Clarification Request

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References: BTL Specified Tests-9.0.final

Stage: ☒Request, ☐Listed, ☐Analysis, ☐Resolved

Background / Proposed Solution:

A number of tests in one step issue a TRANSMIT ReadRange with a small count it items. In the next step they expect a RECEIVE ReadRange-ACK with MoreFollows= TRUE in the ResultFlags.

Test 7.3.2.26.X1 steps 9 and 10
Test 7.3.2.26.X2 steps 7 and 8
Test 7.3.2.26.X3 steps 6 and 7
Test 7.3.2.26.X4 steps 5 and 7

7.3.2.26.X1 Internal Logging of Notifications

Reason for Change: Ensuring that the Event Log implementation fundamentally works. This test is in SSPC proposal DO-016.

Purpose: To verify the IUT correctly collects and represents the Notifications which it initiates.

Test Concept: Make the IUT generate two event notification messages which the IUT logs. Use ReadRange to retrieve them from an Event Log and compare the two representations.

Configuration Requirements: The tester shall choose two events which the IUT will initiate and place into its Event Log. O_1 is an event initiating object in IUT, which is configured to send event notifications to TD. LO_1 is an Event Log object in IUT.

Test Steps:

1. WRITE Enable = TRUE
2. MAKE (IUT generate an EventNotification)
3. RECEIVE ConfirmedEventNotification-Request,

SOURCE =	IUT,
DESTINATION =	TD,
'Process Identifier' =	(any valid process identifier),
'Initiating Device Identifier' =	IUT,
'Event Object Identifier' =	O_1
'Time Stamp' =	(T_1, any valid timestamp),
'Notification Class' =	(any valid notification class),
'Priority' =	(any valid priority),
'Event Type' =	(any standard event type),
'Message Text' =	(any character string),
'Notify Type' =	ALARM | EVENT,
'AckRequired' =	TRUE | FALSE,
'From State' =	(state S_1, any valid state for this event type),

'To State' = (state S_2, any valid state for this event type that can follow S_1),
'Event Values' = (any values appropriate to the event type)

4. TRANSMIT BACnet-SimpleACK-PDU
5. MAKE (IUT generate another EventNotification to ensure at least two records are logged)
6. RECEIVE ConfirmedEventNotification-Request,
   SOURCE = IUT,
   DESTINATION = TD,
   'Process Identifier' = (any valid process identifier),
   'Initiating Device Identifier' = IUT,
   'Event Object Identifier' = O_1
   'Time Stamp' = (T_2, any valid timestamp),
   'Notification Class' = (any valid notification class),
   'Priority' = (any valid priority),
   'Event Type' = (any standard event type),
   'Message Text' = (any character string),
   'Notify Type' = ALARM | EVENT,
   'AckRequired' = TRUE | FALSE,
   'From State' = (state S_1, any valid state for this event type),
   'To State' = (state S_2, any valid state for this event type that can follow S_1),
   'Event Values' = (any values appropriate to the event type)
7. TRANSMIT BACnet-SimpleACK-PDU
8. READ RC = LO_1, Record_Count
9. TRANSMIT ReadRange-Request,
   'Object Identifier' = LO_1,
   'Property Identifier' = Log_Buffer,
   'Reference Index' = RC,
   'Count' = -2
10. RECEIVE ReadRange-ACK,
    'Object Identifier' = LO_1,
    'Property Identifier' = Log_Buffer,
    'Result Flags' = {~~FALSE~~?,?,~~TRUE~~ FALSE},
    'Item Count' = 2,
    'Item Data' = (logged data that matches the information received in steps 3 and 6, except that Process_Identifier can be any value and need not match)
11. CHECK **(**$T_2 > T_1$, and that they were logged in order)

Notes to Tester: When the UnconfirmedEventNotification service is used instead of the ConfirmedEventNotification service, the TD shall skip the steps in which a SimpleACK-PDU is sent.

7.3.2.26.X2 Remote Logging of Notifications

Purpose: To verify that the IUT correctly collects and represents the Notifications which it receives.

Test Concept: Make TD send multiple event notification messages. Use ReadRange to retrieve the events from an Event Log or perhaps from multiple Event Logs in the IUT, and compare the two representations.

Configuration Requirements: LO_1 is an Event Log object in IUT which logs the Event types which are sent. Stop_When_Full in LO_1 shall be FALSE or absent.

Test Steps:

1. WRITE Enable = TRUE
2. TRANSMIT ConfirmedEventNotification-Request,
   'Process Identifier' = (any valid process identifier),
   'Initiating Device Identifier' = TD,

'Event Object Identifier' = (any valid object identifier),
'Time Stamp' = (T_1, any valid timestamp),
'Notification Class' = (any valid notification class),
'Priority' = (any valid priority),
'Event Type' = (any standard event type),
'Message Text' = (any character string),
'Notify Type' = ALARM | EVENT,
'AckRequired' = TRUE | FALSE,
'From State' = (state S_1, any valid state for this event type),
'To State' = (state S_2, any valid state for this event type that can follow S_1),
'Event Values' = (any values appropriate to the event type)

3. RECEIVE BACnet-SimpleACK-PDU
4. TRANSMIT ConfirmedEventNotification-Request,
   SOURCE = IUT,
   DESTINATION = TD,
   'Process Identifier' = (any valid process identifier),
   'Initiating Device Identifier' = IUT,
   'Event Object Identifier' = (any valid object identifier),
   'Time Stamp' = (T_2, any valid timestamp),
   'Notification Class' = (any valid notification class),
   'Priority' = (any valid priority),
   'Event Type' = (any standard event type),
   'Message Text' = (any character string),
   'Notify Type' = ALARM | EVENT,
   'AckRequired' = TRUE | FALSE,
   'From State' = (state S_1, any valid state for this event type),
   'To State' = (state S_2, any valid state for this event type that can follow S_1),
   'Event Values' = (any values appropriate to the event type)
5. RECEIVE BACnet-SimpleACK-PDU
6. READ RC = LO_1, Record_Count
7. TRANSMIT ReadRange-Request,
   'Object Identifier' = LO_1,
   'Property Identifier' = Log_Buffer,
   'Reference Index' = RC,
   'Count' = -2
8. RECEIVE ReadRange-ACK,
   'Object Identifier' = LO_1,
   'Property Identifier' = Log_Buffer,
   'Result Flags' = {~~FALSE~~?,?,~~TRUE~~ FALSE},
   'Item Count' = 2,
   'Item Data' = (logged data that matches the information received in steps 3 and 6, except that Process_Identifier can be any value and need not match)
9. CHECK **(**that the events were logged in the order in which they were received)

Notes to Tester: When the UnconfirmedEventNotification service is used instead of the ConfirmedEventNotification service, the test shall skip the steps in which a SimpleACK-PDU is expected.

7.3.2.26.X3 Internal Logging of ACK_NOTIFICATION

Purpose: To verify the IUT correctly collects and represents an ACK_NOTIFICATION which it initiates.

Test Concept: Make the IUT generate an ACK_NOTIFICATION message. Use ReadRange to retrieve that same event from an Event Log and compare the two representations. If the IUT does not support logging of the ACK_NOTIFICATIONs which it initiates, this test shall be skipped.

Configuration Requirements: O_1 is an event initiating object in IUT, which is configured to send event notifications to TD. LO_1 is an Event Log object in IUT which logs ACK_NOTIFICATIONs.

Test Steps:

1. WRITE Enable = TRUE
2. MAKE (O_1 issue an ACK_NOTIFICATION)
3. READ RC = LO_1, Record_Count
4. RECEIVE ConfirmedEventNotification-Request,
   SOURCE = IUT,
   DESTINATION = TD,
   'Process Identifier' = (any valid process identifier),
   'Initiating Device Identifier' = IUT,
   'Event Object Identifier' = O_1,
   'Time Stamp' = (T_1, any valid timestamp),
   'Notification Class' = (any valid notification class),
   'Priority' = (any valid priority),
   'Event Type' = (any standard event type),
   'Message Text' = (any character string),
   'Notify Type' = ACK_NOTIFICATION,
   'From State' = (state S_1, any valid state for this event type)
5. TRANSMIT BACnet-SimpleACK-PDU
6. TRANSMIT ReadRange-Request,
   'Object Identifier' = LO_1,
   'Property Identifier' = Log_Buffer,
   'Reference Index' = RC,
   'Count' = -1
7. RECEIVE ReadRange-ACK,
   'Object Identifier' = LO_1,
   'Property Identifier' = Log_Buffer,
   'Result Flags' = {~~FALSE~~?,?,~~TRUE~~ FALSE},
   'Item Count' = 1,
   'Item Data' = (logged data that matches the information received in step 4, except that Process_Identifier can be any value and need not match)

Notes to Tester: When the UnconfirmedEventNotification service is used instead of the ConfirmedEventNotification service, the TD shall skip the step in which a SimpleACK-PDU is sent.

7.3.2.26.X4 Remote Logging of ACK_NOTIFICATION

Purpose: To verify that the IUT correctly collects and represents ACK_NOTIFICATIONs which it receives.

Test Concept: Send an ACK_NOTIFICATION to the IUT. Use ReadRange to retrieve that same event from an Event Log and compare the two representations.

Configuration Requirements: LO_1 is an Event Log object in IUT which logs ACK_NOTIFICATIONs. Stop_When_Full in LO_1 shall be FALSE or absent.

Test Steps:

1. WRITE Enable = TRUE
2. TRANSMIT ConfirmedEventNotification-Request,

SOURCE = IUT,
DESTINATION = TD,
'Process Identifier' = (any valid process identifier),
'Initiating Device Identifier' = IUT,
'Event Object Identifier' = (any valid object identifier),
'Time Stamp' = (T_1, any valid timestamp),
'Notification Class' = (any valid notification class),
'Priority' = (any valid priority),
'Event Type' = (any standard event type),
'Message Text' = (any character string),
'Notify Type' = ACK_NOTIFICATION,
'From State' = (state S_1, any valid state for this event type)

3. RECEIVE BACnet-SimpleACK-PDU
4. READ RC = LO_1, Record_Count
5. TRANSMIT ReadRange-Request,
   'Object Identifier' = LO_1,
   'Property Identifier' = Log_Buffer,
   'Reference Index' = RC,
   'Count' = -1
6. RECEIVE ReadRange-ACK,
   'Object Identifier' = LO_1,
   'Property Identifier' = Log_Buffer,
   'Result Flags' = {~~FALSE~~?,?,~~TRUE~~ FALSE},
   'Item Count' = 1,
   'Item Data' = (logged data that matches the information received in step 2, except that Process_Identifier can be any value and need not match)

Notes to Tester: When the UnconfirmedEventNotification service is used instead of the ConfirmedEventNotification service, the test shall skip the step in which a SimpleACK-PDU is expected.

Question:

Should the Flag MORE_ITEMS be set to FALSE in all those cases?

Response:

Yes. Also, the FIRST_ITEM could be TRUE or FALSE based on the number of elements in the array. The tests will be modified as highlighted above.