

**INTERPRETATION IC 135-2008-13 OF
ANSI/ASHRAE STANDARD 135-2008 BACnet® -
A Data Communication Protocol for Building
Automation and Control Networks**

Approval Date: January 29, 2011

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Reference: This request for interpretation refers to the requirements presented in ANSI/ASHRAE Standard 135-2008, Clauses 6.4.7 and 6.4.8 (pages 55 and 56), relating Initialize-Routing-Table and Initialize-Routing-Table-Ack.

Background: In Clause 6.4.7, the Initialize-Routing-Table service is described and it provides two purposes. The service can be used to 'initialize' a device's routing table or it can be used to query the contents of a device's routing table.

The third paragraph of Clause 6.4.7 describes the semantic of the content of the request message:

"... Following this field are sets of data indicating the DNET directly connected to this port or accessible through a dial-up PTP connection, Port ID, Port Info Length, and, in the case Port Info Length is non-zero, Port Info. If an Initialize-Routing-Table message is sent with the Number of Ports equal to zero, the responding device shall return its complete routing table in an Initialize-Routing-Table-Ack message without updating its routing table. ..."

The language is clear that only directly connected DNETs (and PTP dial-up DNETs) are described in the request. But in the response, it is not clear what a device's 'complete routing table' contains. Are only directly connected networks included (as described by the data format description), or are all networks reachable through the router included (as possibly implied by the term 'complete routing table').

There is no language dealing with this question within Clause 6.4.8; it only indicates that the format is the same as the data portion of the Initialize-Routing-Table message:

"The data portion of this message, returned only in response to a routing table query, conveys the routing table information, and it has the same format as the data portion of an Initialize-Routing-Table message. See 6.4.7 and Figure 6-11."

In considering this problem, it is also worth noting that having the response indicate all known networks may result in the service not working in large BACnet installations because routers would be unable to provide all directly connected DNETs plus all learned distant DNETs. It also makes the determination of which networks are directly connected to a router difficult, if not impossible (e.g. when a router cannot cache all networks in the system and thus reports fewer than all networks, or when the response is too large thus resulting in no response or a partial response).

Interpretation: Given that Clause 6.4.7 indicates that the 'Number of Ports' field is followed by a list of directly connected DNETs, that Clause 6.4.8 states that the response is to follow the same format as the request, and that the service fails to fulfill basic needs if all ports are reported, the term 'complete routing table' shall mean all directly connected DNETs (plus PTP dial-up DNETs).

Question: Is this interpretation correct?

Answer: Yes.