



IEEE Standard for Ethernet Structure of Management Information version 2 (SMIPv2) Data Model Definitions

IEEE Computer Society

Developed by the
LAN/MAN Standards Committee

IEEE Std 802.3.1™-2024
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Abstract: This standard defines Structure of Management Information version 2 (SMIv2) MIB module specifications for IEEE Std 802.3 Ethernet and associated managed object branch and leaf assignments used in the variable descriptors in IEEE Std 802.3 Variable Request operations, administration, and maintenance protocol data units (OAMPDU).

Keywords: Ethernet, IEEE 802.3.1™, Management Information Base, MIB, network management, Simple Network Management Protocol, SMIv2, SNMP, Structure of Management Information version 2

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Introduction

This introduction is not part of IEEE Std 802.3.1-2024, IEEE Standard for Ethernet Structure of Management Information version 2 (SMIv2) Data Model Definitions.

The initial version of this standard provided Management Information Base (MIB) module definitions that superseded and made obsolete the Guidelines for the definition of Managed Objects (GDMO) MIB modules defined in Annex 30A and Annex 30B of IEEE Std 802.3™-2008 [B5]⁶, and Structure of Management Information version 2 (SMIv2) MIB modules defined in Annex F.6 of IEEE Std 802.1AB™-2009 [B4], IETF RFC 2108 [B6], IETF RFC 3621 [B8], IETF RFC 3635 [B9], IETF RFC 3637 [B11], IETF RFC 4836 [B14], IETF RFC 4837 [B15], IETF RFC 4878 [B16], and IETF RFC 5066 [B17].

The first revision of this standard updated the SMIv2 MIB modules to support IEEE Std 802.3 amendments published since IEEE Std 802.3.1 was first published in 2011 and removed the GDMO MIB modules except for the associated branch and leaf assignments, which are used in IEEE Std 802.3 for Variable Request operations, administration, and maintenance protocol data units (OAMPDU).

The second revision of this standard updates the SMIv2 MIB modules to support IEEE Std 802.3 amendments published since IEEE Std 802.3.1 was revised in 2013.

Ethernet technology, as defined by the IEEE 802.3 Working Group, continues to evolve, with scalable increases in speed, new types of cabling and interfaces, and new features. The evolution may require changes in the managed objects to reflect this new functionality. This document, as with other documents issued by this working group, reflects a certain stage in the evolution of Ethernet technology. In the future, this document might be revised, or new documents might be issued, to reflect the evolution of Ethernet technology.

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IEEE Standard for Ethernet Structure of Management Information version 2 (SMIPv2) Data Model ~~Base (MIB)~~ Definitions ~~for Ethernet~~

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1. Overview

This standard defines Structure of Management Information version 2 (SMIPv2) Management Information Base (MIB) module specifications for IEEE Std 802.3 Ethernet that can be accessed by a Network Management System using the Simple Network Management Protocol (SNMP). This standard also defines associated managed object branch and leaf assignments used in the variable descriptors in IEEE Std 802.3 Variable Request operations, administration, and maintenance protocol data units (OAMPDU).

~~This document supersedes and makes obsolete Annex 30A and Annex 30B of IEEE Std 802.3TM-2008, Annex F of IEEE Std 802.1ABTM-2009,¹ IETF RFC 2108 [B20],² IETF RFC 3621 [B27], IETF RFC 3635 [B29], IETF RFC 3637 [B30], IETF RFC 4836 [B35], IETF RFC 4837 [B36], IETF RFC 4878 [B37], and IETF RFC 5066 [B38].~~

²The numbers in brackets correspond to those of the bibliography in Annex A.

~~Ethernet technology, as defined by the IEEE 802.3 Working Group, continues to evolve, with scalable increases in speed, new types of cabling and interfaces, and new features. This evolution may require changes in the managed objects in order to reflect this new functionality. This document, as with other documents issued by this working group, reflects a certain stage in the evolution of Ethernet technology. In the future, this document might be revised, or new documents might be issued, in order to reflect the evolution of Ethernet technology.~~

The term “Ethernet-like interfaces” was historically used because the interfaces defined by the IEEE 802.3 Working Group were not considered “Ethernet” per se, but “Ethernet-like”, because “Ethernet” was taken to mean “Ethernet version 2” according to the (DEC, Intel, Xerox) DIX “blue book”. Today and in the context of SNMP management and SMIPv2 MIB modules, “Ethernet”, “Ethernet-like”, and “IEEE 802.3” are synonymous and interchangeable in the marketplace. The term “Ethernet-like” is retained in this document because of its common usage in the SNMP-based network management community.

1.1 Scope

This standard [defines Structure of Management Information version 2 \(SMIPv2\)](#) ~~contains the~~ Management Information Base (MIB) module specifications for IEEE Std 802.3, ~~also known as~~ Ethernet. ~~It includes the Structure of Management Information Version 2 (SMIPv2) MIB module specifications formerly produced and~~ [associated](#) ~~published by the Internet Engineering Task Force (IETF), and the~~ managed object branch and leaf assignments [used](#) ~~provided~~ in the [variable descriptors in](#) ~~Guidelines for the Definition of Managed Objects (GDMO) MIB modules formerly specified within~~ IEEE Std 802.3 [Variable Request operations, administration, and maintenance protocol data unit \(OAMPDU\)](#) ~~, as well as extensions resulting from recent amendments to IEEE Std 802.3. The SMIPv2 MIB modules are intended for use with the Simple Network Management Protocol (SNMP), commonly used to manage Ethernet.~~

1.2 Purpose

The purpose of the standard is to define Structure of Management Information version 2 (publish the SMIV2) MIB module specifications for in a single document that is separate from IEEE Std 802.3, and associated managed object branch and leaf assignments and publish them that can be published in a machine-readable format. Future amendments and revisions to IEEE Std 802.3.1 will be performed to update the MIB specifications as required to track future amendments and revisions to IEEE Std 802.3.

1.3 Word usage

The word *shall* indicates mandatory requirements strictly to be followed in order to conform to the standard and from which no deviation is permitted (*shall equals is required to*).^{8,9}

The word *should* indicates that among several possibilities one is recommended as particularly suitable, without mentioning or excluding others; or that a certain course of action is preferred but not necessarily required (*should equals is recommended that*).

The word *may* is used to indicate a course of action permissible within the limits of the standard (*may equals is permitted to*).

The word *can* is used for statements of possibility and capability, whether material, physical, or causal (*can equals is able to*).

1.4 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 IETF RFC 3410.¹⁰

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

⁸ The use of the word *must* is deprecated and cannot be used when stating mandatory requirements, *must* is used only to describe unavoidable situations.

⁹ The use of *will* is deprecated and cannot be used when stating mandatory requirements, *will* is only used in statements of fact.

¹⁰ ⁺ Information on references can be found in Clause 2.

Objects in the MIB are defined using the mechanisms defined in the Structure of Management Information (SMI). This standard specifies MIB modules that are compliant to the SMIV2, which is described in IETF ~~STD-58~~ (RFC 2578), IETF ~~STD-58~~ (RFC 2579), and IETF ~~STD-58~~ (RFC 2580).

1.5 Security considerations

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 a MIB module.

Implementers should consider the security features as provided by the SNMPv3 framework (see section 8 of IETF RFC 3410), including full support for the SNMPv3 cryptographic mechanisms (for authentication and privacy).

SNMPv3 should be deployed, rather than previous versions of SNMP, and cryptographic security should be enabled. It is then a customer/operator responsibility to ensure that the SNMP entity giving access to an instance of this MIB module 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.

Throughout this standard, there are a number of accessible management objects that ~~could~~ ~~may~~ be considered sensitive or vulnerable in some network environments. The support for some operations in a non-secure environment without proper protection can have a negative effect on network operations. Such management objects are detailed in the clauses that define them.

The user of these MIB modules should therefore be aware that support for SET operations in a non-secure environment without proper protection can have a negative effect on network operations.

The readable objects in these MIB modules (i.e., those with MAX-ACCESS other than not-accessible) ~~could~~ ~~may~~ be considered sensitive in some environments since, collectively, they provide information about the performance of network interfaces and can reveal some aspects of their configuration. In such environments, it is important to control GET and NOTIFY access to these objects and possibly encrypt their values when sending them over the network via SNMP.

1.6 Conformance

Specific conformance statements and compliance statements, written in accordance with IETF ~~STD 58~~, RFC 2580, are included in each MIB module. They can be found by searching for the text strings “Conformance statements” and “Compliance statements”.

1.7 SMIV2 syntax validation and formatting

All SMIV2 modules included in this standard are SMIV2 (see IETF RFC 2578) compliant and pass automated checks using tools available at the time of publication, including the open source and/or free versions of SMIV2 validation ‘smilint’ (see <https://linux.die.net/man/1/smilint>), as well as other SMIV2 validation tools listed at <https://wiki.ietf.org/group/ops/mib-review-tools>. When using “smilint” tool, “smilint: level 6” and “smilint: hide namelength-32” configuration options were used. The “smidump” utility was used to produce a common structure/format for SMIV2 modules included in this standard.

2. Normative references

The following referenced documents are indispensable for the application of this document (i.e., they must be understood and used, so each referenced document is cited in text and its relationship to this document is explained). For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments or corrigenda) applies.

ANSI T1.231-1997, Layer 1 In-Service Digital Transmission Performance Monitoring. ^{11 3}

ANSI T1.424-2004, Interface Between Networks and Customer Installation—Very-high-bit-rate Digital Subscriber Lines (VDSL)—Metallic Interface (DMT Based).

~~ETSI TS1 101 270 1 (1999), Transmission and Multiplexing (TM); Access transmission systems on metallic access cables; Very high speed Digital Subscriber Line (VDSL); Part 1: Functional requirements.~~⁴

^{11 3} ANSI publications are available from the American National Standards Institute (<https://www.ansi.org/> ~~<http://www.ansi.org/>~~).

~~⁴ETSI publications are available from the European Telecommunications Standards Institute (<http://www.etsi.org/>).~~

IEEE Std 802[®], IEEE Standard for Local and Metropolitan Area Networks: Overview and —
Architecture.^{12, 13 5, 6}

IEEE Std 802.1Q[™] ~~802.1D[™]~~, IEEE Standard for Local and Metropolitan Area Networks—~~Media Access Control (MAC)~~ Bridges and Bridged Networks.

IEEE Std 802.1AB[™], ~~802.1AB[™]-2009~~, IEEE Standard for Local and Metropolitan Area Networks—
Station and Media Access Control Connectivity Discovery.

IEEE Std 802.3[™], IEEE Standard for Ethernet.

IEEE Std 802.9a[™]-1995, IEEE Standards for Local and Metropolitan Area Networks—Supplement to
Integrated Services (IS) LAN Interface at the Medium Access Control (MAC) and Physical (PHY)
Layers—Specification of IsLAN16-T.

IETF RFC 1213, Management Information Base for Network Management of TCP/IP-based internets:
MIB-II, K.₇ McCloghrie₇ and M.₇ Rose, Mar. 1991.^{14 7}

IETF RFC 1516, Definitions of Managed Objects for IEEE 802.3 Repeater Devices, D.₇ McMaster₇ and
K.₇ McCloghrie, Sep ~~Sept.~~ 1993.

IETF RFC 2119, Key words for use in RFCs to Indicate Requirement Levels, S.₇ Bradner, Mar. 1997.

IETF RFC 2434, Guidelines for Writing an IANA Considerations Section in RFCs, T. Narten₇ and H.₇
Alvestrand, Oct₇ 1998.

IETF RFC 2578 (STD 58), Structure of Management Information Version 2 (SMIv2), K.₇ McCloghrie,
D.₇ Perkins, J.₇ Schoenwaelder, Apr. 1999.

IETF RFC 2579 (STD 58), Textual Conventions for SMIv2, K.₇ McCloghrie, D.₇ Perkins, and J.₇
Schoenwaelder, Apr. 1999.

^{12 5} IEEE publications are available from The Institute of Electrical and Electronics Engineers (<https://standards.ieee.org/>
~~http://standards.ieee.org/~~).

^{13 6} The IEEE standards or products referred to in ~~this~~ Clause 2 are trademarks owned by ~~of~~ The Institute of Electrical and Electronics
Engineers, Incorporated Inc.

^{14 7} IETF ~~documents (i.e., RFCs)~~ are available from the Internet Engineering Task Force <https://www.ietf.org/> ~~for download at~~
<http://www.rfc-archive.org/>.

IETF RFC 2580 (STD 58), Conformance Statements for SMIPv2, K. McCloghrie, D. Perkins, and J. Schoenwaelder, Apr. 1999.

~~IETF RFC 2856, Textual Conventions for Additional High Capacity Data Types, Bierman, A., McCloghrie, K., and Presuhn, R., June 2000.~~

IETF RFC 2863, The Interfaces Group MIB, K. McCloghrie and F. Kastenholz, Jun. June 2000.

IETF RFC 2864, The Inverted Stack Table Extension to the Interfaces Group MIB, K. McCloghrie and G. Hanson, Jun. June 2000.

IETF RFC 3410, Introduction and Applicability Statements for Internet Standard Management Framework, J. Case, R. Mundy, D. Partain, and B. Stewart, Dec. 2002.

~~IETF RFC 3411, An Architecture for Describing Simple Network Management Protocol (SNMP) Management Frameworks, Harrington, D., Presuhn, R., and Wijnen, B., Dec. 2002.~~

IETF RFC 3592, Definitions of Managed Objects for the Synchronous Optical Network/Synchronous Digital Hierarchy (SONET/SDH) Interface Type, K. Tesink, Sep Sept. 2003.

ITU-T Recommendation G.983.1, 1998—Optical line systems for local and access networks—Broadband optical access systems based on Passive Optical Networks (PON).^{15 8}

ITU-T Recommendation G.991.2, 2003—Single-pair high-speed digital subscriber line (SHDSL) transceivers.

ITU-T Recommendation G.993.1, 2004—Very high speed digital subscriber line transceivers.

3. Definitions

For the purposes of this document, the following terms and definitions apply. *The IEEE Standards Dictionary Online* should be consulted for terms not defined in this clause.^{16 9}

agent: An entity, typically implemented in software, which provides remote access to management instrumentation, via the Simple Network Management Protocol (SNMP).

^{15 8} ITU-T publications are available from the International Telecommunications Union (<https://www.itu.int/> ~~<http://www.itu.int/>~~).

^{16 9} The *IEEE Standards Dictionary Online* ~~subscription~~ is available at <https://dictionary.ieee.org/>. An IEEE Account is required for access to the dictionary, and one can be created at no charge on the dictionary sign-in page <http://www.ieee.org/portal/innovate/products/standard/standards.html>.

jack type: The jack connector type, as it appears on the outside of the system. The type of mechanical interface to the transmission medium.

Loss of Code-group Delineation: See 50.3.5.3 of IEEE Std 802.3.

managed object: An abstract representation of network resources that are managed. A managed object is defined according to the *Structure of Management Information version 2* (SMIv2) defined in IETF ~~STD 58~~, RFC 2578.

managed repeater: A repeater as defined by IEEE Std 802.3 incorporating a management entity that complies with the Management Information Base (MIB) module definition contained in Clause 7 of IEEE Std [802.3.1-2024](#) ~~802.3.1-2013~~.

module: ~~A building block in a modular system.~~ In the context of the MIB definitions, a specification of management capabilities related to the system. ~~In the context of a chassis, it typically maps into one "slot"; however, the range of configurations may be very large, with several modules entering one slot, or one module covering several slots.~~

non-trivial repeater: A repeater as defined by IEEE Std 802.3 having multiple ports.

path coding violations: In IEEE Std 802.3, the path layer coding violations count is based on block errors and not on BIP-8 errors; [that is i.e.](#), it is incremented only once for each B3 byte that indicates incorrect parity, regardless of the number of bits in error. Note that section 8.4.5.1 of ANSI T1.231-1997 allows either path BIP-8 errors or path block errors to be used for the path layer error count.

repeater system: A managed entity compliant with this standard and incorporating at least one managed IEEE 802.3 repeater.

repeater-unit: The portion of a repeater that is inboard of its Physical Medium Attachment (PMA)/Physical Signaling Sublayer (PLS) or PMA/Physical Coding Sublayer (PCS).

Signal Label Mismatch: This defect is called [Path Payload](#) Label Mismatch (PLM) in IEEE Std 802.3. It is reported by setting both the sonetPathSignalLabelMismatch bit in the appropriate instance of sonetPathCurrentStatus (defined in IETF RFC 3592) and the etherWisPathPLM bit in the corresponding instance of etherWisPathCurrentStatus.

stack: A scalable system in which modularity is achieved by interconnecting a number of different systems.

STS-Path Remote Defect Indication: IEEE Std 802.3 mandates the use of ERDI-P (Enhanced Remote Defect Indication-Path) defined in ANSI T1.231-1997 to signal remote server defects (triggered by path AIS or path LOP) and remote payload defects (triggered by [Path Payload](#) Label Mismatch or Loss of Code-group Delineation). IETF RFC 3592 defines the one-bit RDI-P (Remote Defect Indication-Path), which signals remote server defects (i.e., path AIS and path LOP) only. An implementation of the MIB module defined in Clause 12 of IEEE Std [802.3.1-2024](#) ~~802.3.1-2013~~ sets the sonetPathSTSRDI bit in the appropriate instance of sonetPathCurrentStatus when it receives an ERDI-P server defect indication from the remote end. Both ERDI-P payload defects and ERDI-P server defects are reported in the object etherWisFarEndPathCurrentStatus.

system: An entity compliant with one or more Management Information Base (MIB) modules of this standard.

system interconnect segment: An internal segment allowing interconnection of ports belonging to different physical entities into the same logical managed repeater, bridge, or other system. Examples of implementation might be backplane [buses](#) ~~busses~~ in modular hubs, or chaining cables in stacks of bridges/switches. It is not uncommon for such segments to be a proprietary implementation.

trivial repeater-unit: An isolated port that can gather statistics.

4. Abbreviations

~~ACK~~ — ~~acknowledge~~

AIS Alarm Indication Signal

ARP address resolution protocol

ASCII American Standard Code for Information Interchange

~~Atn~~ — ~~attenuation~~

BER bit error ratio

BIP bit interleaved parity

BW bandwidth

CID — Company ID

CO central office

CPE customer premises equipment

CRC cyclic redundancy check

DTE data terminal equipment

EFM Ethernet in the First Mile

EFMCu Ethernet in the First Mile ~~EFM~~ copper

ELTE Ethernet line termination equipment

EPON Ethernet passive optical network

ERDI-P enhanced remote defect indication—path

FCS frame check sequence

FEC forward error correction

~~GDMO~~ — ~~Guidelines for Definition of Managed Objects~~

GMII gigabit media independent interface

IANA Internet Assigned Numbers Authority

IETF Internet Engineering Task Force

IFG inter-frame gap

ITU International Telecommunication Union

LAN local area network

LCD Loss of Code-group Delineation – Path

LLC	logical link control
LLDP	logical link discovery protocol
LLDPDU	logical link discovery protocol data unit
LLID	logical link identifier
LOP	Loss of Pointer
LTE	line termination equipment
MAC	media access control
MAU	medium attachment unit
~~Mb/s~~	~~megabit per second~~
MDI	medium dependent interface
MDIO	management data input/output
<u>MIB</u>	<u>Management Information Base</u>
MII	media independent interface
~~MP2PE~~	~~multipoint to point emulation~~
MPCP	multipoint control protocol
MPCPDU	multipoint control protocol data unit
MTU	maximum transmission unit
~~NMS~~	~~network management system~~
OAM	operations, administration, and maintenance
OAMPDU	operations, administration, and maintenance protocol data unit
OID	object identifier
OLT	optical line terminal
OMP	optical multipoint
ONU	optical network unit

OSI	Open Systems Interconnection
<u>OUI</u>	<u>Organizationally Unique Identifier</u>
P2MP	point-to-multipoint
P2PE	point-to-point emulation
PAF	PME aggregation function
PBO	power back-off
PCS	physical coding sublayer
PD	powered device
PDU	protocol data unit
PHY	Physical Layer entity
PLM	<u>Path</u> ~~Payload~~ Label Mismatch
PMA	physical medium attachment
PMD	physical medium dependent
PME	physical medium entity
PON	passive optical network
PSD	power spectral density
PSE	power sourcing equipment
RFC	Request for Comments
ROM	read-only-memory
RS	reconciliation sublayer
RTT	round-trip time
SDH	Synchronous Digital Hierarchy
SLA	service level agreement
SLD	start of <u>logical link identifier</u> ~~LLID~~ delimiter

SMIv2	structure of management information version 2
SNMP	simple network management protocol
SNR	signal-to-noise ratio
SONET	Synchronous Optical Network
TCPAM	trellis coded pulse amplitude modulation
TDM	time division multiplexing
TDMA	time division multiple access
TLV	type/length/value
TQ	time quanta
WAN	wide area network
WDM	wavelength division multiplexing
WIS	WAN interface sublayer

5. Ethernet logical link discovery protocol (LLDP) extension MIB module

The logical link discovery protocol (LLDP) is defined in IEEE Std [802.1AB](#) ~~802.1AB-2009~~, Station and Media Access Control Discovery. Extensions to this protocol for Ethernet are defined in Clause 79 of IEEE Std 802.3.

5.1 Structure of the IEEE 802.3 LLDP extension MIB

Table 5-1 summarizes the particular object groups that are required for each operating mode. The implemented MIB shall comply with the MIB conformance section for the particular operating mode being supported.

Table 5-1 — IEEE 802.3 LLDP extension MIB object group conformance requirements

MIB group	Rx mode	Tx mode	Tx/Rx mode
lldpV2Xdot3ConfigGroup	M ^a	M	M
lldpV2Xdot1LocSysGroup	M	—	M
lldpV2Xdot1RemSysGroup	—	M	M
ifGeneralInformationGroup	M	M	M

^a M = Mandatory.

Table 5-2 shows the structure of the MIB and the relationship of the MIB objects to the LLDP operational status/control variables, LLDP statistics variables, and TLV variables.

Table 5-2 — IEEE 802.3/LLDP extension MIB cross reference

MIB table	MIB object	LLDP reference
<i>Configuration group</i>		
lldpV2Xdot3PortConfigTable		Augments lldpV2PortConfigEntry
	lldpV2Xdot3PortConfigTLVsTxEnable	Normal LLDPDUs
<i>Local devices information group</i>		
lldpV2Xdot3LocPortTable		
	lldpV2LocPortIfIndex	(Table index)
	lldpV2Xdot3LocPortAutoNegSupported	Auto-Negotiation support/status
	lldpV2Xdot3LocPortAutoNegEnabled	Auto-Negotiation support/status
	lldpV2Xdot3LocPortAutoNegAdvertisedCap	Auto-Negotiation advertised
	lldpV2Xdot3LocPortOperMauType	Operational MAU type

[\(New\)](#)

MIB table	MIB object	LLDP reference
<i>Configuration group</i>		
lldpV2Xdot3PortConfigTable		Augments lldpV2PortConfigEntry
	lldpV2Xdot3PortConfigTLVsTxEnable	Normal LLDPDUs
<i>Local devices information group</i>		
lldpV2Xdot3LocPortTable		
	lldpV2LocPortIfIndex	(Table index)
	lldpV2Xdot3LocPortAutoNegSupported	Auto-Negotiation support/status
	lldpV2Xdot3LocPortAutoNegEnabled	Auto-Negotiation support/status
	lldpV2Xdot3LocPortAutoNegAdvertisedCap	Auto-Negotiation advertised
	lldpV2Xdot3LocPortOperMauType	Operational MAU type
lldpV2Xdot3LocPowerTable		
	lldpV2LocPortIfIndex	(Table index)
	lldpV2Xdot3LocPowerPortClass	MDI power support
	lldpV2Xdot3LocPowerMDISupported	MDI power support
	lldpV2Xdot3LocPowerMDIEnabled	MDI power support
	lldpV2Xdot3LocPowerPairControlable	MDI power support
	lldpV2Xdot3LocPowerPairs	PSE power pair
	lldpV2Xdot3LocPowerClass	Power class
lldpV2Xdot3LocMaxFrameSizeTable		
	lldpV2LocPortIfIndex	(Table index)
	lldpV2Xdot3LocMaxFrameSize	Maximum frame size
<i>Remote devices information group</i>		
lldpV2Xdot3RemPortTable		
	lldpV2RemTimeMark	(Table index)
	lldpV2RemLocalIfIndex	(Table index)
	lldpV2RemLocalDestMACAddress	(Table index)
	lldpV2RemIndex	(Table index)
	lldpV2Xdot3RemPortAutoNegSupported	Auto-Negotiation support/status
	lldpV2Xdot3RemPortAutoNegEnabled	Auto-Negotiation support/status
	lldpV2Xdot3RemPortAutoNegAdvertisedCap	Auto-Negotiation advertised
	lldpV2Xdot3RemPortOperMauType	Operational MAU type

(Deleted)

Table 5-2—IEEE 802.3/LLDP extension MIB cross reference (*continued*)

MIB table	MIB object	LLDP reference
lldpV2Xdot3LocPowerTable		
	lldpV2LocPortIfIndex	(Table index)
	lldpV2Xdot3LocPowerPortClass	MDI power support
	lldpV2Xdot3LocPowerMDISupported	MDI power support
	lldpV2Xdot3LocPowerMDIEnabled	MDI power support
	lldpV2Xdot3LocPowerPairControlable	MDI power support
	lldpV2Xdot3LocPowerPairs	PSE power pair
	lldpV2Xdot3LocPowerClass	Power class
lldpV2Xdot3LocMaxFrameSizeTable		
	lldpV2LocPortIfIndex	(Table index)
	lldpV2Xdot3LocMaxFrameSize	Maximum frame size
<i>Remote devices information group</i>		
lldpV2Xdot3RemPortTable		
	lldpV2RemTimeMark	(Table index)
	lldpV2RemLocalIfIndex	(Table index)
	lldpV2RemLocalDestMACAddress	(Table index)
	lldpV2RemIndex	(Table index)
	lldpV2Xdot3RemPortAutoNegSupported	Auto-Negotiation support/status
	lldpV2Xdot3RemPortAutoNegEnabled	Auto-Negotiation support/status
	lldpV2Xdot3RemPortAutoNegAdvertisedCap	Auto-Negotiation advertised
	lldpV2Xdot3RemPortOperMauType	Operational MAU type
lldpV2Xdot3RemPowerTable		
	lldpV2RemTimeMark	(Table index)
	lldpV2RemLocalIfIndex	(Table index)
	lldpV2RemLocalDestMACAddress	(Table index)
	lldpV2RemIndex	(Table index)
	lldpV2Xdot3RemPowerPortClass	MDI power support
	lldpV2Xdot3RemPowerMDISupported	MDI power support
	lldpV2Xdot3RemPowerMDIEnabled	MDI power support
	lldpV2Xdot3RemPowerPairControlable	MDI power support
	lldpV2Xdot3RemPowerPairs	PSE power pair
	lldpV2Xdot3RemPowerClass	Power class

(New)

MIB table	MIB object	LLDP reference
lldpV2Xdot3RemPowerTable		
	lldpV2RemTimeMark	(Table index)
	lldpV2RemLocalIfIndex	(Table index)
	lldpV2RemLocalDestMACAddress	(Table index)
	lldpV2RemIndex	(Table index)
	lldpV2Xdot3RemPowerPortClass	MDI power support
	lldpV2Xdot3RemPowerMDISupported	MDI power support
	lldpV2Xdot3RemPowerMDIEnabled	MDI power support
	lldpV2Xdot3RemPowerPairControlable	MDI power support
	lldpV2Xdot3RemPowerPairs	PSE power pair
	lldpV2Xdot3RemPowerClass	Power class
lldpV2Xdot3RemMaxFrameSizeTable		
	lldpV2RemTimeMark	(Table index)
	lldpV2RemLocalIfIndex	(Table index)
	lldpV2RemLocalDestMACAddress	(Table index)
	lldpV2RemIndex	(Table index)
	lldpV2Xdot3RemMaxFrameSize	Maximum frame size

(Deleted)

Table 5-2 – IEEE 802.3/LLDP extension MIB cross reference *(continued)*

MIB table	MIB object	LLDP reference
lldpV2Xdot3RemMaxFrameSizeTable		
	lldpV2RemTimeMark	(Table index)
	lldpV2RemLocalIfIndex	(Table index)
	lldpV2RemLocalDestMACAddress	(Table index)
	lldpV2RemIndex	(Table index)
	lldpV2Xdot3RemMaxFrameSize	Maximum frame size

(New)

5.2 Relationship to other MIBs

Version 1 of the IEEE 802.3 LLDP extension MIB module is deprecated. [LLDP-V2 MIB](#) and [LLDP-V2-TC-MIB](#) are used instead.

5.3 Security considerations for IEEE 802.3 LLDP extension MIB module

There are a number of management objects defined in this MIB module with a MAX-ACCESS clause of read-write.^{17 40} Such objects can ~~may~~ be considered sensitive or vulnerable in some network environments. The support for SET operations in a non-secure environment without proper protection can have a negative effect on network operations.

Setting the object, `lldpV2Xdot3PortConfigTLVsTxEnable`, to incorrect values can result in improper operation of LLDP.

The following readable objects in this MIB module can ~~may~~ be considered ~~to be~~ sensitive or vulnerable in some network environments:

a) Objects that are associated with the transmit mode are as follows:

- 1) `lldpV2Xdot3LocPortAutoNegSupported`
- 2) `lldpV2Xdot3LocPortAutoNegEnabled`
- 3) `lldpV2Xdot3LocPortAutoNegAdvertisedCap`
- 4) `lldpV2Xdot3LocPortOperMauType`
- 5) `lldpV2Xdot3LocPowerPortClass`
- 6) `lldpV2Xdot3LocPowerMDISupported`
- 7) `lldpV2Xdot3LocPowerMDIEnabled`
- 8) `lldpV2Xdot3LocPowerPairControlable`
- 9) `lldpV2Xdot3LocPowerPairs`
- 10) `lldpV2Xdot3LocPowerClass`
- 11) `lldpV2Xdot3LocMaxFrameSize`

b) Objects that are associated with the receive mode are as follows:

- 1) `lldpV2Xdot3RemPortAutoNegSupported`

^{17 40} In IETF MIB definitions, the MAX-ACCESS clause defines the type of access that is allowed for particular data elements in the MIB. An explanation of the MAX-ACCESS mapping is given in section 7.3 of IETF ~~STD-58~~, RFC 2578.

- 2) lldpV2Xdot3RemPortAutoNegEnabled
- 3) lldpV2Xdot3RemPortAutoNegAdvertisedCap
- 4) lldpV2Xdot3RemPortOperMauType
- 5) lldpV2Xdot3RemPowerPortClass
- 6) lldpV2Xdot3RemPowerMDISupported
- 7) lldpV2Xdot3RemPowerMDIEnabled
- 8) lldpV2Xdot3RemPowerPairControlable
- 9) lldpV2Xdot3RemPowerPairs
- 10) lldpV2Xdot3RemPowerClass
- 11) lldpV2Xdot3RemMaxFrameSize

This concern applies both objects that describe the configuration of the local host, as well as objects that describe information from the remote hosts, acquired via LLDP and displayed by the objects in this MIB module. It is thus also important to control GET and/or NOTIFY access to these objects and possibly to encrypt the values of these objects when sending them over the network via SNMP.

5.4 MIB module definition

In the following MIB definition, should any discrepancy between the DESCRIPTION text and the corresponding definition in 5.2 through 5.3 of this clause occur, the definitions in 5.2 through 5.3 prevail ~~shall take precedence~~.

An ASCII text version of the MIB definition can be found at the following URL:¹⁸ ⁴⁴
https://www.ieee802.org/3/1/public/mib_modules/20241211/802dot3dot1C5mib.txt
~~http://www.ieee802.org/3/1/public/mib_modules/20130411/802dot3dot1C5mib.txt~~

Two additional modules have to ~~must~~ be imported when compiling the IEEE 802.3 LLDP extension MIB module, and they can be found at the following URLs:

<https://www.ieee802.org/1/files/public/MIBs/LLDP-V2-MIB-201603110000Z.mib>

¹⁸ ⁴⁴ Copyright release for MIB modules: Users of this standard may freely reproduce the MIB module contained in this subclause so that it can be used for its intended purpose.

<https://www.ieee802.org/1/files/public/MIBs/LLDP-V2-TC-MIB-201603110000Z.mib>

<http://www.ieee802.org/1/files/public/MIBs/LLDP-V2-MIB-200906080000Z.txt>

<http://www.ieee802.org/1/files/public/MIBs/LLDP-V2-TC-MIB-200906080000Z.txt>

5.4.1 Tree hierarchy

----- ieee8023lldpV2Xdot3MIB(1.3.111.2.802.3.1.5)	
++++ lldpV2Xdot3Objects(1)	
++++ lldpV2Xdot3Config(1)	
++++ lldpV2Xdot3PortConfigTable(1)	
++++ lldpV2Xdot3PortConfigEntry(1) [lldpV2PortConfigIfIndex, lldpV2PortConfigDestAddressIndex]	
++++ lldpV2Xdot3PortConfigTlvTxEnable(1) Bits	
++++ lldpV2Xdot3LocalData(2)	
++++ lldpV2Xdot3LocPortTable(1)	
++++ lldpV2Xdot3LocPortEntry(1) [lldpV2LocPortIfIndex]	
++++ lldpV2Xdot3LocPortAutoNegSupported(1) TruthValue	
++++ lldpV2Xdot3LocPortAutoNegEnabled(2) TruthValue	
++++ lldpV2Xdot3LocPortAutoNegAdvertisedCap(3) OctetString	
++++ lldpV2Xdot3LocPortOperMauType(4) Unsigned32	
++++ lldpV2Xdot3LocPowerTable(2)	
++++ lldpV2Xdot3LocPowerEntry(1) [lldpV2LocPortIfIndex]	
++++ lldpV2Xdot3LocPowerPortClass(1) lldpV2PowerPortClass	
++++ lldpV2Xdot3LocPowerMDISupported(2) TruthValue	
++++ lldpV2Xdot3LocPowerMDIEnabled(3) TruthValue	
++++ lldpV2Xdot3LocPowerPairControlable(4) TruthValue	
++++ lldpV2Xdot3LocPowerPairs(5) Enumeration	
++++ lldpV2Xdot3LocPowerClass(6) Enumeration	
++++ lldpV2Xdot3LocPowerType(7) Bits	
++++ lldpV2Xdot3LocPowerSource(8) Enumeration	
++++ lldpV2Xdot3LocPowerPriority(9) Enumeration	
++++ lldpV2Xdot3LocPowerRequestedPowerValue(10) Integer32	
++++ lldpV2Xdot3LocPowerRequestedPowerValueA(11) Integer32	
++++ lldpV2Xdot3LocPowerRequestedPowerValueB(12) Integer32	
++++ lldpV2Xdot3LocPowerSEALlocatedPowerValue(13) Integer32	
++++ lldpV2Xdot3LocPowerSEALlocatedPowerValueA(14) Integer32	
++++ lldpV2Xdot3LocPowerSEALlocatedPowerValueB(15) Integer32	
++++ lldpV2Xdot3LocPowerSealingStatus(16) Enumeration	
++++ lldpV2Xdot3LocPowerSealingStatus(17) Enumeration	
++++ lldpV2Xdot3LocPowerPairsExt(18) Enumeration	
++++ lldpV2Xdot3LocPowerClassExtA(19) Enumeration	
++++ lldpV2Xdot3LocPowerClassExtB(20) Enumeration	
++++ lldpV2Xdot3LocPowerClassExt(21) Enumeration	
++++ lldpV2Xdot3LocPowerTypeExt(22) Enumeration	

(New)


```

| | +----- lldpV2Xdot3RemMaxFrameSizeEntry(1) [lldpV2RemLocalIfIndex, lldpV2RemLocalDestMACAd-
dress, lldpV2RemIndex]
| | +--r- lldpV2Xdot3RemMaxFrameSize(1) Unsigned32
| +----- lldpV2Xdot3RemEEETable(4)
| | +----- lldpV2Xdot3RemEEETableEntry(1) [lldpV2RemLocalIfIndex]
| | | +--r- lldpV2Xdot3RemTxTWSys(1) Integer32
| | | +--r- lldpV2Xdot3RemTxTWSysEcho(2) Integer32
| | | +--r- lldpV2Xdot3RemRxTWSys(3) Integer32
| | | +--r- lldpV2Xdot3RemRxTWSysEcho(4) Integer32
| | | +--r- lldpV2Xdot3RemFbTWSys(5) Integer32
| | | +--r- lldpV2Xdot3RemFbTWSysEcho(6) TruthValue
| | | +--r- lldpV2Xdot3RemTxFWEcho(7) TruthValue
| | | +--r- lldpV2Xdot3RemRxFW(8) TruthValue
| | | +--r- lldpV2Xdot3RemRxFWEcho(9) TruthValue
| | | +--r- lldpV2Xdot3RemPreemptSupported(10) TruthValue
| | | +--r- lldpV2Xdot3RemPreemptEnabled(11) TruthValue
| | | +--r- lldpV2Xdot3RemPreemptActive(12) TruthValue
| | | +--r- lldpV2Xdot3RemAddFragSize(13) Integer32
+----- lldpV2Xdot3Conformance(2)
+----- lldpV2Xdot3Compliances(1)
| +----- lldpV2Xdot3TxRxCompliance(1)
| +----- lldpV2Xdot3TxCompliance(2)
| +----- lldpV2Xdot3RxCompliance(3)
+----- lldpV2Xdot3Groups(2)
+----- lldpV2Xdot3ConfigGroup(1)
+----- lldpV2Xdot3LocSysGroup(2)
+----- lldpV2Xdot3RemSysGroup(3)

```

(New)

5.4.2 MIB module definition

```
IEEE8023-DOT3-LLDP-EXT-V2-MIB DEFINITIONS ::= BEGIN

IMPORTS
    ifGeneralInformationGroup
        FROM IF-MIB
    lldpV2LocPortIfIndex, lldpV2PortConfigEntry, lldpV2RemIndex,
    lldpV2RemLocalDestMACAddress, lldpV2RemLocalIfIndex,
    lldpV2RemTimeMark
        FROM LLDP-V2-MIB
    LldpV2PowerPortClass
        FROM LLDP-V2-TC-MIB
    MODULE-COMPLIANCE, OBJECT-GROUP
        FROM SNMPv2-CONF
    Integer32, MODULE-IDENTITY, OBJECT-TYPE, Unsigned32, org
        FROM SNMPv2-SMI
    TruthValue
        FROM SNMPv2-TC;

ieee8023lldpV2Xdot3MIB MODULE-IDENTITY
    LAST-UPDATED "202412110000Z"
    ORGANIZATION
        "IEEE 802.3 Working Group"
    CONTACT-INFO
        " WG-URL: http://www.ieee802.org/3/index.html
        WG-EMail: mailto:stds-802-3-dialog@ieee.org
        Contact: IEEE 802.3 Working Group Chair
        Postal: C/O IEEE 802.3 Working Group
                IEEE Standards Association
                445 Hoes Lane
                Piscataway, NJ 08854
                USA
        E-mail: mailto:stds-802-3-dialog@ieee.org"
    DESCRIPTION
        "The LLDP Management Information Base extension module for
        IEEE 802.3 organizationally defined discovery information."
    REVISION "202412110000Z"
    DESCRIPTION
        "Revision, based on an earlier version in IEEE Std 802.3.1-2013
        addressing changes from IEEE Std 802.3 revisions 2012, 2015, 2018,
        and 2022."
    REVISION "201304110000Z"
    DESCRIPTION
        "Revision, based on an earlier version in IEEE Std 802.3.1-2011."
    REVISION "201102020000Z"
    DESCRIPTION
        "This revision incorporated changes to the MIB module to
        add objects to support management of Energy Efficient
        Ethernet (EEE) and Enhanced DTE Power via the MDI (PoE+)."
    ::= { org ieee(111) standards-association-numbers-series-standards(2) lan-
    man-stds(802) ieee802dot3(3) ieee802dot3dot1mibs(1) 5 }

lldpV2Xdot3Objects OBJECT IDENTIFIER
    ::= { ieee8023lldpV2Xdot3MIB 1 }

lldpV2Xdot3Config OBJECT IDENTIFIER
    ::= { lldpV2Xdot3Objects 1 }
```

[\(New\)](#)

```

lldpV2Xdot3PortConfigTable OBJECT-TYPE
    SYNTAX      SEQUENCE OF LldpV2Xdot3PortConfigEntry
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
        "A table that controls selection of LLDP TLVs to be transmitted
        on individual ports."
    ::= { lldpV2Xdot3Config 1 }

lldpV2Xdot3PortConfigEntry OBJECT-TYPE
    SYNTAX      LldpV2Xdot3PortConfigEntry
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
        "LLDP configuration information that controls the
        transmission of IEEE 802.3 organizationally defined TLVs on
        LLDP transmission capable ports.

        This configuration object augments the lldpV2PortConfigEntry of
        the LLDP-MIB, therefore it is only present along with the port
        configuration defined by the associated lldpV2PortConfigEntry
        entry.

        Each active lldpV2Xdot3PortConfigEntry is restored from non-volatile
        storage (along with the corresponding lldpV2PortConfigEntry)
        after a re-initialization of the management system."
    AUGMENTS    { lldpV2PortConfigEntry }
    ::= { lldpV2Xdot3PortConfigTable 1 }

lldpV2Xdot3PortConfigEntry ::= SEQUENCE {
    lldpV2Xdot3PortConfigTLVsTxEnable  BITS
}

lldpV2Xdot3PortConfigTLVsTxEnable OBJECT-TYPE
    SYNTAX      BITS { macPhyConfigStatus(0), powerViaMDI(1), unused(2),
        maxFrameSize(3), eeeEnabled(4),
        eeeFastWakeEnabled(5), addEthernetCapabilities(6) }
    MAX-ACCESS  read-write
    STATUS      current
    DESCRIPTION
        "The lldpV2Xdot3PortConfigTLVsTxEnable, defined as a bitmap,
        includes the IEEE 802.3 organizationally defined set of LLDP
        TLVs whose transmission is allowed by the local LLDP agent by
        the network management. Each bit in the bitmap corresponds
        to an IEEE 802.3 subtype associated with a specific IEEE
        802.3 optional TLV.

        The bit 'macPhyConfigStatus(0)' indicates that the LLDP agent
        should transmit 'MAC/PHY configuration/status TLV'.

        The bit 'powerViaMDI(1)' indicates that the LLDP agent should
        transmit 'Power via MDI TLV'.

        The bit 'unused(2)' is no longer used; this was used for
        the 'Link Aggregation TLV' in the previous version.

        The bit 'maxFrameSize(3)' indicates that the LLDP agent should
        transmit 'Maximum-frame-size TLV'."

```

[\(New\)](#)

The bit 'eeeEnabled(4)' indicates that the LLDP agent should transmit EEE TLV.

The bit 'eeeFastWakeEnabled(5)' indicates that the LLDP agent should transmit EEE Fast Wake TLV.

The bit 'addEthernetCapabilities(6)' indicates that the LLDP agent should transmit Additional Ethernet Capabilities TLV.

The default value for lldpV2Xdot3PortConfigTLVsTxEnable object is an empty set, which means no enumerated values are set.

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

REFERENCE

"IEEE Std 802.3, 30.12.1.1.1"

DEFVAL { {} }

::= { lldpV2Xdot3PortConfigEntry 1 }

lldpV2Xdot3LocalData OBJECT IDENTIFIER

::= { lldpV2Xdot3Objects 2 }

lldpV2Xdot3LocPortTable OBJECT-TYPE

SYNTAX SEQUENCE OF LldpV2Xdot3LocPortEntry

MAX-ACCESS not-accessible

STATUS current

DESCRIPTION

"This table contains one row per port of Ethernet port information (as a part of the LLDP 802.3 organizational extension) on the local system known to this agent."

::= { lldpV2Xdot3LocalData 1 }

lldpV2Xdot3LocPortEntry OBJECT-TYPE

SYNTAX LldpV2Xdot3LocPortEntry

MAX-ACCESS not-accessible

STATUS current

DESCRIPTION

"Information about a particular port component."

INDEX { lldpV2LocPortIfIndex }

::= { lldpV2Xdot3LocPortTable 1 }

LldpV2Xdot3LocPortEntry ::= SEQUENCE {

lldpV2Xdot3LocPortAutoNegSupported TruthValue,

lldpV2Xdot3LocPortAutoNegEnabled TruthValue,

lldpV2Xdot3LocPortAutoNegAdvertisedCap OCTET STRING,

lldpV2Xdot3LocPortOperMauType Unsigned32

}

lldpV2Xdot3LocPortAutoNegSupported OBJECT-TYPE

SYNTAX TruthValue

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"The truth value used to indicate whether the given port (associated with the local system) supports Auto-negotiation."

REFERENCE

"IEEE Std 802.3, 30.12.2.1.1"

::= { lldpV2Xdot3LocPortEntry 1 }

[\(New\)](#)

```

lldpV2Xdot3LocPortAutoNegEnabled OBJECT-TYPE
    SYNTAX      TruthValue
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "The truth value used to indicate whether port
        Auto-negotiation is enabled on the given port associated
        with the local system."
    REFERENCE
        "IEEE Std 802.3, 30.12.2.1.2"
    ::= { lldpV2Xdot3LocPortEntry 2 }

lldpV2Xdot3LocPortAutoNegAdvertisedCap OBJECT-TYPE
    SYNTAX      OCTET STRING (SIZE(2))
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "This object contains the value (bitmap) of the
        ifMauAutoNegCapAdvertisedBits object (defined in IETF RFC
        3636) which is associated with the given port on the
        local system."
    REFERENCE
        "IEEE Std 802.3, 30.12.2.1.3"
    ::= { lldpV2Xdot3LocPortEntry 3 }

lldpV2Xdot3LocPortOperMauType OBJECT-TYPE
    SYNTAX      Unsigned32 (0..2147483647)
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "An integer value that indicates the operational MAU type
        of the given port on the local system.

        This object contains the integer value derived from the
        list position of the corresponding dot3MauType as listed
        in Clause 13 and is equal to the last number in the
        respective dot3MauType OID.

        For example, if the ifMauType object is dot3MauType1000BaseTHD
        which corresponds to {dot3MauType 29}, the numerical value of
        this field is 29. For MAU types not listed in Clause 13,
        the value of this field shall be set to zero."
    REFERENCE
        "IEEE Std 802.3, 30.12.2.1.4"
    ::= { lldpV2Xdot3LocPortEntry 4 }

lldpV2Xdot3LocPowerTable OBJECT-TYPE
    SYNTAX      SEQUENCE OF LldpV2Xdot3LocPowerEntry
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
        "This table contains one row per port of Power over Ethernet
        information (as a part of the LLDP IEEE 802.3 organizational
        extension) on the local system known to this agent."
    ::= { lldpV2Xdot3LocalData 2 }

lldpV2Xdot3LocPowerEntry OBJECT-TYPE
    SYNTAX      LldpV2Xdot3LocPowerEntry

```

[\(New\)](#)

```

MAX-ACCESS    not-accessible
STATUS        current
DESCRIPTION
    "Information about a particular port component."
INDEX         { lldpV2LocPortIfIndex }
 ::= { lldpV2Xdot3LocPowerTable 1 }

LldpV2Xdot3LocPowerEntry ::= SEQUENCE {
    lldpV2Xdot3LocPowerPortClass          LldpV2PowerPortClass,
    lldpV2Xdot3LocPowerMDISupported       TruthValue,
    lldpV2Xdot3LocPowerMDIEnabled         TruthValue,
    lldpV2Xdot3LocPowerPairControlable    TruthValue,
    lldpV2Xdot3LocPowerPairs              INTEGER,
    lldpV2Xdot3LocPowerClass              INTEGER,
    lldpV2Xdot3LocPowerType               BITS,
    lldpV2Xdot3LocPowerSource              INTEGER,
    lldpV2Xdot3LocPowerPriority            INTEGER,
    lldpV2Xdot3LocPDRequestedPowerValue   Integer32,
    lldpV2Xdot3LocPDRequestedPowerValueA  Integer32,
    lldpV2Xdot3LocPDRequestedPowerValueB  Integer32,
    lldpV2Xdot3LocPSEAllocatedPowerValue  Integer32,
    lldpV2Xdot3LocPSEAllocatedPowerValueA Integer32,
    lldpV2Xdot3LocPSEAllocatedPowerValueB Integer32,
    lldpV2Xdot3LocPSEPoweringStatus       INTEGER,
    lldpV2Xdot3LocPDPoweredStatus         INTEGER,
    lldpV2Xdot3LocPowerPairsExt           INTEGER,
    lldpV2Xdot3LocPowerClassExtA          INTEGER,
    lldpV2Xdot3LocPowerClassExtB          INTEGER,
    lldpV2Xdot3LocPowerClassExt           INTEGER,
    lldpV2Xdot3LocPowerTypeExt            INTEGER,
    lldpV2Xdot3LocPDLoad                  TruthValue,
    lldpV2Xdot3LocPD4PID                   TruthValue,
    lldpV2Xdot3LocPSEMaxAvailPower         Integer32,
    lldpV2Xdot3LocPSEAutoclassSupport      TruthValue,
    lldpV2Xdot3LocPSEAutoclassCompleted   TruthValue,
    lldpV2Xdot3LocPSEAutoclassRequest     TruthValue,
    lldpV2Xdot3LocPowerDownRequest        Integer32,
    lldpV2Xdot3LocPowerDownTime           Integer32,
    lldpV2Xdot3LocMeasVoltageSupport       TruthValue,
    lldpV2Xdot3LocMeasCurrentSupport       TruthValue,
    lldpV2Xdot3LocMeasPowerSupport         TruthValue,
    lldpV2Xdot3LocMeasEnergySupport        TruthValue,
    lldpV2Xdot3LocMeasurementSource        TruthValue,
    lldpV2Xdot3LocMeasVoltageRequest       TruthValue,
    lldpV2Xdot3LocMeasCurrentRequest       TruthValue,
    lldpV2Xdot3LocMeasPowerRequest         TruthValue,
    lldpV2Xdot3LocMeasEnergyRequest        TruthValue,
    lldpV2Xdot3LocMeasVoltageValid         TruthValue,
    lldpV2Xdot3LocMeasCurrentValid         TruthValue,
    lldpV2Xdot3LocMeasPowerValid           TruthValue,
    lldpV2Xdot3LocMeasEnergyValid          TruthValue,
    lldpV2Xdot3LocMeasVoltageUncertainty   Integer32,
    lldpV2Xdot3LocMeasCurrentUncertainty   Integer32,
    lldpV2Xdot3LocMeasPowerUncertainty     Integer32,
    lldpV2Xdot3LocMeasEnergyUncertainty    Integer32,
    lldpV2Xdot3LocVoltageMeasurement       Integer32,
    lldpV2Xdot3LocCurrentMeasurement       Integer32,
    lldpV2Xdot3LocPowerMeasurement         Integer32,
    lldpV2Xdot3LocEnergyMeasurement        Integer32,

```

(New)

```

        lldpV2Xdot3LocPSEPowerPriceIndex      Integer32,
        lldpV2Xdot3LocResponseTime            Integer32,
        lldpV2Xdot3LocReady                    TruthValue
    }

lldpV2Xdot3LocPowerPortClass OBJECT-TYPE
    SYNTAX      LldpV2PowerPortClass
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "The value that identifies the port Class of the given port
        associated with the local system."
    REFERENCE
        "IEEE Std 802.3, 30.12.2.1.5"
    ::= { lldpV2Xdot3LocPowerEntry 1 }

lldpV2Xdot3LocPowerMDISupported OBJECT-TYPE
    SYNTAX      TruthValue
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "For a PSE, the truth value used to indicate whether the MDI
        power is supported on the given port associated with the
        local system. For a PD, this attribute is undefined."
    REFERENCE
        "IEEE Std 802.3, 30.12.2.1.6"
    ::= { lldpV2Xdot3LocPowerEntry 2 }

lldpV2Xdot3LocPowerMDIEnabled OBJECT-TYPE
    SYNTAX      TruthValue
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "For a PSE, the truth value used to identify whether MDI
        power is enabled on the given port associated with the
        local system. For a PD, this attribute is undefined."
    REFERENCE
        "IEEE Std 802.3, 30.12.2.1.7"
    ::= { lldpV2Xdot3LocPowerEntry 3 }

lldpV2Xdot3LocPowerPairControlable OBJECT-TYPE
    SYNTAX      TruthValue
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "A truth value used to indicate the ability to control which
        PSE Pinout Alternative (see IEEE Std 802.3, 33.2.3 and 145.2.4)
        is used for PD detection and power. For a PSE, this attribute
        contains the value of the aPSEPowerPairsControlAbility attribute
        (see IEEE Std 802.3, 30.9.1.1.3). For a PD, the contents of this
        this attribute are undefined."
    REFERENCE
        "IEEE Std 802.3, 30.12.2.1.8"
    ::= { lldpV2Xdot3LocPowerEntry 4 }

lldpV2Xdot3LocPowerPairs OBJECT-TYPE
    SYNTAX      INTEGER { signal(0), spare(1) }
    MAX-ACCESS  read-only
    STATUS      current

```

[\(New\)](#)

DESCRIPTION

"This attribute identifies the PSE Pinout Alternative (see IEEE Std 802.3, 33.2.3 and 145.2.4) in use for detecting and supplying power to the PD.
A Type 3 or Type 4 PSE detecting or supplying power on both PSE Pinout Alternatives may return either PSE Pinout Alternative as this configuration is communicated through the aLldpXdot3LocPowerPairsExt attribute.
A Type 3 or Type 4 PSE supplying power on only one PSE Pinout Alternative returns that PSE Pinout Alternative.
For a PD, the contents of this attribute are undefined."

REFERENCE

"IEEE Std 802.3, 30.12.2.1.9"
::= { lldpV2Xdot3LocPowerEntry 5 }

lldpV2Xdot3LocPowerClass OBJECT-TYPE

SYNTAX INTEGER { class0(0), class1(1), class2(2), class3(3),
class4(4) }

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"This attribute identifies the requested Class of the PD as specified in IEEE Std 802.3, 33.2.6 and 145.2.8.
This attribute returns an enumeration of 'class4' for a PD of Class 4 or higher as such PD Classes are identified through the aLldpXdot3LocPowerClassExt attribute."

REFERENCE

"IEEE Std 802.3, 30.12.2.1.10"
::= { lldpV2Xdot3LocPowerEntry 6 }

lldpV2Xdot3LocPowerType OBJECT-TYPE

SYNTAX BITS { typelp(0), pdpse(1) }

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"This attribute that returns a bit string indicating whether the local system is a PSE or a PD and whether it is Type 1 or greater than Type 1. The first bit ('typelp') indicates Type 1 or greater than Type 1.
The second bit ('pdpse') indicates PSE or PD."

REFERENCE

"IEEE Std 802.3, 30.12.2.1.14"
::= { lldpV2Xdot3LocPowerEntry 7 }

lldpV2Xdot3LocPowerSource OBJECT-TYPE

SYNTAX INTEGER { pseprimary(0), psebackup(1), pseunknown(2),
pdpseandlocal(3), pdpseonly(4), pdunknown(5) }

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"A GET returns an integer indicating the power sources of the local system. A PSE indicates whether it is being powered by a primary power source; a backup power source; or unknown. A PD indicates whether it is being powered by a PSE and locally; by a PSE only; or unknown."

REFERENCE

"IEEE Std 802.3, 30.12.2.1.15"
::= { lldpV2Xdot3LocPowerEntry 8 }

[\(New\)](#)

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lldpV2Xdot3LocPowerPriority OBJECT-TYPE
    SYNTAX      INTEGER { low(0), high(1), critical(2), unknown(3) }
    MAX-ACCESS  read-write
    STATUS      current
    DESCRIPTION
        "A GET returns the priority of a PD system. For a PSE, this
        is the priority that the PSE assigns to the PD. For a PD, this
        is the priority that the PD requests from the PSE. A SET
        operation changes the priority of the PD system to the indicated
        value."
    REFERENCE
        "IEEE Std 802.3, 30.12.2.1.16"
    ::= { lldpV2Xdot3LocPowerEntry 9 }

lldpV2Xdot3LocPDRequestedPowerValue OBJECT-TYPE
    SYNTAX      Integer32
    UNITS       "0.1 Watts"
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "A GET returns the PD requested power value.
        For a PD, it is the power value that the PD has currently
        requested from the remote system. PD requested power value
        is the maximum input average power the PD ever draws under
        this power allocation if accepted. For a PSE, it is the power
        value that the PSE echoes back to the remote system. This is
        the PD requested power value that was used by the PSE to compute
        the power it has currently allocated to the remote system."
    REFERENCE
        "IEEE Std 802.3, 30.12.2.1.17"
    ::= { lldpV2Xdot3LocPowerEntry 10 }

lldpV2Xdot3LocPDRequestedPowerValueA OBJECT-TYPE
    SYNTAX      Integer32
    UNITS       "0.1 Watts"
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "A GET returns the PD requested power value for the Mode A
        pairset.
        For a PD, it is the power value that the PD has currently
        requested from the remote system for the Mode A pairset.
        For a PSE, it is the power value for the Alternative A
        pairset that the PSE echoes back to the remote system."
    REFERENCE
        "IEEE Std 802.3, 30.12.2.1.18"
    ::= { lldpV2Xdot3LocPowerEntry 11 }

lldpV2Xdot3LocPDRequestedPowerValueB OBJECT-TYPE
    SYNTAX      Integer32
    UNITS       "0.1 Watts"
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "A GET returns the PD requested power value for the Mode B
        pairset.
        For a PD, it is the power value that the PD has currently
        requested from the remote system for the Mode B pairset.
        For a PSE, it is the power value for the Alternative B

```

[\(New\)](#)