPE
    SYNTAX      Integer32
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
        "This object is used to get the octet-length of
         lispUseMapServerAddress, the next object."
    ::= { lispUseMapServerEntry 1 }

```

```

lispUseMapServerAddress OBJECT-TYPE
    SYNTAX      LispAddressType

```

```

STATUS      current
DESCRIPTION
    "Address of Map-Server configured on this device."
 ::= { lispUseMapServerEntry 2 }

lispUseMapServerState OBJECT-TYPE
SYNTAX      INTEGER {
                down (0),
                up (1)
            }
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
    "State of this Map-Server configured on this
     device (0 = Map-Server is down; 1 = Map-Server
     is up)."
```

```

 ::= { lispUseMapServerEntry 3 }

lispUseMapResolverTable OBJECT-TYPE
SYNTAX      SEQUENCE OF LispMapResolversEntry
MAX-ACCESS  not-accessible
STATUS      current
DESCRIPTION
    "This table provides the properties of the
     map-resolver(s) this device is configured to use."
REFERENCE "[LISP]"
 ::= { lisp 10 }

lispUseMapResolverEntry OBJECT-TYPE
SYNTAX      LispMapResolversEntry
MAX-ACCESS  not-accessible
STATUS      current
DESCRIPTION
    "An entry (conceptual row) in the
     lispUseMapResolverTable."
INDEX       { lispUseMapResolverAddressLength,
              lispUseMapResolverAddress }
 ::= { lispUseMapResolverTable 1 }

LispMapResolversEntry ::= SEQUENCE {
    lispUseMapResolverAddressLength  Integer32,
    lispUseMapResolverAddress        LispAddressType,
    lispUseMapResolverState          INTEGER
}

lispUseMapResolverAddressLength OBJECT-TYPE
```

```
SYNTAX      Integer32
MAX-ACCESS  not-accessible
STATUS      current
DESCRIPTION
    "This object is used to get the octet-length of
    lispUseMapResolverAddress, the next object."
 ::= { lispUseMapResolverEntry 1 }
```

```
lispUseMapResolverAddress OBJECT-TYPE
SYNTAX      LispAddressType
MAX-ACCESS  not-accessible
STATUS      current
DESCRIPTION
    "Address of map-resolver configured on this device."
 ::= { lispUseMapResolverEntry 2 }
```

```
lispUseMapResolverState OBJECT-TYPE
SYNTAX      INTEGER {
                down (0),
                up (1)
            }
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
    "State of this Map-Resolver configured on this device
    (0 = Map-Resolver is down; 1 = Map-Resolver is up)."
 ::= { lispUseMapResolverEntry 3 }
```

```
lispUseProxyEtrTable OBJECT-TYPE
SYNTAX      SEQUENCE OF LispUseProxyEtrEntry
MAX-ACCESS  not-accessible
STATUS      current
DESCRIPTION
    "This table provides the properties of all
    Proxy ETRs that this device is configured
    to use."
REFERENCE "[LISP]"
 ::= { lisp 11 }
```

```
lispUseProxyEtrEntry OBJECT-TYPE
SYNTAX      LispUseProxyEtrEntry
MAX-ACCESS  not-accessible
STATUS      current
DESCRIPTION
    "An entry (conceptual row) in the lispUseProxyEtrTable."
```

INDEX { lispUseProxyEtrAddressLength,
lispUseProxyEtrAddress }

::= { lispUseProxyEtrTable 1 }

lispUseProxyEtrEntry ::= SEQUENCE {
lispUseProxyEtrAddressLength Integer32,
lispUseProxyEtrAddress LispAddressType,
lispUseProxyEtrPriority Integer32,
lispUseProxyEtrWeight Integer32,
lispUseProxyEtrMPriority Integer32,
lispUseProxyEtrMWeight Integer32,
lispUseProxyEtrState INTEGER
}

lispUseProxyEtrAddressLength OBJECT-TYPE

SYNTAX Integer32

MAX-ACCESS not-accessible

STATUS current

DESCRIPTION

"This object is used to get the octet-length of
lispUseProxyEtrAddress, the next object."

::= { lispUseProxyEtrEntry 1 }

lispUseProxyEtrAddress OBJECT-TYPE

SYNTAX LispAddressType

MAX-ACCESS not-accessible

STATUS current

DESCRIPTION

"Address of Proxy ETR configured on this device."

::= { lispUseProxyEtrEntry 2 }

lispUseProxyEtrPriority OBJECT-TYPE

SYNTAX Integer32

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"The unicast priority of the PETR locator."

::= { lispUseProxyEtrEntry 3 }

lispUseProxyEtrWeight OBJECT-TYPE

SYNTAX Integer32

```
MAX-ACCESS read-only
STATUS current
DESCRIPTION
    "The unicast weight of the PETR locator."
 ::= { lispUseProxyEtrEntry 4 }
```

```
lispUseProxyEtrMPriority OBJECT-TYPE
SYNTAX Integer32
MAX-ACCESS read-only
```

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```
STATUS current
DESCRIPTION
    "The multicast priority of the PETR locator."
 ::= { lispUseProxyEtrEntry 5 }
```

```
lispUseProxyEtrMWeight OBJECT-TYPE
SYNTAX Integer32
MAX-ACCESS read-only
STATUS current
DESCRIPTION
    "The multicast weight of the PETR locator."
 ::= { lispUseProxyEtrEntry 6 }
```

```
lispUseProxyEtrState OBJECT-TYPE
SYNTAX INTEGER {
    down (0),
    up (1)
}
MAX-ACCESS read-only
STATUS current
DESCRIPTION
    "State of this Proxy ETR configured on this device
    (0 = Proxy ETR is down; 1 = Proxy ETR is up)."
```

```
 ::= { lispUseProxyEtrEntry 7 }
```

```
--
-- Conformance Information
--
```

```
lispMIBConformance OBJECT IDENTIFIER ::= { lispMIB 2 }
lispMIBCompliances OBJECT IDENTIFIER ::= { lispMIBConformance 1 }
```

lispMIBGroups OBJECT IDENTIFIER ::= { lispMIBConformance 2 }

--

-- Compliance Statements

--

```
lispMIBComplianceEtr MODULE-COMPLIANCE
  STATUS current
  DESCRIPTION
    "The compliance statement for LISP ETRs."
  MODULE -- this module
  MANDATORY-GROUPS { lispMIBetrGroup }

  GROUP lispMIBItrGroup
  DESCRIPTION
```

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"This group is optional."

```
GROUP lispMIBPetrGroup
DESCRIPTION
  "This group is optional."
```

```
GROUP lispMIBPitrGroup
DESCRIPTION
  "This group is optional."
```

```
GROUP lispMIBMapServerGroup
DESCRIPTION
  "This group is optional."
```

```
GROUP lispMIBMapResolverGroup
DESCRIPTION
  "This group is optional."
```

```
GROUP lispMIBetrExtendedGroup
DESCRIPTION
  "This group is optional."
```

```
GROUP lispMIBItrExtendedGroup
DESCRIPTION
  "This group is optional."
```

GROUP lispMIBMapServerExtendedGroup
DESCRIPTION
"This group is optional."

GROUP lispMIBTuningParametersGroup
DESCRIPTION
"This group is optional."

GROUP lispMIBEncapStatisticsGroup
DESCRIPTION
"This group is optional."

GROUP lispMIBDecapStatisticsGroup
DESCRIPTION
"This group is optional."

GROUP lispMIBDiagnosticsGroup
DESCRIPTION
"This group is optional."

::= { lispMIBCompliances 1 }

lispMIBComplianceItr MODULE-COMPLIANCE
STATUS current
DESCRIPTION
"The compliance statement for LISP ITRs."
MODULE -- this module
MANDATORY-GROUPS { lispMIBItrGroup }

GROUP lispMIBetrGroup
DESCRIPTION
"This group is optional."

GROUP lispMIBPetrGroup
DESCRIPTION
"This group is optional."

GROUP lispMIBPitrGroup
DESCRIPTION
"This group is optional."

GROUP lispMIBMapServerGroup
DESCRIPTION
"This group is optional."

GROUP lispMIBMapResolverGroup
DESCRIPTION
"This group is optional."

GROUP lispMIBEtrExtendedGroup
DESCRIPTION
"This group is optional."

GROUP lispMIBItrExtendedGroup
DESCRIPTION
"This group is optional."

GROUP lispMIBMapServerExtendedGroup
DESCRIPTION
"This group is optional."

GROUP lispMIBTuningParametersGroup
DESCRIPTION
"This group is optional."

GROUP lispMIBEncapStatisticsGroup
DESCRIPTION
"This group is optional."

GROUP lispMIBDecapStatisticsGroup

DESCRIPTION
"This group is optional."

GROUP lispMIBDiagnosticsGroup
DESCRIPTION
"This group is optional."

::= { lispMIBCompliances 2 }

lispMIBCompliancePetr MODULE-COMPLIANCE
STATUS current


```
DESCRIPTION
    "The compliance statement for LISP Proxy-ETRs."
MODULE -- this module
MANDATORY-GROUPS { lispMIBPetrGroup }

GROUP lispMIBetrGroup
DESCRIPTION
    "This group is optional."

GROUP lispMIBitrGroup
DESCRIPTION
    "This group is optional."

GROUP lispMIBPitrGroup
DESCRIPTION
    "This group is optional."

GROUP lispMIBMapServerGroup
DESCRIPTION
    "This group is optional."

GROUP lispMIBMapResolverGroup
DESCRIPTION
    "This group is optional."

GROUP lispMIBetrExtendedGroup
DESCRIPTION
    "This group is optional."

GROUP lispMIBitrExtendedGroup
DESCRIPTION
    "This group is optional."

GROUP lispMIBMapServerExtendedGroup
DESCRIPTION
    "This group is optional."
```

```
GROUP lispMIBTuningParametersGroup
DESCRIPTION
    "This group is optional."
```

```

GROUP    lispMIBEncapStatisticsGroup
DESCRIPTION
    "This group is optional."

GROUP    lispMIBDecapStatisticsGroup
DESCRIPTION
    "This group is optional."

GROUP    lispMIBDiagnosticsGroup
DESCRIPTION
    "This group is optional."

 ::= { lispMIBCompliances 3 }

lispMIBCompliancePitr MODULE-COMPLIANCE
STATUS   current
DESCRIPTION
    "The compliance statement for LISP Proxy-ITRs."
MODULE   -- this module
MANDATORY-GROUPS { lispMIBPitrGroup }

GROUP    lispMIBEtrGroup
DESCRIPTION
    "This group is optional."

GROUP    lispMIBItrGroup
DESCRIPTION
    "This group is optional."

GROUP    lispMIBPetrGroup
DESCRIPTION
    "This group is optional."

GROUP    lispMIBMapServerGroup
DESCRIPTION
    "This group is optional."

GROUP    lispMIBMapResolverGroup
DESCRIPTION
    "This group is optional."

GROUP    lispMIBEtrExtendedGroup
DESCRIPTION
    "This group is optional."

```

```
GROUP    lispMIBItrExtendedGroup
DESCRIPTION
    "This group is optional."
```

```
GROUP    lispMIBMapServerExtendedGroup
DESCRIPTION
    "This group is optional."
```

```
GROUP    lispMIBTuningParametersGroup
DESCRIPTION
    "This group is optional."
```

```
GROUP    lispMIBEncapStatisticsGroup
DESCRIPTION
    "This group is optional."
```

```
GROUP    lispMIBDecapStatisticsGroup
DESCRIPTION
    "This group is optional."
```

```
GROUP    lispMIBDiagnosticsGroup
DESCRIPTION
    "This group is optional."
```

```
::= { lispMIBCompliances 4 }
```

```
lispMIBComplianceMapServer MODULE-COMPLIANCE
```

```
STATUS current
DESCRIPTION
    "The compliance statement for LISP Map Servers."
MODULE -- this module
MANDATORY-GROUPS { lispMIBMapServerGroup }
```

```
GROUP    lispMIBEtrGroup
DESCRIPTION
    "This group is optional."
```

```
GROUP    lispMIBItrGroup
DESCRIPTION
    "This group is optional."
```

```
GROUP    lispMIBPetrGroup
DESCRIPTION
    "This group is optional."
```

```
GROUP    lispMIBPitrGroup
DESCRIPTION
```

"This group is optional."

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GROUP lispMIBMapResolverGroup

DESCRIPTION

"This group is optional."

GROUP lispMIBetrExtendedGroup

DESCRIPTION

"This group is optional."

GROUP lispMIBitrExtendedGroup

DESCRIPTION

"This group is optional."

GROUP lispMIBMapServerExtendedGroup

DESCRIPTION

"This group is optional."

GROUP lispMIBTuningParametersGroup

DESCRIPTION

"This group is optional."

GROUP lispMIBEncapStatisticsGroup

DESCRIPTION

"This group is optional."

GROUP lispMIBDecapStatisticsGroup

DESCRIPTION

"This group is optional."

GROUP lispMIBDiagnosticsGroup

DESCRIPTION

"This group is optional."

::= { lispMIBCompliances 5 }

lispMIBComplianceMapResolver MODULE-COMPLIANCE

STATUS current

DESCRIPTION

"The compliance statement for LISP Map Resolvers."

MODULE -- this module

MANDATORY-GROUPS { lispMIBMapResolverGroup }

GROUP lispMIBetrGroup
DESCRIPTION
"This group is optional."

GROUP lispMIBitrGroup
DESCRIPTION
"This group is optional."

GROUP lispMIBPetrGroup
DESCRIPTION
"This group is optional."

GROUP lispMIBPitrGroup
DESCRIPTION
"This group is optional."

GROUP lispMIBMapServerGroup
DESCRIPTION
"This group is optional."

GROUP lispMIBetrExtendedGroup
DESCRIPTION
"This group is optional."

GROUP lispMIBitrExtendedGroup
DESCRIPTION
"This group is optional."

GROUP lispMIBMapServerExtendedGroup
DESCRIPTION
"This group is optional."

GROUP lispMIBTuningParametersGroup
DESCRIPTION
"This group is optional."

GROUP lispMIBEncapStatisticsGroup
DESCRIPTION
"This group is optional."

GROUP lispMIBDecapStatisticsGroup

DESCRIPTION
"This group is optional."

GROUP lispMIBDiagnosticsGroup
DESCRIPTION
"This group is optional."

::= { lispMIBCompliances 6 }

--
-- Units of Conformance
--

lispMIBetrGroup OBJECT-GROUP

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OBJECTS { lispFeaturesEtrEnabled,
lispMappingDatabaseLsb,
lispMappingDatabaseLocatorRlocPriority,
lispMappingDatabaseLocatorRlocWeight,
lispMappingDatabaseLocatorRlocMPriority,
lispMappingDatabaseLocatorRlocMWeight,
lispMappingDatabaseLocatorRlocState,
lispMappingDatabaseLocatorRlocLocal,
lispUseMapServerState
}

STATUS current

DESCRIPTION

"A collection of objects to support basic
management of LISP ETRs."

::= { lispMIBGroups 1 }

lispMIBitrGroup OBJECT-GROUP

OBJECTS { lispFeaturesItrEnabled,
lispMapCacheSize,
lispMappingDatabaseLsb,
lispMapCacheLocatorRlocPriority,
lispMapCacheLocatorRlocWeight,
lispMapCacheLocatorRlocMPriority,
lispMapCacheLocatorRlocMWeight,
lispMapCacheLocatorRlocState,
lispMapCacheEidUpTime,

```

        lispMapCacheEidExpiryTime,
        lispUseMapResolverState,
        lispUseProxyEtrState
    }
STATUS current
DESCRIPTION
    "A collection of objects to support basic
    management of LISP ITRs."
::= { lispMIBGroups 2 }

lispMIBPetrGroup OBJECT-GROUP
OBJECTS { lispFeaturesProxyEtrEnabled
}
STATUS current
DESCRIPTION
    "A collection of objects to support basic
    management of LISP Proxy-ETRs."
::= { lispMIBGroups 3 }

lispMIBPitrGroup OBJECT-GROUP
OBJECTS { lispFeaturesProxyItrEnabled
}

```

```

STATUS current
DESCRIPTION
    "A collection of objects to support basic
    management of LISP Proxy-ITRs."
::= { lispMIBGroups 4 }

lispMIBMapServerGroup OBJECT-GROUP
OBJECTS { lispFeaturesMapServerEnabled,
        lispEidRegistrationEidRegisterState,
        lispEidRegistrationLocatorRlocState,
        lispEidRegistrationLocatorRlocPriority,
        lispEidRegistrationLocatorRlocWeight,
        lispEidRegistrationLocatorRlocMPriority,
        lispEidRegistrationLocatorRlocMWeight,
        lispEidRegistrationLocatorRlocRegisterState
}
STATUS current
DESCRIPTION
    "A collection of objects to support basic

```

```
management of LISP Map Servers."
 ::= { lispMIBGroups 5 }
```

```
lispMIBMapResolverGroup OBJECT-GROUP
  OBJECTS { lispFeaturesMapResolverEnabled
            }
  STATUS current
  DESCRIPTION
    "A collection of objects to support basic
    management of LISP Map Resolvers."
  ::= { lispMIBGroups 6 }
```

```
lispMIBetrExtendedGroup OBJECT-GROUP
  OBJECTS { lispFeaturesRlocProbeEnabled,
            lispFeaturesEtrAcceptMapDataEnabled,
            lispFeaturesEtrAcceptMapDataVerifyEnabled,
            lispMappingDatabaseEidPartitioned
            }
  STATUS current
  DESCRIPTION
    "A collection of objects to support management
    of LISP features and properties on ETRs."
  ::= { lispMIBGroups 7 }
```

```
lispMIBitrExtendedGroup OBJECT-GROUP
  OBJECTS { lispFeaturesRlocProbeEnabled,
            lispMapCacheEidState,
            lispMapCacheEidAuthoritative,
```

```
lispMapCacheLocatorRlocUpTime,
lispMapCacheLocatorRlocLastPriorityChange,
lispMapCacheLocatorRlocLastWeightChange,
lispMapCacheLocatorRlocLastMPriorityChange,
lispMapCacheLocatorRlocLastMWeightChange,
lispMapCacheLocatorRlocLastStateChange,
lispMapCacheLocatorRlocRtt
}
STATUS current
DESCRIPTION
  "A collection of objects to support management
  of LISP features and properties on ITRs."
```



```

 ::= { lispMIBGroups 8 }

lispMIBMapServerExtendedGroup OBJECT-GROUP
  OBJECTS { lispEidRegistrationDescription,
            lispEidRegistrationEidFirstRegisterTime,
            lispEidRegistrationEidRegisterSenderLength,
            lispEidRegistrationEidRegisterSender,
            lispEidRegistrationEidRouteTag,
            lispEidRegistrationEidWantsMapNotifies,
            lispEidRegistrationLocatorRlocFirstRegisterTime,
            lispEidRegistrationLocatorRlocLastRegisterTime,
            lispEidRegistrationLocatorRlocProxyReply
          }
  STATUS current
  DESCRIPTION
    "A collection of objects to support management
    of LISP features and properties on Map Servers."
  ::= { lispMIBGroups 9 }

lispMIBTuningParametersGroup OBJECT-GROUP
  OBJECTS { lispFeaturesMapCacheLimit,
            lispFeaturesEtrMapCacheTtl
          }
  STATUS current
  DESCRIPTION
    "A collection of writeable objects used to
    configure LISP behavior and to tune performance."
  ::= { lispMIBGroups 10 }

lispMIBEncapStatisticsGroup OBJECT-GROUP
  OBJECTS { lispMappingDatabaseEncapOctets,
            lispMappingDatabaseEncapPackets,
            lispMappingDatabaseLocatorRlocEncapOctets,
            lispMappingDatabaseLocatorRlocEncapPackets,
            lispMapCacheEncapOctets,
            lispMapCacheEncapPackets,

```

```

            lispMapCacheLocatorRlocEncapOctets,
            lispMapCacheLocatorRlocEncapPackets
          }
  STATUS current
  DESCRIPTION

```

```

        "A collection of LISP encapsulation statistics
        by the device."
 ::= { lispMIBGroups 11 }

lispMIBDecapStatisticsGroup OBJECT-GROUP
  OBJECTS { lispMappingDatabaseDecapOctets,
            lispMappingDatabaseDecapPackets,
            lispMappingDatabaseLocatorRlocDecapOctets,
            lispMappingDatabaseLocatorRlocDecapPackets,
            lispMapCacheDecapOctets,
            lispMapCacheDecapPackets,
            lispMapCacheLocatorRlocDecapOctets,
            lispMapCacheLocatorRlocDecapPackets
          }
  STATUS current
  DESCRIPTION
    "A collection of LISP decapsulation statistics
    by the device."
 ::= { lispMIBGroups 12 }

lispMIBDiagnosticsGroup OBJECT-GROUP
  OBJECTS { lispFeaturesMapRequestsIn,
            lispFeaturesMapRequestsOut,
            lispFeaturesMapRepliesIn,
            lispFeaturesMapRepliesOut,
            lispFeaturesMapRegistersIn,
            lispFeaturesMapRegistersOut,
            lispEidRegistrationEidAuthenticationErrors,
            lispEidRegistrationEidRegisterRlocsMismatch
          }
  STATUS current
  DESCRIPTION
    "Objects providing additional diagnostics related
    to a LISP router."
 ::= { lispMIBGroups 13 }

```

END

8. Relationship to Other MIB Modules

8.1. MIB modules required for IMPORTS

The LISP MIB imports the textual-convention AddressFamilyNumbers from the IANA-ADDRESS-FAMILY-NUMBERS-MIB [[IANA](#)].

9. Security Considerations

There are no management objects defined in this MIB module that have a MAX-ACCESS clause of read-write and/or read-create. As long as these MIB modules are implemented correctly, there are no risks that any management objects of this MIB module can modify device settings via direct SNMP SET operations.

There are no readable objects in this MIB module (i.e., objects with a MAX-ACCESS other than not-accessible) that are considered sensitive.

SNMP versions prior to SNMPv3 did not include adequate security. Even if the network itself is secure (for example by using IPsec), there is no control as to who on the secure network is allowed to access and GET/SET (read/change/create/delete) the objects in this MIB module.

It is RECOMMENDED that implementers consider the security features as provided by the SNMPv3 framework (see [[RFC3410](#)], [section 8](#)), including full support for the SNMPv3 cryptographic mechanisms (for authentication and privacy).

Further, deployment of SNMP versions prior to SNMPv3 is NOT RECOMMENDED. Instead, it is RECOMMENDED to deploy SNMPv3 and to enable cryptographic security. It is then a customer/operator responsibility to ensure that the SNMP entity giving access to an instance of these MIB modules is properly configured to give access to the objects only to those principals (users) that have legitimate rights to indeed GET or SET (change/create/delete) them.

10. IANA Considerations

LISP is an experimental protocol and the LISP MIB is an experimental MIB. No IANA actions are required by this document.

11. References

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11.1. Normative References

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- [LISP-MS] Farinacci, D. and V. Fuller, "LISP Map Server", [draft-ietf-lisp-ms-16.txt](#) (work in progress), March 2012.
- [RFC1035] Mockapetris, P., "Domain names - implementation and specification", STD 13, [RFC 1035](#), November 1987.
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[Appendix A](#). Open Issues

Open issues for the LISP MIB include the following:

1. This LISP MIB draft does not include LISP Multicast considerations. Multicast considerations will be added in a separate LISP Multicast MIB draft.

[Appendix B.](#) Acknowledgments

A thank you is owed to Dino Farinacci for his inputs and review comments on the initial versions of this draft. In addition, the authors would like to gratefully acknowledge several others who have reviewed and commented on this draft. They include: Darrel Lewis, Isidor Kouvelas, Jesper Skriver, Selina Heimlich, and Parna Agrawal.

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