NX Area Controller

Date: November 8, 2022
Vendor Name: Current
Product Name: NX Area Controller
Product Model Number: NXAC-UNV-001 / NXAC2-120
Application Software Version: 5.1.0-2021-5-04
Firmware Revision: n/a
BACnet Protocol Revision: Ver. 1, Rev. 14

Product Description

The NX Area Controller acts as a BACnet server and virtual BACnet router between BACnet clients and a NX virtual BACnet solution. BACnet devices served by the NX Area Controller are Zones. Zones are virtual BACnet devices that represent physical space within the building such as conference rooms, open offices or corridors.

BACnet Standardized Device Profile (Annex L):

☐ BACnet Operator Workstation (B-OWS)
☐ BACnet Advanced Operator Workstation (B-AWS)
☐ BACnet Operator Display (B-OD)
☐ BACnet Building Controller (B-BC)
☐ BACnet Advanced Application Controller (B-AAC)
☐ BACnet Application Specific Controller (B-ASC)
☐ BACnet Smart Sensor (B-SS)
☐ BACnet Smart Actuator (B-SA)
☒ BACnet General (B-GENERAL)

List all BACnet Interoperability Building Blocks Supported (Annex K):

K.1.2 BIBB - Data Sharing-ReadProperty-B (DS-RP-B)
K.1.4 BIBB - Data Sharing-ReadPropertyMultiple-B (DS-RPM-B)
K.5.2 BIBB - Device Management-Dynamic Device Binding-B (DM-DDB-B)
K.5.4 BIBB - Device Management-Dynamic Object Binding-B (DM-DOB-B)
K.5.6 BIBB - Device Management-DeviceCommunicationControl-B (DM-DCC-B)

Segmentation Capability:

☐ Able to transmit segmented messages   Window Size N/A
☐ Able to receive segmented messages   Window Size N/A

Standard Object Types Supported:

An Object Type is supported if it may be present in the device. For each standard Object Type supported provide the following data:

Device
1. Whether objects of this type are dynamically creatable using the CreateObject service? **NO**
2. Whether objects of this type are dynamically deletable using the DeleteObject service? **NO**
3. List of the optional properties supported: **Description, Location**
4. List of all properties that are writable where not otherwise required by this standard: **NONE**
5. List of all properties that are conditionally writable where not otherwise required by this standard: **NONE**
6. List of proprietary properties and for each its property identifier, datatype, and meaning: **NONE**
7. List of any property range restrictions: **NONE**

Data Link Layer Options:

☒ BACnet IP, (Annex J)
☒ BACnet IP, (Annex J), Foreign Device
☐ ISO 8802-3, Ethernet (Clause 7)
☐ ATA 878.1, 2.5 Mb. ARCNET (Clause 8)
☐ ATA 878.1, EIA-485 ARCNET (Clause 8), baud rate(s) _____
☐ MS/TP master (Clause 9), baud rate(s):
☐ MS/TP slave (Clause 9), baud rate(s):
☐ Point-To-Point, EIA 232 (Clause 10), baud rate(s):
☐ Point-To-Point, modem, (Clause 10), baud rate(s):
☐ LonTalk, (Clause 11), medium: _____
☐ BACnet/ZigBee (ANNEX O)
☐ Other: _____

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Device Address Binding:
Is static device binding supported? (This is currently necessary for two-way communication with MS/TP slaves and certainother devices.)
☐ Yes ☒ No

Networking Options:
☐ Router, Clause 6 - List all routing configurations, e.g., ARCNET-Ethernet, Ethernet-MS/TP, etc.
☐ Annex H, BACnet Tunneling Router over IP
☒ Annex H1.1.2, Multiple Virtual BACnet Devices in a Single Physical Device
☐ BACnet/IP Broadcast Management Device (BBMD)
      Does the BBMD support registrations by Foreign Devices? ☐ Yes ☐ No
      Does the BBMD support network address translation? ☐ Yes ☐ No

Network Security Options:
☒ Non-secure Device – is capable of operating without BACnet Network Security
☐ Secure Device – is capable of using BACnet Network Security (NS-SD BIBB)
      ☐ Multiple Application-Specific Keys:
      ☐ Supports encryption (NS-ED BIBB)
      ☐ Key Server (NS-KS BIBB)

Character Sets Supported:
Indicating support for multiple character sets does not imply that they can all be supported simultaneously.

☒ ISO 10646 (UTF-8)
☐ IBM™/Microsoft™ DBCS
☐ ISO 8859-1
☐ ISO 10646 (UCS-2)
☐ ISO 10646 (UCS-4)
☐ JIS X 0208

If this product is a communication gateway, describe the types of non-BACnet equipment/networks(s) that the gateway supports:
The NXAC supports other devices in the NX ecosystem such as NX lighting control panels, NX Bridges and Room Controllers, fixture modules, sensors and switches. These devices are commissioned into a Zone and configured in the NXAC GUI.

NXAC Virtual Zone Device

Date: November 8, 2022
Vendor Name: Current
Product Name: NXAC Virtual Zone Device
Product Model Number: Virtual Zone Device
Application Software Version: 5.1.0-2021-5-04
Firmware Revision: N/A
BACnet Protocol Revision: Ver. 1, Rev. 14

Product Description
Zones are virtual BACnet devices that represent physical space within the building such as conference rooms, open offices or corridors. Each Zone will have a single state of occupancy and some quantity of Relays and/or Dimmers. Zones are created in the NX Area Controller and accessible after enabling the BACnet Service.

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☐ BACnet Building Controller (B-BC)
☐ BACnet Advanced Application Controller (B-AAC)
☐ BACnet Application Specific Controller (B-ASC)
☒ BACnet Smart Sensor (B-SS)
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☐ BACnet General (B-GENERAL)

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K.5.4 BIBB - Device Management-Dynamic Object Binding-B (DM-DOB-B)
K.5.6 BIBB - Device Management-DeviceCommunicationControl-B (DM-DCC-B)

Segmentation Capability:
☐ Able to transmit segmented messages   Window Size <u>N/A</u>
☐ Able to receive segmented messages   Window Size <u>N/A</u>

Standard Object Types Supported:
An Object Type is supported if it may be present in the device. For each standard Object Type supported provide the following data:

Device
1. Whether objects of this type are dynamically creatable using the CreateObject service? **<u>NO</u>**
2. Whether objects of this type are dynamically deletable using the DeleteObject service? **<u>NO</u>**
3. List of the optional properties supported: **<u>Description, Location</u>**
4. List of all properties that are writable where not otherwise required by this standard: **<u>NONE</u>**
5. List of all properties that are conditionally writable where not otherwise required by this standard: **<u>NONE</u>**
6. List of proprietary properties and for each its property identifier, datatype, and meaning: **<u>NONE</u>**
7. List of any property range restrictions: **<u>NONE</u>**

Analog Value
1. Whether objects of this type are dynamically creatable using the CreateObject service? **<u>NO</u>**
2. Whether objects of this type are dynamically deletable using the DeleteObject service? **<u>NO</u>**
3. List of the optional properties supported: **<u>Description for all Analog Value Objects, the Min/Max Present Value are supported for Dimmer Objects</u>**
4. List of all properties that are writable where not otherwise required by this standard: **<u>Present_Value in all DimmerObjects</u>**
5. List of all properties that are conditionally writable where not otherwise required by this standard: **<u>NONE</u>**
6. List of proprietary properties and for each its property identifier, datatype, and meaning: **<u>NONE</u>**
7. List of any property range restrictions: **<u>(Present Value) 0-100 for all Dimmer Objects</u>**

Binary Value
1. Whether objects of this type are dynamically creatable using the CreateObject service? **<u>NO</u>**
2. Whether objects of this type are dynamically deletable using the DeleteObject service? **<u>NO</u>**
3. List of the optional properties supported: **<u>Description</u>**
4. List of all properties that are writable where not otherwise required by this standard: **<u>Present_Value in all RelayObjects</u>**
5. List of all properties that are conditionally writable where not otherwise required by this standard: **<u>NONE</u>**
6. List of proprietary properties and for each its property identifier, datatype, and meaning: **<u>NONE</u>**
7. List of any property range restrictions: **<u>NONE</u>**

Multi-state Value
1. Whether objects of this type are dynamically creatable using the CreateObject service? **<u>NO</u>**
2. Whether objects of this type are dynamically deleteable using the DeleteObject service? **<u>NO</u>**
3. List of the optional properties supported: **<u>Description, State-text</u>**
4. List of all properties that are writable where not otherwise required by this standard: **<u>Present_Value</u>**
5. List of all properties that are conditionally writable where not otherwise required by this standard: **<u>NONE</u>**
6. List of proprietary properties and for each its property identifier, datatype, and meaning: **<u>NONE</u>**
7. List of any property range restrictions: **<u>NONE</u>**

Data Link Layer Options:
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BACnet IP, (Annex J), Foreign Device
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ATA 878.1, EIA-485 ARCNET (Clause 8), baud rate(s) _____
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MS/TP slave (Clause 9), baud rate(s):
Point-To-Point, EIA 232 (Clause 10), baud rate(s):
Point-To-Point, modem, (Clause 10), baud rate(s):
LonTalk, (Clause 11), medium: _____

BACnet/ZigBee (ANNEX O)
Other:

Device Address Binding:
Is static device binding supported? (This is currently necessary for two-way communication with MS/TP slaves and certainother devices.)
☐ Yes   ☒ No

Networking Options:
☐ Router, Clause 6 - List all routing configurations, e.g., ARCNET-Ethernet, Ethernet-MS/TP, etc.
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☒ Annex H1.1.2, Multiple Virtual BACnet Devices in a Single Physical Device
☐ BACnet/IP Broadcast Management Device (BBMD)
      Does the BBMD support registrations by Foreign Devices? ☐ Yes ☐ No
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☐ ISO 10646 (UCS-4)
☐ JIS X 0208

Zone limitations
The NX addressing in the Area Controller supports up to 128 Areas. Each Area can contain up to 128 addressable Zones. Each Zone can contain up to 16 addressable groups. A Zone can contain a mix between room controller devices and non-room controller devices. The number of available Zones and their composition is managed by the NXAC GUI. BACnet configuration settings are applied to all Zones.

Zone Object Lists
The object list of a Zone can be sourced directly or indirectly from the following controls and devices:
- Relays
- Dimmers
- Sensors
- Presets

Zone Object Enumeration Summary
The NXAC Zone Object properties are not commandable.
All Objects that support Read Property also support Read Property Multiple.
All Objects that support Write Property also support Write Property Multiple.

Object Enumeration & BACnet Service for a NX Zone:
- BV101 - BV116 Group 1 up to 16 On/Off (Read/Write)
  The Present Value of the Group On/Off Objects will reflect the last written value due to the possibility of conflicting Relay states within a Group.
- AV201 - AV216 Group 1 up to 16 Level (Read/Write)
  The Present Value of the Group Level Objects will reflect the last written value due to the possibility of conflicting Dimmer Levels within a Group.
- BV301 Occupancy State (Read Only)
  If at least one occupancy sensor in the Zone is occupied, the present value of this object will show the entire Zone as Occupied.
- MSV401 Preset State from 1 up to 16 presets + 1 for "This is not a preset" for no preset active state (Read/Write)
  The present value will indicate which preset is active or if the Zone is in the no preset active state.

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- AV601 - AV616 Daylight Foot Candles Group 1 up to 16 (Read Only)
  The present value of these Objects will correspond to the Daylight Foot Candles read at the sensor which is controlling the Group.
- AV701 Zone Watts (Read Only)*
  The present value is the total wattage reported by devices in the Zone.
- BV8001 - BV80XX Relay 1 up to 99 (Read/Write)
  The present value of these Objects is the state of a single Relay.
- AV9001 - AV90XX Dimmer 1 up to 99 (Read/Write)
  The present value of these Objects is the level of a single Dimmer.

*May not be supported in all Zone configurations; please contact the factory for details