

PROTOCOL IMPLEMENTATION CONFORMANCE STATEMENT (PICS)



INTEGRA

Vendor Name: American Auto-Matrix

Product Name: Integra

Product Model Number: IT-4xxx-xx, IT-5xx-xx, IT-6xx-xx, IT-VAC-xx (IP or Ethernet only)

Application Software Version: 3.2.20.1 or higher

Firmware Revision: 3.2.20 or higher

BACnet Protocol Revision: 4

Product Description:

Integra is a full featured BACnet Building Controller built on state-of-the-art technology. Powered by the NiagaraAX Framework, Integra provides the ability to view, monitor, and control BACnet devices or IP, Ethernet, or MS/TP media layers. Devices, points, schedules, and logs can be discovered and managed. In addition, Niagara-based points, schedules, histories, and alarm data can be exposed to BACnet for monitor and control by foreign BACnet clients.

BACNET STANDARDIZED DEVICE PROFILE:

- BACnet Operator Workstation (B-OWS)
- 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 INTEROPERABILITY BUILDING BLOCKS SUPPORTED:

DS-RP-A, B	AE-N-A, I-B	T-VTM-A, I-B, E-B	DM-RD-B	DM-PT-A
DS-RPM-A,B	AE-ACK-A, B	T-ATR-A, B	DM-TS-B	DM-PT-B
DS-WP-A, B	AE-ASUM-B	NB-CE-A	DM-UTC-B	DM-TS-A
DS-WPM,B	AE-ESUM-B	DM-DDB-A, B	DM-LM-A, B	DM-UTC-B
DS-COV-A, B	AE-INFO-B	DM-DOB-A, B	DM-BR-B	DM-RD-B
DS-COVU-A ,B	SCHED-A, I-B, E-B	DM-DCC-B	DM-DCC-B	

SEGMENTATION CAPABILITY:

Able to transmit segmented messages yes no Window Size: 10

Able to receive segmented messages yes no Window Size: any

STANDARD OBJECT TYPES SUPPORTED

Dynamically Creatable Objects

None

Dynamically Deletable Objects

None

Properties

Bold indicates writable properties

Italics indicates optional properties

Range limitations are expressed in parentheses following the property name - e.g. (0).

NOTES

The following are notes specific to object functionality. Numeric items are listed in superscript next to each corresponding object property.

1. The **File_Size** property of File objects is only writable if the underlying system file is changeable.
2. The **Setpoint** property of Loop objects is writable only if the setpoint is not linked from within Niagara.
3. The **Recipient_List** property of the Notification Class object will maintain entries that are internally configured within Niagara.
4. The **List_Of_Object_Property_References** property of the Schedule object will maintain entries that are internally configured within Niagara.
5. The **Priority_For_Writing** property of Schedule objects is not important for internal Niagara operation, as the priority at which a point is commanded is determined by the input to which the Schedule output is linked.
6. These Trend Log object properties are not writable if the backing history for the exported Trend Log is a Niagara-generated history. If the history is created as a BACnet Trend Log, then they are writable.
7. Trend Logs in Niagara are either COV or Interval. So the Log_Interval property cannot be written to a value other than 0 for COV logs, or to 0 for interval logs.

Analog Input

Object_Identifier
Object_Name
 Object_Type
 Present_Value
Description
Device_Type
 Status_Flags
 Event_State
Reliability
Out_Of_Service
 Units
Min_Pres_Value
Max_Pres_Value
Resolution
COV_Increment
Time_Delay
Notification_Class
High_Limit
Low_Limit
Deadband
Limit_Enable
Event_Enable
Acked_Transitions
Notify_Type
Event_Time_Stamps

Analog Output

Object_Identifier
Object_Name
 Object_Type
 Present_Value
Description
Device_Type
 Status_Flags
 Event_State
Reliability
Out_Of_Service
 Units
Min_Pres_Value
Max_Pres_Value
Resolution
 Priority_Array
Relinquish_Default
COV_Increment
Time_Delay
Notification_Class
High_Limit
Low_Limit
Deadband
Limit_Enable
Event_Enable
Acked_Transitions
Notify_Type
Event_Time_Stamps

Analog Value

Object_Identifier
Object_Name
 Object_Type
 Present_Value
Description
 Status_Flags
 Event_State
Reliability
Out_Of_Service
 Units
Priority_Array
Relinquish_Default
Min_Pres_Value
Max_Pres_Value
 COV_Increment
Time_Delay
Notification_Class
High_Limit
Low_Limit
Deadband
Limit_Enable
Event_Enable
Acked_Transitions
Notify_Type
Event_Time_Stamps

Binary Input

Object_Identifier
Object_Name
 Object_Type
 Present_Value
Description
 Device_Type
 Status_Flags
 Event_State
Reliability
Out_Of_Service
 Polarity
Inactive_Text
Active_Text
Change_Of_State_Time
Change_Of_State_Count (0)
Time_Of_State_Count_Reset
Elapsed_Active_Time (0)
Time_Of_Active_Time_Reset
Time_Delay
Notification_Class
Alarm_Value
Event_Enable
Acked_Transitions
Notify_Type
Event_Time_Stamps

Binary Output

Object_Identifier
Object_Name
Object_Type
Present_Value
Description
Device_Type
Status_Flags
Event_State
Reliability
Out_Of_Service
Polarity
Inactive_Text
Active_Text
Change_Of_State_Time
Change_Of_State_Count (0)
Time_Of_State_Count_Reset
Elapsed_Active_Time (0)
Time_Of_Active_Time_Reset
Minimum_Off_Time
Minimum_On_Time
Priority_Array
Relinquish_Default
Time_Delay
Notification_Class
Feedback_Value
Event_Enable
Acked_Transitions
Notify_Type
Event_Time_Stamps

Binary Value

Object_Identifier
Object_Name
Object_Type
Present_Value
Description
Status_Flags
Event_State
Reliability
Out_Of_Service
Inactive_Text
Active_Text
Change_Of_State_Time
Change_Of_State_Count (0)
Time_Of_State_Count_Reset
Elapsed_Active_Time (0)
Time_Of_Active_Time_Reset
Minimum_Off_Time
Minimum_On_Time
Priority_Array
Relinquish_Default
Time_Delay
Notification_Class
Alarm_Value
Event_Enable
Acked_Transitions
Notify_Type
Event_Time_Stamps

Calendar

Object_Identifier
Object_Name
Object_Type
Description
Present_Value
Date_List

Device

Object_Identifier
Object_Name
Object_Type
System_Status
Vendor_Name
Vendor_Identifier
Model_Name
Firmware_Revision
Application_Software_Revision
Location
Description
Protocol_Version
Protocol_Revision
Protocol_Services_Supported
Protocol_Object_Types_Support
ed
Object_List
Max_APDU_Length_Accepted
Segmentation_Supported
Max_Segments_Accepted
Local_Time
Local_Date
UTC_Offset
Daylight_Savings_Status
APDU_Segment_Timeout
APDU_Timeout
Number_Of_APDU_Retrieves
Max_Master
Max_Info_Frames
Device_Address_Binding
Database_Revision
Configuration_Files
Last_Restore_Time
Backup_Failure_Timeout
Active_COV_Subscriptions

File (Stream-Access Only)

Object_Identifier
Object_Name
Object_Type
Description
File_Type
File_Size ¹
Modification_Date
Archive
Read_Only
File_Access_Method

Loop

Object_Identifier
Object_Name
Object_Type
Present_Value
Description
Status_Flags
Event_State
Reliability
Out_Of_Service
Output_Units
Manipulated_Variable_Reference
Controlled_Variable_Reference
Controlled_Variable_Value
Controlled_Variable_Units
Setpoint_Reference
Setpoint ²
Action
Proportional_Constant
Proportional_Constant_Units
Integral_Constant
Integral_Constant_Units
Derivative_Constant
Derivative_Constant_Units
Bias
Maximum_Output
Minimum_Output
Priority_For_Writing
COV_Increment
Time_Delay
Notification_Class
Error_Limit
Event_Enable
Acked_Transitions
Notify_Type
Event_Time_Stamps

Multi-State Input

Object_Identifier
Object_Name
Object_Type
Present_Value
Description
Device_Type
Status_Flags
Event_State
Reliability
Out_Of_Service
Number_Of_States
State_Text
Time_Delay
Notification_Class
Alarm_Values
Fault_Values
Event_Enable
Acked_Transitions
Notify_Type
Event_Time_Stamps

Multi-State Output

Object_Identifier
Object_Name
Object_Type
Present_Value
Description
Device_Type
Status_Flags
Event_State
Reliability
Out_Of_Service
Number_Of_States
State_Text
Priority_Array
Relinquish_Default
Time_Delay
Notification_Class
Feedback_Value
Event_Enable
Acked_Transitions
Notify_Type
Event_Time_Stamps

Multi-State Value

Object_Identifier
Object_Name
Object_Type
Present_Value
Description
Status_Flags
Event_State
Reliability
Out_Of_Service
Number_Of_States
State_Text
Priority_Array
Relinquish_Default
Time_Delay
Notification_Class
Alarm_Values
Fault_Values
Event_Enable
Acked_Transitions
Notify_Type
Event_Time_Stamps

Notification Class

Object_Identifier
Object_Name
Object_Type
Description
Notification_Class
Priority
Ack_Required
Recipient_List³

Schedule

Object_Identifier
Object_Name
Object_Type
Description
Effective_Period
Weekly_Schedule
Exception_Schedule
Schedule_Default
List_Of_Object_Property_References⁴
Priority_For_Writing⁵
Status_Flags
Reliability
Out_Of_Service

Trend Log

Object_Identifier
Object_Name
Object_Type
Description
Log_Enable⁶
Start_Time
Stop_Time
Log_DeviceObjectProperty
Log_Interval^{6,7}
COV_Resubscription_Interval
Client_COV_Increment
Stop_When_Full
Buffer_Size
Log_Buffer
Record_Count (0)⁶
Total_Record_Count
Notification_Threshold
Records_Since_Notification
Last_Notify_Record
Event_State
Notification_Class
Event_Enable
Acked_Transitions
Notify_Type
Event_Time_Stamps

DATA LINK LAYER OPTIONS:

- BACnet IP, (Annex J)
- BACnet IP, (Annex J), Foreign Device
- ISO 8802-3, Ethernet (Clause 7)
- ANSI/ATA 878.1, 2.5 Mb. ARCNET (Clause 8)
- ANSI/ATA 878.1, RS-485 ARCNET (Clause 8), baud rate(s):
- MS/TP master (Clause 9), baud rate(s): 9.6k, 19.2k, 38.4k, 76.8k
- 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:
- Other:

DEVICE ADDRESS BINDING:

Is static device binding supported? Yes No

(This is currently necessary for two-way communication with MS/TP slaves and certain other devices.)

NETWORKING OPTIONS:

- Router, Clause 6 - List all routing configurations, e.g., ARCNET-Ethernet, Ethernet-MS/TP, etc.
- Annex H, BACnet Tunneling Router over IP
- BACnet/IP Broadcast Management Device (BBMD)
Does the BBMD support registrations by Foreign Devices? Yes No

CHARACTER SETS SUPPORTED

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

- | | |
|---|---|
| <input checked="" type="checkbox"/> ANSI X3.4 | <input type="checkbox"/> ISO 10646 (UCS-4) |
| <input type="checkbox"/> IBM™/Microsoft™ DBCS | <input checked="" type="checkbox"/> ISO 10646 (UCS-2) |
| <input type="checkbox"/> JIS C 6226 | <input checked="" type="checkbox"/> ISO 8859-1 |

GATEWAY

This product supports communications between BACnet and any third-party system that Niagara can connect to. Contact American Auto-Matrix for a list of supported protocols.