

**INTERPRETATION IC 135-2016-20 OF
ANSI/ASHRAE STANDARD 135-2016 BACnet® -
A Data Communication Protocol for Building
Automation and Control Networks**

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Reference: This request for interpretation refers to the requirements presented in ANSI/ASHRAE Standard 135-2016, Clauses 5.2.1.2, 9.7.1 and 19.4, regarding the requirements for devices to know the Maximum Conveyable APDU to remote networks

Background: Clause 19.4 outlines a procedure for a 'node' to determine the Maximum Conveyable APDU to a remote network and requires the node to cache the determined value. References in the Standard that refer to Clause 19.4 are found in Clause 5.2 (Segmentation) and 9.7.1 (Routing of BACnet Messages from MS/TP).

There are some inconsistencies in Clause 5.2.1.2 because Clause 5.2.1.2 (b) implies that a device must know the maximum APDU size conveyable to a remote network to choose an appropriate APDU size that will reach the recipient. Yet, later in 5.2.1.2, the standard dictates that a requesting BACnet-user (client) must use the Max_APDU_Length_Accepted property of the remote peer's Device object and a non-requesting BACnet-user (server) must use the 'Max APDU Length Accepted' parameter in the confirmed request PDU. For a routed message, there is a possibility that the two values determined by the device are not equivalent.

The language in Clause 9.7.1 suggests that finding the maximum APDU size conveyable to a remote network is optional by stating:

'Before sending large MS/TP frames, a sending device should determine whether a given destination network is reachable using large MS/TP frames.'

This clause does not make any client/server distinctions regarding the 'sending device' nor does it make a distinction between segmenting and non-segmenting devices.

There are two points of confusion here:

- 1) When is it a requirement for a 'sending device' to determine the maximum APDU size conveyable to a remote network?
- 2) To which device does the burden of finding the maximum APDU size conveyable to a remote network fall upon? Is the 'sending device', the client, server, or router?

Interpretation: A requesting BACnet-user (client) is required to determine the maximum APDU size conveyable to a remote network when it receives a Message_Too_Long error in response to a confirmed-request-PDU. A non-requesting BACnet-user (server) that supports segmentation must also determine the maximum APDU size conveyable to a remote network when it receives a Message_Too_Long error in response to a Complex-Ack and then segment the response accordingly. Non-requesting BACnet-users that do not support segmentation are not obligated to determine the maximum APDU size conveyable to a remote network because they

are not able to control the size of a response, however, upon receiving a Message_Too_Long error response to a Complex-Ack, the device shall send an Abort PDU with a reason of Segmentation_Not_Supported to the requesting BACnet-user.

Question: Is this Interpretation correct?

Answer: No.

Comments: The BACnet standard does not mandate any devices to determine the maximum conveyable APDU for remote networks.