BACnet MS/TP

Device Driver Guide

Contents

1. BACnet MS/TP Device Communication

1.1 Overview

1.1.1 Driver Introduction

Advantech WebAccess' BwBACnetM device driver supports communication with BACnet MS/TP.

File list

Name	Version No.	Description
BwBACnetM #.dll	1.0	BwBACnetM #.dll file is saved in directory: \WebAccess\Node\
BwBACnetM.dll	1.0	BwBACnetM.dll file is saved in directory: \WebAccess\Node\driver\
BwBACnetMSTPApp.exe	1.0	BwBACnetMSTPApp.exe file is saved in directory: \WebAccess\Node\
BACnetMSTP.dll	1.0.1.24	BACnetMSTP.dll file is saved in directory: \WebAccess\Node\

Application Environment

System level	WebAccess PC version
Protocol level	BACnet MS/TP **Communication mode: series port inquiry mode**
	Device property
Device level	BACnet MS/TP device

1.1.2 Procedures of BwBACnetM Device Configuration

The procedures are briefly introduced as follows:

1. Run IE browser.
2. Input the IP address of project node
3. Open Advantech WebAccess project management
4. Open or create a project
5. Configure SCADA node (connecting to automotive device's PC)
6. Add a communication port of series type in SCADA node.
7. Click "Add a device" to configure BwBACnetM device.
8. Select "Adding a tag" to create a tag.
9. Select parameters to match the reading data tags.
10. Modify the address to match the actual address and change the tag property to meet with the actual needs.
11. Apply the tag name.
12. Edit the tag in project management to assign alarming, scale, project unit, description and other features.

1.2 Detailed Configuration of BwBACnetM Device

1.2.1 Adding Communication Port – SERIAL

Interface Name	SERIAL
Comport Number	1
Description	Description
Baud Rate	9600 bps
Data bit	8 bits
Stop bit	1 bits
Parity	None
Scan time	15 Second
TimeOut	5000 MilliSecond
Retry count	3
Auto Recover Time	60 Second
HandShakeRts	Yes
HandShakeDtr	Yes
Backup Port Number	0

Port Name Select "SERIAL" for port type.

Port NO. Use the actually used series port no.

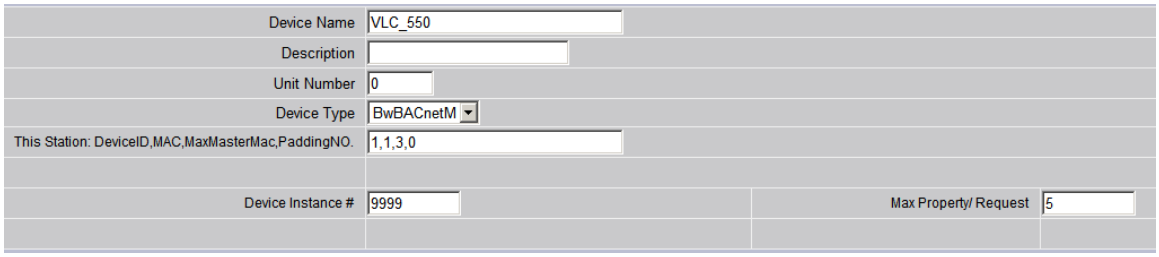
Scan Time Detect the new data frequency, depending upon the field devices. You can increase it properly if the device communication is too slow.

Timeout The time to wait to resend data package if not responding. Recommend to use the default, but you can increase it if the device communication is too slow.

Note: *If tag information dialog box shows [8000] error, please try to increase the "Timeout" property of the port.*

1.2.2 Add a Device - BwBACnetM

After configuring the communication port, please click “Add a device” to add the device to the port.



Device Name Any user defined name. The device name will show in the “VIEW” tab under the project management and operation condition. Select a clearly described name is helpful for technicians to recognize the device location.

The modification of device name will rename the existing device.

The modification of **Device Name and Unit Number** can copy the device (that is, creating a new device).

Description User defined, 70 characters max.

Unit Number Without real physical meaning here.

Device Type BwBACnetM.

This Station: DeviceID,MAC,MaxMasterMac,PaddingNO. This station is used for configuring parameters of MS/TP master, representing device ID, MAC, maximum master MAC, padding no. sequentially with “,” as the separation. For example, “1,1,3,0” means this station as the master, device ID is 1, MAC is 1, maximum master MAC is 3, and no padding characters.

Note:

1. ***This Station*** *parameters of all devices under one port must be consistent.*
2. *For the first project communication, since it has to handshake with device, it takes longer time to get the tag value.*
3. *Recommended to set the continuous MSTP device as continuous Mac address, and keep it continuous with Mac part in* ***This Station****; and set MaxMasterMac of all devices (including the host) as the largest Mac of the continuous devices, so as to keep the communication smooth and timely.*
4. *Data update time is relevant to the number and configuration of the connected MSTP device, when finding the value update is too slow, please check the parameter configuration of MSTP device.*

Device Instance # Communication device’s ID.

Max Property/ Request Typical MSTP device data package is of short length, and different types of devices support different data package length; for example, an Alerton VLC550 controller is

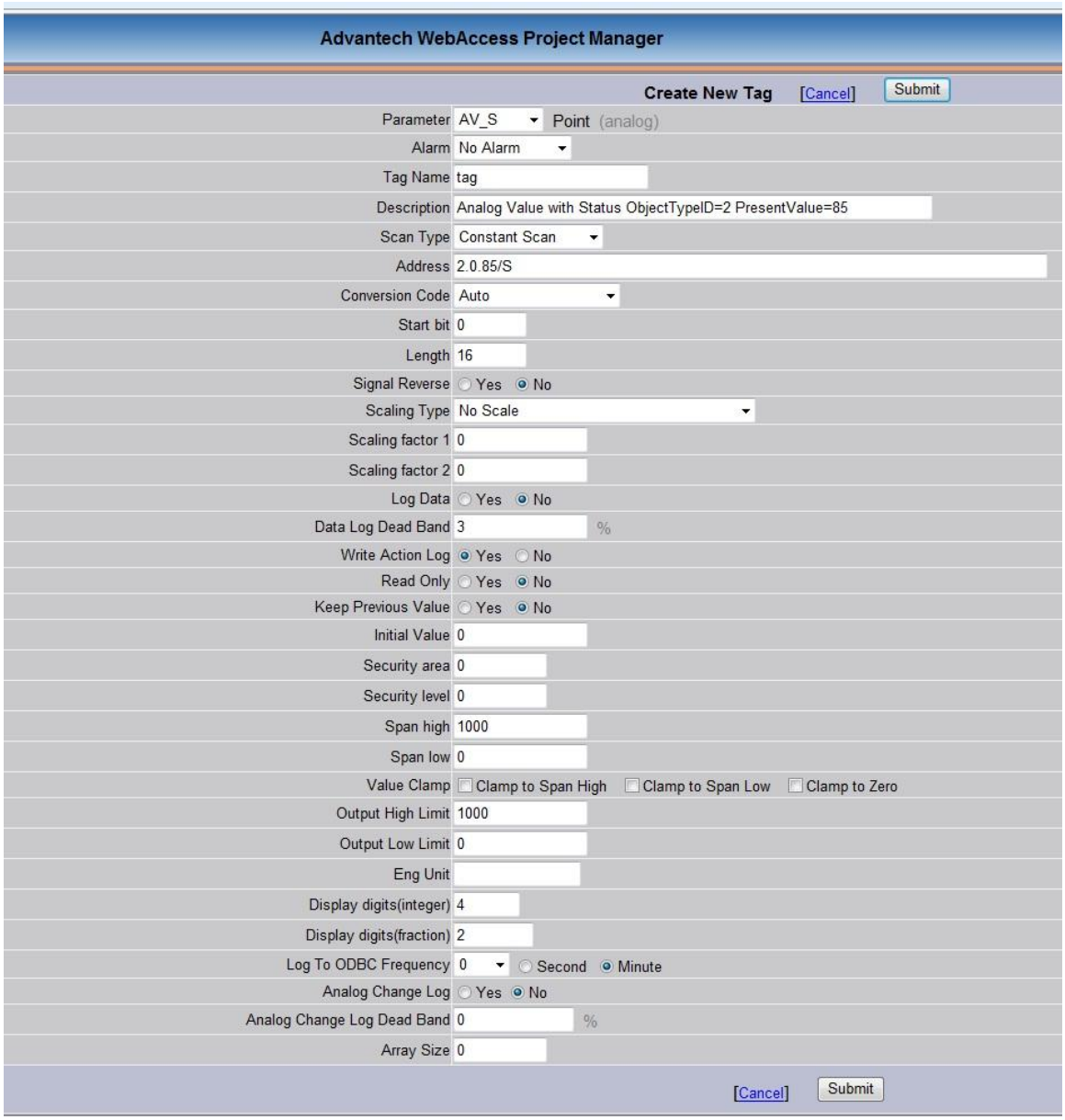
able to respond to a message of 128 bytes, which equals to a request package of 7 WebAccess tags.

If the value here is too small, the communication efficiency will be reduced; if the value here is too large and exceeds the longest length supported by the device, it will be unable to communicate. Therefore, you must use your device to test the maximum read property size (counting by tag).

1.2.3 Adding a Tag

WebAccess has added some parameters for users as the default, from which users can select what they need. If no parameter list, users can add parameters in BwBACnetM device driver configuration page.

Currently the supported reading MS/TP device tags are “Status” and “Present Value” properties of some objects, including AI, AO, AV, BI, BO, BV, MI, MO and MV.

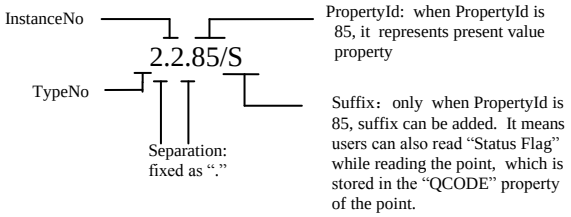


1. Select **Parameter** name from the parameter drop-down list, and wait for page update.

2. Select the **alarm** option from **Alarm** drop-down list and wait for page update to appear red alarming zone (alarming zone attached in the bottom).

3. Input a tag name which can be used for users to recognize the tag.

4. The selected parameter provides the **Address** of the tag. The address structure is "TypeNo.InstanceNo.PropertyId/S", for example, Tag AV2_S represents the current value of the second channel AV, and its state. Its address: 2.2.85/S, its meaning:



5. Input the description to help users recognize the tag.

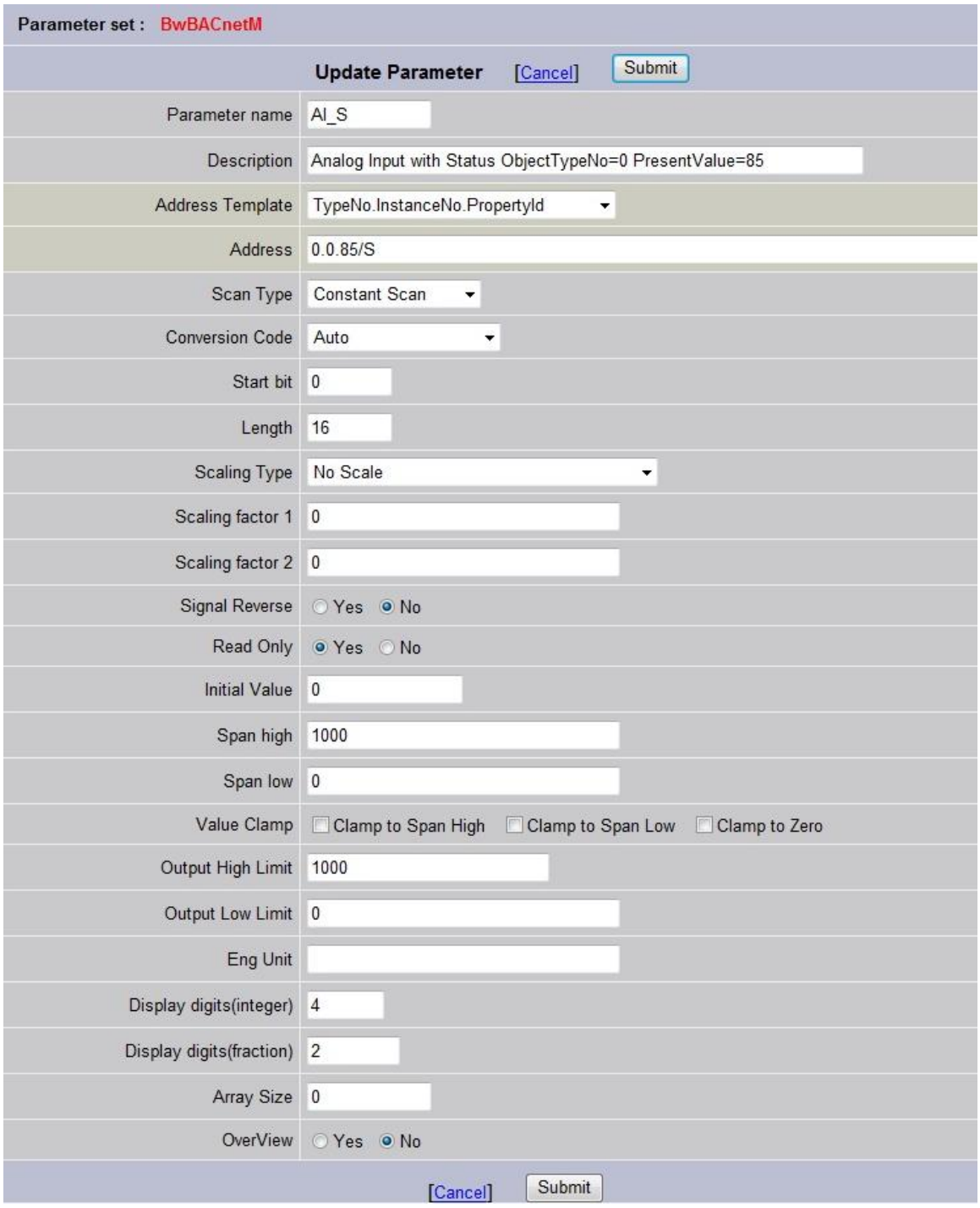
6. Input the start value, maximum value, minimum value and project unit according to the physical meaning of the tag.

7. Select the alarm option to enable data record, number (integer) display and number (fraction) display, etc.

8. Click "Summit".

1.2.4 Add a Parameter

Click “BwBACnetM” in the device driver list, and click “Add a parameter” to add a parameter.



Parameter Type To create a start template for analog I/O, users must choose parameter type as analogy parameter; to create a start template for digital I/O, users must choose parameter type as

digital parameter; to create a start template for textual I/O, users must choose parameter type as textual parameter.

Parameter Name Specify a name for the parameter.

Description User defined, 70 characters max.

Address Please refer to the address structure in Section 1.2.3.

Conversion Code Generally the conversion code can be configured as "Auto", but when the tag is date or time value, it should be configured according to its meaning.

Start Bit/Length Driver will automatically analyze it, with no need for configuration here.

Parameter List:

Tag	Type	Address	Read Only	Significance
AI	Analog	0.0.85	Y	Analog Input
AI_S	Analog	0.0.85/S	Y	Analog Input with Status
AO	Analog	1.0.85	N	Analog Output
AO_S	Analog	1.0.85/S	N	Analog Output with Status
AV	Analog	2.0.85	N	Analog Value
AV_S	Analog	2.0.85/S	N	Analog Value with Status
BI	Digital	3.0.85	Y	Binary Input
BI_S	Digital	3.0.85/S	Y	Binary Input with Status
BO	Digital	4.0.85	N	Binary Output
BO_S	Digital	4.0.85/S	N	Binary Output with Status
BV	Digital	5.0.85	N	Binary Value
BV_S	Digital	5.0.85/S	N	Binary Value with Status
MI	Digital	13.0.85	Y	MultiState Input
MI_S	Digital	13.0.85/S	Y	MultiStateInput with Status
MO	Digital	14.0.85	N	MultiState Output
MO_S	Digital	14.0.85/S	N	MultiStateInput Output with Status
MV	Digital	19.0.85	N	MultiState Value
MV_S	Digital	19.0.85/S	N	MultiStateInput Value with Status