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2023-07

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Part 1AB: Station and media access control connectivity discovery

AMENDMENT 2: Support for multiframe protocol data units

Technologies de l'information — Télécommunications et échange d'information entre systèmes — Réseaux locaux et métropolitains — Exigences spécifiques —

Partie 1AB: Découverte de connectivité des stations et du contrôle d'accès aux supports

AMENDEMENT 2: Support pour les unités de données de protocole multitrame

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IEEE Std 802.1ABdh™-2021
(Amendment to IEEE Std 802.1AB™-2016
as amended by IEEE Std 802.1ABcu™-2021)

IEEE Standard for Local and metropolitan area networks—

Station and Media Access Control Connectivity Discovery

Amendment 2: Support for Multiframe Protocol Data Units

Developed by the

LAN/MAN Standards Committee
of the
IEEE Computer Society

Approved 8 December 2021

IEEE SA Standards Board

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Abstract: This amendment to IEEE Std 802.1AB™-2016 specifies protocols, procedures, and managed objects that support the transmission and reception of a set of Link Layer Discovery Protocol (LLDP) Type/Length/Values (TLVs) that exceed the space available in a single frame.

Keywords: IEEE 802®, IEEE 802.1AB™, IEEE 802.1ABdh™, link layer discovery protocol, management information base, multiframe LLDPDUs, topology discovery, topology information

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Introduction

This introduction is not part of IEEE Std 802.1ABdh-2021, IEEE Standard for Local and metropolitan area networks—Station and Media Access Control Connectivity Discovery—Amendment 2: Support for Multiframe Protocol Data Units.

The first edition of IEEE Std 802.1AB™ was published in 2005, and revisions were published in 2009 and 2016. An amendment, IEEE Std 802.1ABcu™-2021, specifies a Unified Modeling Language (UML)-based information model and a YANG data model. This amendment, IEEE Std 802.1ABdh™-2021, specifies protocols, procedures, and managed objects that support the transmission and reception of a set of Link Layer Discovery Protocol (LLDP) Type/Length/Values (TLVs) that exceed the space available in a single frame.

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IEEE Standard for Local and metropolitan area networks—

Station and Media Access Control Connectivity Discovery

Amendment 2: Support for Multiframe Protocol Data Units

(This amendment is based on IEEE Std 802.1AB™-2016 as amended by IEEE Std 802.1ABcu™-2021.)

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

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3. Definitions and numerical representation

3.1 Definitions

Insert the following new definitions in 3.1 in alphanumerical order:

Extended Link Layer Discovery Protocol (XLLDP): An LLDP extension used to retrieve the frames beyond the Normal LLDPDU of a multi-frame LLDP database.

Extension LLDPDU (XPDU): An LLDPDU containing an Extension Identifier TLV and not containing a Time to Live TLV or Extension Request TLV.

Extension Request LLDPDU (XREQ): An LLDPDU containing an Extension Request TLV and not containing a Time to Live TLV or Extension Identifier TLV.

Manifest LLDPDU: A Normal LLDPDU containing a Manifest TLV.

Normal LLDPDU: An LLDPDU containing a Time To Live TLV and not containing an Extension Request TLV or an Extension Identifier TLV.

Scope MAC Address: The MAC address used as the destination address in Normal LLDPDUs, which determines the limits of propagation in the network.

shutdown LLDPDU: A Normal LLDPDU with a TTL value of zero.

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4. Acronyms and abbreviations

Insert the following new abbreviations in Clause 4 in alphabetical order:

XLLDP	Extended Link Layer Discovery Protocol
XPDU	Extension LLDPDU
XREQ	Extension Request LLDPDU

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5. Conformance

5.3 Required capabilities

Change list items j), k), and l) in the lettered list in 5.3 as follows:

j) If receipt of LLDPDUs is supported, for every set of TLVs (the basic management set, extended LLDP set, and any organizationally specific sets) supported, support shall be implemented for receipt of every TLV defined in the set.

k) If transmission of LLDPDUs is supported, for every set of TLVs (the basic management set, extended LLDP set, and any organizationally specific sets) supported, support shall be implemented for transmission of every TLV defined in the set.

l) If transmission of LLDPDUs is supported, for every set of TLVs (the basic management set, extended LLDP set, and any organizationally specific sets) supported, a capability shall be implemented for users to determine which optional TLVs are transmitted in any particular LLDPDU.

Insert new item p) at the end of the lettered list in 5.3 (as modified by IEEE Std 802.1ABcu-2021) as follows:

p) If the Extended Link Layer Discovery Protocol is supported, then
   1) The extended LLDP set of TLVs shall be implemented as defined in 8.5a.
   2) The Extension Request and Extension LLDPDU formats (8.2) and addressing (7.1.2) shall be implemented.
   3) The extended receive state machine (Figure 9-2a) shall be implemented.

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