

Clarification Request

References: BTL Specified Tests-20.0.Final.pdf

Date of BTL-WG Response: July 28, 2022

Background:

Following is the snapshot of 14.YY.1.2.9 Invalid WebSocket Data Test form BTL Specified Tests-20.0.Final.pdf

14.YY.1.2.9 Invalid WebSocket Data Test

Reference: YY.7.5.3

Purpose: To verify that the IUT will drop a WebSocket if a non-BVLC data frame is received on the WebSocket.

Test Concept: The IUT is connected to the network. Send a non-binary WebSocket data frame (the only type allowed for BVLC packets) to the IUT to hub WebSocket. Verify that the IUT closes the connection.

Configuration Requirements: The IUT is connected to the TD as a primary hub or direct connection peer.

Test Steps:

1. TRANSMIT WebSocket Frame,

'opcode' =	(a value in the range 1, 3 - 7),	-- WebSocket opcode for a -- non-binary data frame
Encapsulated-NPDU,		
'Message ID' =	(M1: any valid value),	
-- 'Originating Virtual Address' absent		
-- 'Destination Virtual Address' absent		
-- 'Destination Options' absent		
'Data Options' =	({X'41'}), -- Secure Path	
'BACnet NPDU' =		
ReadProperty-Request		
'Object Identifier' =	(O: any object in the IUT),	
'Property Identifier' =	Object_Name	
2. CHECK(that the IUT closes the WebSocket)

The bulk of WebSocket libraries silently omit the few opcodes; for instance, Libwebsocket silently omits three to seven values. No meaning of this opcodes in the WebSocket library. Only 1 is for text. 2 is for binary, which is used for BACnet/SC. WebSockets.

0x3 to 0x7 and 0xB to 0xF, are not defined yet or reserved for future use. Refer to RFC 6455's statement below.



Fette & Melnikov Standards Track [Page 28]

[RFC 6455](#) The WebSocket Protocol December 2011

Opcode: 4 bits

Defines the interpretation of the "Payload data". If an unknown opcode is received, the receiving endpoint **MUST Fail the WebSocket Connection**. The following values are defined.

- * %x0 denotes a continuation frame
- * %x1 denotes a text frame
- * %x2 denotes a binary frame
- * %x3-7 are reserved for further non-control frames
- * %x8 denotes a connection close
- * %x9 denotes a ping
- * %xA denotes a pong
- * %xB-F are reserved for further control frames

At the WebSocket level, these opcodes are silently dropped, and packets are not forwarded to the stack or application. Due to this, Stack/IUT could not take any decisions.

Question:

Can BTL mark as NA or ignore those opcodes, which are not defined and silently dropped at WebSocket level? e.g., 3 to 7 opcodes.

RESPONSE:

The BTL Working Group agrees that it is not clear what the standard's mandate is with respect to opcodes 3 – 7. The BTL-WG will bring the issue up with the SSPC. Until further direction is received, the test will be restricted to testing opcode 1.