

Clarification Request

References: BTL Test Plan 23.1 - 14.YY.2.1.3 Minimum NPDU Forwarding Size Test

Date of BTL-WG Response: 2023-08-17

Background: BTL Test Plan 23.1 - 14.YY.2.1.3 Minimum NPDU Forwarding Size Test

Purpose: To verify that the hub can forward BVLC messages of length 1497 with 4192 octets of data and destination options.

Test Concept: With the IUT operating as the primary hub, connect devices D3 and D4 to the IUT. D3 sends a BVLC of length 1497 octets with 4192 octets of data options to D4 via the hub. Verify that the BVLC is correctly forwarded to D4.

Configuration Requirements: The IUT is configured as a primary or failover hub and the test devices D3, D4 and D5 are connected to it.

Test Steps:

1. TRANSMIT PORT (D3-IUT hub WebSocket),
 Encapsulated-NPDU,
 -- 'Originating Virtual Address' absent
 'Destination Virtual Address' = (D4's VMAC),
 -- 'Destination Options' absent
 'Data Options' = ({X'CI',
 X'3F105A000034...
 '}), -- replace ... with 4186 octets of any value
 'Payload'
 WriteProperty-Request,
 'Object Identifier' = (O: any object identifier),
 'Property Identifier' = (P: any property identifier),
 'Property Value' = (V: any data value with an encoded length which
 makes the PayLoad 1497 octets)
2. RECEIVE PORT (D4-IUT hub WebSocket),
 Encapsulated-NPDU,
 'Originating Virtual Address' = (D3's VMAC),
 -- 'Destination Virtual Address' absent
 -- 'Destination Options' absent
 'Data Options' = ({X'CI',
 X'3F105A000034...'
 '}), -- replace ... with 4186 octets of any value
 'Payload'
 WriteProperty-Request,
 'Object-Identifier' = O,
 'Property-Identifier' = P,
 'Property Value' = V

Problem:

There is uncertainty about the size of the 'data options'. ASHRAE states "The hub function shall support...at the least, NPDU sizes of 1497 octets and 4192 octets of data options...".

Data options in the test have 4193 octets. (one octet 'C1' + six octets '3F105A000034' + 4186 octets 'of any value')

The size of the data options hex '105A' (=4186) does not fit to the size of the test description.

Source: ASHRAE 135 2020 AB 5.1 Hub Function Requirements Page 1395

The hub function is required to accept hub connections initiated by the hub connector of BACnet/SC nodes.

Unicast BVLC messages received from a hub connection shall be forwarded by the hub function to the hub connection where the destination VMAC address matches the VMAC address of the connection peer node. If there is no match, the unicast BVLC message shall be discarded.

Broadcast BVLC messages received from a hub connection shall be duplicated and a copy shall be sent to all hub connections except the one from which it was received.

The hub function shall support the forwarding and distribution of BVLC messages that convey, at the least, NPDU sizes of 1497 octets and 4192 octets of data options and destination options.

The hub function shall not send a BVLC message, or any copy of it, to the hub connection from which it was received.

Question:

Needs the test to be adjusted to meet ASHRAE definitions?

Response:

Yes. The correct value is 0X1059 (4185).