

79. IEEE 802.3 Organizationally Specific Link Layer Discovery Protocol (LLDP) type, length, and value (TLV) information elements

79.1.1.1 Destination Address field

The Destination Address field of an IEEE 802.3 LLDP frame contains a MAC address specified by 7.1 of IEEE Std 802.1AB-2009 (see 79.2).

For nodes operating on a 10BASE-T1S or 10BASE-T1M mixing segment, the Destination Address field of an IEEE 802.3 LLDP frame shall contain the “Nearest bridge” group MAC address value as specified in Table 7-1 of IEEE Std 802.1AB-2009.

79.3 IEEE 802.3 Organizationally Specific TLVs

Table 79–1—IEEE 802.3 Organizationally Specific TLVs

IEEE 802.3 subtype	TLV name	Subclause reference
...		
9	PLCA	79.3.9
10	Topology Discovery	79.3.10
11	Hibernation Control	79.3.11
12 to 255	Reserved	—

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79.3.10 Topology Discovery TLV

The Topology Discovery TLV is a mandatory TLV that coordinates and indicates capabilities and status of 10BASE-T1S and 10BASE-T1M mixing segment discovery agents. Figure 79-xx shows the format of this TLV.

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TLV type =	TLV information	802.3 OUI	802.3	Topology discovery support/	Topology discovery target node	Topology Discovery Internal Delay Measurement Results
127	string length = 9	00-12-0F	subtype = 10	status	targetNode	internalDelay
7 bits	9 bits	3 octets	1 octet	2 octets	6 octets	4 octets
TLV Header	TLV Header	TLV Info Str	TLV Info Str	TLV Info Str	TLV Info Str	TLV Info Str

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Figure 79–xx—Topology Discovery TLV format

79.3.10.1 Topology discovery support/status

The topology discovery support/status field shall contain a bitmap that identifies the topology discovery support and status of the local IEEE 802.3 LAN station as defined in Table 79–xx.

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79.3.10.2 Topology discovery targetNode

The topology discovery targetNode field contains the MAC address of the station that is permitted to perform an internal delay measurement or is required to respond to a measurement process.

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79.3.10.3 Topology discovery internalDelay

The topology discovery internalDelay field contains an unsigned integer value indicating the results of the local IEEE 802.3

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LAN station's most recent internal delay measurement.

79.3.10.4 Topology discovery TLV usage rules

An LLDPDU shall contain no more than one topology discovery TLV.

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Table 79–xx— Topology discovery support/status

Field	Length (Octets)	Format	Field definitions	Value/Values	Notes
Topology discovery support/status	2	Bitmap	Bit 0 – topology discovery mute supported	1 = supported 0 = not supported	
			Bit 1 – topology discovery measurement supported	1 = supported 0 = not supported	
			Bit 2 – topology discovery target mode supported	1 = supported 0 = not supported	
			Bit 3 – topology discovery internal delay measurement supported	1 = supported 0 = not supported	
			Bit 4 – topology discovery internal delay measurement valid	1 = internalDelay field is valid 0 = internalDelay field is invalid	
			Bit 5 – topology discovery target node internal delay measurement requested	1 = targetNode requested to perform internal delay measurement 0 = targetNode not currently allowed to perform internal delay	
			Bit 6 – topology discovery target node measurement response requested	1 = targetNode requested to respond to measurement process 0 = targetNode not permitted to respond to measurement process	
			Bits 7 to 15	Reserved	

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79.3.11 Hibernation Control TLV

The Hibernation Control TLV is an optional TLV that indicates capabilities and status of 10BASE-T1S and 10BASE-T1M mixing segment nodes capable of power modes so low that they no longer respond to Ethernet frames while hibernating. Figure 79-xx shows the format of this TLV.

TLV type =	TLV information	802.3 OUI	802.3	Hibernation Control support/	Hibernation Control target node count	Hibernation Control target nodes
127	string length = 9	00-12-0F	subtype = 11	status	targetNodeCount	targetNodes
7 bits	9 bits	3 octets	1 octet	2 octets	2 octets	6 octets * targetNodeCount
TLV Header	TLV Header	TLV Info Str	TLV Info Str	TLV Info Str	TLV Info Str	TLV Info Str

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 Figure 79–xx— Hibernation Control TLV format

79.3.12.1 Hibernation Control support/status

The Hibernation Control support/status field shall contain a bitmap that identifies the Hibernation Control support and status of the local IEEE 802.3 LAN station as defined in Table 79–xx.

79.3.11.2 Hibernation Control targetNodeCount

The Hibernation Control targetNodes field contains the 16-bit unsigned integer representing the number of MAC addresses present in the targetNodes list.

79.3.11.3 Hibernation Control targetNodes

The Hibernation Control targetNodes field contains the MAC addresses of the stations that are permitted to return to a hibernating state following an out-of-band wake up event. The length of this field is 6 octets * targetNodeCount.

79.3.11.4 Hibernation Control TLV usage rules

An LLDPDU shall contain no more than one Hibernation Control TLV.

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Table 79–xx— Hibernation Control support/status

Field	Length (Octets)	Format	Field definitions	Value/Values	Notes
Hibernation Control support/status	2	Bitmap	Bit 0 – Hibernation Coordinator Role supported	1 = supported 0 = not supported	
			Bit 1 – Hibernation wake event reception supported	1 = supported 0 = not supported	
			Bit 2 – Hibernation Coordinator Role active	1 = sender is acting as a hibernation coordinator 0 = sender is not acting as a hibernation coordinator	
			Bits 3 to 7	Reserved	

79.5 Protocol implementation conformance statement (PICS) proforma for IEEE 802.3 Organizationally Specific Link Layer Discovery Protocol (LLDP) type, length, and value (TLV) information elements

79.5.3 Major capabilities/options

Insert new row to the end of the protocol implementation conformance statement (PICS) proforma as follows (unchanged rows and unchanged footnote number 142 in subclause 79.5 not shown):

Item	Feature	Subclause	Value/Comment	Status	Support
*PL	PLCA TLV	79.3.9		O	Yes [] No []

Insert new subclause 79.5.13 after 79.5.12 as follows:

79.5.13 PLCA TLV

Item	Feature	Subclause	Value/Comment	Status	Support
PLC1	PLCA support/status field	79.3.9.1	Contains a bitmap identifying PLCA and D-PLCA support defined in Table 79-21	PL:M	Yes [] N/A []
PLC2	PLCA nodeID field	79.3.9.2	Contains an integer value indicating the PLCA nodeID	PL:M	Yes [] N/A []
PLC3	PLCA TLV usage rules	79.3.9.3	PLCA support/status TLV should contain no more than one PLCA TLV	PL:O	Yes [] No [] N/A []