



**International
Standard**

**ISO/IEC/IEEE
8802-1CS**

**Telecommunications and exchange
between information technology
systems — Requirements for local
and metropolitan area networks —**

Part 1CS:

Link-local registration protocol

TECHNICAL CORRIGENDUM 1:

**Corrections to management modules
and protocol encoding**

**First edition
2022-07**

**TECHNICAL
CORRIGENDUM 1**



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**IEEE Standard for
Local and Metropolitan Area Networks—**

Link-local Registration Protocol

**Corrigendum 1: Corrections to
Management Modules and Protocol
Encoding**

Developed by the
LAN/MAN Standards Committee
of the
IEEE Computer Society

Approved 15 February 2024
IEEE SA Standards Board

Abstract: This corrigendum corrects errors in the YANG module, SNMP MIBs, and TLV encoding in IEEE Std 802.1CS-2020.

Keywords: Bridged Local Area Networks, Bridges, bridging, IEEE 802[®], IEEE 802.1CS[™], IEEE 802.1Q[™], Link-local Registration Protocol, local area networks (LANs), LRP, MAC Bridges, Time-Sensitive Networking, TSN, Virtual Bridged Local Area Networks (virtual LANs)

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Introduction

This introduction is not part of IEEE Std 802.1CS-2020/Cor 1-2024, IEEE Standard for Local and Metropolitan Area Networks—Link-local Registration Protocol—Corrigendum 1: Corrections to Management Modules and Protocol Encoding.

This corrigendum to IEEE Std 802.1CS-2020 corrects errors in the YANG module, SNMP MIBs, and TLV encoding.

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IEEE Standard for Local and Metropolitan Area Networks— Link-local Registration Protocol

Corrigendum 1: Corrections to Management Modules and Protocol Encoding

(This corrigendum is based on IEEE Std 802.1CS-2020.)

NOTE—The editing instructions contained in this corrigendum define how to merge the material contained therein into the existing base standard and its amendments to form the comprehensive standard.

The editing instructions are shown in ***bold italic***. Four editing instructions are used: change, delete, insert, and replace. ***Change*** is used to make corrections in existing text or tables. The editing instruction specifies the location of the change and describes what is being changed by using ~~striketrough~~ (to remove old material) and underscore (to add new material). ***Delete*** removes existing material. ***Insert*** adds new material without disturbing the existing material. Deletions and insertions may require renumbering. If so, renumbering instructions are given in the editing instruction. ***Replace*** is used to make changes in figures or equations by removing the existing figure or equation and replacing it with a new one. Editing instructions, change markings, and this NOTE will not be carried over into future editions because the changes will be incorporated into the base standard.⁶

⁶ Notes in text, tables, and figures are given for information only and do not contain requirements needed to implement the standard.

Change the Abstract as follows:

Abstract: This standard specifies protocols, procedures, and managed objects for a Link-local Registration Protocol (LRP) to replicate a registration database from one end to the other of a point-to-point link and to replicate changes to parts of that database. A facility is provided to purge the replicated database if the source becomes unresponsive. LRP is optimized for databases on the order of ~~1 Mbyte~~ a million bytes.

1. Overview

1.1 Scope

Change 1.1 as follows:

This standard specifies protocols, procedures, and managed objects for a Link-local Registration Protocol (LRP) to replicate a registration database from one end to the other of a point-to-point link and to replicate changes to parts of that database. A facility is provided to purge the replicated database if the source becomes unresponsive. Provision is made for a proxy system to operate LRP on behalf of a controlled system. LRP is optimized for databases on the order of ~~1 Mbyte~~ a million bytes.

6. Link-local Registration Protocol

6.3 Objectives and non-objectives

6.3.1 Objectives of LRP

Change 6.3.1 as follows:

The objectives of LRP are to:

- a) Serve application instances as described in 6.2.
- b) Remain independent of the syntax and semantics of the LRP application data contained in the applicant and registrar databases.
- c) Provide a facility for an application instance to discover its peers, and to make and break associations between application instances.
- d) Support multiple options for the transport mechanisms used to carry LRPDU, in order to provide a range of capability/complexity trade-offs.
- e) Transfer the application instances' data quickly, reliably, and efficiently with respect to bandwidth.
- f) Efficiently transfer changes to parts of a database, without retransmitting the whole database.
- g) Serve applicant and registrar databases whose size, per port, is on the order of magnitude of ~~1-Mbyte~~ a million bytes.
- h) Support only point-to-point associations between application instances.
- i) Support multiple point-to-point associations on one port.
- j) By the use of TCP as an LRP-DT transport mechanism, provide for placing the application instance and Portal in a separate Proxy system from its target port, in order to facilitate central control of a network.
- k) Support proxying for a Controlled system without requiring any new behaviors of the Controlled system, in order to make it possible to deploy a new LRP application without implementing an application instance in every system.
- l) Make efficient use of TCP connections.
- m) Support resource-constrained end systems.

12. YANG models for LRP

12.2 The YANG framework

Change 12.2 as follows:

This clause has been developed according to the YANG guidelines published in IETF RFC 6087 [B13] as applicable to IEEE standards. The YANG framework applies hierarchy in the following areas:

- 1) The uniform resource name (URN), as specified in IEEE Std 802d™ [B2]. ~~The structure of the URN is such that “ieee” is the root (i.e., name-space identifier), followed by the standard, then the working group developing the standard.~~
- 2) The YANG objects form a hierarchy of configuration and operational data structures that define the YANG model. These hierarchical relationships are described in 11.2 and 12.5.

12.6 Definition of LRP YANG module^{7, 8}

Delete the YANG module in 12.6.

Insert the following YANG module in 12.6:

```
module ieee802-dot1cs-lrp {
  yang-version 1.1;

  namespace "urn:ieee:std:802.1CS:yang:ieee802-dot1cs-lrp";
  prefix "dot1cs";

  import ietf-system { prefix "sys"; }
  import ietf-yang-types { prefix "yang"; }
  import ietf-interfaces { prefix if; }
  import ieee802-types { prefix ieee; }
  import ietf-inet-types { prefix inet; }

  organization
    "Institute of Electrical and Electronics Engineers";
  contact
    "WG-URL: http://ieee802.org/1/
    WG-EMail: stds-802-1-1@ieee.org
    Contact: IEEE 802.1 Working Group Chair
    Postal: C/O IEEE 802.1 Working Group
    IEEE Standards Association
    445 Hoes Lane
    Piscataway
    NJ 08854
    USA

    E-mail: stds-802-1-chairs@ieee.org";

  description
    "This module provides management of systems that support the
    Link-local Registration Protocol (LRP).

    Copyright (C) IEEE (2024).

    This version of this YANG module is part of IEEE Std 802.1CS;
    see the standard itself for full legal notices.";

  revision 2024-02-15 {
    description
```

⁷Copyright release for YANG module: Users of this standard may freely reproduce the YANG module contained in this subclause so that they can be used for their intended purpose.

⁸An ASCII version of each YANG module is attached to the PDF of this amendment and can also be obtained from the IEEE 802.1 Website at <https://1.ieee802.org/yang-modules/>.

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IEEE Standard for Local and Metropolitan Area Networks—Link-local Registration Protocol—
Corrigendum 1: Corrections to Management Modules and Protocol Encoding

"Published as part of IEEE Std 802.1CS-2020/Cor 1-2024.

The following reference statement identifies each referenced IEEE Standard as updated by applicable amendments.";

```
reference
  "IEEE Std 802.1CS:
    IEEE Std 802.1CS-2020 Link-local Registration Protocol,
    IEEE Std 802.1CS-2020/Cor 1-2024: Corrections to
    Management Modules and Protocol Encoding.";
}

revision 2020-12-03 {
  description
    "First defined in IEEE P802.1CS-2020";
  reference
    "IEEE Std 802.1CS-2020.";
}

/*-----*/
/* Feature */
/*-----*/

feature lrp {
  description
    "Feature Link-local Registration Protocol";
}

/*-----*/
/* Type Definitions */
/*-----*/
typedef lrp-dt-address-union {
  type union {
    type ieee:mac-address;
    type inet:ipv4-address;
    type inet:ipv6-address;
  }
}

/*-----*/
/* Configuration Data */
/*-----*/
/*
  Link-local Registration Protocol
*/
augment "/sys:system" {
  description "Link-local Registration Protocol";
  container lrp {
    if-feature lrp;
    description
      "Configure the Link-local Registration Protocol";
    leaf lrp-ack-timer-init {
      type uint32;
      units "milliseconds";
      config false;
      description
        "A read-only integer n specifying the number of milliseconds for
        ackTimerInit (D.2.12.6 of IEEE Std 802.1Q-2018)";
      reference
        "11.3.1 of IEEE Std 802.1CS";
    }
    leaf lrp-reconnect-max {
      type uint16;
      units "seconds";
      description
        "An integer number of seconds which is the maximum value for
        instReconnectReset.";
      reference
        "11.3.2 of IEEE Std 802.1CS";
    }
  }
  list portal {
    key "portal-id";
    config false;
  }
}
```

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IEEE Std 802.1CS-2020/Cor 1-2024
IEEE Standard for Local and Metropolitan Area Networks—Link-local Registration Protocol—
Corrigendum 1: Corrections to Management Modules and Protocol Encoding

```
leaf portal-id {
  type uint32;
  config false;
  description
    "Local Identifier of portal";
  reference
    "Clause 10 of IEEE Std 802.1CS";
}
leaf target-port-interface-ref {
  type if:interface-ref;
  config false;
  description
    "The interface reference identifying the target
    port to which this portal is attached.";
  reference
    "8.2.1 of IEEE Std 802.1CS";
}
leaf lrp-dt-instance-id {
  type leafref {
    path "/sys:system/dot1cs:lrp/dot1cs:lrp-dt-instance/dot1cs:instance-id";
  }
  config false;
  description
    "The LRP-DT instance id that this portal is
    attached to.";
  reference
    "8.2.1 of IEEE Std 802.1CS";
}
leaf application-id {
  type string;
  config false;
  description
    "The value transmitted in, and expected to be received in, the
    appId field of Hello LRPDU.";
  reference
    "8.2.2.1 of IEEE Std 802.1CS";
}
leaf my-chassis-id {
  type ieee:chassis-id-type ;
  config false;
  description
    "The value transmitted in the My Chassis ID TLV, and expected to be
    received in the Neighbor Chassis ID TLV, of Hello LRPDU.";
  reference
    "8.2.2.2 of IEEE Std 802.1CS";
}
leaf my-port-id {
  type ieee:port-id-type ;
  config false;
  description
    "The value transmitted in the My Port ID TLV, and expected to be
    received in the Neighbor Port ID TLV, of Hello LRPDU.";
  reference
    "8.2.2.3 of IEEE Std 802.1CS";
}
leaf neighbor-chassis-id {
  type ieee:chassis-id-type ;
  config false;
  description
    "The value transmitted in the Neighbor Chassis ID TLV, and expected
    to be received in the My Chassis ID TLV, of Hello LRPDU.";
  reference
    "8.2.2.4 of IEEE Std 802.1CS";
}
leaf neighbor-port-id {
  type ieee:port-id-type ;
  config false;
  description
    "The value transmitted in the Neighbor Port ID TLV, and expected to
    be received in the My Port ID TLV, of Hello LRPDU.";
  reference
    "8.2.2.5 of IEEE Std 802.1CS";
}
```

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```
}
leaf my-hello-status {
  type enumeration {
    enum hs-looking {
      value 1;
      description
        "This Portal has not yet received a successful Associate Portal
        request.";
    }
    enum hs-connecting {
      value 2;
      description
        "This Portal has received a successful Associate Portal
        request, and a Hello LRPDU with the hsLooking status. The
        Portal is ready to receive all LRPDU.s.";
    }
    enum hs-connected {
      value 3;
      description
        "This Portal is up and ready to transfer LRP application data.
        The Portal is allowed to transmit all LRPDU.s.";
    }
  }
  config false;
  description
    "An enumerated value to be transmitted in the Hello status field
    of any Hello LRPDU.";
  reference
    "8.2.2.8 of IEEE Std 802.1CS";
}
leaf local-overflow {
  type boolean;
  config false;
  description
    "Contains the last Boolean input from the Database overflow
    request. A value of TRUE indicates that the partner applicant
    database has exceeded the capacity of the local registrar LRP
    application.";
  reference
    "8.2.2.10 of IEEE Std 802.1CS";
}
leaf neighbor-overflow {
  type boolean;
  config false;
  description
    "A Boolean copied from the last-received database overflow bit [bit
    8] in the Error status field of the last-received Hello LRPDU.";
  reference
    "8.2.2.11 of IEEE Std 802.1CS";
}
leaf neighbor-acknowledged {
  type boolean;
  config false;
  description
    "A Boolean, equal to the AND of all of the actAcknowledged
    variables for all of the Applicant state machines (records) on this
    Portal.";
  reference
    "8.2.2.12 of IEEE Std 802.1CS";
}
leaf my-app-hello-info {
  type string;
  config false;
  description
    "Value to put in the Application Information TLV of a
    transmitted Hello LRPDU.";
  reference
    "8.2.2.16 of IEEE Std 802.1CS";
}
leaf last-received-status {
  type string;
  config false;
```

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```
description
    "Used by the Receive Hello state machine to record the
    Hello status field of a Hello LRPDU received from the
    neighbor Portal.";
reference
    "8.2.2.22 of IEEE Std 802.1CS";
}
leaf applicant-active-records {
    type uint32;
    config false;
    description
        "An integer reporting the number of records in the applicant
        database.";
    reference
        "11.5.1 of IEEE Std 802.1CS";
}
leaf registrar-active-records {
    type uint32;
    config false;
    description
        "An integer reporting the number of records in the registrar
        database.";
    reference
        "11.5.2 of IEEE Std 802.1CS";
}
leaf sent-hellos {
    type yang:counter64;
    config false;
    description
        "The number of Hello LRPDU s transmitted by the Send Hello state machines.";
    reference
        "11.5.3 of IEEE Std 802.1CS";
}
leaf accepted-hellos {
    type yang:counter64;
    config false;
    description
        "The number of valid Hello LRPDU s received by the Receive Hello
        state machine.";
    reference
        "11.5.4 of IEEE Std 802.1CS";
}
leaf discarded-hellos {
    type yang:counter64;
    config false;
    description
        "The number of invalid Hello LRPDU s discarded by the Receive Hello
        state machine.";
    reference
        "11.5.5 of IEEE Std 802.1CS";
}
leaf sent-records {
    type yang:counter64;
    config false;
    description
        "The number of Record LRPDU s transmitted by the Applicant state
        machine.";
    reference
        "11.5.6 of IEEE Std 802.1CS";
}
leaf accepted-records {
    type yang:counter64;
    config false;
    description
        "The number of valid Record LRPDU s received by the Partial list
        state machine.";
    reference
        "11.5.7 of IEEE Std 802.1CS";
}
leaf discarded-records {
    type yang:counter64;
    config false;
```

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```
description
    "The number of invalid Record LRPDU's discarded by the Partial list
    state machine.";
reference
    "11.5.8 of IEEE Std 802.1CS";
}
leaf record-errors {
    type yang:counter64;
    config false;
    description
        "The number of records discarded from otherwise-valid Record LRPDU's
        by regReceiveWriteRecord due to inconsistencies between the
        Checksum, Application data, and Data length fields.";
    reference
        "11.5.9 of IEEE Std 802.1CS";
}
leaf sent-partials {
    type yang:counter64;
    config false;
    description
        "The number of Partial List LRPDU's transmitted by the Applicant
        state machine.";
    reference
        "11.5.10 of IEEE Std 802.1CS";
}
leaf accepted-partials {
    type yang:counter64;
    config false;
    description
        "The number of valid Partial List LRPDU's received by the Applicant
        state machine.";
    reference
        "11.5.11 of IEEE Std 802.1CS";
}
leaf discarded-partials {
    type yang:counter64;
    config false;
    description
        "The number of invalid Partial List LRPDU's discarded by the
        Applicant state machine.";
    reference
        "11.5.12 of IEEE Std 802.1CS";
}
leaf sent-complete {
    type yang:counter64;
    config false;
    description
        "The number of Complete List LRPDU's transmitted by the Applicant
        state machine.";
    reference
        "11.5.13 of IEEE Std 802.1CS";
}
leaf accepted-completes {
    type yang:counter64;
    config false;
    description
        "The number of valid Complete List LRPDU's received by the Applicant
        state machine.";
    reference
        "11.5.14 of IEEE Std 802.1CS";
}
leaf discarded-completes {
    type yang:counter64;
    config false;
    description
        "The number of invalid Complete List LRPDU's discarded by the
        Applicant state machine.";
    reference
        "11.5.15 of IEEE Std 802.1CS";
}
leaf discarded-unknowns {
    type yang:counter64;
```

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```
    config false;
    description
        "The number of LRPDUs of unknown type discarded by the Applicant
        state machine or Partial list state machine.";
    reference
        "11.5.16 of IEEE Std 802.1CS";
}
} // end portal
list lrp-dt-instance {
    key "instance-id";
    config false;
    leaf instance-id {
        type uint32;
        config false;
        description
            "Local data transport instance";
        reference
            "Clause 7 of IEEE Std 802.1CS";
    }
    leaf active-tcp-open {
        type boolean;
        config false;
        description
            "A Boolean value that is TRUE if and only if instMyAddress and
            instNeighborAddress are TCP addresses and this LRP-DT instance is
            using the active , not the passive , form of TCP OPEN";
        reference
            "7.3.2.1 of IEEE Std 802.1CS";
    }
    leaf my-dt-address {
        type lrp-dt-address-union;
        config false;
        description
            "The address of the local system for this LRP-DT instance; the
            address used as a destination address by the neighbor LRP-DT
            instance. The address includes a type (MAC, IPv4, or IPv6) and an
            address of that type.";
        reference
            "7.3.2.2 of IEEE Std 802.1CS";
    }
    leaf my-tcp-port {
        type inet:port-number;
        config false;
        description
            "The local port number for this TCP connection, or 0, if this
            connection uses ECP, instead of TCP.";
        reference
            "7.3.2.3 of IEEE Std 802.1CS";
    }
    leaf neighbor-dt-address {
        type lrp-dt-address-union;
        config false;
        description
            "The address of the neighbor LRP-DT instance; the address used as a
            destination address by this LRP-DT instance. The address includes a
            type (MAC, IPv4, or IPv6) and an address of that type.";
        reference
            "7.3.2.4 of IEEE Std 802.1CS";
    }
    leaf neighbor-tcp-port {
        type inet:port-number;
        config false;
        description
            "The remote port number for this TCP connection, or 0, if this
            connection uses ECP, instead of TCP.";
        reference
            "7.3.2.5 of IEEE Std 802.1CS";
    }
    leaf discarded-lrpdus {
        type yang:counter64;
        config false;
        description
```

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```
"A counter indicating the number of LRPDUs discarded by the LRP-DT
instance that cannot be assigned to a Portal for processing.";
reference
  "11.4.1 of IEEE Std 802.1CS";
}
} // end lrp-dt-instance
} // end lrp
} // end augment system
} // end ieee802-dot1cs-lrp
```

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13. MIB modules for LRP⁹

13.5 MIB modules^{10, 11}

13.5.1 LRP Textual conventions MIB

Change 13.5.1 as follows:

```
LRP-TC-MIB DEFINITIONS ::= BEGIN
IMPORTS
    MODULE-IDENTITY,
    Unsigned32
        FROM SNMPv2-SMI
    ieee802dot1mibs
        FROM IEEE8021-TC-MIB
    TEXTUAL-CONVENTION
        FROM SNMPv2-TC;

ieee8021LrpTcMIB MODULE-IDENTITY
    LAST-UPDATED "202012030000Z" -- December 3, 2020
    LAST-UPDATED "202402150000Z" -- February 15, 2024
    ORGANIZATION "IEEE 802.1 Working Group"
    CONTACT-INFO
        "WG-URL:      http://1.ieee802.org
        WG-EMail:     stds-802-1-1@ieee.org

        Contact:     IEEE 802.1 Working Group Chair
        Postal:       C/O IEEE 802.1 Working Group
                     IEEE Standards Association
                     445 Hoes Lane
                     Piscataway
                     NJ 08854
                     USA
        E-mail:       stds-802-1-chairs@ieee.org"

    DESCRIPTION
        "Textual conventions used throughout IEEE Std 802.1CS.

        Unless otherwise indicated, the references in this
        MIB module are to IEEE Std 802.1CS-2020.

Copyright (C) IEEE (2021). This version of this MIB module
is included in clause 13 of IEEE Std 802.1CS-2020;
        Copyright (C) IEEE (2024). This version of this MIB module
        is included in Clause 13 of IEEE Std 802.1CS-2020/Cor 1-2024;
        see the standard itself for full legal notices."

    REVISION      "202402150000Z" -- February 15, 2024
    DESCRIPTION   "OID changed to avoid conflict with a MIB defined in
                    IEEE Std 802.1CBcv-2021."
    "
    REVISION      "202012030000Z" -- December 3, 2020
    DESCRIPTION   "This MIB module included in IEEE Std 802.1CS-2020.
    "
```

⁹An ASCII version of this MIB module can be obtained by Web browser from the IEEE 802.1 Website at <http://www.ieee802.org/1/pages/MIBS.html>.

¹⁰Copyright release for MIBs: Users of this standard may freely reproduce the MIBs contained in this subclause so that they can be used for their intended purpose.

¹¹An ASCII version of each MIB module is attached to the PDF of this amendment and can also be obtained from the IEEE 802.1 Website at <https://1.ieee802.org/mib-modules/>.

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```
-- ::= ( ieee802dot1mibs 34 )
-- ::= ( ieee802dot1mibs 38 )

--
-- *****
-- Textual Conventions
-- *****

LrpHelloStatus ::= TEXTUAL-CONVENTION
    STATUS current
    DESCRIPTION
        "This specifies the current state of the Hello Receive State
        Machine. It can take the following values:

        hsLooking(1) This Portal has not yet received a successful
        Complete Portal create request.
        hsConnecting(2) This Portal has received a successful
        Complete Portal create request (10.2.4), and a
        Hello LRPDU with the hsLooking status.
        The Portal is ready to receive all LRPDUs.
        hsConnected(3) This Portal is up and ready to transfer
        LRP application data. The Portal is allowed to
        transmit all LRPDUs

        "
    REFERENCE
        "8.2.2.8"
    SYNTAX INTEGER {
        hsLooking (1),
        hsConnecting (2),
        hsConnected (3)
    }

LrpAppId ::= TEXTUAL-CONVENTION
    DISPLAY-HINT "x"
    STATUS current
    DESCRIPTION
        "Identifies an LRP application type.
        A 32 bit number. The most-significant 24 bits of the integer are
        an OUI or CID (obtainable from the IEEE Registration Authority),
        and the least-significant 8 bits are assigned by the owner of
        the OUI or CID. This creates a world-wide unique identity for
        the LRP application type.

        "
    REFERENCE "9.2"
    SYNTAX Unsigned32

LrpInetAddressInfo ::= TEXTUAL-CONVENTION
    STATUS current
    DESCRIPTION
        "An LRP TCP Discovery TLV has some number of
        Application descriptors, each of which can have either one or
        two Address info fields. The Address info field indicates whether
        the following Address field is present or not, and if present,
        whether it contains an IPv4 or an IPv6 address.
        LrpInetAddressInfo can take the following values:

        noAddress(0), Address info present, Address field not present
        addrIPv4(1), Address info present, Address field has IPv4
        addrIPv6(2), Address info present, Address field has IPv6
        notPresent(256) Address info not present

        "
    REFERENCE "C.2.2.6.2"
    SYNTAX INTEGER {
        noAddress(0),
```

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```
    addrIPv4(1),  
    addrIPv6(2),  
    notPresent(256)  
}
```

END

13.5.2 LRP MIB

Change 13.5.2 as follows:

```
LRP-MIB DEFINITIONS ::= BEGIN  
IMPORTS
```

```
    MODULE-IDENTITY,  
    OBJECT-TYPE,  
    Unsigned32,  
    Counter64  
        FROM SNMPv2-SMI  
    TruthValue  
        FROM SNMPv2-TC  
    MODULE-COMPLIANCE,  
    OBJECT-GROUP  
        FROM SNMPv2-CONF  
    AddressFamilyNumbers  
        FROM IANA-ADDRESS-FAMILY-NUMBERS-MIB  
    InetPortNumber  
        FROM INET-ADDRESS-MIB  
    InterfaceIndex  
        FROM IF-MIB  
    LldpV2ChassisIdSubtype,  
    LldpV2ChassisId,  
    LldpV2PortIdSubtype,  
    LldpV2PortId,  
    LldpV2ManAddress  
        FROM LLDP-V2-TC-MIB  
    ieee802dot1mibs  
        FROM IEEE8021-TC-MIB  
    LrpAppId  
        FROM LRP-TC-MIB;
```

```
ieee8021LrpMIB MODULE-IDENTITY
```

```
LAST-UPDATED "202012030000Z" -- December 3, 2020  
LAST-UPDATED "202402150000Z" -- February 15, 2024
```

```
ORGANIZATION "IEEE 802.1 Working Group"
```

```
CONTACT-INFO
```

```
    "WG-URL:    http://1.ieee802.org  
    WG-Email:  stds-802-1-l@ieee.org
```

```
    Contact:   IEEE 802.1 Working Group Chair  
    Postal:    C/O IEEE 802.1 Working Group  
              IEEE Standards Association  
              445 Hoes Lane  
              Piscataway  
              NJ 08854  
              USA
```

```
    E-mail:    stds-802-1-chairs@ieee.org"
```

```
DESCRIPTION
```

```
    "Management Information Base module for configuration of the  
    Link-local Registration Protocol.
```

```
    This MIB module supports the managed objects described in  
clause Clause 11.
```

```
    Unless otherwise indicated, the references in this
```

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MIB module are to IEEE Std 802.1CS-2020.

~~Copyright (C) IEEE (2021). This version of this MIB module~~
~~is included in clause 13 of IEEE Std 802.1CS-2020;~~
Copyright (C) IEEE (2024). This version of this MIB module
is included in Clause 13 of IEEE Std 802.1CS-2020/Cor 1-2024;
see the standard itself for full legal notices."

REVISION "202402150000Z" -- February 15, 2024
DESCRIPTION "OID changed to avoid conflict with a MIB defined in
IEEE Std 802.1CBcv-2021.
"
REVISION "202012030000Z" -- December 3, 2020
DESCRIPTION "This MIB module included in IEEE Std 802.1CS-2020.
"

~~::= { ieee802dot1mibs 35 }~~
::= { ieee802dot1mibs 39 }

lrpObjects OBJECT IDENTIFIER ::= { ieee8021LrpMIB 1 }
lrpConformance OBJECT IDENTIFIER ::= { ieee8021LrpMIB 2 }

--
-- LRP MIB Objects
--

lrpConfiguration OBJECT IDENTIFIER ::= { lrpObjects 1 }
lrpStatistics OBJECT IDENTIFIER ::= { lrpObjects 2 }

-- *****
-- L R P C O N F I G
-- *****

-- *****
-- The table containing information about each LRP-DT instance.
-- *****

lrpDtInstanceTable OBJECT-TYPE
SYNTAX SEQUENCE OF LrpDtInstanceEntry
MAX-ACCESS not-accessible
STATUS current
DESCRIPTION
"A table presenting basic information about each LRP-DT instance
in the system."
REFERENCE
"11.4"
::= { lrpConfiguration 1 }

lrpDtInstanceEntry OBJECT-TYPE
SYNTAX LrpDtInstanceEntry
MAX-ACCESS not-accessible
STATUS current
DESCRIPTION
"A list of basic information about one LRP-DT instance."
INDEX { lrpDtInstNumber }
::= { lrpDtInstanceTable 1 }

LrpDtInstanceEntry ::= SEQUENCE {
lrpDtInstNumber Unsigned32,
lrpDtInstActiveTcp TruthValue,
lrpDtInstAddressTypes AddressFamilyNumbers,

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```
        lrpDtInstMyAddress      LldpV2ManAddress,
        lrpDtInstMyTcpPort      InetPortNumber,
        lrpDtInstNeighborAddress LldpV2ManAddress,
        lrpDtInstNeighborTcpPort InetPortNumber
    }

lrpDtInstNumber OBJECT-TYPE
    SYNTAX      Unsigned32(1..4294967295)
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
        "A small integer identifying an LRP-DT instance. Each
        LRP-DT instance in a system has a unique lrpDtInstNumber.

        This object SHALL NOT contain the value 0."
    ::= { lrpDtInstanceEntry 1 }

lrpDtInstActiveTcp OBJECT-TYPE
    SYNTAX      TruthValue
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "TRUE if and only if lrpDtInstAddressTypes indicates an IPv4
        or IPv6 address, and this LRP-DT instance uses an active TCP
        OPEN, as opposed to a passive TCP OPEN, to initiate the TCP
        connection."
    ::= { lrpDtInstanceEntry 2 }

lrpDtInstAddressTypes OBJECT-TYPE
    SYNTAX      AddressFamilyNumbers
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "An enumerated value specifying the format of the addresses
        in lrpDtInstMyAddress and lrpDtInstNeighborAddress.

        If lrpDtInstAddressTypes has a value indicating a type of
        Inetnet Protocol address, then this LRP-DT instance uses TCP.
        Otherwise, it uses ECP."
    ::= { lrpDtInstanceEntry 3 }

lrpDtInstMyAddress OBJECT-TYPE
    SYNTAX      LldpV2ManAddress
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "The address used by the local end of the LRP-DT instance. The
        format of the address is determined by lrpDtInstAddressTypes."
    ::= { lrpDtInstanceEntry 4 }

lrpDtInstMyTcpPort OBJECT-TYPE
    SYNTAX      InetPortNumber
    MAX-ACCESS  read-only
```

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STATUS current

DESCRIPTION

"The local TCP port number used for the TCP connection, or 0,
if this connection uses ECP, instead of TCP.

"

REFERENCE

"11.4, 7.3.2.3"

::= { lrpDtInstanceEntry 5 }

lrpDtInstNeighborAddress OBJECT-TYPE

SYNTAX LldpV2ManAddress

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"The address used by the partner end of the LRP-DT instance, if
lrpDtInstActiveTcp is TRUE or lrpDtInstAddressTypes indicates
a MAC address. Otherwise (this LRP-DT instance was created
from a passive TCP OPEN), lrpDtInstNeighborAddress contains a
zero-length string. The format of the address is determined by
lrpDtInstAddressTypes.

"

REFERENCE

"11.4, 7.3.2.4"

::= { lrpDtInstanceEntry 6 }

lrpDtInstNeighborTcpPort OBJECT-TYPE

SYNTAX InetPortNumber

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"The remote TCP port number used for the TCP connection, or 0,
if this connection uses ECP, instead of TCP.

"

REFERENCE

"11.4, 7.3.2.5"

::= { lrpDtInstanceEntry 7 }

-- *****
-- The table containing information about each LRP-DS Portal.
-- *****

lrpPortalTable OBJECT-TYPE

SYNTAX SEQUENCE OF LrpPortalEntry

MAX-ACCESS not-accessible

STATUS current

DESCRIPTION

"A table containing the per-portal set of counters that record
LRP events. There is an entry in the table for every portal in
a system.

"

REFERENCE

"8.2.2"

::= { lrpConfiguration 2 }

lrpPortalEntry OBJECT-TYPE

SYNTAX LrpPortalEntry

MAX-ACCESS not-accessible

STATUS current

DESCRIPTION

"A list of counters for events occurring on one Portal.

"

INDEX { lrpPortalNumber }

::= { lrpPortalTable 1 }

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```
LrpPortalEntry ::= SEQUENCE {
    lrpPortalNumber          Unsigned32,
    lrpPortalIfIndex         InterfaceIndex,
    lrpPortalDtInstanceIndex Unsigned32,
    lrpPortalAppId           LrpAppId,
    lrpPortalMyChassisIdType LldpV2ChassisIdSubtype,
    lrpPortalMyChassisId     LldpV2ChassisId,
    lrpPortalMyPortIdType    LldpV2PortIdSubtype,
    lrpPortalMyPortId        LldpV2PortId,
    lrpPortalNbrChassisIdType LldpV2ChassisIdSubtype,
    lrpPortalNbrChassisId    LldpV2ChassisId,
    lrpPortalNbrPortIdType   LldpV2PortIdSubtype,
    lrpPortalNbrPortId       LldpV2PortId,
    lrpPortalLocalOverflow   TruthValue
}

lrpPortalNumber OBJECT-TYPE
    SYNTAX      Unsigned32
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
        "A small integer identifying a portal. Each portal in a system
        has a unique lrpPortalNumber.

        This object SHALL NOT contain the value 0.
        "
    ::= { lrpPortalEntry 1 }

lrpPortalIfIndex OBJECT-TYPE
    SYNTAX      InterfaceIndex
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "The interface index identifying the target port to which this
        portal is attached. The value is 0, if there is none.
        "
    ::= { lrpPortalEntry 2 }

lrpPortalDtInstanceIndex OBJECT-TYPE
    SYNTAX      Unsigned32
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "The same value as the lrpDtInstNumber object of the
        lrpDtInstanceEntry describing the LRP-DT instance to which this
        Portal is attached.
        "
    REFERENCE
        "8.2.2.1"
        "8.2.1"
    ::= { lrpPortalEntry 3 }

lrpPortalAppId OBJECT-TYPE
    SYNTAX      LrpAppId
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "The application ID used for this Portal.
        "
    REFERENCE
        "8.2.2.1"
    ::= { lrpPortalEntry 4 }

lrpPortalMyChassisIdType OBJECT-TYPE
    SYNTAX      LldpV2ChassisIdSubtype
```

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MAX-ACCESS read-only
STATUS current
DESCRIPTION
"The My Chassis ID TLV type field used for this Portal."
REFERENCE
"8.2.2.2"
::= { lrpPortalEntry 5 }

lrpPortalMyChassisId OBJECT-TYPE
SYNTAX LldpV2ChassisId
MAX-ACCESS read-only
STATUS current
DESCRIPTION
"The My Chassis ID TLV Chassis ID field used for this Portal."
REFERENCE
"8.2.2.2"
::= { lrpPortalEntry 6 }

lrpPortalMyPortIdType OBJECT-TYPE
SYNTAX LldpV2PortIdSubtype
MAX-ACCESS read-only
STATUS current
DESCRIPTION
"The My Port ID TLV type field used for this Portal."
REFERENCE
"8.2.2.3"
::= { lrpPortalEntry 7 }

lrpPortalMyPortId OBJECT-TYPE
SYNTAX LldpV2PortId
MAX-ACCESS read-only
STATUS current
DESCRIPTION
"The My Port ID TLV Port ID field used for this Portal."
REFERENCE
"8.2.2.3"
::= { lrpPortalEntry 8 }

lrpPortalNbrChassisIdType OBJECT-TYPE
SYNTAX LldpV2ChassisIdSubtype
MAX-ACCESS read-only
STATUS current
DESCRIPTION
"The Neighbor Chassis ID TLV type field used for this Portal."
REFERENCE
"8.2.2.4"
::= { lrpPortalEntry 9 }

lrpPortalNbrChassisId OBJECT-TYPE
SYNTAX LldpV2ChassisId
MAX-ACCESS read-only
STATUS current
DESCRIPTION
"The Neighbor Chassis ID TLV Chassis ID field used for this Portal."
REFERENCE
"8.2.2.4"
::= { lrpPortalEntry 10 }

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```
lrpPortalNbrPortIdType OBJECT-TYPE
    SYNTAX      LldpV2PortIdSubtype
    MAX-ACCESS   read-only
    STATUS       current
    DESCRIPTION
        "The Neighbor Port ID TLV type field used for this Portal.
        "
    REFERENCE
        "8.2.2.5"
    ::= { lrpPortalEntry 11 }

lrpPortalNbrPortId OBJECT-TYPE
    SYNTAX      LldpV2PortId
    MAX-ACCESS   read-only
    STATUS       current
    DESCRIPTION
        "The Neighbor Port ID TLV Port ID field used for this Portal.
        "
    REFERENCE
        "8.2.2.5"
    ::= { lrpPortalEntry 12 }

lrpPortalLocalOverflow OBJECT-TYPE
    SYNTAX      TruthValue
    MAX-ACCESS   read-only
    STATUS       current
    DESCRIPTION
        "A Boolean indicating whether or not the local registrar
        database has overflowed its allotted memory.
        "
    REFERENCE
        "8.2.2.10"
    ::= { lrpPortalEntry 13 }

-- *****
--          P O R T A L      S T A T I S T I C S
-- *****

lrpPortalCountersTable OBJECT-TYPE
    SYNTAX      SEQUENCE OF LrpPortalCountersEntry
    MAX-ACCESS   not-accessible
    STATUS       current
    DESCRIPTION
        "A table containing the per-portal set of counters that record
        LRP events.  There is an entry in the table for every portal in
        a system.
        "
    REFERENCE
        "11.5"
    ::= { lrpStatistics 1 }

lrpPortalCountersEntry OBJECT-TYPE
    SYNTAX      LrpPortalCountersEntry
    MAX-ACCESS   not-accessible
    STATUS       current
    DESCRIPTION
        "A list of counters for events occurring on one Portal.
        "
    INDEX { lrpPortalNumber }
    ::= { lrpPortalCountersTable 1 }

LrpPortalCountersEntry ::= SEQUENCE {
    lrpPortalApplicantActiveRecords Unsigned32,
    lrpPptCtRegistrarActiveRecords Unsigned32,
    lrpPptCtSentHellos              Counter64,
```


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```
    lrpPptCtAcceptedHellos          Counter64,
    lrpPptCtDiscardedHellos         Counter64,
    lrpPptCtSentRecords             Counter64,
    lrpPptCtAcceptedRecords         Counter64,
    lrpPptCtDiscardedRecords        Counter64,
    lrpPptCtRecordErrors            Counter64,
    lrpPptCtSentPartials            Counter64,
    lrpPptCtAcceptedPartials        Counter64,
    lrpPptCtDiscardedPartials       Counter64,
    lrpPptCtSentCompletes           Counter64,
    lrpPptCtAcceptedCompletes       Counter64,
    lrpPptCtDiscardedCompletes      Counter64,
    lrpPptCtDiscardedUnknowns       Counter64
}

lrpPortalApplicantActiveRecords OBJECT-TYPE
    SYNTAX      Unsigned32
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "The number of records in the applicant database.
        "
    REFERENCE
        "11.5.1"
    ::= { lrpPortalCountersEntry 1 }

lrpPptCtRegistrarActiveRecords OBJECT-TYPE
    SYNTAX      Unsigned32
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "The number of records in the registrar database.
        "
    REFERENCE
        "11.5.2"
    ::= { lrpPortalCountersEntry 2 }

lrpPptCtSentHellos OBJECT-TYPE
    SYNTAX      Counter64
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Incremented once for each Hello LRPDU transmitted by the
        Send Hello state machines.
        "
    REFERENCE
        "11.5.3"
    ::= { lrpPortalCountersEntry 3 }

lrpPptCtAcceptedHellos OBJECT-TYPE
    SYNTAX      Counter64
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Incremented once for each Hello LRPDU received by the
        Receive Hello state machine.
        "
    REFERENCE
        "11.5.4"
    ::= { lrpPortalCountersEntry 4 }

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

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DESCRIPTION

"Incremented once for each invalid Hello LRPDU discarded by the
Receive Hello state machine
"

REFERENCE

"11.5.5"
::= { lrpPortalCountersEntry 5 }

lrpPptCtSentRecords OBJECT-TYPE

SYNTAX Counter64
MAX-ACCESS read-only
STATUS current

DESCRIPTION

"Incremented once for each Record LRPDU transmitted by the
Applicant state machine.
"

REFERENCE

"11.5.6"
::= { lrpPortalCountersEntry 6 }

lrpPptCtAcceptedRecords OBJECT-TYPE

SYNTAX Counter64
MAX-ACCESS read-only
STATUS current

DESCRIPTION

"Incremented once for each valid Record LRPDU received by the
Partial list state machine.
"

REFERENCE

"11.5.7"
::= { lrpPortalCountersEntry 7 }

lrpPptCtDiscardedRecords OBJECT-TYPE

SYNTAX Counter64
MAX-ACCESS read-only
STATUS current

DESCRIPTION

"Incremented once for each invalid Record LRPDU discarded by the
Partial list state machine.
"

REFERENCE

"11.5.8"
::= { lrpPortalCountersEntry 8 }

lrpPptCtRecordErrors OBJECT-TYPE

SYNTAX Counter64
MAX-ACCESS read-only
STATUS current

DESCRIPTION

"Incremented once for each record discarded from a Record LRPDU
because of inconsistencies among the Checksum, Application data,
and Data length fields.
"

REFERENCE

"11.5.9"
::= { lrpPortalCountersEntry 9 }

lrpPptCtSentPartials OBJECT-TYPE

SYNTAX Counter64
MAX-ACCESS read-only
STATUS current

DESCRIPTION

"Incremented once for each Partial List LRPDU transmitted by the
Applicant state machine.
"

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REFERENCE

"11.5.10"

::= { lrpPortalCountersEntry 10 }

lrpPptCtAcceptedPartials OBJECT-TYPE

SYNTAX Counter64

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"Incremented once for each valid Partial List LRPDU received by the Applicant state machine.

"

REFERENCE

"11.5.11"

::= { lrpPortalCountersEntry 11 }

lrpPptCtDiscardedPartials OBJECT-TYPE

SYNTAX Counter64

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"Incremented once for each invalid Partial List LRPDU discarded by the Applicant state machine.

"

REFERENCE

"11.5.12"

::= { lrpPortalCountersEntry 12 }

lrpPptCtSentCompletes OBJECT-TYPE

SYNTAX Counter64

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"Incremented once for each Complete List LRPDU transmitted by the Applicant state machine.

"

REFERENCE

"11.5.13"

::= { lrpPortalCountersEntry 13 }

lrpPptCtAcceptedCompletes OBJECT-TYPE

SYNTAX Counter64

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"Incremented once for each valid Complete List LRPDU received by the Applicant state machine.

"

REFERENCE

"11.5.14"

::= { lrpPortalCountersEntry 14 }

lrpPptCtDiscardedCompletes OBJECT-TYPE

SYNTAX Counter64

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"Incremented once for each invalid Complete List LRPDU discarded by the Applicant state machine.

"

REFERENCE

"11.5.15"

::= { lrpPortalCountersEntry 15 }

lrpPptCtDiscardedUnknowns OBJECT-TYPE

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```
SYNTAX      Counter64
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
    "Incremented once for each LRPDU of unknown type discarded by
    the Applicant state machine or Partial list state machine.
    "
REFERENCE
    "11.5.16"
::= { lrpPortalCountersEntry 16 }

-- *****
--      L R P - D T   I N S T A N C E   S T A T I S T I C S
-- *****

lrpDtInstanceCountersTable OBJECT-TYPE
    SYNTAX      SEQUENCE OF LrpDtInstanceCountersEntry
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
        "A table containing the per-LRP-DT instance set of counters that
        record LRP events. There is an entry in the table for every
        LRP-DT instance in a system.
        "
    REFERENCE
        "11.4"
    ::= { lrpStatistics 2 }

lrpDtInstanceCountersEntry OBJECT-TYPE
    SYNTAX      LrpDtInstanceCountersEntry
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
        "A list of statistics about one LRP-DT instance.
        "
    INDEX { lrpDtInstNumber }
    ::= { lrpDtInstanceCountersTable 1 }

LrpDtInstanceCountersEntry ::= SEQUENCE {
    lrpDtInstDiscardedLrpdus      Counter64
}

lrpDtInstDiscardedLrpdus OBJECT-TYPE
    SYNTAX      Counter64
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "The number of received Link-local Registration Protocol Data
        Units discarded by the LRP-DT instance because it could not
        determine to which Portal it should be given.
        "
    REFERENCE
        "11.4, 11.4.1"
    ::= { lrpDtInstanceCountersEntry 1 }

--
-- *****
--      L R P   M I B   C O N F O R M A N C E
-- *****
--

lrpCompliances OBJECT IDENTIFIER ::= { lrpConformance 1 }
lrpGroups      OBJECT IDENTIFIER ::= { lrpConformance 2 }
```

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```
-- compliance statements

lrpCompliance MODULE-COMPLIANCE
  STATUS current
  DESCRIPTION
    "A compliance statement for all SNMP entities that
    implement the LRP MIB.

    This version defines compliance requirements for
    LRP MIB module.
    "
  MODULE -- this module
    MANDATORY-GROUPS {
      lrpDsDtGroup
    }

    ::= { lrpCompliances 1 }

-- MIB groupings

lrpDsDtGroup OBJECT-GROUP
  OBJECTS {
    lrpDtInstActiveTcp,
    lrpDtInstAddressTypes,
    lrpDtInstMyAddress,
    lrpDtInstMyTcpPort,
    lrpDtInstNeighborAddress,
    lrpDtInstNeighborTcpPort,
    lrpPortalIfIndex,
    lrpPortalDtInstanceIndex,
    lrpPortalAppId,
    lrpPortalMyChassisIdType,
    lrpPortalMyChassisId,
    lrpPortalMyPortIdType,
    lrpPortalMyPortId,
    lrpPortalNbrChassisIdType,
    lrpPortalNbrChassisId,
    lrpPortalNbrPortIdType,
    lrpPortalNbrPortId,
    lrpPortalLocalOverflow,
    lrpPortalApplicantActiveRecords,
    lrpPptCtRegistrarActiveRecords,
    lrpPptCtSentHellos,
    lrpPptCtAcceptedHellos,
    lrpPptCtDiscardedHellos,
    lrpPptCtSentRecords,
    lrpPptCtAcceptedRecords,
    lrpPptCtDiscardedRecords,
    lrpPptCtRecordErrors,
    lrpPptCtSentPartials,
    lrpPptCtAcceptedPartials,
    lrpPptCtDiscardedPartials,
    lrpPptCtSentCompletes,
    lrpPptCtAcceptedCompletes,
    lrpPptCtDiscardedCompletes,
    lrpPptCtDiscardedUnknowns,
    lrpDtInstDiscardedLrpdus
  }
  STATUS current
  DESCRIPTION
    "The collection of objects which are used to monitor the
    status of LRP-DS and LRP-DT.
    "
  ::= { lrpGroups 1 }
```

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END

13.5.3 LLDPv2 LRP extension MIB

Change 13.5.3 as follows:

LLDP-V2-LRP-EXT-MIB DEFINITIONS ::= BEGIN

IMPORTS

MODULE-IDENTITY,
OBJECT-TYPE,
Unsigned32
FROM SNMPv2-SMI
TruthValue
FROM SNMPv2-TC
MODULE-COMPLIANCE,
OBJECT-GROUP
FROM SNMPv2-CONF
TimeFilter
FROM RMON2-MIB
InterfaceIndex
FROM IF-MIB
InetAddress,
InetAddressIPv4,
InetAddressIPv6,
InetPortNumber
FROM INET-ADDRESS-MIB
LldpV2DestAddressTableIndex
FROM LLDP-V2-TC-MIB
lldpXdot1StandAloneExtensions
FROM LLDP-EXT-DOT1-EVB-EXTENSIONS-MIB
LrpAppId,
LrpInetAddressInfo
FROM LRP-TC-MIB;

lldpXdot1LrpExtensions MODULE-IDENTITY

~~LAST-UPDATED "202012030000Z" -- December 3, 2020~~

LAST-UPDATED "202402150000Z" -- February 15, 2024

ORGANIZATION "IEEE 802.1 Working Group"

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DESCRIPTION

"The LLDP Management Information Base extension module for IEEE 802.1 organizationally-defined discovery information, as specified in IEEE Std 802.1CS, Link-local Registration Protocol (LRP)."

The Link-Layer Discovery Protocol (LLDP) is defined in IEEE Std 802.1AB.

lldpXdot1StandAloneExtensions is the OUI for LLDP-EXT-DOT1-EVB-EXTENSIONS-MIB, which defines managed objects for IEEE 802.1-defined organizationally-specified LLDP Type-Length Value (TLV)

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discovery information. lldpXdot1StandAloneExtensions is branched from lldpV2Extensions (defined in LLDP-V2-MIB) using the Organizationally Unique Identifier (OUI) value 00-80-C1, which belongs to IEEE 802.1. An OUI is a 24 bit globally-unique number assigned by the IEEE Registration Authority -- see:

<http://standards.ieee.org/develop/regauth/oui/index.html>

In turn, lldpXdot1LrpExtensions and lldpV2ExtLrpConformance are branched from lldpXdot1StandAloneExtensions, and thus are also extensions from the IEEE 802.1 OUI.

Unless otherwise indicated, the references in this MIB module are to IEEE Std 802.1CS-2020.

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standard itself for full legal notices."

REVISION "202402150000Z" -- February 15, 2024

DESCRIPTION

"Description of lldpV2LocLrpTcpAddress1 corrected.

"

REVISION "202012030000Z" -- December 3, 2020

DESCRIPTION

"This MIB module included in IEEE Std 802.1CS-2020.

"

::= { lldpXdot1StandAloneExtensions 3 }

--
-- Organizationally Defined Information Extension - IEEE 802.1
-- Definitions to support the IEEE Std 802.1AB LLDP TLVs defined in
-- IEEE Std 802.1CS Link-local Registration Protocol (LRP)
--

lldpV2ExtLrpObjects OBJECT IDENTIFIER ::= { lldpXdot1LrpExtensions 1 }

-- LLDP IEEE 802.1CS extension MIB groups

lldpV2ExtConfigLrp OBJECT IDENTIFIER ::= { lldpV2ExtLrpObjects 1 }

lldpV2ExtLrpLocalData OBJECT IDENTIFIER ::= { lldpV2ExtLrpObjects 2 }

lldpV2ExtLrpRemoteData OBJECT IDENTIFIER ::= { lldpV2ExtLrpObjects 3 }

-- IEEE 802.1 - Configuration for the LRP TLV set

--
-- The table specifying, for each LRP application, what IP
-- addresses to advertise in LRP TCP Discovery TLVs in a
-- Controlled system.
--

lldpV2ConfigLrpTcpControlledTable OBJECT-TYPE

SYNTAX SEQUENCE OF LldpV2LrpConfigTcpControlledEntry

MAX-ACCESS not-accessible

STATUS current

DESCRIPTION

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"A table specifying what IP addresses are to be advertised as the address of the Proxy system controlling this Controlled system, for each particular LRP application. These IP addresses and application identifiers can be transmitted in LRP TCP Discovery TLVs.
"

REFERENCE

"11.6.1.1"

::= { lldpV2ExtConfigLrp 1 }

lldpV2ConfigLrpTcpControlledEntry OBJECT-TYPE

SYNTAX LldpV2LrpConfigTcpControlledEntry

MAX-ACCESS not-accessible

STATUS current

DESCRIPTION

"A table specifying what IP addresses are to be advertised as the address of the Proxy system controlling this Controlled system, for a particular LRP application. These IP addresses and application identifiers can be transmitted in LRP TCP Discovery TLVs.
"

INDEX { lldpV2ConfigLrpTcpControlledApplicationId }

::= { lldpV2ConfigLrpTcpControlledTable 1 }

lldpV2LrpConfigTcpControlledEntry ::= SEQUENCE {

lldpV2ConfigLrpTcpControlledApplicationId	LrpAppId,
lldpV2ConfigLrpTcpControlledTcpPortNumber	InetPortNumber,
lldpV2ConfigLrpTcpControlledIPv4Enable	TruthValue,
lldpV2ConfigLrpTcpControlledIPv4Address	InetAddressIPv4,
lldpV2ConfigLrpTcpControlledIPv6Enable	TruthValue,
lldpV2ConfigLrpTcpControlledIPv6Address	InetAddressIPv6

}

lldpV2ConfigLrpTcpControlledApplicationId OBJECT-TYPE

SYNTAX LrpAppId

MAX-ACCESS not-accessible

STATUS current

DESCRIPTION

"The application identifier to which the rest of the lldpV2ConfigLrpTcpControlledEntry applies.
"

REFERENCE

"9.2"

::= { lldpV2ConfigLrpTcpControlledEntry 1 }

lldpV2ConfigLrpTcpControlledTcpPortNumber OBJECT-TYPE

SYNTAX InetPortNumber

MAX-ACCESS read-write

STATUS current

DESCRIPTION

"The destination TCP Port number to which TCP connections for LRP to the addresses in lldpV2ConfigLrpTcpControlledIPv4Address or lldpV2ConfigLrpTcpControlledIPv6Address, for the application in lldpV2ConfigLrpTcpControlledApplicationId, are to be made.

If this object contains the value 0, then no Application descriptor with the indexed application ID is transmitted.

The value of this object is restored from non-volatile storage after a re-initialization of the management system.
"

REFERENCE

ISO/IEC/IEEE 8802-1CS:2022/Cor.1:2025(en)

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"C.2.2.6.1"

::= { lldpV2ConfigLrpTcpControlledEntry 2 }

lldpV2ConfigLrpTcpControlledIPv4Enable OBJECT-TYPE

SYNTAX TruthValue

MAX-ACCESS read-write

STATUS current

DESCRIPTION

"Specifies whether or not the indexed LRP application is available through the LRP-DT TCP mechanism using TCP over IPv4. It thus controls whether the LRP TCP Discovery TLVs transmitted from this Controlled system include the IPv4 address in lldpV2ConfigLrpTcpControlledIPv4Address in an Application descriptor containing the indexed application ID.

If lldpV2ConfigLrpTcpControlledIPv4Enable and lldpV2ConfigLrpTcpControlledIPv4Enable are both false(2), then no Application descriptor with the indexed application ID is transmitted.

The value of this object is restored from non-volatile storage after a re-initialization of the management system.

"

REFERENCE

"C.2.2.6.2"

::= { lldpV2ConfigLrpTcpControlledEntry 3 }

lldpV2ConfigLrpTcpControlledIPv4Address OBJECT-TYPE

SYNTAX InetAddressIPv4

MAX-ACCESS read-write

STATUS current

DESCRIPTION

"Specifies an IPv4 address to be advertised in all of the LRP TCP Discovery TLVs that carry the indexed application ID that are transmitted by this Controlled system.

The value of this object is restored from non-volatile storage after a re-initialization of the management system.

"

REFERENCE

"C.2.2.6.3"

::= { lldpV2ConfigLrpTcpControlledEntry 4 }

lldpV2ConfigLrpTcpControlledIPv6Enable OBJECT-TYPE

SYNTAX TruthValue

MAX-ACCESS read-write

STATUS current

DESCRIPTION

"Specifies whether or not the indexed LRP application is available through the LRP-DT TCP mechanism using TCP over IPv6. It thus controls whether the LRP TCP Discovery TLVs transmitted from this Controlled system include the IPv6 address in lldpV2ConfigLrpTcpControlledIPv6Address in an Application descriptor containing the indexed application ID.

If lldpV2ConfigLrpTcpControlledIPv4Enable and lldpV2ConfigLrpTcpControlledIPv4Enable are both false(2), then no Application descriptor with the indexed application ID is transmitted.

The value of this object is restored from non-volatile storage after a re-initialization of the management system.

"

REFERENCE

"C.2.2.6.2"

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```
::= { lldpV2ConfigLrpTcpControlledEntry 5 }

lldpV2ConfigLrpTcpControlledIPv6Address OBJECT-TYPE
    SYNTAX      InetAddressIPv6
    MAX-ACCESS   read-write
    STATUS       current
    DESCRIPTION
        "Specifies an IPv6 address to be advertised in all of the
         LRP TCP Discovery TLVs that carry the indexed application ID
         that are transmitted by this Controlled system.

         The value of this object is restored from non-volatile
         storage after a re-initialization of the management system.
        "
    REFERENCE
        "C.2.2.6.3"
    ::= { lldpV2ConfigLrpTcpControlledEntry 6 }

--
-- lldpV2ConfigLrpEcpTxTable: configure the transmission of the
--                               LRP ECP Discovery TLVs on a set of ports.
--

lldpV2ConfigLrpEcpTxTable OBJECT-TYPE
    SYNTAX      SEQUENCE OF LldpV2ConfigLrpEcpTxEntry
    MAX-ACCESS   not-accessible
    STATUS       current
    DESCRIPTION
        "This table contains one or more rows per physical network
         connection known to this agent. The agent may wish to
         ensure that only one lldpV2ConfigLrpEcpTxEntry is present for
         each local port, or it may choose to maintain multiple
         entries for the same local port."
    REFERENCE
        "11.6.2.1"
    ::= { lldpV2ExtLrpLocalData 1 }

lldpV2ConfigLrpEcpTxEntry OBJECT-TYPE
    SYNTAX      LldpV2ConfigLrpEcpTxEntry
    MAX-ACCESS   not-accessible
    STATUS       current
    DESCRIPTION
        "Information about a particular port component."
    INDEX       { lldpV2ConfigLrpEcpTxLocalIfIndex,
                  lldpV2ConfigLrpEcpTxLocalDestMACAddress }
    ::= { lldpV2ConfigLrpEcpTxTable 1 }

LldpV2ConfigLrpEcpTxEntry ::= SEQUENCE {
    lldpV2ConfigLrpEcpTxLocalIfIndex      InterfaceIndex,
    lldpV2ConfigLrpEcpTxLocalDestMACAddress LldpV2DestAddressTableIndex,
    lldpV2ConfigLrpEcpTxEnable            TruthValue
}

lldpV2ConfigLrpEcpTxLocalIfIndex OBJECT-TYPE
    SYNTAX      InterfaceIndex
    MAX-ACCESS   not-accessible
    STATUS       current
    DESCRIPTION
        "The interface index value used to identify the port
         associated with this entry. Its value is an index
         into the interfaces MIB

         The value of this object is used as an index to the
         lldpV2ConfigLrpEcpTxTable.
        "
    ::= { lldpV2ConfigLrpEcpTxTable 2 }
```

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```
::= { lldpV2ConfigLrpEcpTxEntry 1 }

lldpV2ConfigLrpEcpTxLocalDestMACAddress OBJECT-TYPE
    SYNTAX      LldpV2DestAddressTableIndex
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
        "The index value used to identify the LLDPDU frame destination
        MAC address associated with this entry. Its value identifies
        the row in the lldpV2DestAddressTable where the MAC address
        can be found.

        The value of this object is used as an index to the
        lldpV2ConfigLrpEcpTxTable.
        "
    ::= { lldpV2ConfigLrpEcpTxEntry 2 }

lldpV2ConfigLrpEcpTxEnable OBJECT-TYPE
    SYNTAX      TruthValue
    MAX-ACCESS  read-write
    STATUS      current
    DESCRIPTION
        "The lldpV2ConfigLrpEcpTxEnable, which is defined
        as a truth value and configured by the network management,
        determines whether the IEEE 802.1 organizationally defined
        LRP ECP Discovery TLV transmission is allowed on a given
        LLDP transmission-capable port component.

        The value of this object is restored from non-volatile
        storage after a re-initialization of the management system."
    DEFVAL { false }
    ::= { lldpV2ConfigLrpEcpTxEntry 3 }

--
-- lldpV2ConfigLrpTcpTxTable: configure the transmission of the
--                               LRP TCP Discovery TLVs on a set of ports.
--

lldpV2ConfigLrpTcpTxTable OBJECT-TYPE
    SYNTAX      SEQUENCE OF LldpV2ConfigLrpTcpTxEntry
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
        "This table contains one or more rows per physical network
        connection known to this agent. The agent may wish to
        ensure that only one lldpV2ConfigLrpTcpTxEntry is present for
        each local port, or it may choose to maintain multiple
        entries for the same local port."
    ::= { lldpV2ExtLrpLocalData 2 }

lldpV2ConfigLrpTcpTxEntry OBJECT-TYPE
    SYNTAX      LldpV2ConfigLrpTcpTxEntry
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
        "Information about a particular port component."
    INDEX      { lldpV2ConfigLrpTcpTxLocalIfIndex,
                 lldpV2ConfigLrpTcpTxLocalDestMACAddress }
    ::= { lldpV2ConfigLrpTcpTxTable 1 }

LldpV2ConfigLrpTcpTxEntry ::= SEQUENCE {
    lldpV2ConfigLrpTcpTxLocalIfIndex      InterfaceIndex,
    lldpV2ConfigLrpTcpTxLocalDestMACAddress LldpV2DestAddressTableIndex,
    lldpV2ConfigLrpTcpTxEnable            TruthValue
}
```

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```
}

lldpV2ConfigLrpTcpTxLocalIfIndex OBJECT-TYPE
    SYNTAX      InterfaceIndex
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
        "The interface index value used to identify the port
        associated with this entry. Its value is an index
        into the interfaces MIB

        The value of this object is used as an index to the
        lldpV2ConfigLrpTcpTxTable.
        "
    ::= { lldpV2ConfigLrpTcpTxEntry 1 }

lldpV2ConfigLrpTcpTxLocalDestMACAddress OBJECT-TYPE
    SYNTAX      LldpV2DestAddressTableIndex
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
        "The index value used to identify the LLDPDU frame destination
        MAC address associated with this entry. Its value identifies
        the row in the lldpV2DestAddressTable where the MAC address
        can be found.

        The value of this object is used as an index to the
        lldpV2ConfigLrpTcpTxTable.
        "
    ::= { lldpV2ConfigLrpTcpTxEntry 2 }

lldpV2ConfigLrpTcpTxEnable OBJECT-TYPE
    SYNTAX      TruthValue
    MAX-ACCESS  read-write
    STATUS      current
    DESCRIPTION
        "The lldpV2ConfigLrpTcpTxEnable, which is defined
        as a truth value and configured by the network management,
        determines whether the IEEE 802.1 organizationally defined
        LRP TCP Discovery TLV transmission is allowed on a given
        LLDP transmission-capable port component.

        The value of this object is restored from non-volatile
        storage after a re-initialization of the management system."
    REFERENCE
        "9.1.2.1 of IEEE Std 802.1AB-2016"
    DEFVAL { false }
    ::= { lldpV2ConfigLrpTcpTxEntry 3 }

-----
-- IEEE 802.1CS LRP LLDP TLVs - Local System Information
-----

--
-- lldpV2LocLrpEcpTable
--

lldpV2LocLrpEcpTable OBJECT-TYPE
    SYNTAX      SEQUENCE OF LldpV2LocLrpEcpEntry
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
        "This table contains one or more rows per physical network
        connection known to this agent. The agent may wish to
        ensure that only one lldpV2ExtLrpLocEntry is present for
```

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each local port, or it may choose to maintain multiple
lldpV2ExtLrpLocEntries for the same local port.

"

REFERENCE

"11.6.2.2"

::= { lldpV2ExtLrpLocalData 3 }

lldpV2LocLrpEcpEntry OBJECT-TYPE

SYNTAX LldpV2LocLrpEcpEntry

MAX-ACCESS not-accessible

STATUS current

DESCRIPTION

"Information about the C.2.1LRP ECP Discovery TLV that can
be transmitted from a particular LLDP port component.
Note that this MIB supports the transmission of only one
LRP ECP Discovery TLV per port component.

"

INDEX { lldpV2LocLrpEcpLocalIfIndex,
lldpV2LocLrpEcpLocalDestMACAddress,
lldpV2LocLrpEcpApplicationIndex }

::= { lldpV2LocLrpEcpTable 1 }

LldpV2LocLrpEcpEntry ::= SEQUENCE {
lldpV2LocLrpEcpLocalIfIndex InterfaceIndex,
lldpV2LocLrpEcpLocalDestMACAddress LldpV2DestAddressTableIndex,
lldpV2LocLrpEcpApplicationIndex Unsigned32,
lldpV2LocLrpEcpApplicationId LrpAppId
}

lldpV2LocLrpEcpLocalIfIndex OBJECT-TYPE

SYNTAX InterfaceIndex

MAX-ACCESS not-accessible

STATUS current

DESCRIPTION

"The interface index value used to identify the port
associated with this entry. Its value is an index
into the interfaces MIB

The value of this object is used as an index to the
lldpV2LocLrpEcpTable.

"

::= { lldpV2LocLrpEcpEntry 1 }

lldpV2LocLrpEcpLocalDestMACAddress OBJECT-TYPE

SYNTAX LldpV2DestAddressTableIndex

MAX-ACCESS not-accessible

STATUS current

DESCRIPTION

"The index value used to identify the LLDPDU frame destination
MAC address associated with this entry. Its value identifies
the row in the lldpV2DestAddressTable where the MAC address
can be found.

The value of this object is used as an index to the
lldpV2LocLrpEcpTable.

"

::= { lldpV2LocLrpEcpEntry 2 }

lldpV2LocLrpEcpApplicationIndex OBJECT-TYPE

SYNTAX Unsigned32 (0..255)

MAX-ACCESS not-accessible

STATUS current

DESCRIPTION

"A small integer that selects one entry in the
lldpV2LocLrpEcpTable. For every entry in lldpV2LocLrpEcpEntry,

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there is one Application descriptor in the transmitted
LRP ECP Discovery TLV.

The value of the transmitted Application count field in the
LRP ECP Discovery TLV is equal to the number of different values
of lldpV2LocLrpEcpApplicationIndex for this port component.

"
REFERENCE "C.2.1.5, C.2.1.6"
::= { lldpV2LocLrpEcpEntry 3 }

lldpV2LocLrpEcpApplicationId OBJECT-TYPE

SYNTAX LrpAppId
MAX-ACCESS read-only
STATUS current
DESCRIPTION
"The AppId in one Application descriptor in the transmitted
LRP ECP Discovery TLV."
REFERENCE "C.2.1.5, C.2.1.6"
::= { lldpV2LocLrpEcpEntry 4 }

--
-- lldpV2LocLrpTcpTable - indexed by ifIndex.
--

lldpV2LocLrpTcpTable OBJECT-TYPE

SYNTAX SEQUENCE OF LldpV2LocLrpTcpEntry
MAX-ACCESS not-accessible
STATUS current
DESCRIPTION
"This table contains one or more rows per physical network
connection known to this agent, one for each port component."
::= { lldpV2ExtLrpLocalData 4 }

lldpV2LocLrpTcpEntry OBJECT-TYPE

SYNTAX LldpV2LocLrpTcpEntry
MAX-ACCESS not-accessible
STATUS current
DESCRIPTION
"Information about a particular LLDP port component's transmitted
LRP TCP Discovery TLV. Note that this MIB supports the
transmission of only one LRP TCP Discovery TLV per port
component."
INDEX { lldpV2LocLrpTcpLocalIfIndex,
lldpV2LocLrpTcpLocalDestMACAddress,
lldpV2LocLrpTcpApplicationIndex }
::= { lldpV2LocLrpTcpTable 1 }

LldpV2LocLrpTcpEntry ::= SEQUENCE {
lldpV2LocLrpTcpLocalIfIndex InterfaceIndex,
lldpV2LocLrpTcpLocalDestMACAddress LldpV2DestAddressTableIndex,
lldpV2LocLrpTcpApplicationIndex Unsigned32,
lldpV2LocLrpTcpApplicationId LrpAppId,
lldpV2LocLrpTcpPortNumber InetPortNumber,
lldpV2LocLrpTcpAddressInfo1 LrpInetAddressInfo,
lldpV2LocLrpTcpAddress1 InetAddress,
lldpV2LocLrpTcpAddressInfo2 LrpInetAddressInfo,
lldpV2LocLrpTcpAddress2 InetAddress
}

lldpV2LocLrpTcpLocalIfIndex OBJECT-TYPE

SYNTAX InterfaceIndex
MAX-ACCESS not-accessible

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```
STATUS      current
DESCRIPTION
    "The interface index value used to identify the port
    associated with this entry. Its value is an index
    into the interfaces MIB

    The value of this object is used as an index to the
    lldpV2LocLrpTcpTable.
    "
    ::= { lldpV2LocLrpTcpEntry 1 }

lldpV2LocLrpTcpLocalDestMACAddress OBJECT-TYPE
SYNTAX      LldpV2DestAddressTableIndex
MAX-ACCESS  not-accessible
STATUS      current
DESCRIPTION
    "The index value used to identify the destination
    MAC address associated with this entry. Its value identifies
    the row in the lldpV2DestAddressTable where the MAC address
    can be found.

    The value of this object is used as an index to the
    lldpV2LocLrpTcpTable.
    "
    ::= { lldpV2LocLrpTcpEntry 2 }

lldpV2LocLrpTcpApplicationIndex OBJECT-TYPE
SYNTAX      Unsigned32 (0..255)
MAX-ACCESS  not-accessible
STATUS      current
DESCRIPTION
    "A small integer that selects one entry in the
    lldpV2LocLrpTcpTable. For every entry in lldpV2LocLrpTcpEntry,
    there is one Application descriptor in the transmitted
    LRP TCP Discovery TLV.

    The value of the transmitted Application count field in the
    LRP TCP Discovery TLV is equal to the number of different values
    of lldpV2LocLrpTcpApplicationIndex for this port component.
    "
    REFERENCE "C.2.2.5, C.2.2.6"
    ::= { lldpV2LocLrpTcpEntry 3 }

lldpV2LocLrpTcpApplicationId OBJECT-TYPE
SYNTAX      LrpAppId
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
    "The AppId in one Application descriptor in the transmitted
    LRP TCP Discovery TLV.
    "
    REFERENCE "C.2.2.6"
    ::= { lldpV2LocLrpTcpEntry 4 }

lldpV2LocLrpTcpPortNumber OBJECT-TYPE
SYNTAX      InetPortNumber
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
    "The contents of the TCP Port number field in the transmitted
    LRP TCP Discovery TLV. lldpV2LocLrpTcpPortNumber SHALL NOT
    contain the value 0.
    "
    REFERENCE "C.2.2.6"
    ::= { lldpV2LocLrpTcpEntry 5 }
```

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```
lldpV2LocLrpTcpAddressInfo1 OBJECT-TYPE
    SYNTAX      LrpInetAddressInfo
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "The contents of the first Address info field in the transmitted
        Application descriptor. lldpV2LocLrpTcpAddressInfo1 SHALL NOT
        contain the value, notPresent(256).
        "
    REFERENCE "C.2.2.6"
    ::= { lldpV2LocLrpTcpEntry 6 }

lldpV2LocLrpTcpAddress1 OBJECT-TYPE
    SYNTAX      InetAddress
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "The contents of the first Address field in the transmitted
        Application descriptor. If lldpV2LocLrpTcpAddressInfo1 has the
        value notPresent(256) or noAddress(0), lldpV2LocLrpTcpAddress1
        SHALL contain a zero-length octet string. Otherwise,
        lldpV2LocLrpTcpAddress1 SHALL contain an IPv4 or IPv6 address,
        as specified by lldpV2LocLrpTcpAddressInfo1.
        "
    REFERENCE "C.2.2.6"
    ::= { lldpV2LocLrpTcpEntry 7 }

lldpV2LocLrpTcpAddressInfo2 OBJECT-TYPE
    SYNTAX      LrpInetAddressInfo
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "The contents of the second Address info field in the transmitted
        Application descriptor. lldpV2LocLrpTcpAddressInfo2 has the
        value notPresent(256) if there is no second Address info field
        in the Application descriptor.
        "
    REFERENCE "C.2.2.6"
    ::= { lldpV2LocLrpTcpEntry 8 }

lldpV2LocLrpTcpAddress2 OBJECT-TYPE
    SYNTAX      InetAddress
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "The contents of the second Address field in the transmitted
        Application descriptor. If lldpV2LocLrpTcpAddressInfo2 has the
        value notPresent(256) or noAddress(0), lldpV2LocLrpTcpAddress2
        SHALL contain a zero-length octet string. Otherwise,
        lldpV2LocLrpTcpAddress2 SHALL contain an IPv4 or IPv6 address,
        as specified by lldpV2LocLrpTcpAddressInfo2.
        "
    REFERENCE "C.2.2.6"
    ::= { lldpV2LocLrpTcpEntry 9 }

-----
-- IEEE 802.1CS LRP LLDP TLVs - Remote (Neighbor) System Information
-----

--
-- lldpV2RemLrpEcpTable
--

lldpV2RemLrpEcpTable OBJECT-TYPE
```


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SYNTAX SEQUENCE OF LldpV2RemLrpEcpEntry
MAX-ACCESS not-accessible
STATUS current
DESCRIPTION
"This table contains one or more rows per physical network connection known to this agent. The agent may wish to ensure that only one lldpV2ExtLrpRemEntry is present for each local port, or it may choose to maintain multiple lldpV2ExtLrpRemEntries for the same local port."
REFERENCE
"11.6.2.3"
::= { lldpV2ExtLrpRemoteData 1 }

lldpV2RemLrpEcpEntry OBJECT-TYPE
SYNTAX LldpV2RemLrpEcpEntry
MAX-ACCESS not-accessible
STATUS current
DESCRIPTION
"Information about a particular port component."
INDEX { lldpV2RemLrpEcpTimeMark,
lldpV2RemLrpEcpLocalIfIndex,
lldpV2RemLrpEcpLocalDestMACAddress,
lldpV2RemLrpEcpIndex,
lldpV2RemLrpEcpApplicationIndex }
::= { lldpV2RemLrpEcpTable 1 }

LldpV2RemLrpEcpEntry ::= SEQUENCE {
lldpV2RemLrpEcpTimeMark TimeFilter,
lldpV2RemLrpEcpLocalIfIndex InterfaceIndex,
lldpV2RemLrpEcpLocalDestMACAddress LldpV2DestAddressTableIndex,
lldpV2RemLrpEcpIndex Unsigned32,
lldpV2RemLrpEcpApplicationIndex Unsigned32,
lldpV2RemLrpEcpApplicationId LrpAppId
}

lldpV2RemLrpEcpTimeMark OBJECT-TYPE
SYNTAX TimeFilter
MAX-ACCESS not-accessible
STATUS current
DESCRIPTION
"A TimeFilter for this entry. See the TimeFilter textual convention in IETF RFC 4502 to see how TimeFilter works."
REFERENCE
"IETF RFC 4502 section 6"
::= { lldpV2RemLrpEcpEntry 1 }

lldpV2RemLrpEcpLocalIfIndex OBJECT-TYPE
SYNTAX InterfaceIndex
MAX-ACCESS not-accessible
STATUS current
DESCRIPTION
"The interface index value used to identify the port associated with this entry. Its value is an index into the interfaces MIB

The value of this object is used as an index to the lldpV2RemLrpEcpTable."
::= { lldpV2RemLrpEcpEntry 2 }

lldpV2RemLrpEcpLocalDestMACAddress OBJECT-TYPE
SYNTAX LldpV2DestAddressTableIndex
MAX-ACCESS not-accessible

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STATUS current

DESCRIPTION

"The index value used to identify the LLDPDU frame destination MAC address associated with this entry. Its value identifies the row in the lldpV2DestAddressTable where the MAC address can be found.

The value of this object is used as an index to the lldpV2RemLrpTcpTable.

"

::= { lldpV2RemLrpEcpEntry 3 }

lldpV2RemLrpEcpIndex OBJECT-TYPE

SYNTAX Unsigned32(1..2147483647)

MAX-ACCESS not-accessible

STATUS current

DESCRIPTION

"This object represents an arbitrary local integer value used by this agent to identify a particular connection instance, unique only for the indicated remote system.

An agent is encouraged to assign monotonically increasing index values to new entries, starting with one, after each reboot. It is considered unlikely that the lldpV2RemLrpEcpIndex can wrap between reboots.

"

::= { lldpV2RemLrpEcpEntry 4 }

lldpV2RemLrpEcpApplicationIndex OBJECT-TYPE

SYNTAX Unsigned32 (0..255)

MAX-ACCESS not-accessible

STATUS current

DESCRIPTION

"A small integer that selects one entry in the lldpV2RemLrpEcpTable. For every entry in lldpV2RemLrpEcpEntry, there is one Application descriptor in the received LRP ECP Discovery TLV.

The value of the received Application count field in the LRP ECP Discovery TLV is equal to the number of different values of lldpV2RemLrpEcpApplicationIndex for this connection instance.

"

REFERENCE "C.2.1.5, C.2.1.6"

::= { lldpV2RemLrpEcpEntry 5 }

lldpV2RemLrpEcpApplicationId OBJECT-TYPE

SYNTAX LrpAppId

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"The AppId in one Application descriptor in the received LRP ECP Discovery TLV.

"

REFERENCE "C.2.1.5, C.2.1.6"

::= { lldpV2RemLrpEcpEntry 6 }

--

-- lldpV2RemLrpTcpTable

--

lldpV2RemLrpTcpTable OBJECT-TYPE

SYNTAX SEQUENCE OF LldpV2RemLrpTcpEntry

MAX-ACCESS not-accessible

STATUS current

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DESCRIPTION

"This table contains one or more rows per physical network connection known to this agent. The agent may wish to ensure that only one lldpV2ExtLrpRemEntry is present for each local port, or it may choose to maintain multiple lldpV2ExtLrpRemEntries for the same local port."

::= { lldpV2ExtLrpRemoteData 2 }

lldpV2RemLrpTcpEntry OBJECT-TYPE

SYNTAX LldpV2RemLrpTcpEntry

MAX-ACCESS not-accessible

STATUS current

DESCRIPTION

"Information about a particular port component."

INDEX { lldpV2RemLrpTcpTimeMark,
lldpV2RemLrpTcpLocalIfIndex,
lldpV2RemLrpTcpLocalDestMACAddress,
lldpV2RemLrpTcpIndex,
lldpV2RemLrpTcpApplicationIndex }

::= { lldpV2RemLrpTcpTable 1 }

LldpV2RemLrpTcpEntry ::= SEQUENCE {

lldpV2RemLrpTcpTimeMark	TimeFilter,
lldpV2RemLrpTcpLocalIfIndex	InterfaceIndex,
lldpV2RemLrpTcpLocalDestMACAddress	LldpV2DestAddressTableIndex,
lldpV2RemLrpTcpIndex	Unsigned32,
lldpV2RemLrpTcpApplicationIndex	Unsigned32,
lldpV2RemLrpTcpApplicationId	LrpAppId,
lldpV2RemLrpTcpPortNumber	InetPortNumber,
lldpV2RemLrpTcpAddressInfo1	LrpInetAddressInfo,
lldpV2RemLrpTcpAddress1	InetAddress,
lldpV2RemLrpTcpAddressInfo2	LrpInetAddressInfo,
lldpV2RemLrpTcpAddress2	InetAddress

}

lldpV2RemLrpTcpTimeMark OBJECT-TYPE

SYNTAX TimeFilter

MAX-ACCESS not-accessible

STATUS current

DESCRIPTION

"A TimeFilter for this entry. See the TimeFilter textual convention in IETF RFC 4502 to see how TimeFilter works."

REFERENCE

"IETF RFC 4502 section 6"

::= { lldpV2RemLrpTcpEntry 1 }

lldpV2RemLrpTcpLocalIfIndex OBJECT-TYPE

SYNTAX InterfaceIndex

MAX-ACCESS not-accessible

STATUS current

DESCRIPTION

"The interface index value used to identify the port associated with this entry. Its value is an index into the interfaces MIB"

The value of this object is used as an index to the lldpV2RemLrpTcpTable.

"

::= { lldpV2RemLrpTcpEntry 2 }

lldpV2RemLrpTcpLocalDestMACAddress OBJECT-TYPE

SYNTAX LldpV2DestAddressTableIndex

MAX-ACCESS not-accessible

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STATUS current

DESCRIPTION

"The index value used to identify the destination MAC address associated with this entry. Its value identifies the row in the lldpV2DestAddressTable where the MAC address can be found.

The value of this object is used as an index to the lldpV2RemLrpTcpTable.

"

::= { lldpV2RemLrpTcpEntry 3 }

lldpV2RemLrpTcpIndex OBJECT-TYPE

SYNTAX Unsigned32 (1..2147483647)

MAX-ACCESS not-accessible

STATUS current

DESCRIPTION

"This object represents an arbitrary local integer value used by this agent to identify a particular connection instance, unique only for the indicated remote system.

An agent is encouraged to assign monotonically increasing index values to new entries, starting with one, after each reboot. It is considered unlikely that the lldpV2RemLrpTcpIndex can wrap between reboots.

"

::= { lldpV2RemLrpTcpEntry 4 }

lldpV2RemLrpTcpApplicationIndex OBJECT-TYPE

SYNTAX Unsigned32 (0..255)

MAX-ACCESS not-accessible

STATUS current

DESCRIPTION

"A small integer that selects one entry in the lldpV2RemLrpTcpTable. For every entry in lldpV2RemLrpTcpEntry, there is one Application descriptor in the received LRP TCP Discovery TLV.

The value of the received Application count field in the LRP TCP Discovery TLV is equal to the number of different values of lldpV2RemLrpTcpApplicationIndex for this connection instance.

"

REFERENCE "C.2.2.5, C.2.2.6"

::= { lldpV2RemLrpTcpEntry 5 }

lldpV2RemLrpTcpApplicationId OBJECT-TYPE

SYNTAX LrpAppId

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"The AppId in one Application descriptor in the received LRP TCP Discovery TLV.

"

REFERENCE "C.2.2.6"

::= { lldpV2RemLrpTcpEntry 6 }

lldpV2RemLrpTcpPortNumber OBJECT-TYPE

SYNTAX InetPortNumber

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"The contents of the TCP Port number field in the received Application descriptor. lldpV2RemLrpTcpPortNumber SHALL NOT contain the value 0.

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```
"
REFERENCE "C.2.2.6"
::= { lldpV2RemLrpTcpEntry 7 }

lldpV2RemLrpTcpAddressInfo1 OBJECT-TYPE
SYNTAX      LrpInetAddressInfo
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
    "The contents of the first Address info field in the received
    Application descriptor. lldpV2RemLrpTcpAddressInfo1 SHALL NOT
contain the value, notPresent(256)."
"
REFERENCE "C.2.2.6"
::= { lldpV2RemLrpTcpEntry 8 }

lldpV2RemLrpTcpAddress1 OBJECT-TYPE
SYNTAX      InetAddress
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
    "The contents of the first Address field in the received
    Application descriptor. If lldpV2RemLrpTcpAddressInfo1 has the
    value notPresent(256) or noAddress(0), lldpV2RemLrpTcpAddress1
    SHALL contain a zero-length octet string. Otherwise,
    lldpV2RemLrpTcpAddress1 SHALL contain an IPv4 or IPv6 address,
    as specified by lldpV2RemLrpTcpAddressInfo1."
"
REFERENCE "C.2.2.6"
::= { lldpV2RemLrpTcpEntry 9 }

lldpV2RemLrpTcpAddressInfo2 OBJECT-TYPE
SYNTAX      LrpInetAddressInfo
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
    "The contents of the second Address info field in the received
    Application descriptor. lldpV2RemLrpTcpAddressInfo2 has the
    value notPresent(256) if there is no second Address info field
    in the Application descriptor."
"
REFERENCE "C.2.2.6"
::= { lldpV2RemLrpTcpEntry 10 }

lldpV2RemLrpTcpAddress2 OBJECT-TYPE
SYNTAX      InetAddress
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
    "The contents of the second Address field in the received
    Application descriptor. If lldpV2RemLrpTcpAddressInfo2 has the
    value notPresent(256) or noAddress(0), lldpV2RemLrpTcpAddress2
    SHALL contain a zero-length octet string. Otherwise,
    lldpV2RemLrpTcpAddress2 SHALL contain an IPv4 or IPv6 address,
    as specified by lldpV2RemLrpTcpAddressInfo2."
"
REFERENCE "C.2.2.6"
::= { lldpV2RemLrpTcpEntry 11 }

-----
-- Conformance Information for the basicSet TLV set
-----

lldpV2ExtLrpConformance
OBJECT IDENTIFIER ::= { lldpXdot1StandAloneExtensions 9 }
```

ISO/IEC/IEEE 8802-1CS:2022/Cor.1:2025(en)

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```
lldpV2ExtLrpCompliances
    OBJECT IDENTIFIER ::= { lldpV2ExtLrpConformance 1 }
lldpV2ExtLrpGroups
    OBJECT IDENTIFIER ::= { lldpV2ExtLrpConformance 2 }

-- compliance statements

lldpV2ExtLrpTxRxCompliance MODULE-COMPLIANCE
    STATUS current
    DESCRIPTION
        "A compliance statement for SNMP entities that implement
        the IEEE 802.1 organizationally defined LLDP extension MIB.

        This group is mandatory for all agents that implement the
        LLDP 802.1 organizational extension in TX and/or RX mode
        for the basicSet TLV set.

        This version defines compliance requirements for
        V2 of the LLDP MIB."
    MODULE -- this module
    ::= { lldpV2ExtLrpCompliances 1 }

-- MIB groupings for the basicSet TLV set

lldpV2ExtLrpControlledTcpControlGroup    OBJECT-GROUP
    OBJECTS {
        lldpV2ConfigLrpTcpControlledTcpPortNumber,
        lldpV2ConfigLrpTcpControlledIPv4Enable,
        lldpV2ConfigLrpTcpControlledIPv4Address,
        lldpV2ConfigLrpTcpControlledIPv6Enable,
        lldpV2ConfigLrpTcpControlledIPv6Address
    }
    STATUS current
    DESCRIPTION
        "The optional collection of objects which are required of a
        Controlled system so that a Proxy system SNMP client can
        configure the LRP TCP Discovery TLVs to be transmitted by the
        Controlled system.
        "
    REFERENCE "5.10:b"
    ::= { lldpV2ExtLrpGroups 1 }

lldpV2ExtLrpEcpTlvGroup    OBJECT-GROUP
    OBJECTS {
        lldpV2ConfigLrpEcpTxEnable,
        lldpV2LocLrpEcpApplicationId,
        lldpV2RemLrpEcpApplicationId
    }
    STATUS current
    DESCRIPTION
        "The optional collection of objects which are required of any
        system implementing the LRP-DT ECP mechanism so that an SNMP
        client can observe the LRP ECP Discovery TLVs transmitted and
        received by the system."
    REFERENCE "Clause 5"
    ::= { lldpV2ExtLrpGroups 2 }

lldpV2ExtLrpTcpTlvGroup    OBJECT-GROUP
    OBJECTS {
        lldpV2ConfigLrpTcpTxEnable,
        lldpV2LocLrpTcpApplicationId,
        lldpV2LocLrpTcpPortNumber,
```

ISO/IEC/IEEE 8802-1CS:2022/Cor.1:2025(en)

IEEE Std 802.1CS-2020/Cor 1-2024
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```
lldpV2LocLrpTcpAddressInfo1,  
lldpV2LocLrpTcpAddress1,  
lldpV2LocLrpTcpAddressInfo2,  
lldpV2LocLrpTcpAddress2,  
lldpV2RemLrpTcpApplicationId,  
lldpV2RemLrpTcpPortNumber,  
lldpV2RemLrpTcpAddressInfo1,  
lldpV2RemLrpTcpAddress1,  
lldpV2RemLrpTcpAddressInfo2,  
lldpV2RemLrpTcpAddress2  
}  
STATUS current  
DESCRIPTION  
    "The optional collection of objects which are required of any  
    system implementing the LRP-DT TCP mechanism so that an SNMP  
    client can observe the LRP TCP Discovery TLVs transmitted and  
    received by the system."  
REFERENCE "Clause 5"  
::= { lldpV2ExtLrpGroups 3 }
```

END

Annex C

(normative)

IEEE 802.1 Organizationally Specific TLVs for LLDP

C.2 Organizationally Specific TLV definitions

C.2.2 LRP TCP Discovery TLV

C.2.2.6 Application descriptor

Change C.2.2.6 as follows:

An Application descriptor for the LRP TCP Discovery TLV contains four octets with an AppId, followed by one or two addresses to use to make the TCP association, as shown in Figure C-3. The first three octets contain the OUI or CID of the organization assigning the AppId, and the fourth octet identifies a specific LRP application that connects using TCP. Following these four octets is a two-octet TCP port number, followed in turn by the descriptions of one or two IP addresses, as shown in Table C-2.

Offset	0	3	4	6	7	varies	varies
	OUI or CID for AppId (3 octets)	AppId subtype (1 octet)	TCP port number (2 octets)	Address info 1 (1 octet)	Address 1 (0, 4, or 16 octets)	Address info 2 (1 octet)	Address 2 (0, 4, or 16 octets)

Figure C-3—LRP TCP Discovery TLV application descriptor format**Table C-2—Allowed address information encodings and lengths**

Address info 1	Address 1 length	Address info 2	Address 2 length	Total length of address information
noAddress	0	addrIPv4	4	6
		addrIPv6	16	18
addrIPv4	4	not present ^a	0	5
		noAddress	0	6
		addrIPv6	16	22
addrIPv6	16	not present ^a	0	17
		noAddress	0	18
		addrIPv4	4	22

^aAllowed only at the end of the TLV. See C.2.2.7.

C.2.2.7 LRP TCP Discovery TLV usage rules

Change C.2.2.7 as follows:

The LRP TCP Discovery TLV is used to establish TCP associations among the Portals on a physical link. A Native or Controlled system should transmit this TLV if and only if the information transmitted in the LLDPDU matches the information in an entry in the `imTargetPortList` (7.2.2.1) in the Native system or the Controlled's Proxy system.

A system shall not transmit the same `AppId` value in more than one Application descriptor of the same LRP TCP Discovery TLV. A system can transmit more than one LRP TCP Discovery TLV for different sets of `AppId` values, but the same `AppId` value shall not appear in more than one LRP TCP Discovery TLV in the same LLDPDU. At ~~least~~^{least} one IP address shall be included in an LRP TCP Discovery TLV. If two addresses are included, they shall be of different types (`addrIPv4` vs. `addrIPv6`). The second `AddressInfo` field can be omitted from an application descriptor (be not present in Table C-2) only if it would be the last octet of the LRP TCP Discovery TLV.

NOTE—The provision for sending or receiving multiple LRP TCP Discovery TLVs is made to facilitate control of these LLDP TLVs by more than one LRP application.

This standard does not specify the actions to be taken if a received LRP TCP Discovery TLV violates these usage rules.

As explained in 9.2.7.7.2 of IEEE Std 802.1AB-2016, a received LRP TCP Discovery TLV is not invalid if the value of the TLV information string length field is larger than the total amount of information indicated by the Application count and Application descriptors. A system receiving such a TLV shall interpret the TLV as described in this standard, and ignore any information following the Application descriptor.



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