Communication Connection Manual

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Content

1.Applicable product scope

Sunfull Products can support more than 300 protocols that including Modbus, MBus meter, Elevator, Electric meter, Air Conditioning, PLC, Lighting Control, UPS, Fire Alarm, Weight, Database, MQTT, Http and so on.

Any questions on testing, Please contact us. We will provide technical support remotely.

If these are not what's your need, please send the communication protocol document to the following email. We can develop private protocol according to the communication document within two weeks.

Technical Email: support@opcmaster.com

Sales Email: sales@opcmaster.com

2.Driver Configuration

2.1 ModbusRTUClient

2.1.1 NEW DRIVER

The driver here means the protocol which you will choose to match with the device's protocol. *For example*, when the device's communication protocol is ModbusRTU, you have to choose the ***ModbusRTUClient*** as the driver.

Click the menu ***Edit*** and select the ***New Driver…*** or click the button  **New Driver** in the toolbar. In the popup diag "**Driver Properties**", choose the ***ModbusRTUClient*** from the **Driver List** and then type in a name , as the following Figure 2-1-1 and Figure 2-1-2 show.

- **Driver List:** All the supported drivers are listed here.
- **Name:** It will be easier distinguished to type a name for the driver.
- **Scan Rate:** It takes effects when there are many devices added to the project. The default value is **1000ms**.

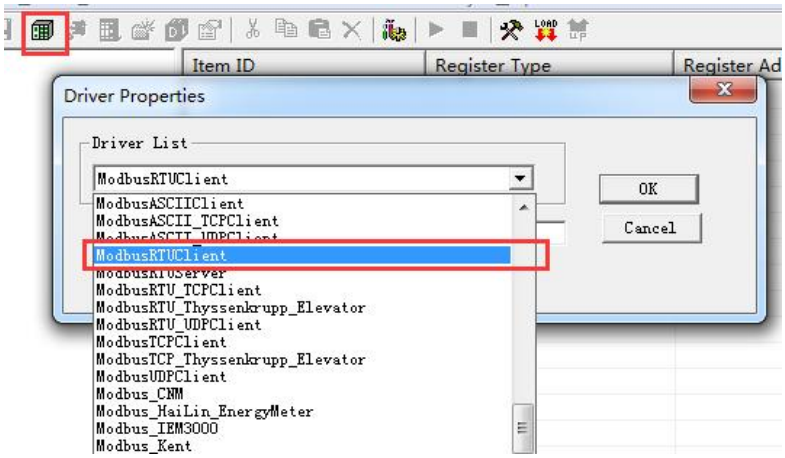

Figure 2-1-1 Choose the driver

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milesgoiiot@gmail.com/sales@opcmaster.com

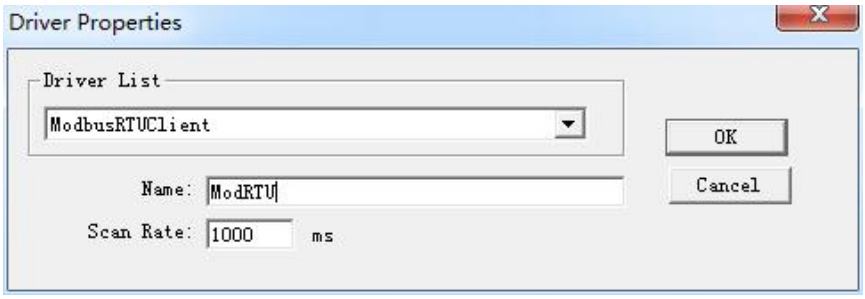

Figure 2-1-2 Type in a name

2.1.2 NEW CHANNEL

Click the menu ***Edit*** and select the ***New Channel…*** or click the button **New Channel** in the toolbar. In the popup diag "**Serial Port Communication Configuration**", set the **Channel Name** and **Communication Parameters**, as the following Figure 2-1-3 shows.

- **Channel Name:** It will be easier distinguished to type a name for the channel, *e.g. COM1*, Floor1 etc.
- **Port:** The communication ports of *Protocol Gateway*. The default value is **COM1**.
- **Baud Rate:** Set it according to the Directions of the device. The default value is **9600**.
- **Date Bits:** Set it according to the Directions of the device. The default value is **8**
- **Stop Bits:** Set it according to the Directions of the device. The default value is **1**.
- **Parity:** Set it according to the Directions of the device. The default value is **None**.
- **Flow Control:** Set it according to the Directions of the device. The default value is **None**.
- **Response Timeout:** It will be error when the time between request frame and response frame is larger than the time in Response Timeout . The default value is **1500ms**.

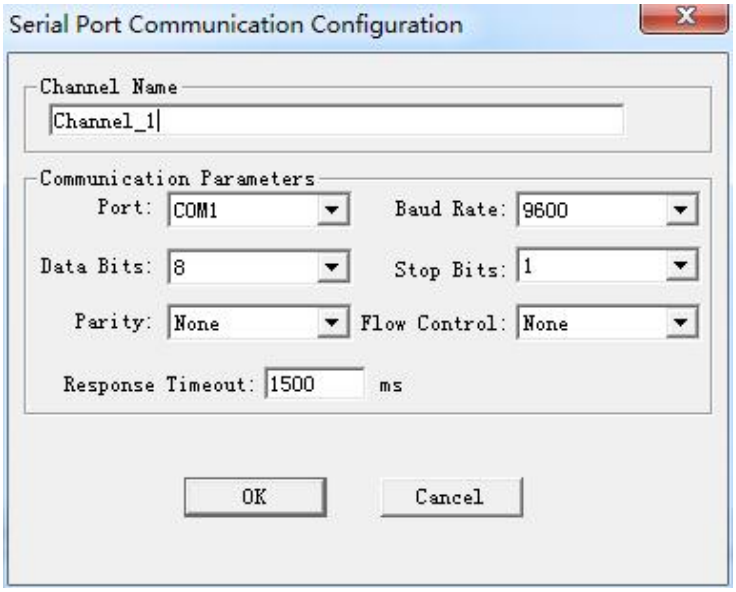

Figure 2-1-3 Set Communication Parameters

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2.1.3 NEW DEVICE

Click the menu ***Edit*** and select the ***New Device…*** or click the button **New Device** in the toolbar. In the popup diag "**Device Properties**", set the device parameters and **Bulk Transfer** parameters, as the following Figure 2-4 shows.

- **Device ID:** It is the device address, and it can be usually found in the operation panel of the device. The default value is **1**.
- **Delay Between Polls:** It is the time between a response frame and the next request frame. The default value is **500ms**.
- **Bulk Transfer:** It allows transmitting and receving several frames at the same time. **Note:** However, if devices don't provide a good analogue to this, there is simply no way to enable this function. At this time you have to set all the Bulk Transfer parameters as zero.

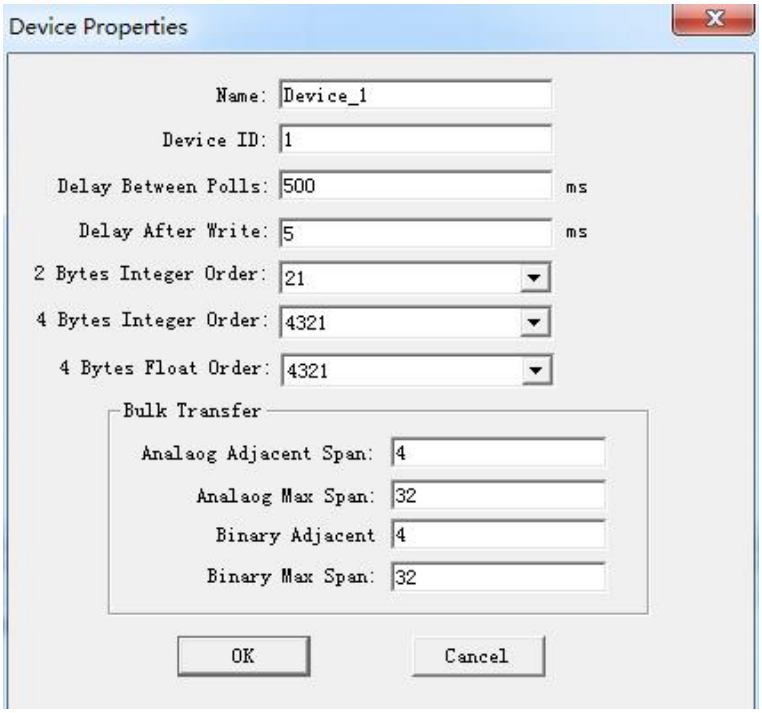

Figure 2-1-4 Set Device Properties

2.1.4 NEW TAG

Click the menu ***Edit*** and select the ***New Tag…*** or click the button **New Tag** in the toolbar. In the popup diag "**Tag Properties**", set the **Collection** and **Transfer(BACnet Server)** parameters, as the following Figure 2-8 shows.

- **Date Type:** Boolean\Word\Short\Dword\Long\Float and Double ,as the following Figure 2-1-5 shows.

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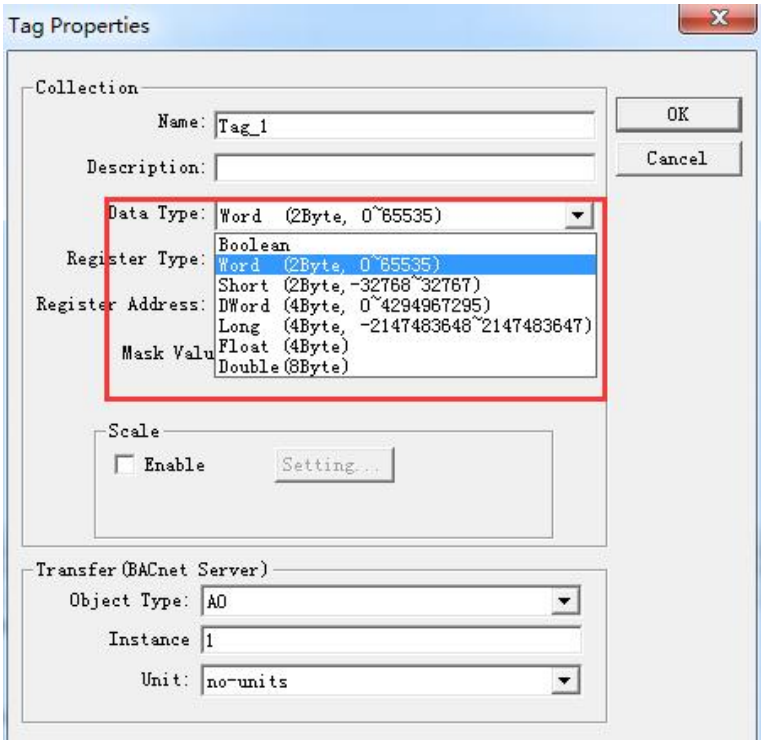

Figure 2-1-5 Date Type

- **Register Type:** 0X(Coil Status)\1X(Input Status)\3X(Input Register)\4X(Holding Register)-F6\4X(Holding Register)-F16\4X(Holding Register)-F5 (*Note*: F is short for Funciton.)
- **Register Address:** Set it according Directions of the device.
- **Mask Value:** Check single box “Mask Value” to pick up a bit from 0 to 15 of some register if necessary,as the following Figure 2-1-6 shows.

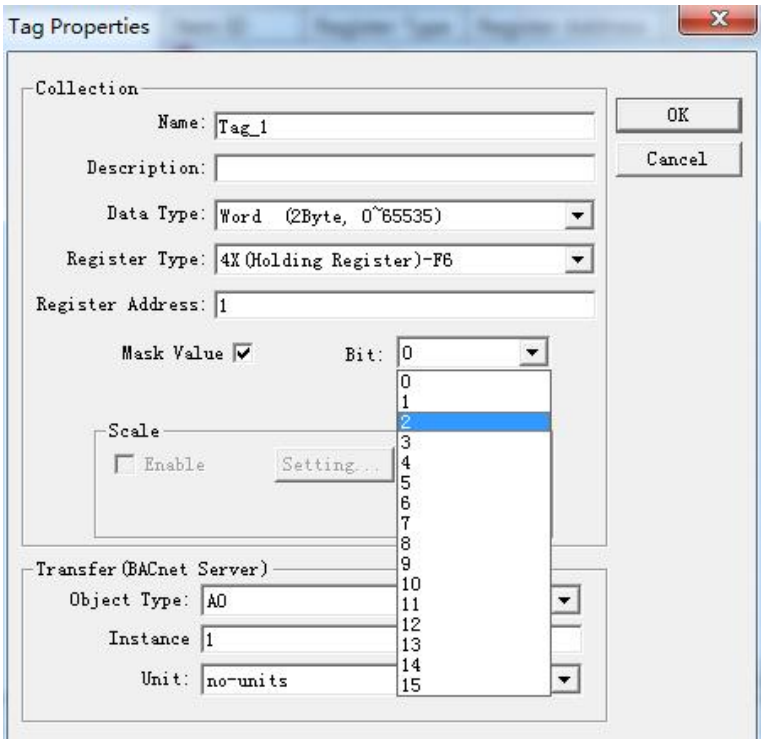

Figure 2-1-6 select Bit

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milesgoiiot@gmail.com/sales@opcmaster.com

- **Scale:** Check single box "**Enable**" and click the button "**Setting…**" to enable liner transformation, as the following Figure 2-1-7 shows.

Figure 2-1-7 Tag Process Settings

- **Transfer:**

① Object Type

Name	Description	Properties
BI	Binary Input	Read Only
BO	Binary Output	Read & Write
BV	Binary Value	Read & Write
AI	Analog Input	Read Only
AO	Analog Output	Read & Write
AV	Analog Value	Read & Write

Table 2-1-1 Object Type

② Instance: The number of BACnet registers begins from zero.

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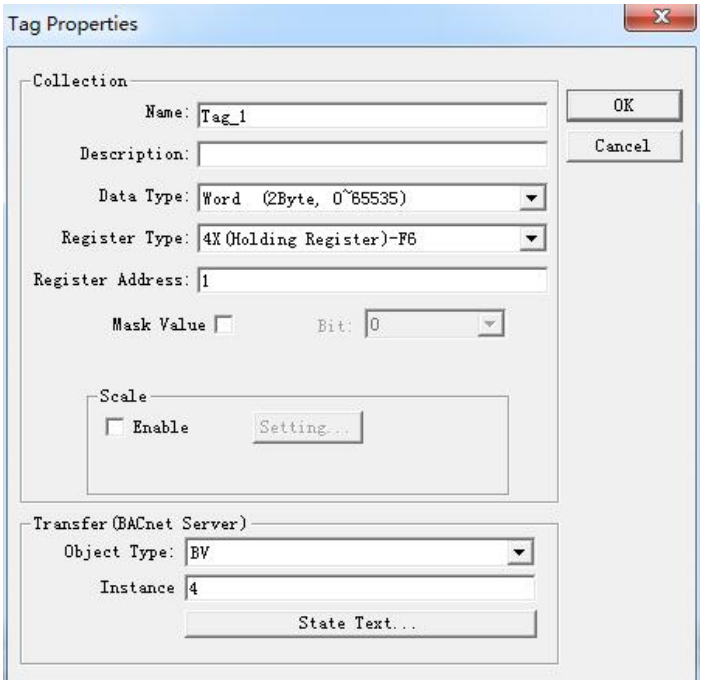

Figure 2-1-8 Set Tag Properties

Add other tags in the same way.

The following is a additional remarks.

Add-1

The new version of the collection end register address can support hexadecimal representation, such as address 1BH (27), which can be represented by 0x1B or 28 (offset 1), with a prefix of 0x (Arabic numeral 0) as shown in Figure 2-1-9. The prefix and suffix characters in the following additional remarks are not case sensitive.

The method of representing addresses in hexadecimal is shown in the figure 2-1-9. Add 0X before it, and the address after it represents hexadecimal.

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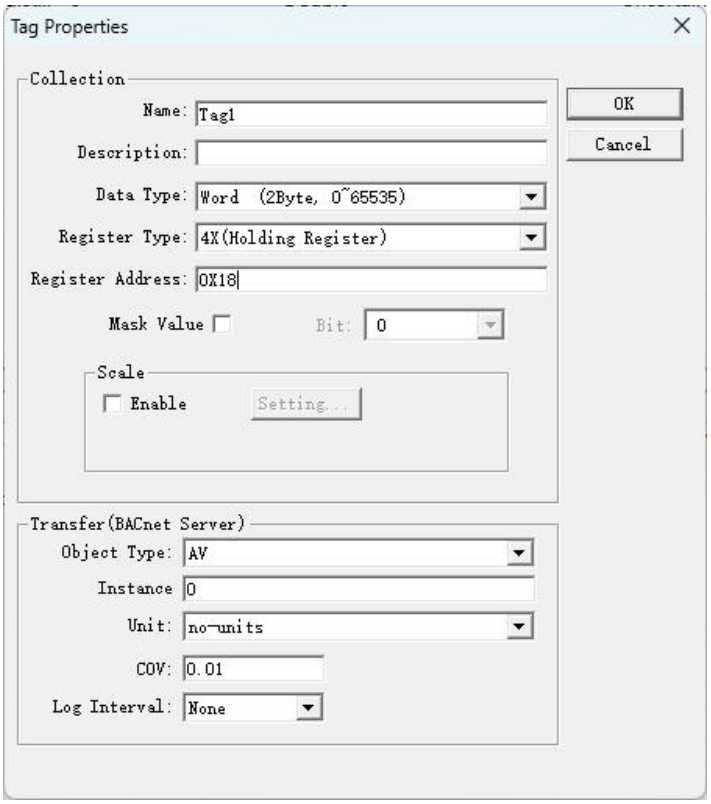

Figure 2-1-6 Epresenting addresses in hexadecimal

ADD-2: If you want to read data in the form of BCD code, you can add the suffix BCD after the register address, which is "A.BCD" (A means the Modbus register address). For example, the Modbus register address "1" takes the BCD code, as shown in Figure 2-1-7.

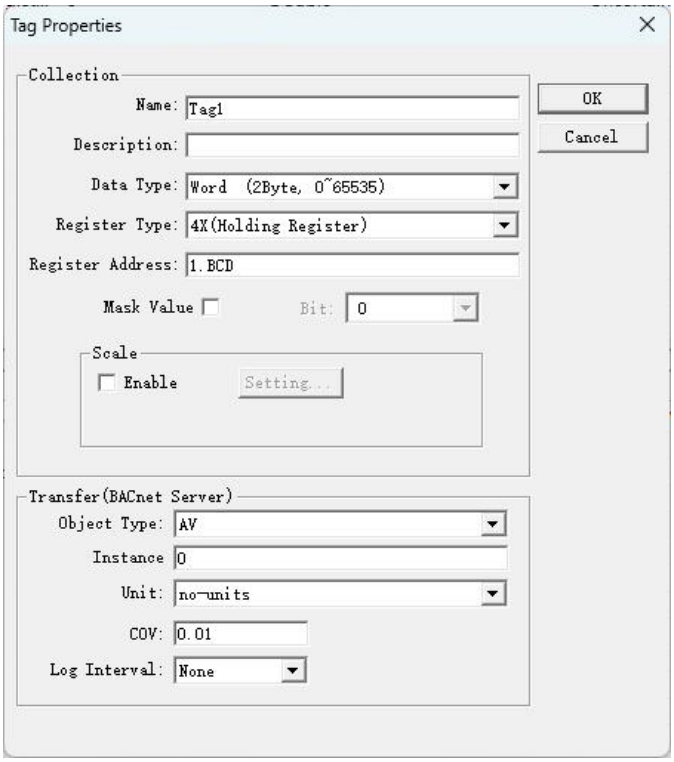

Figure 2-1-7 BCD Code

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ADD-3: The new version also supports taking values for high and low bytes of single register (Word) and double register (Dword) respectively. For example, if the 40001 register occupies two bytes and the high and low bytes represent two meanings, then the high and low bytes will be taken values respectively. The address formats are "A.Hibyte" and "A.Lobyte" (A means Modbus register address), as shown in Figure 2-1-8.

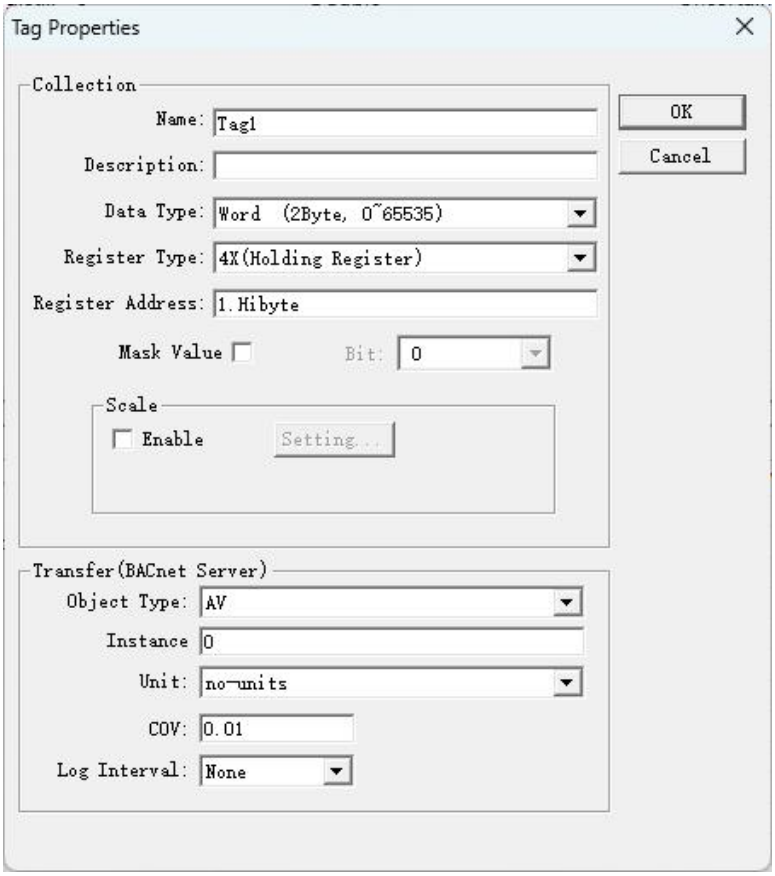

Figure 2-25-8 Representation of High and Low Byte Values

ADD-4: For single registers (high bytes represent integers, low bytes represent decimals), the suffix Sum can be added after the register address, which is "A.Sum" (A represents Modbus register address), as shown in Figure 2-1-9.

Formula A.Sum=A Hibyte * 10+A Lobyte allows users to enable linear conversion after obtaining the value of A.Sum, reducing the value of A.Sum by 10 times, resulting in values with high bytes representing integers and low bytes representing decimals.

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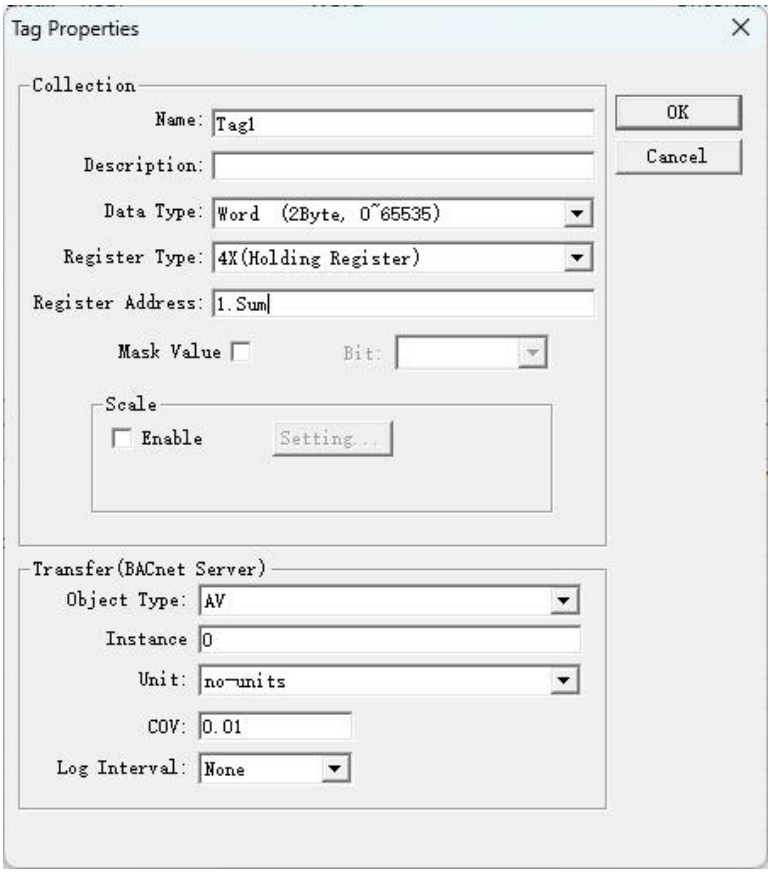

Figure 2-1-9 Combination Summation Representation

ADD-5: In the case of a single register, if a few bits need to be taken, the address can be written as follows:

A.&1110000000000 (representing taking bits 14, 15, and 16 of register A)

A. &11100 (representing bits 3, 4, and 5 of register A) (can be linearly converted to represent values 0-7)

A. &11 (representing taking bits 1 and 2 of register A)

And so on.

Linear conversion (divided by the weight of the corresponding bit taking): After completing the bit taking, the user needs to perform the corresponding linear conversion on the data.

For example, if taking A.11100, the linear conversion needs to be divided by 2^2.

For example, if taking A&111000000, the linear conversion needs to be divided by 2^{13}.

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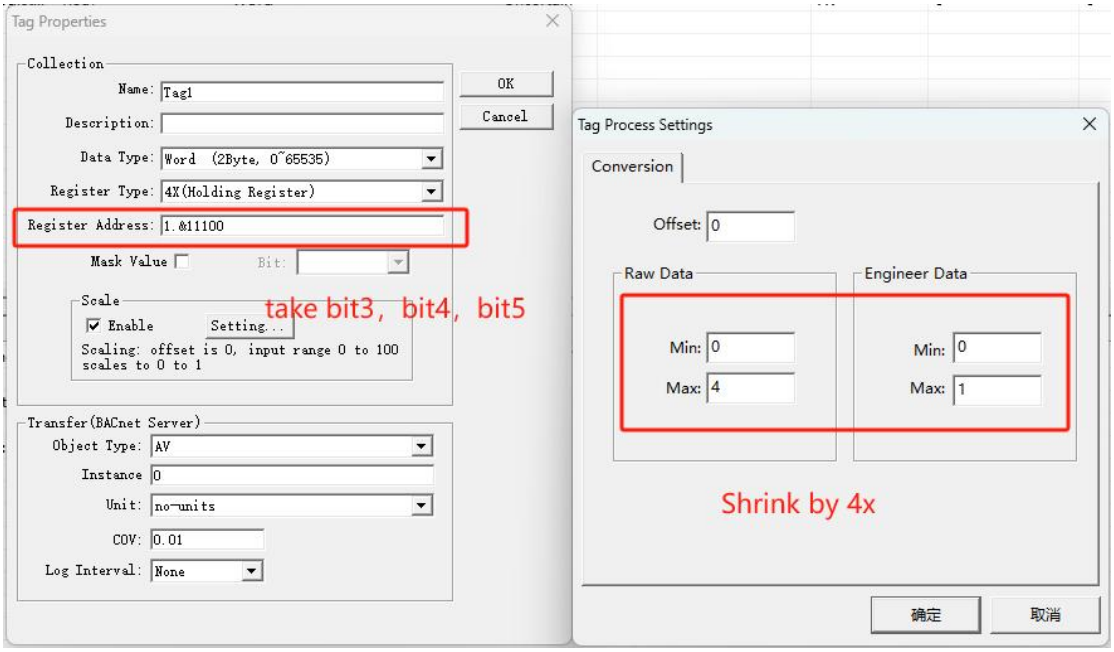

Figure 2-1-10 fetch bit

ADD-6: If one register is only written but not read, the suffix wo can be added after the register address, which is "A.wo" (A represents Modbus register address). For example, Modbus register address "1" is only written but not read, as shown in Figure 2-1-11.

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Figure 2-1-11 Write only

ADD-7: Add a vertical bar after the register address. The vertical bar represents the first digit of the value when writing and merges it. For example, 1.&111 | 10000000 indicates that the seventh digit is 1 when writing, and 1.&100000000 | 100000000000 indicates that the 15th digit is 1 when writing. This is commonly used in Macwell chillers, where a high position of 1 is required to indicate that the value is valid. As shown in Figure 2-1-11.

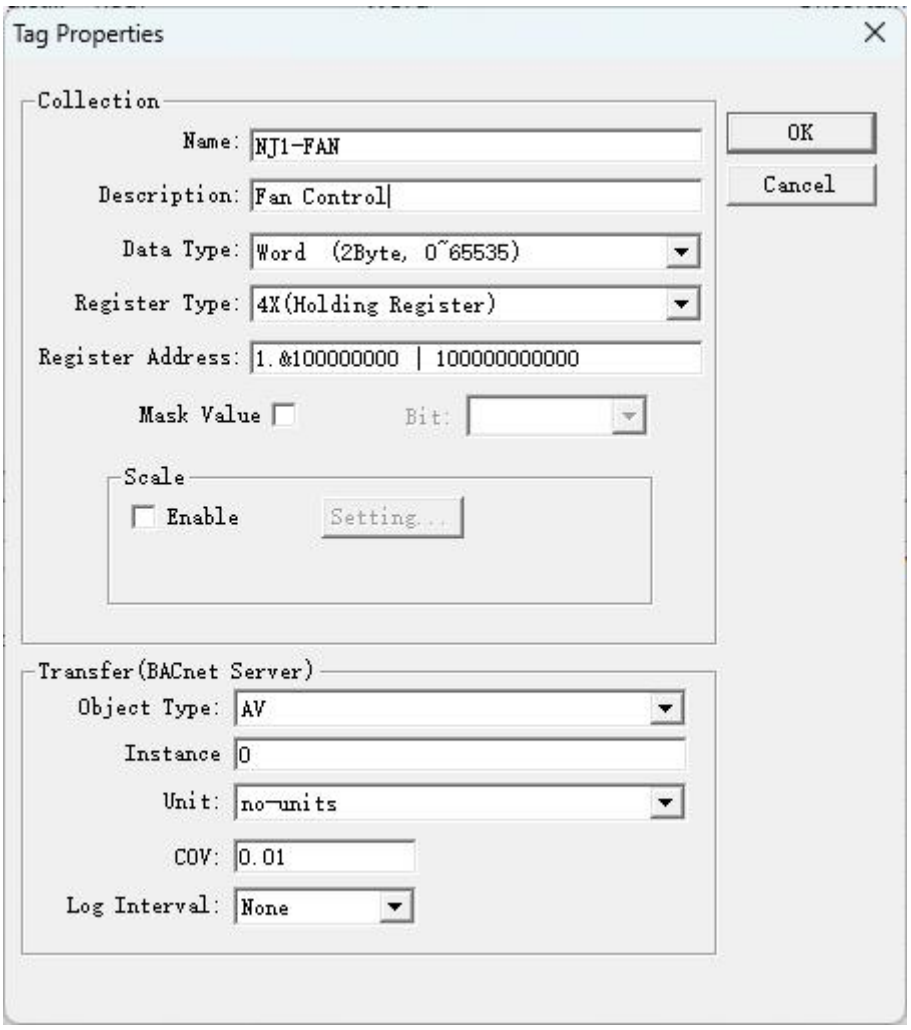

Figure 2-1-11 Write Only

Note: In the above Tag attribute, the base address of the BACnet slave register on the forwarding end is allocated starting from 0. After the label is established, it is shown in Figure 2-1-12.

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milesgoiiot@gmail.com/sales@opcmaster.com

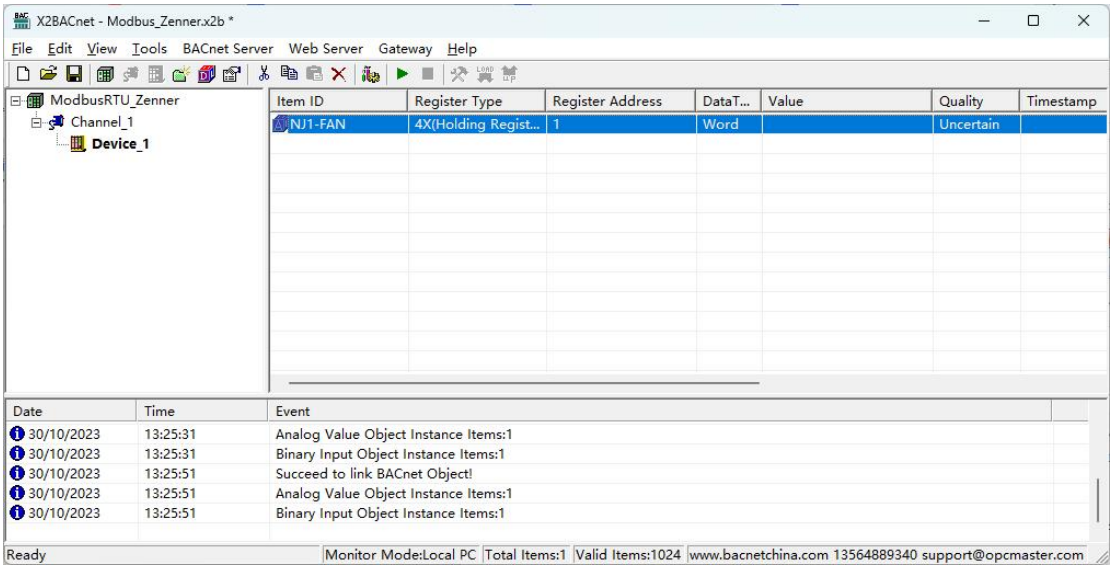

Figure 2-1-12 Tag list

The data types supported by the collection end include Boolean,Word,Short,Dword,Long, Float,Double. Among them, Float type is suitable for AI, AO, and AV registers, Boolean type is suitable for BI, BO, and BV registers, and Dword type is suitable for MI, MO, and MV registers, as shown in Table 2-1-2.

Data Type	Description
Boolean	0,1, Suitable for BI, BO, BV types
Word	2Byte（0~65535）
Short	2Byte（-32768~32767）
Dword	4Byte（0~4294967295）
Long	4Byte（-2147483648~2147483647）
Float	4Byte
Double	8Byte

Table 2-1-2 Data type of Collection

The register types supported by the collection end include 0X, 1X, 3X, and 4X, as detailed in Table 2-1-2.

No	Register Type	Description	Remark

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1	0x（Coil Status）-F5	Digital Signal, support for reading and writing (0/1)	Analog Input, Read-Only (continuously changing object type)
2	0x（Coil Status）-F15	Digital Signal, support for reading and writing (0/1)	Analog Output, Read & Write(continuously changing object types)
3	1x（Coil Status）	Digital Signal, only supports reading (0/1)	Analog Value, Read & Write(continuously changing object types)
4	3x（Input Register）	Analog Signal, only supports reading	Binary Input, Read-Only(Object types with only 0 and 1)
5	4x（Holding Register）-F6	Analog Signal, support for reading and writing	Binary Output, Read & Write(Object types with only 0 and 1)
6	4x（Holding Register）-F5	Analog Signal, support for reading and writing	Binary Value, Read & Write(Object types with only 0 and 1)
7	4x（Holding Register）-F16	Analog Signal, support for reading and writing	Multi-State Input, Read-Only (continuously changing object type)
9	0x（Coil Status）-F15	Digital Signal, support for reading and writing (0/1)	Multi-State Value, Read & Write(continuously changing object types)

Table2-1-3 Collection Register type

2.2 ModbusASCIIClient

2.2.1 NEW DRIVER

Click the menu ***Edit*** and select the ***New Driver…*** or click the button **New Driver** in the toolbar. In the popup diag "**Driver Properties**", choose the ***ModbusASCIIClient*** from the **Driver List** and then type in a name , as the following Figure 2-2-1 and Figure 2-2-2 show.

- **Scan Rate:** It takes effects when there are many devices added to the project. The default value is **1000ms**.

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milesgoiiot@gmail.com/sales@opcmaster.com

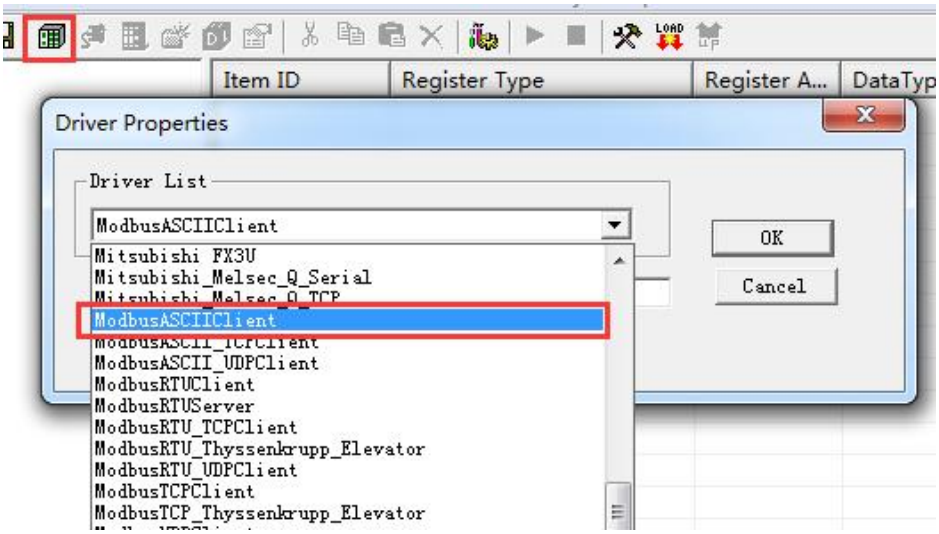

Figure 2-2-1 Choose a driver

Figure 2-2-2 Type in a name

2.2.2 NEW CHANNEL

Click the menu ***Edit*** and select the ***New Channel…*** or click the button **New Channel** in the toolbar. In the popup diag "**Serial Port Communication Configuration**", set the **Channel Name** and **Communication Parameters**, as the following Figure 3-1-3 shows.

- **Channel Name:** It will be easier distinguished to type a name for the channel, *e.g. COM1*, Floor1 etc.
- **Port:** The communication ports of *Protocol Gateway*. The default value is **COM1**.
- **Baud Rate:** Set it according to the Directions of the device. The default value is **9600**.
- **Date Bits:** Set it according to the Directions of the device. The default value is **8**.
- **Stop Bits:** Set it according to the Directions of the device. The default value is **1**.
- **Parity:** Set it according to the Directions of the device. The default value is **None**
- **Flow Control:** Set it according to the Directions of the device. The default value is **None**.
- **Response Timeout:** It will be error when the time between request frame and response frame is larger than the time in Response Timeout . The default value is **1500ms**.

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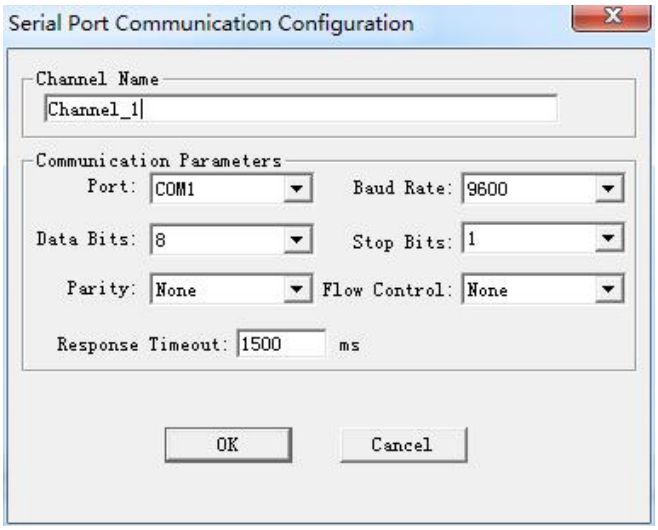

Figure 2-2-3 Set Communication Parameters

2.2.3 NEW DEVICE

Click the menu ***Edit*** and select the ***New Device…*** or click the button **New Device** in the toolbar. In the popup diag "**Device Properties**", set the device parameters and **Bulk Transfer** parameters, as the following Figure 3-1-4 shows.

- **Device ID:** It is the device address, and it can be usually found in the operation panel of the device. The default value is **1**.
- **Delay Between Polls:** It is the time between a response frame and the next request frame. The default value is **50ms**.
- **Bulk Transfer:** It allows transmitting and receving several frames at the same time. **Note:** However, if devices don't provide a good analogue to this, there is simply no way to enable this function. At this time you have to set all the Bulk Transfer parameters as zero.

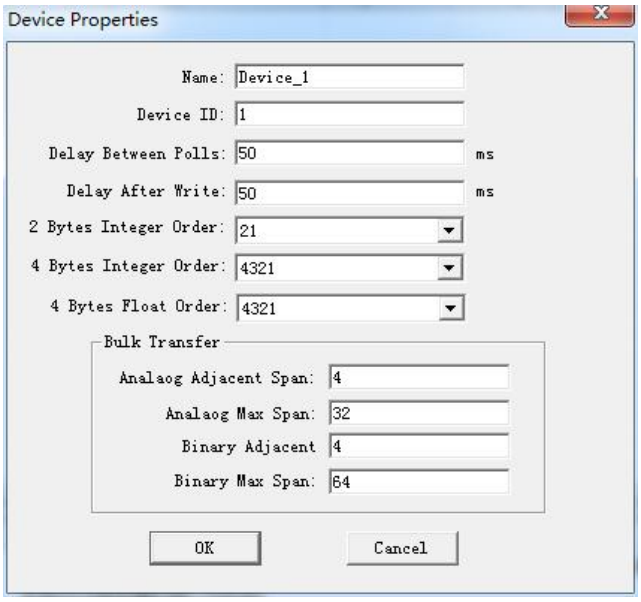

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Figure 2-2-4 Set Device Properties

2.2.4 NEW TAG

Click the menu ***Edit*** and select the ***New Tag…*** or click the button **New Tag** in the toolbar. In the popup diag "**Tag Properties**", set the **Collection** and **Transfer(BACnet Server)** parameters, as the following Figure 2-2-8 shows.

- **Date Type:** Boolean\Word\Short\Dword\Long\Float and Double ,as the following Figure 2-2-5 shows.

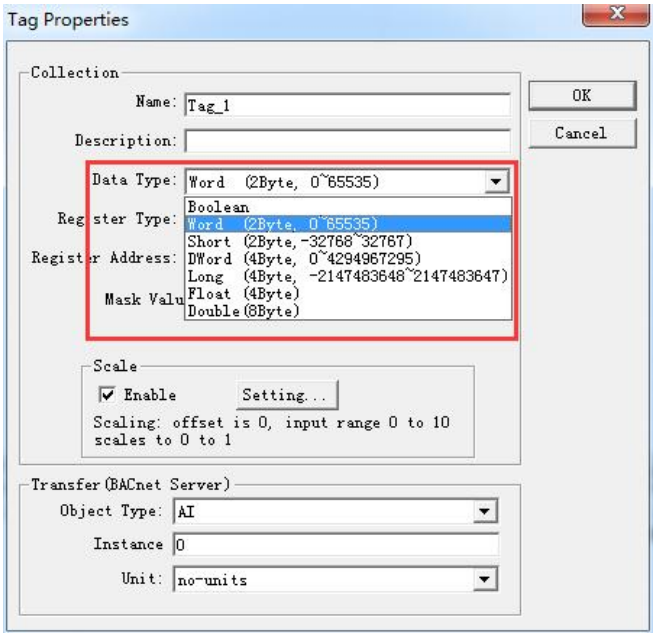

Figure 2-2-5 Date Type

- **Register Type:** 0X(Coil Status)\1X(Input Status)\3X(Input Register)\4X(Holding Register)-F6\4X(Holding Register)-F16\4X(Holding Register)-F5 (*Note*: F is short for Funciton.)
- **Register Address:** Set it according Directions of the device. The number of Modbus registers begins from **1** *(base 1)*.
- **Mask Value:** Check single box "Mask Value" to pick up a bit from 0 to 15 of some register if necessary,as the following Figure 2-2-6 shows.

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milesgoiiot@gmail.com/sales@opcmaster.com

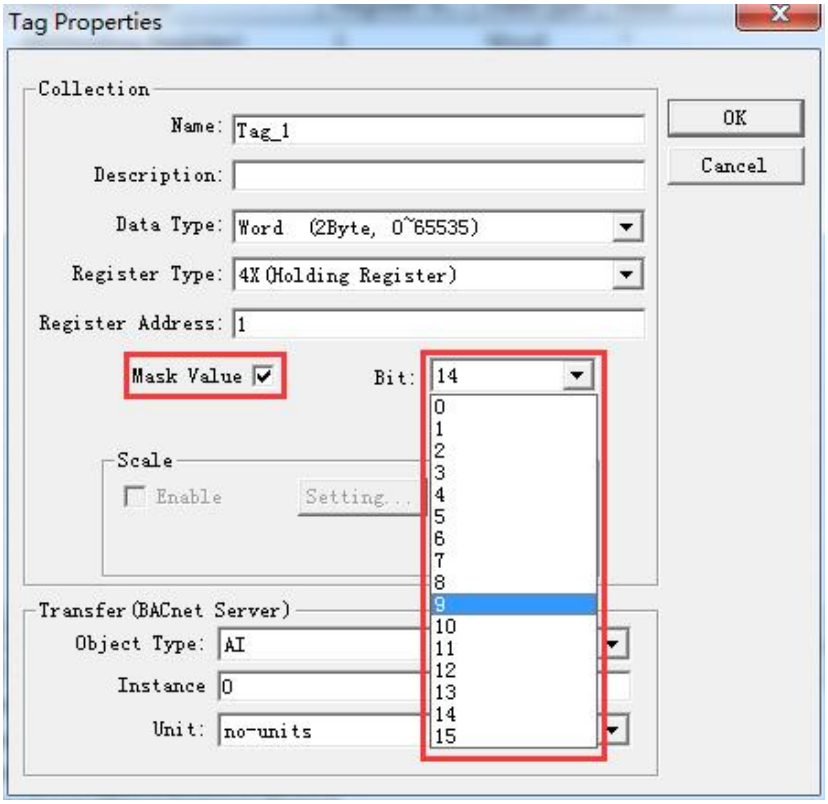

Figure 2-2-6 Pick up a Bit

- **Scale:** Check single box "**Enable**" and click the button "**Setting…**" to enable liner transformation, as the following Figure 2-2-7 shows.

Figure 2-2-7 Tag Process Settings

Transfer:

① Object Type

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Name	Description	Properties
BI	Binary Input	Read Only
BO	Binary Output	Read/Write
BV	/	Read/Write
AI	Analog Input	Read Only
AO	Analog Output	Read/Write
AV	/	Read/Write

② Instance: The number of BACnet registers begins from 0.

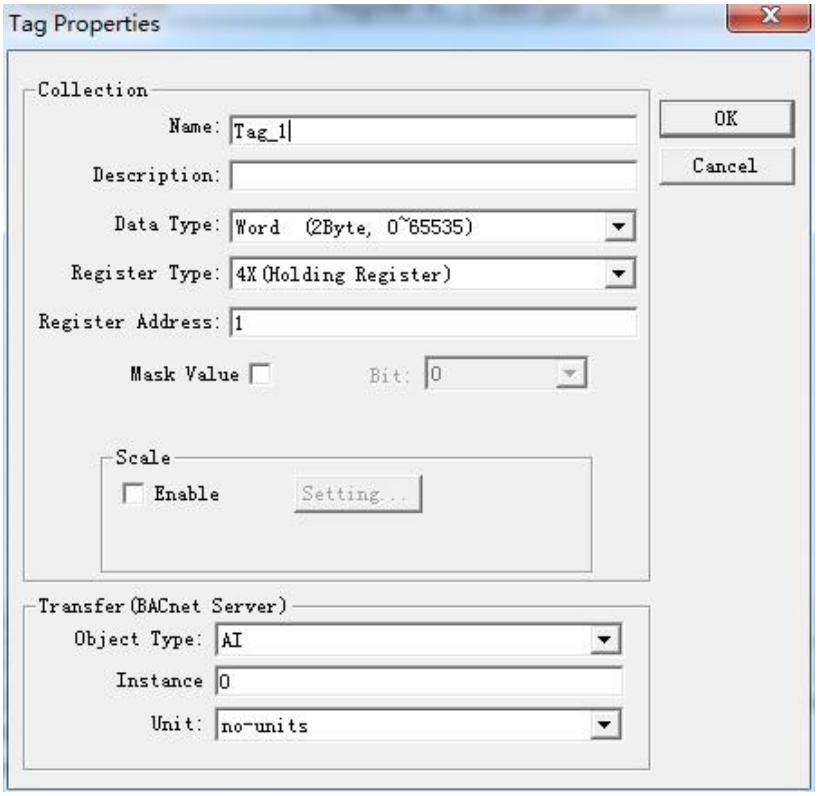

Figure 3-1-8 Set Tag Properties

Add other tags in the same way.

2.3 ModbusTCPClient

2.3.1 NEW DRIVER

Click the menu ***Edit*** and select the ***New Driver…*** or click the button **New Driver** in the toolbar. In the popup diag "**Driver Properties**", choose the ***ModbusTCPClient*** from the **Driver List** and then type in a name , as the following Figure 2-3-1 and Figure 2-3-2 show.

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milesgoiiot@gmail.com/sales@opcmaster.com

- **Scan Rate:** It takes effects when there are many devices added to the project. The default value is **1000ms**.

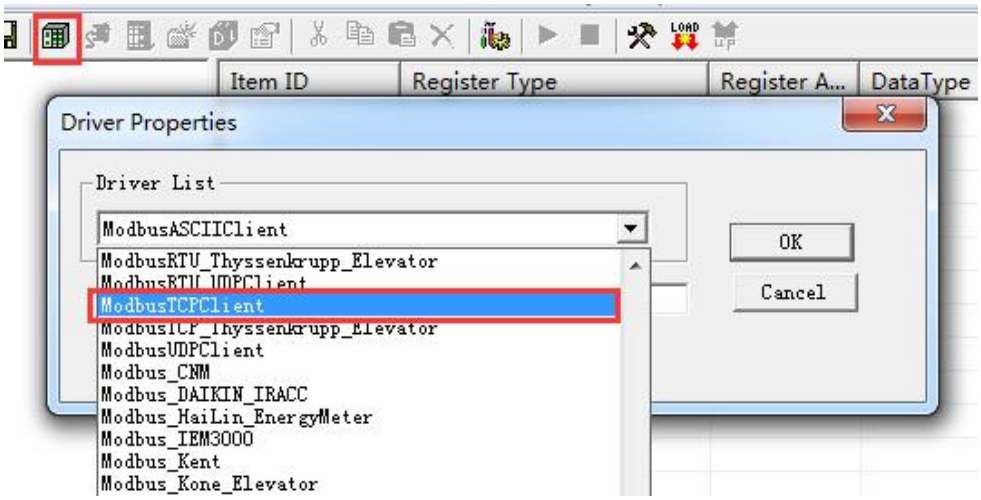

Figure 2-3-1 Choose a driver

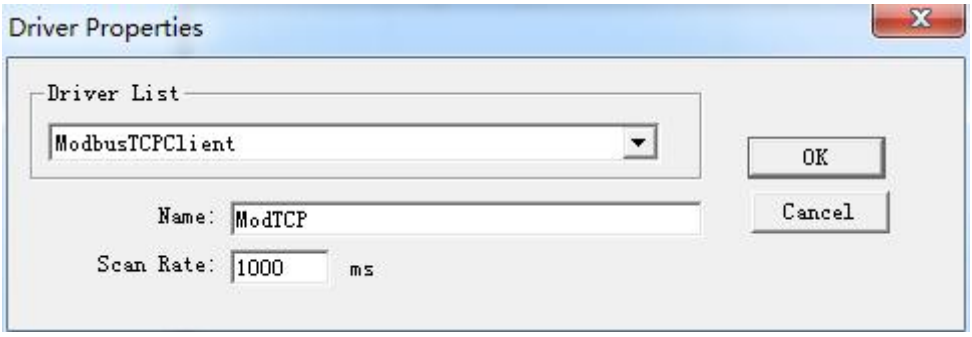

Figure 2-3-2 Type in a name

2.3.2 NEW CHANNEL

Click the menu ***Edit*** and select the ***New Channel…*** or click the button **New Channel** in the toolbar. In the popup diag "**Network Communication Configuration**", set the **Channel Name** and **Communication Parameters**, as the following Figure 2-3-3 shows.

- **Channel Name:** It will be easier distinguished to type a name for the channel, *e.g. ROOM1*, Floor1 etc.
- **IP Address:** The communication IP address.
- **Port:** The communication port is **502**.
- **Response Timeout:** It will be error when the time between request frame and response frame is larger than the time in Response Timeout . The default value is **1000ms**.

Add: 28SenangCrescent,#0511,Bizhub28,Singapore416601 Tel:+6580385403 URL:www.bacnetchina.com
milesgoiiot@gmail.com/sales@opcmaster.com

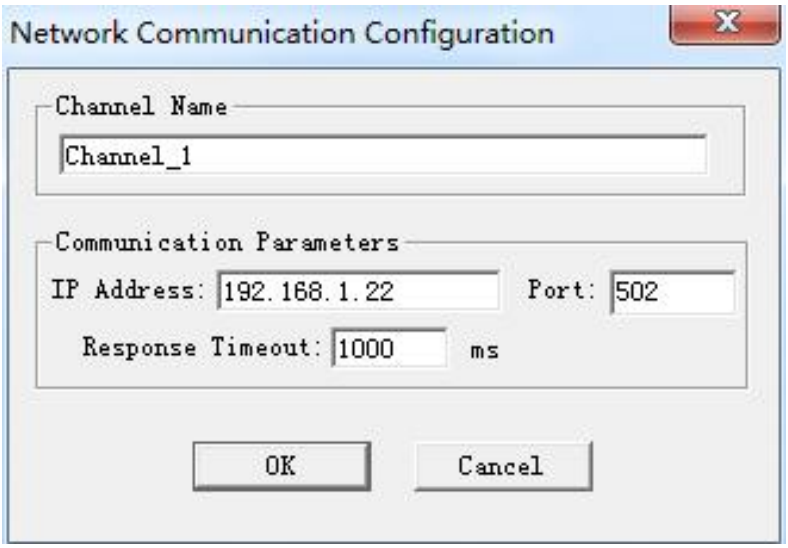

Figure 2-3-3 Set Network Communication Configuration

2.3.3 NEW DEVICE

Click the menu ***Edit*** and select the ***New Device…*** or click the button **New Device** in the toolbar. In the popup diag "**Device Properties**", set the device parameters and **Bulk Transfer** parameters, as the following Figure 2-3-4 shows.

- **Device ID:** It is the device address, and it can be usually found in the operation panel of the device. The default value is **1**.
- **Delay Between Polls:** It is the time between a response frame and the next request frame. The default value is **50ms**.
- **Bulk Transfer:** It allows transmitting and receving several frames at the same time. **Note:** However, if devices don't provide a good analogue to this, there is simply no way to enable this function. At this time you have to set all the Bulk Transfer parameters as zero.

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milesgoiiot@gmail.com/sales@opcmaster.com

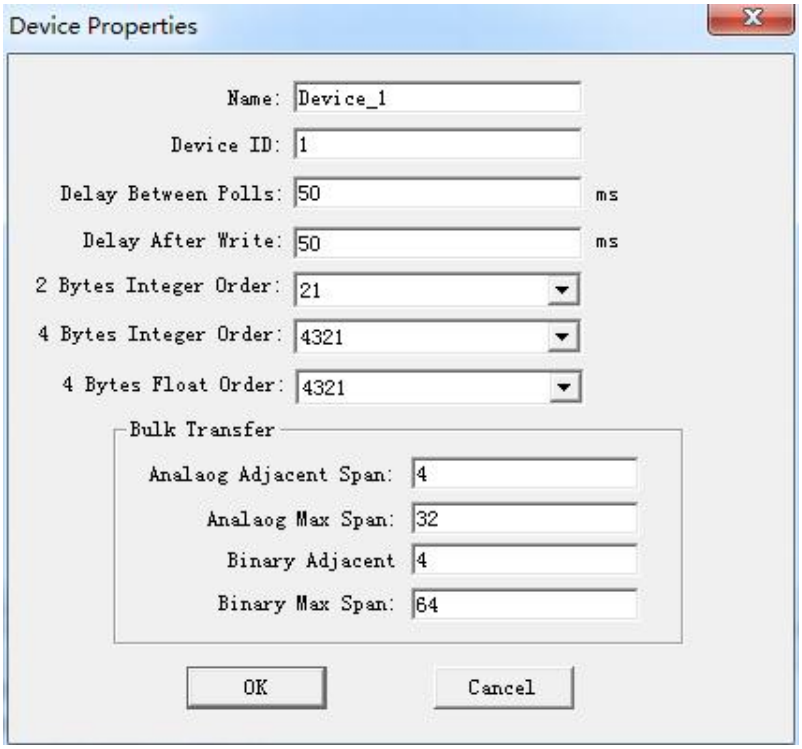

Figure 2-3-4 Set Device Properties

2.3.4 NEW TAG

Click the menu ***Edit*** and select the ***New Tag…*** or click the button **New Tag** in the toolbar. In the popup diag "**Tag Properties**", set the **Collection** and **Transfer(BACnet Server)** parameters, as the following Figure 2-3-8 shows.

- **Date Type:** Boolean\Word\Short\Dword\Long\Float and Double ,as the following Figure 2-3-5 shows.

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milesgoiiot@gmail.com/sales@opcmaster.com

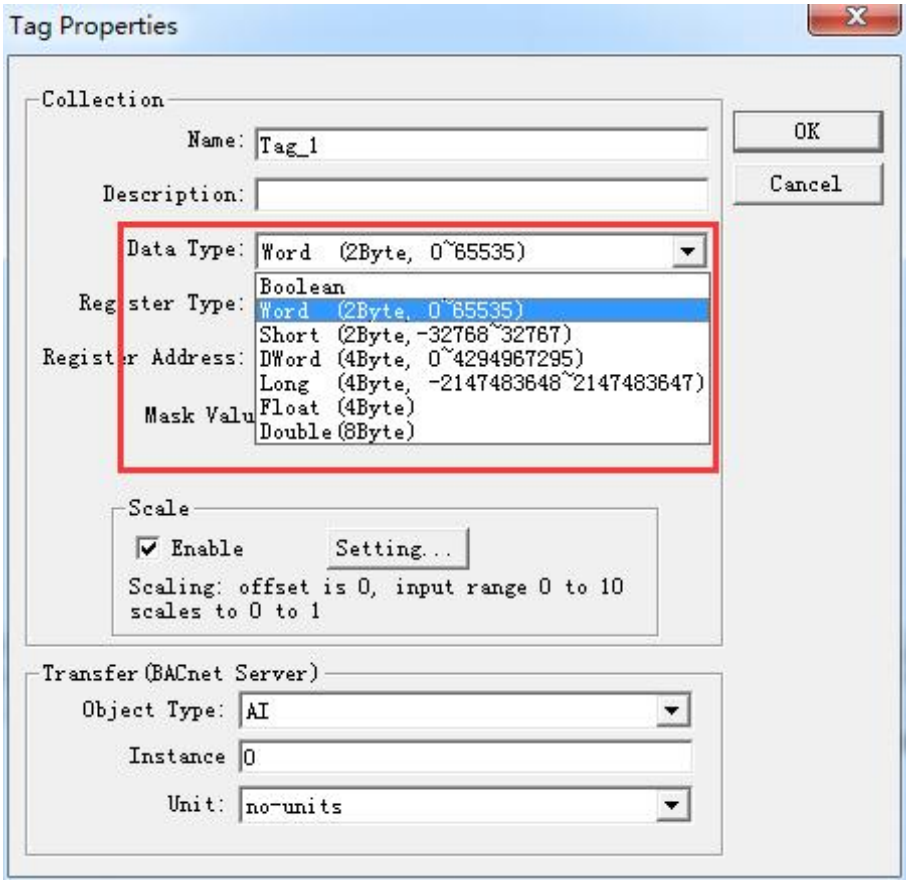

Figure 2-3-5 Date Type

- **Register Type:** 0X(Coil Status)\1X(Input Status)\3X(Input Register)\4X(Holding Register)-F6\4X(Holding Register)-F16\4X(Holding Register)-F5 (*Note*: F is short for Funciton.)
- **Register Address:** Set it according Directions of the device. The number of Modbus registers begins from **1** *(base 1)*.
- **Mask Value:** Check single box “Mask Value” to pick up a bit from 0 to 15 of some register if necessary,as the following Figure 3-2-6 shows.

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milesgoiiot@gmail.com/sales@opcmaster.com

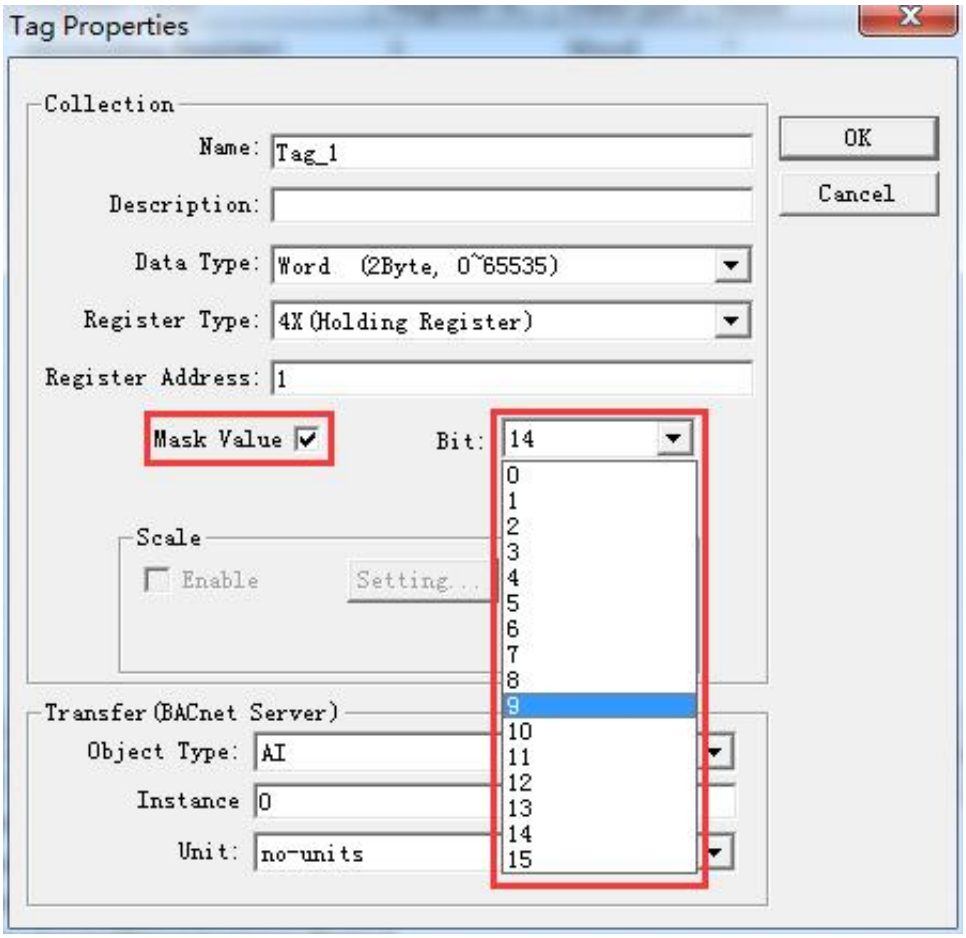

Figure 3-2-6 Pick up a Bit

- **Scale:** Check single box "**Enable**" and click the button "**Setting…**" to enable liner transformation, as the following Figure 3-2-7 shows.

Figure 3-2-7 Tag Process Settings

Add: 28SenangCrescent,#0511,Bizhub28,Singapore416601 Tel:+6580385403 URL:www.bacnetchina.com
milesgoiiot@gmail.com/sales@opcmaster.com

- **Transfer:**

① Object Type

Name	Description	Properties
BI	Binary Input	Read Only
BO	Binary Output	Read/Write
BV	/	Read/Write
AI	Analog Input	Read Only
AO	Analog Output	Read/Write
AV	/	Read/Write

② Instance: The number of BACnet registers begins from **0**.

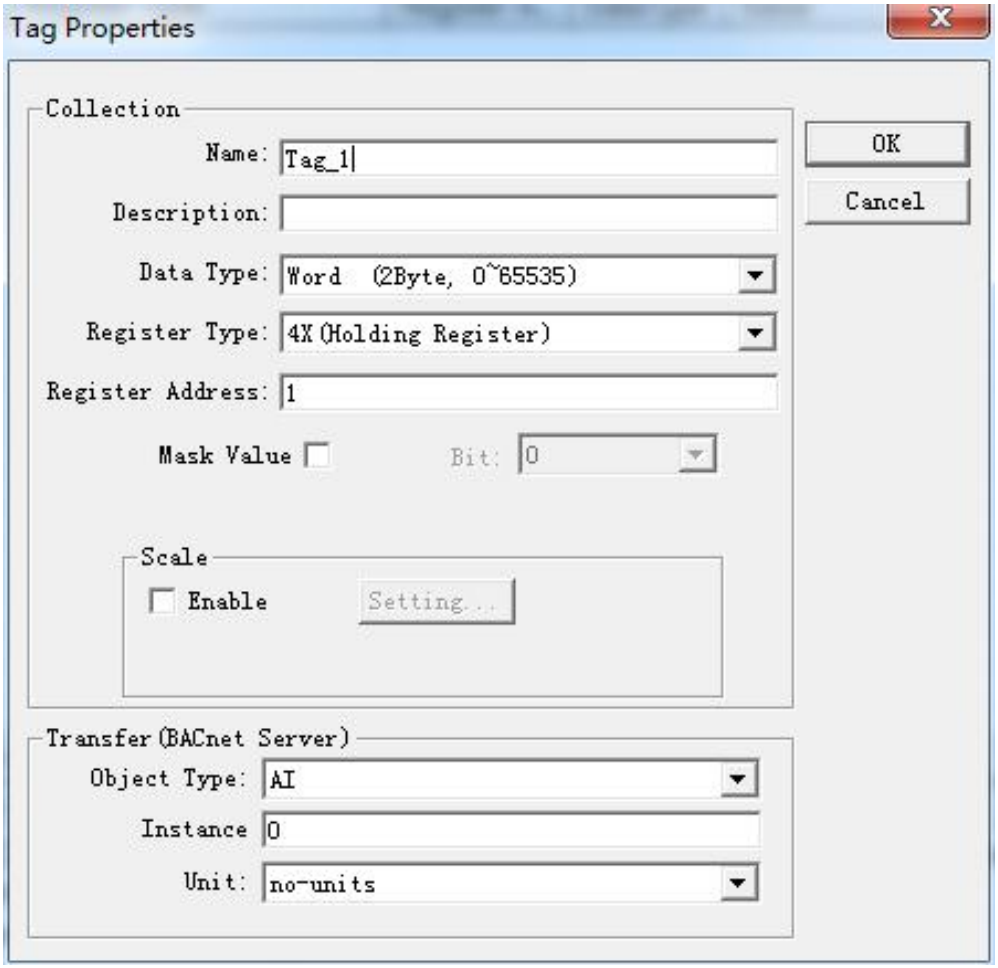

Figure 3-1-8 Set Tag Properties

Add other tags in the same way.

2.4 ModbusUDPClient

Add: 28SenangCrescent,#0511,Bizhub28,Singapore416601 Tel:+6580385403 URL:www.bacnetchina.com
milesgoiiot@gmail.com/sales@opcmaster.com

2.4.1 NEW DRIVER

Click the menu ***Edit*** and select the ***New Driver…*** or click the button **New Driver** in the toolbar. In the popup diag "**Driver Properties**", choose the ***ModbuUDPClient*** from the **Driver List** and then type in a name , as the following Figure 2-4-1 and Figure 2-4-2 show.

- **Scan Rate:** It takes effects when there are many devices added to the project. The default value is **1000ms**.

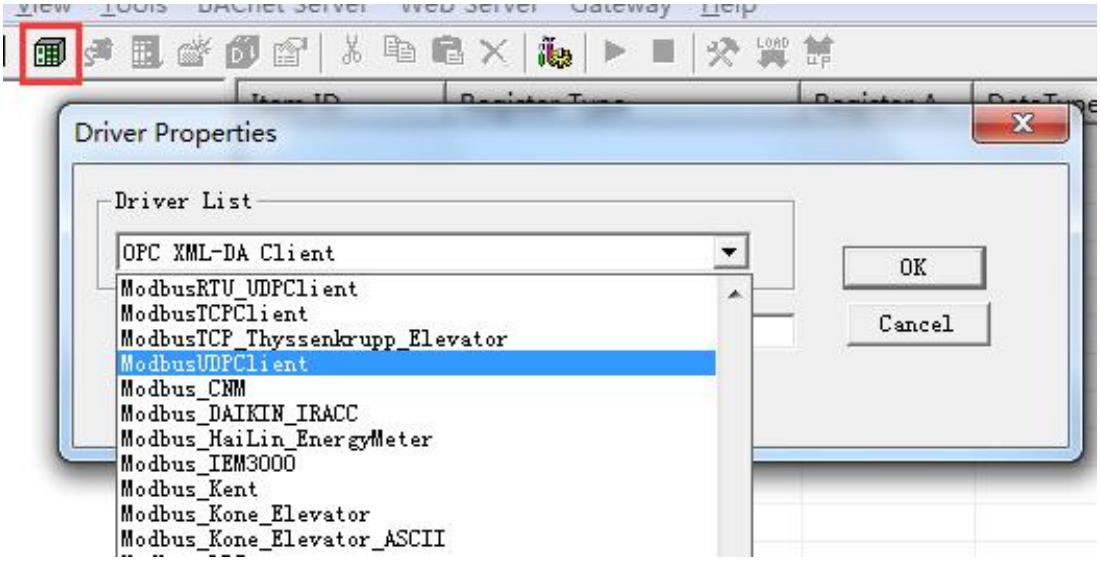

Figure 2-4-1 Choose a driver

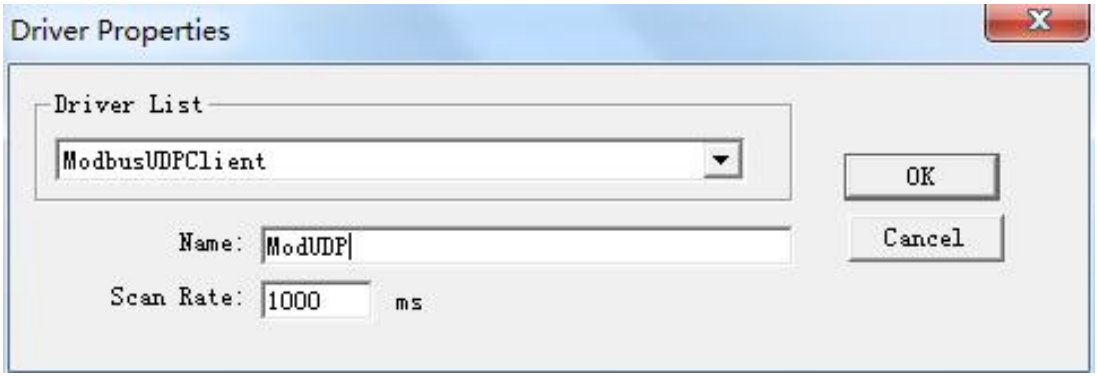

Figure 2-4-2 Type in a name

2.4.2 NEW CHANNEL

Click the menu ***Edit*** and select the ***New Channel…*** or click the button **New Channel** in the toolbar. In the popup diag "**Network Communication Configuration**", set the **Channel Name** and **Communication Parameters**, as the following Figure 2-4-3 shows.

- **Channel Name:** It will be easier distinguished to type a name for the channel, *e.g. ROOM1*, Floor1 etc.

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milesgoiiot@gmail.com/sales@opcmaster.com

- **IP Address:** The communication IP address.
- **Port:** The communication port is **502**.
- **Response Timeout:** It will be error when the time between request frame and response frame is larger than the time in Response Timeout . The default value is **1000ms**.

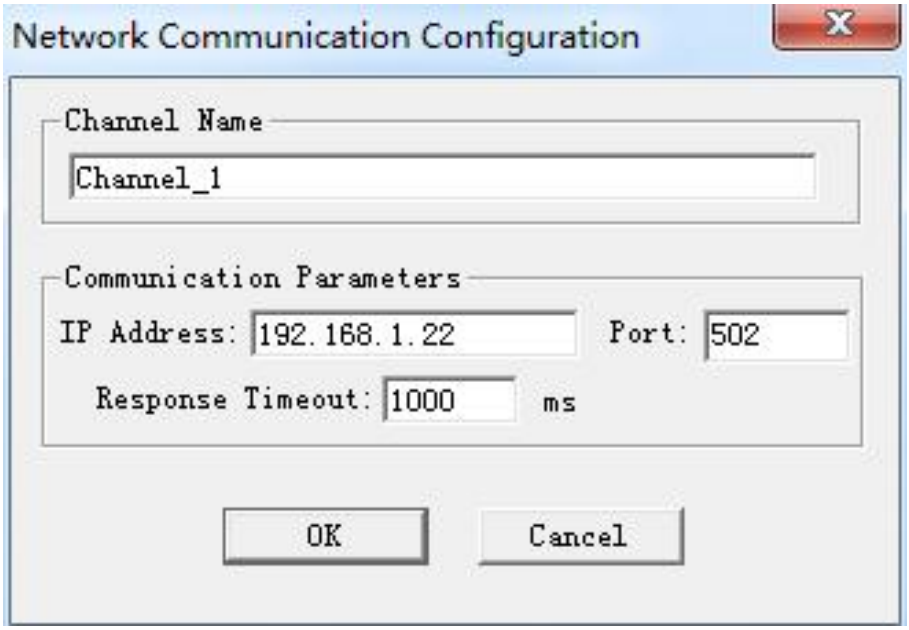

Figure 2-4-3 Set Network Communication Configuration

2.4.3 NEW DEVICE

Click the menu ***Edit*** and select the ***New Device…*** or click the button **New Device** in the toolbar. In the popup diag "**Device Properties**", set the device parameters and **Bulk Transfer** parameters, as the following Figure 2-4-4 shows.

- **Device ID:** It is the device address, and it can be usually found in the operation panel of the device. The default value is **1**.
- **Delay Between Polls:** It is the time between a response frame and the next request frame. The default value is **50ms**.
- **Bulk Transfer:** It allows transmitting and receving several frames at the same time. **Note:** However, if devices don't provide a good analogue to this, there is simply no way to enable this function. At this time you have to set all the Bulk Transfer parameters as zero.

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milesgoiiot@gmail.com/sales@opcmaster.com

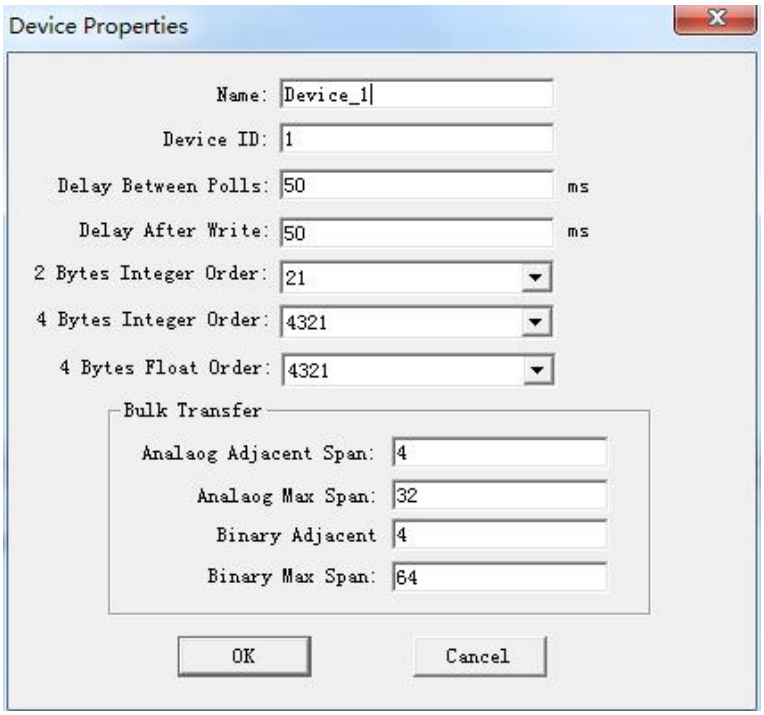
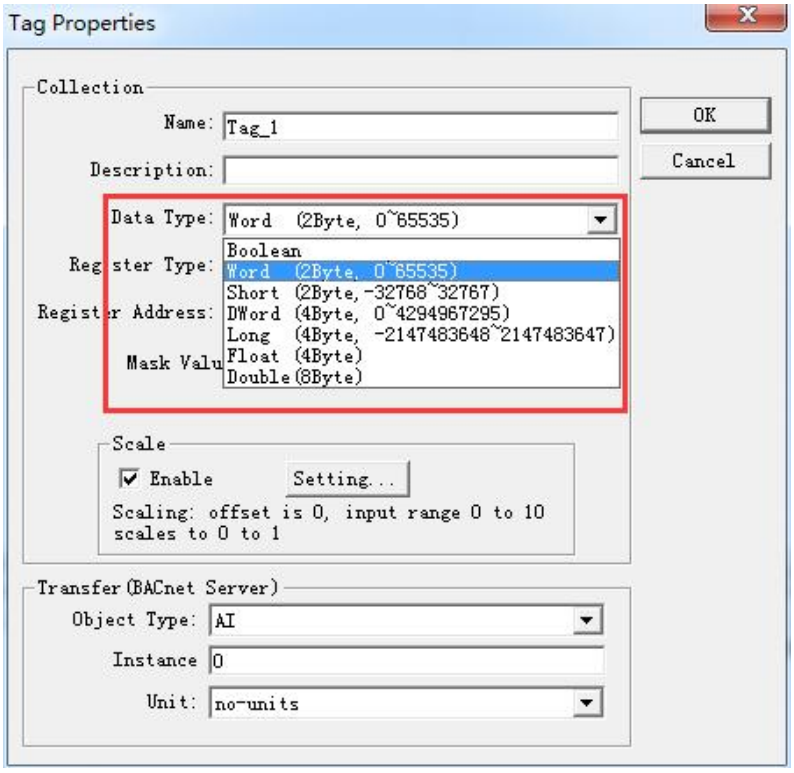


Figure 2-4-4 Set Device Properties

2.4.4 NEW TAG

Click the menu ***Edit*** and select the ***New Tag…*** or click the button **New Tag** in the toolbar. In the popup diag "**Tag Properties**", set the **Collection** and **Transfer(BACnet Server)** parameters, as the following Figure 2-4-5 shows.

- **Date Type:** Boolean\Word\Short\Dword\Long\Float and Double ,as the following Figure 2-4-5 shows.



Add: 28SenangCrescent,#0511,Bizhub28,Singapore416601 Tel:+6580385403 URL:www.bacnetchina.com
milesgoiiot@gmail.com/sales@opcmaster.com

Figure 2-4-5 Date Type

- **Register Type:** 0X(Coil Status)\1X(Input Status)\3X(Input Register)\4X(Holding Register)-F6\4X(Holding Register)-F16\4X(Holding Register)-F5 (*Note*: F is short for Funciton.)
- **Register Address:** Set it according Directions of the device. The number of Modbus registers begins from **1** *(base 1)*.
- **Mask Value:** Check single box “Mask Value” to pick up a bit from 0 to 15 of some register if necessary,as the following Figure 2-4-6 shows.

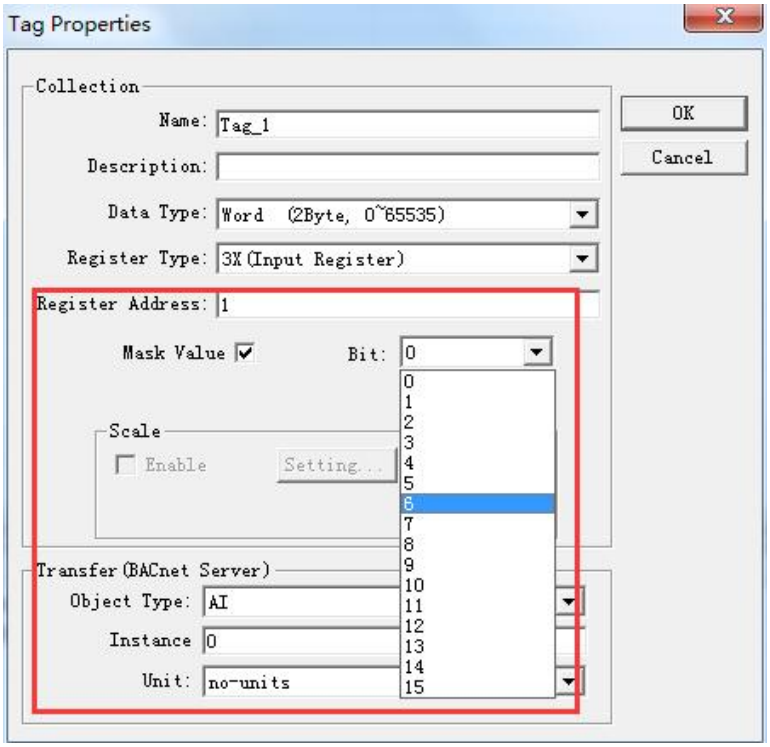


Figure 2-4-6 Select a Bit

Scale: Check single box “**Enable**” and click the button “**Setting…**” to enable liner transformation, as the following Figure 2-4-7 shows.

Figure 2-4-7 Tag Process Settings

Add: 28SenangCrescent,#0511,Bizhub28,Singapore416601 Tel:+6580385403 URL:www.bacnetchina.com
milesgoiiot@gmail.com/sales@opcmaster.com

- **Transfer:**

① Object Type

Name	Description	Properties
BI	Binary Input	Read Only
BO	Binary Output	Read/Write
BV	/	Read/Write
AI	Analog Input	Read Only
AO	Analog Output	Read/Write
AV	/	Read/Write

② Instance: The number of BACnet registers begins from **0**.

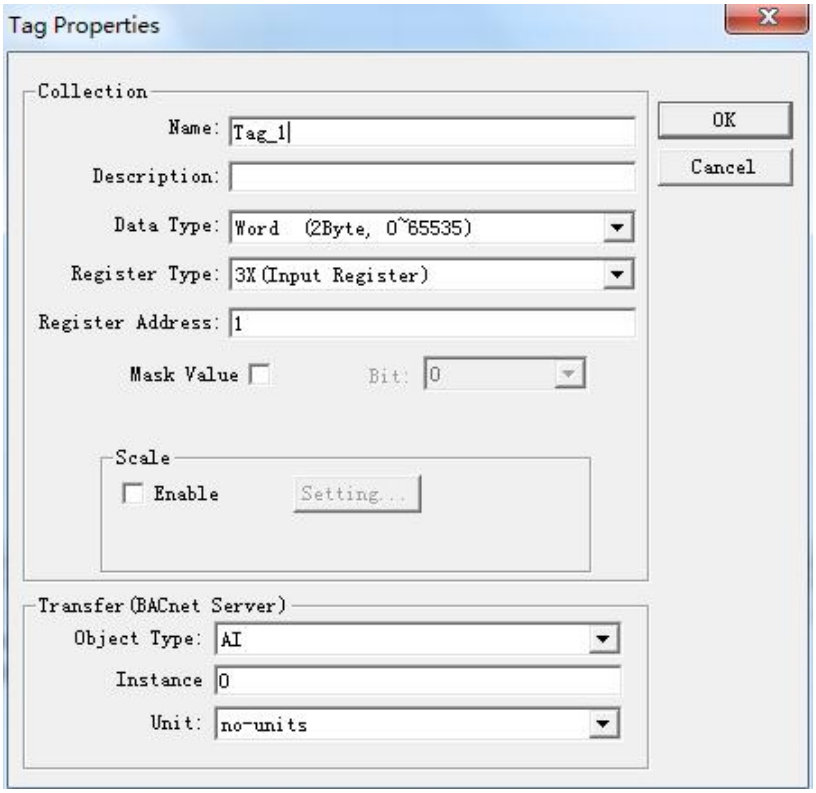


Figure 2-4-8 Set Tag Properties

Add other tags in the same way.

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2.5 OPC XML_DA

2.5.1 NEW DRIVER

Click the menu ***Edit*** and select the ***New Driver…*** or click the button **New Driver** in the toolbar. In the popup diag "**Driver Properties**", choose the ***OPC XML_DA Client*** from the **Driver List** and then type in a name , as the following Figure 2-5-1 and Figure 2-5-2 show.

- **Scan Rate:** It takes effects when there are many devices added to the project. The default value is **1000ms**.

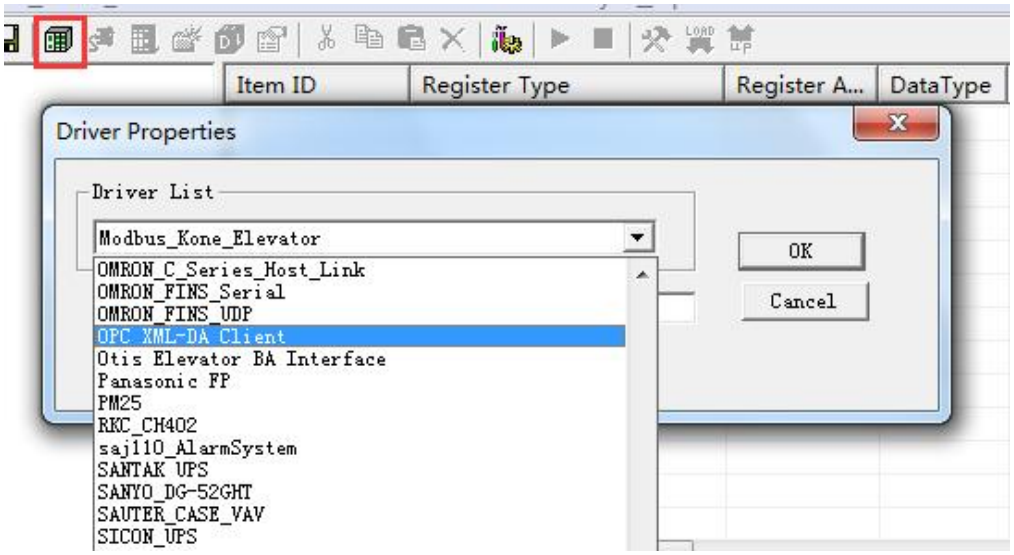

Figure 2-5-1 Choose a driver

Figure 2-5-2 Type in a name

2.5.2 NEW CHANNEL

Click the menu ***Edit*** and select the ***New Channel…*** or click the button **New Channel** in the toolbar. In the popup diag "**Network Communication Configuration**", set the **Channel Name** and **Communication Parameters**, as the following Figure 2-5-3 shows.

Add: 28SenangCrescent,#0511,Bizhub28,Singapore416601 Tel:+6580385403 URL:www.bacnetchina.com
milesgoiiot@gmail.com/sales@opcmaster.com

- **Channel Name:** It will be easier distinguished to type a name for the channel, *e.g. ROOM1*, Floor1 etc.
- **IP Address:** The url of OPC XML_DA Server, e.g. ”http://192.178.1.88/soap“ .
- **Port:** The default communication port number is **80**.
- **Response Timeout:** It will be error when the time between request frame and response frame is larger than the time in Response Timeout . The default value is **1000ms**.

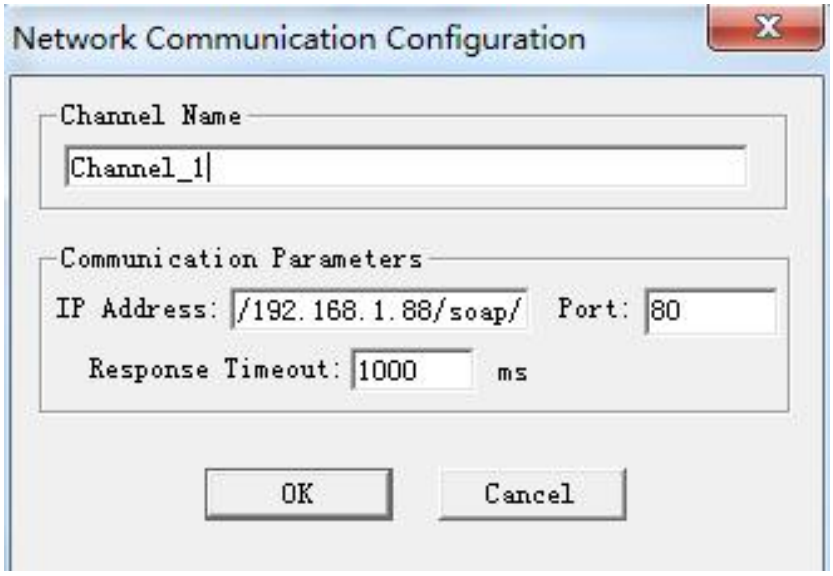

Figure 2-5-3 Set Network Communication Configuration

2.5.3 NEW DEVICE

Click the menu ***Edit*** and select the ***New Device…*** or click the button **New Device** in the toolbar. In the popup diag ”**Device Properties**”, set the device parameters and **Bulk Transfer** parameters, as the following Figure 2-5-4 shows.

- **Device ID:** Keep it empty as default.
- **Delay Between Polls:** It is the time between a response frame and the next request frame. The default value is **100ms**.
- **Bulk Transfer:** It allows transmitting and receving several frames at the same time. **Note:** However, if devices don’t provide a good analogue to this, there is simply no way to enable this function. At this time you have to set all the Bulk Transfer parameters as zero.

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milesgoiiot@gmail.com/sales@opcmaster.com

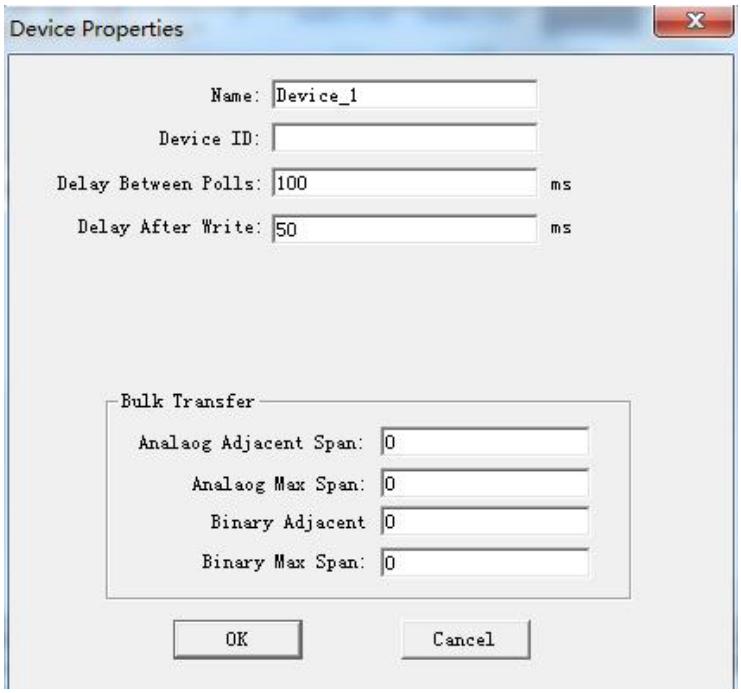


Figure 2-5-4 Set Device Properties

2.5.4 NEW TAG

Click the menu ***Edit*** and select the ***New Tag…*** or click the button **New Tag** in the toolbar. In the popup diag "**Tag Properties**", set the **Collection** and **Transfer(BACnet Server)** parameters, as the following Figure 2-5-8 shows.

- **Date Type:** Boolean\Word\Short\Dword\Long\Float and Double ,as the following Figure 2-5-5 shows.

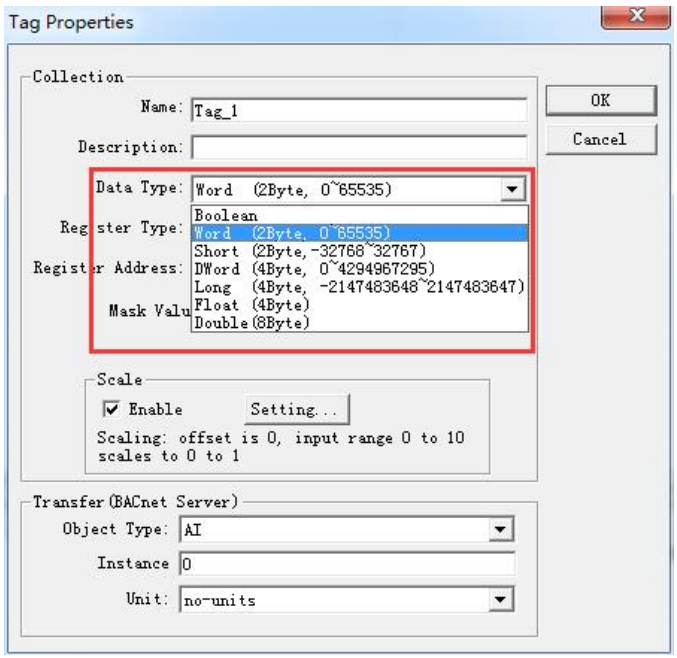


Figure 2-5-5 Date Type

Add: 28SenangCrescent,#0511,Bizhub28,Singapore416601 Tel:+6580385403 URL:www.bacnetchina.com
milesgoiiot@gmail.com/sales@opcmaster.com

- **Register Type:** Item ID ,as the following Figure 2-5-6 shows.

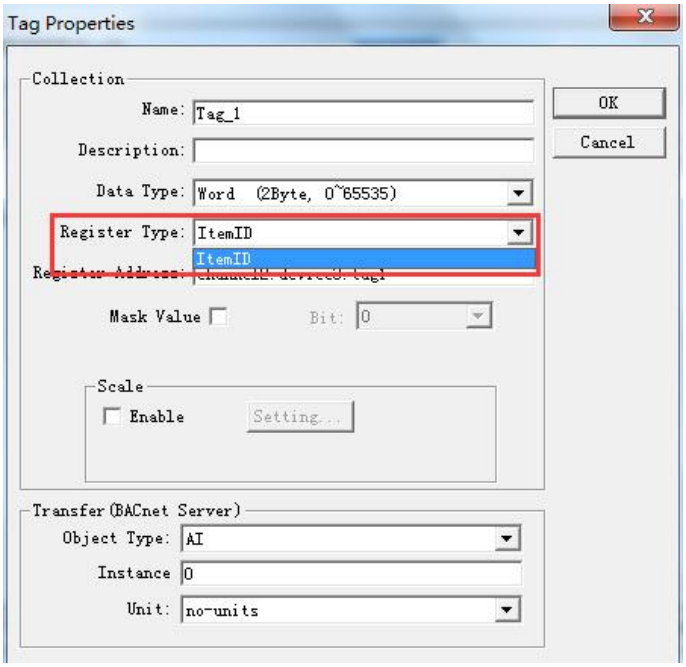


Figure 2-5-6 Register Type

- **Register Address:** Set it according Directions of the device.
- **Mask Value:** Check single box “Mask Value” to pick up a bit from 0 to 15 of some register if necessary, as the following Figure 2-5-6 shows.

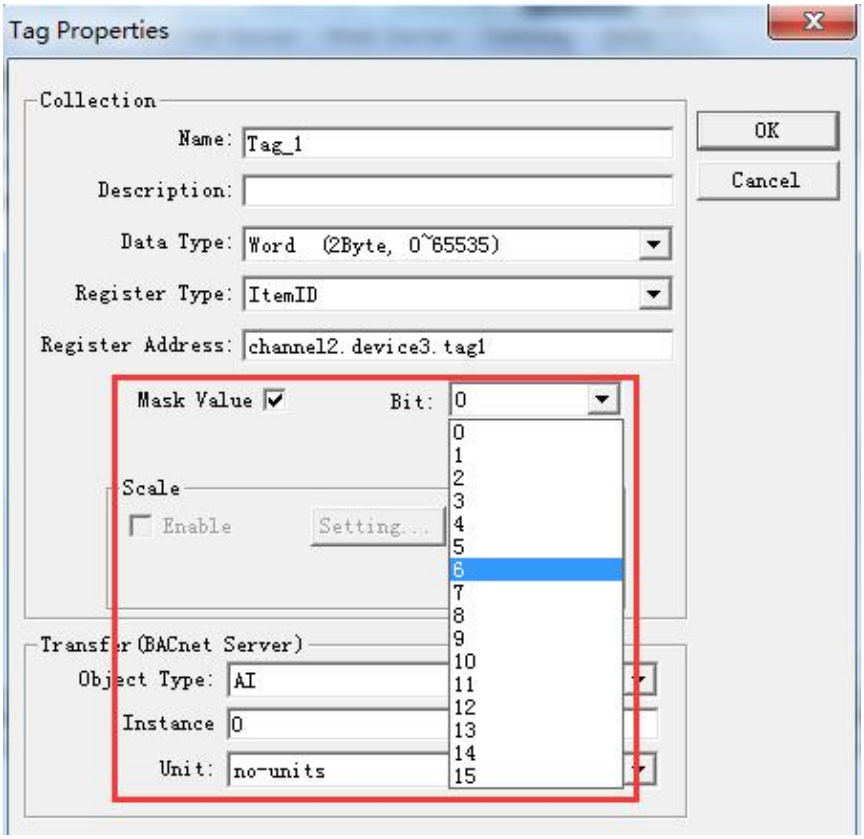


Figure 2-5-6 Select Bit

Add: 28SenangCrescent,#0511,Bizhub28,Singapore416601 Tel:+6580385403 URL:www.bacnetchina.com
milesgoiiot@gmail.com/sales@opcmaster.com

- **Scale:** Check single box "**Enable**" and click the button "**Setting…**" to enable liner transformation, as the following Figure 2-5-7 shows.

Figure 2-5-7 Tag Process Settings

- **Transfer:**

① Object Type

Name	Description	Properties
BI	Binary Input	Read Only
BO	Binary Output	Read/Write
BV	/	Read/Write
AI	Analog Input	Read Only
AO	Analog Output	Read/Write
AV	/	Read/Write

② Instance: The number of BACnet registers begins from 0.

Add: 28SenangCrescent,#0511,Bizhub28,Singapore416601 Tel:+6580385403 URL:www.bacnetchina.com
milesgoiiot@gmail.com/sales@opcmaster.com

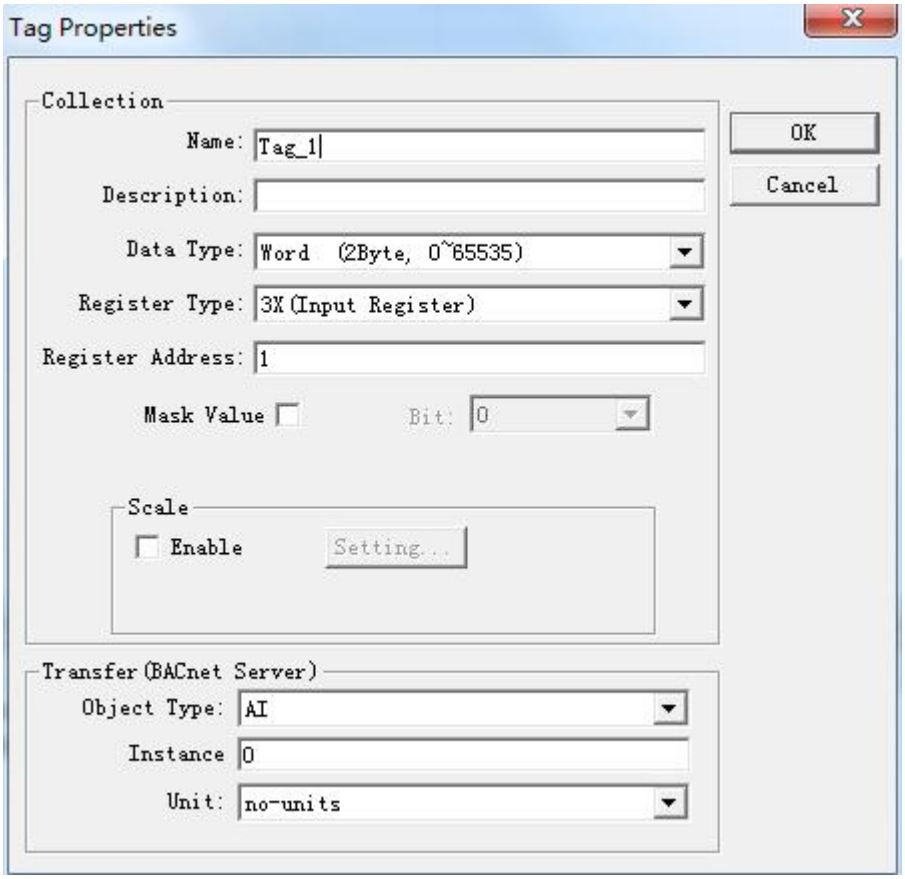


Figure 2-5-8 Set Tag Properties

Add other tags in the same way.

2.6 MBus_EnergyMeter_EN

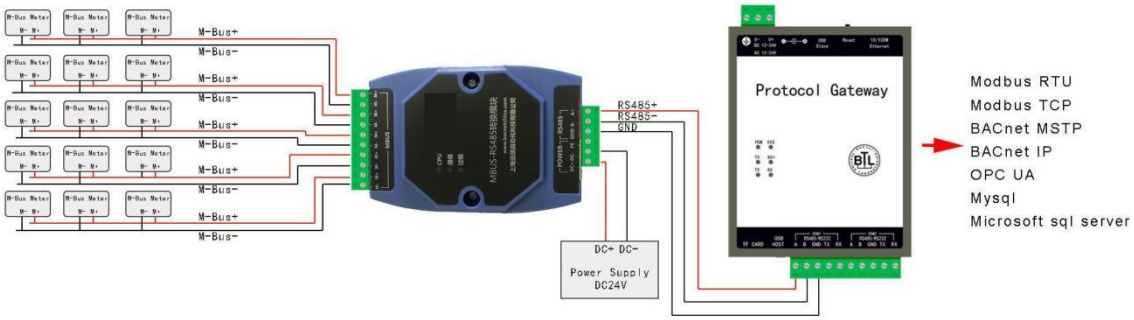


Figure 2-6-1: Select a new Driver

All the European version of meters can use this driver, including Siemens FUE950, Honeywell, Danfoss, Langier, HYDROMETER, Kamstrup, etc.

2.6.1 NEW DRIVER

Select the **New Driver** option from the configuration interface according to the Figure 2-6-2.

Add: 28SenangCrescent,#0511,Bizhub28,Singapore416601 Tel:+6580385403 URL:www.bacnetchina.com
milesgoiiot@gmail.com/sales@opcmaster.com

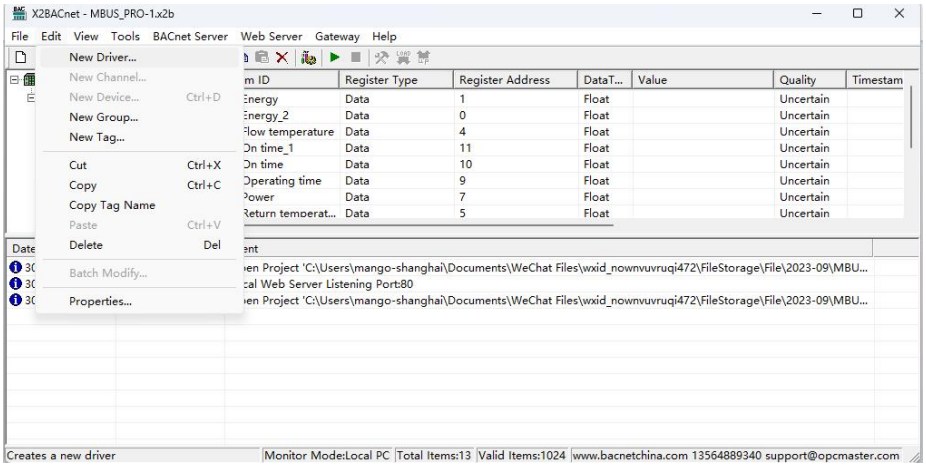


Figure 2-6-2: Select a new Driver

Then select the MBus_EnergerMeter in the pop-up window, as shown in Figure 2-6-3.

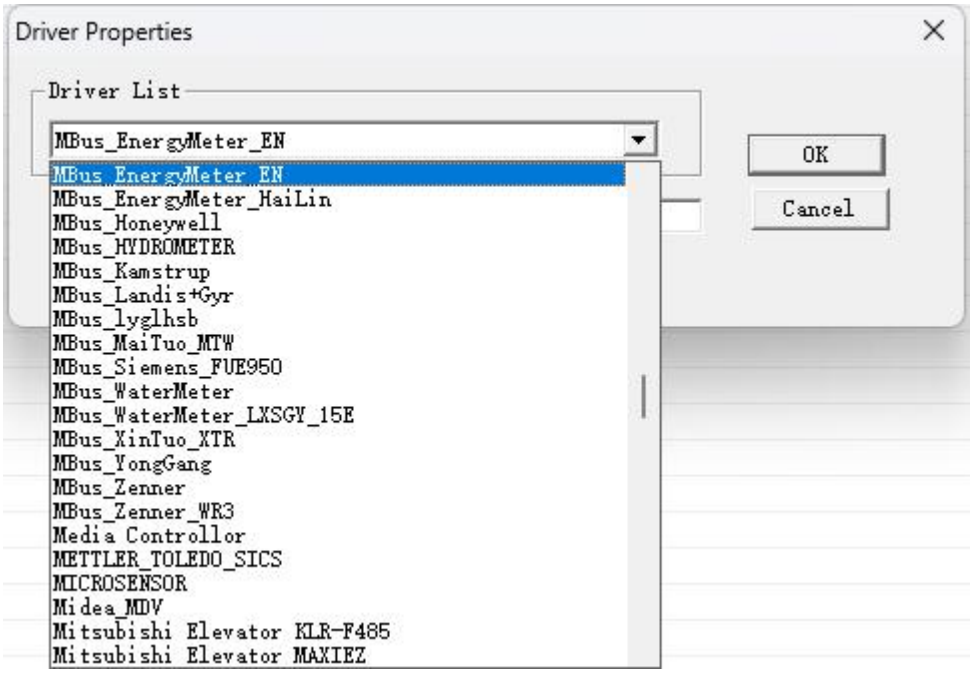


Figure 2-6-3: Selecting Driver

2.6.2 NEW CHANNEL

After adding the driver, select the new channel, MBus_EnergerMeter is as serial communication, default channel serial port 1, default communication parameters: 2400bps, 8 data bits, 1 stop bit, default timeout of 1500ms, as shown in Figure 2-6-4.

Note: The timeout period is the wait timeout for the request frame.

Add: 28SenangCrescent,#0511,Bizhub28,Singapore416601 Tel:+6580385403 URL:www.bacnetchina.com
milesgoiiot@gmail.com/sales@opcmaster.com

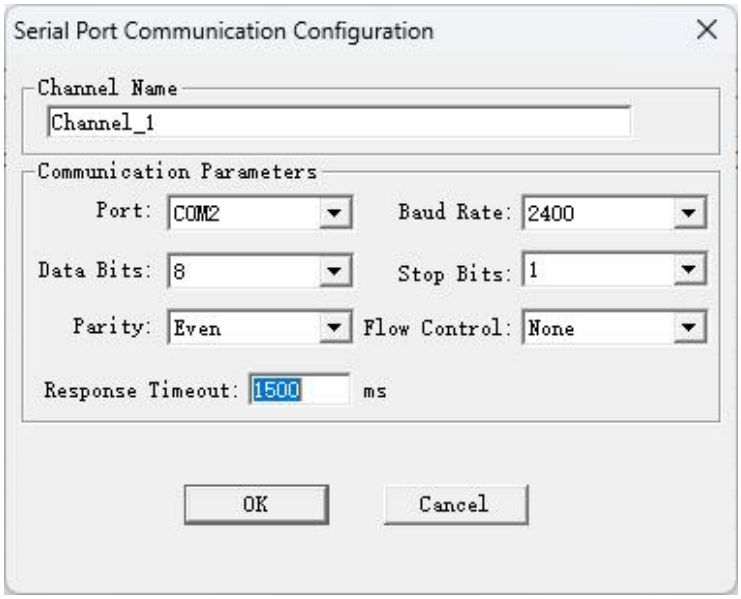


Figure 2-6-4: Channel Parameter settings

2.6.3 NEW DEVICE

After the channel is finished, select new Device, set the device-related properties in the pop-up dialog box, the default device ID is 19112216000000, and the request frame interval is 5000 milliseconds. If the device does not support packaging, you can set the packaging parameter to 0, as shown in figure 2-6-5.

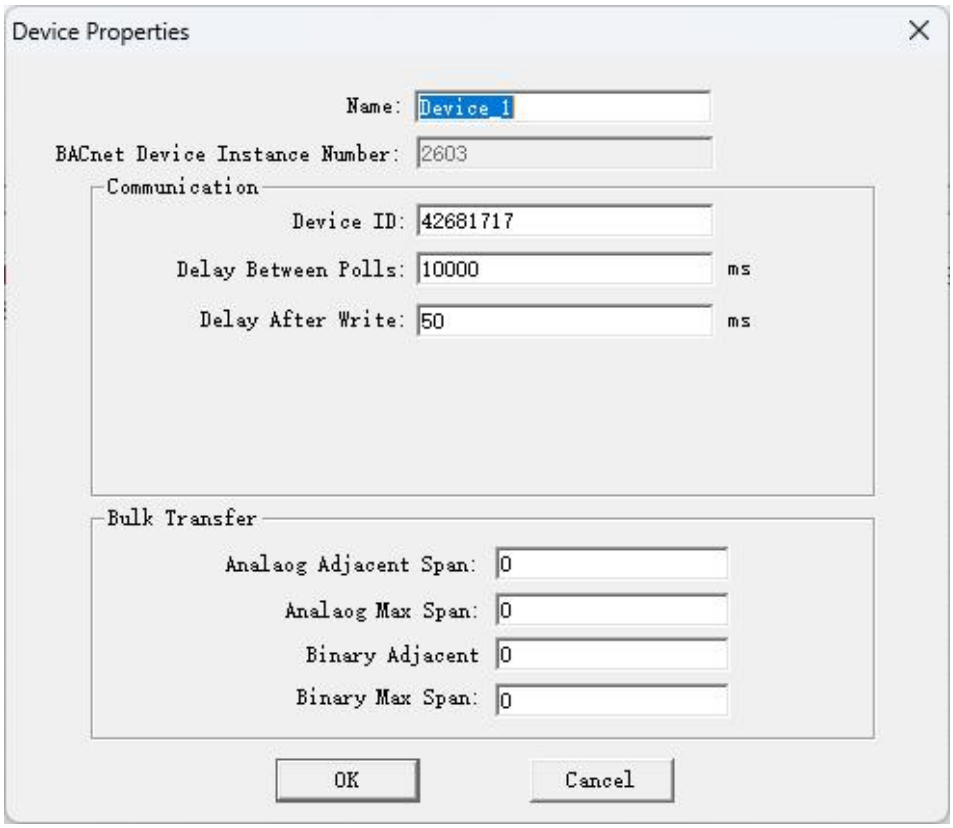


Figure 2-6-5: Device Parameter settings

Add: 28SenangCrescent,#0511,Bizhub28,Singapore416601 Tel:+6580385403 URL:www.bacnetchina.com
milesgoiiot@gmail.com/sales@opcmaster.com

Note: the request frame interval is the time interval between when the next frame request is issued and the previous frame is responded to. The first 8 digits of the station number indicate the table number, and the last 6 digits represent the manufacturer ID number. This driver follows more than 188 protocols.

2.6.4 NEW TAG

After the new device is created, select Add Tags (Points), as shown in figure 2-6-6. When finishing the point, the type of register at the acquisition end can be selected according to the instrument type (20F ~ 29F) and data identification (901F or 1F90) of the field device, and the register address refers to the address of the data field to be read, where the valid address of the register is 1 ~ 8.

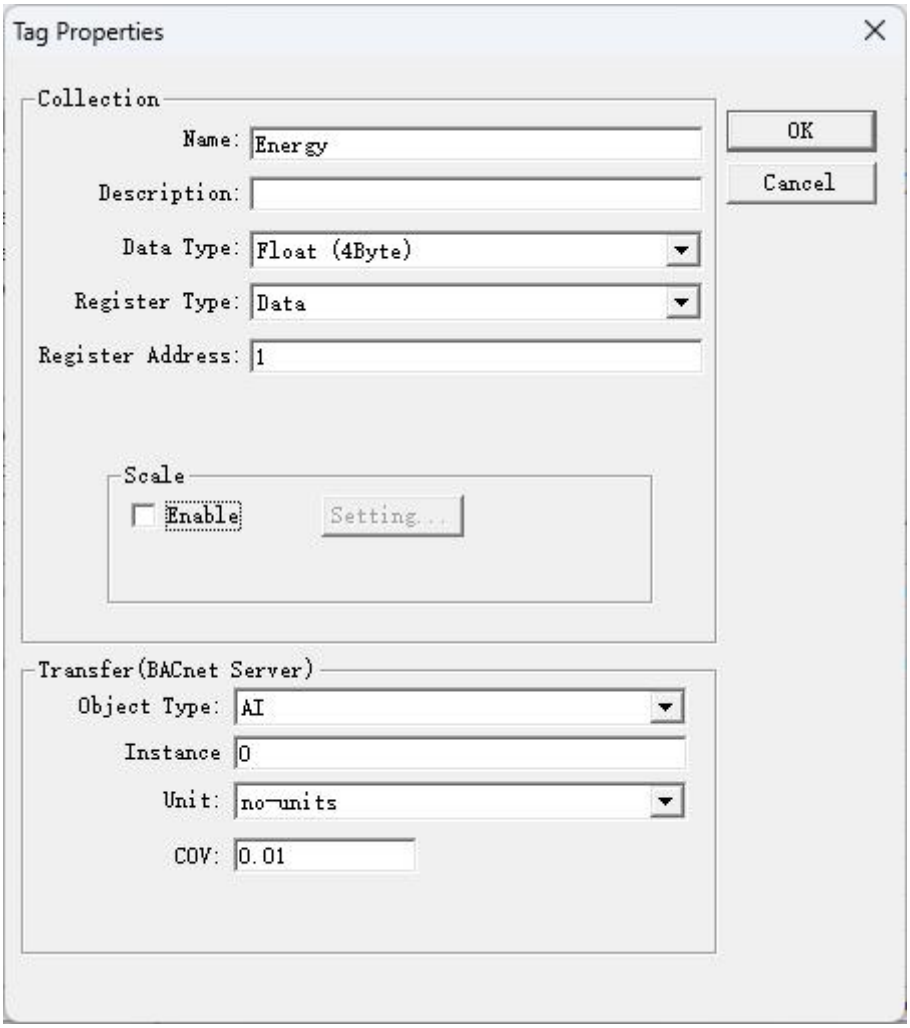


Figure 2-6-6: Tag Parameter settings

After the tag is created, the following figure is shown as the below figure.

Add: 28SenangCrescent,#0511,Bizhub28,Singapore416601 Tel:+6580385403 URL:www.bacnetchina.com
milesgoiiot@gmail.com/sales@opcmaster.com

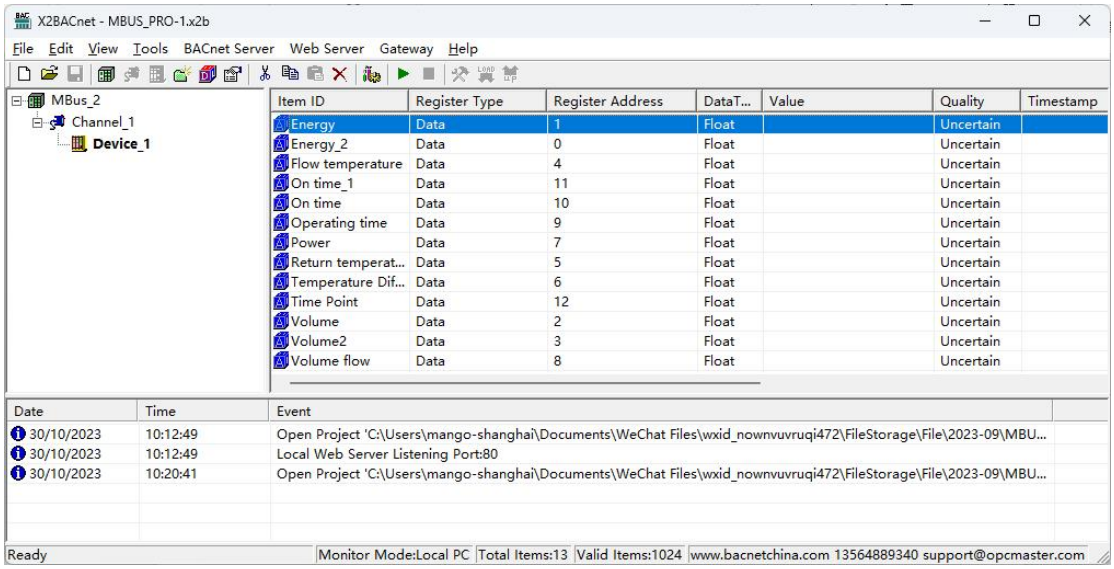


Figure 2-6-7: Completing Configuration

The data types supported by the collection end include Long and Float, as detailed in Table 2-6-8.

DataType	Description
Long	4Byte（-2147483648~2147483647）
Float	4Byte

Table 2-11-1 Data Type

The only register type supported by the collection end is metering data, as detailed in Table 2-1-2.

No	Register Addres	Address Range	Description
1	Data	1~8 Data Type: Float	Address 1 corresponds to cumulative heat, Address 2 corresponds to cumulative flow
			Address 3 corresponds to thermal power, Address 4 corresponds to instantaneous flow rate
			Address 5 corresponds to the supply temperature, Address 6 corresponds to the return temperature
			Address 7 corresponds to temperature difference, Address 8 corresponds to operating time

Table 2-1-2 Register Type

Add: 28SenangCrescent,#0511,Bizhub28,Singapore416601 Tel:+6580385403 URL:www.bacnetchina.com
milesgoiiot@gmail.com/sales@opcmaster.com

Note: When encountering a European version MBUSmeter, you can first use the MbusScan tool to search for all tags, as shown in Figure 2-6-8, and export it to an Excel file. Then select Mbus in the gateway configuration software MBUS_EnergyMeter_EN driver, after building the device, fill in the table number, and finally import it into an Excel file.

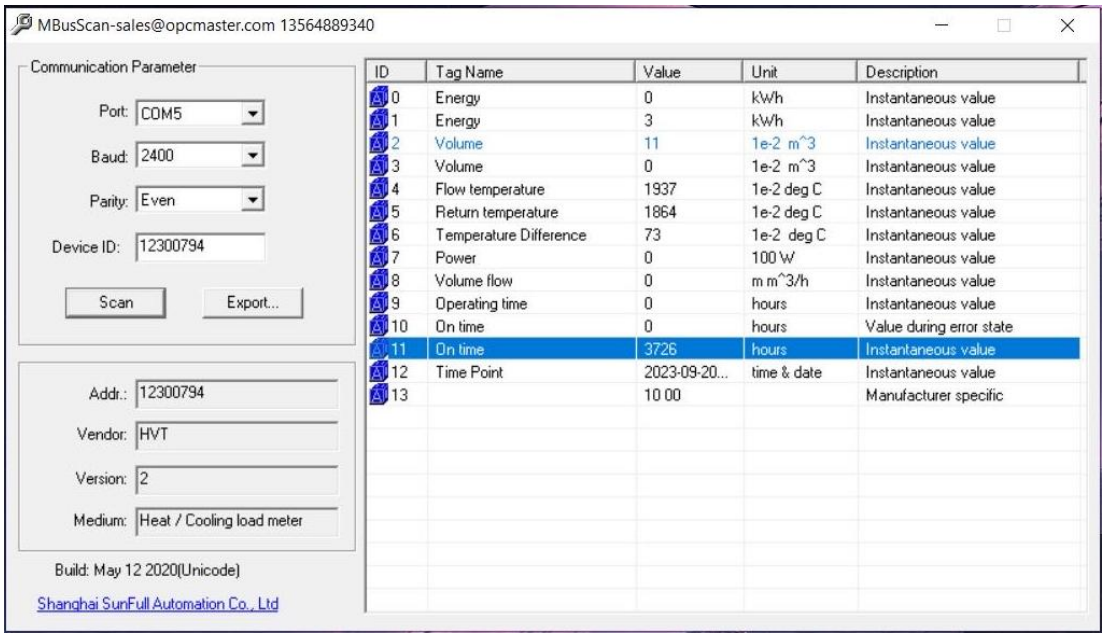


Figure2-6-8 MbusScan

2.7 KNXnetIP_MultiCast

Sunfull gateway can connect the KNX Router.

2.7.1 NEW DRIVER

Select the "New Driver" option in the menu bar of the upper computer configuration interface, as shown in the figure below 2-7-1。

Add: 28SenangCrescent,#0511,Bizhub28,Singapore416601 Tel:+6580385403 URL:www.bacnetchina.com
milesgoiiot@gmail.com/sales@opcmaster.com

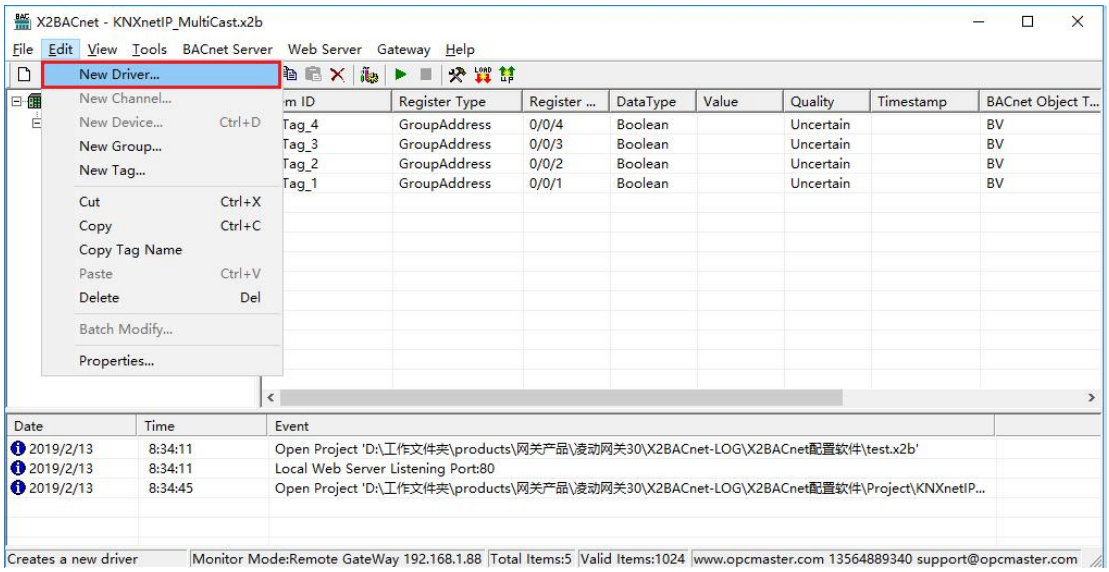


Figure 2-7-1 Select New Driver

Select the "KNXnetIP_MultiCast" driver in the popup window，as shown in the figure below 2-7-2。

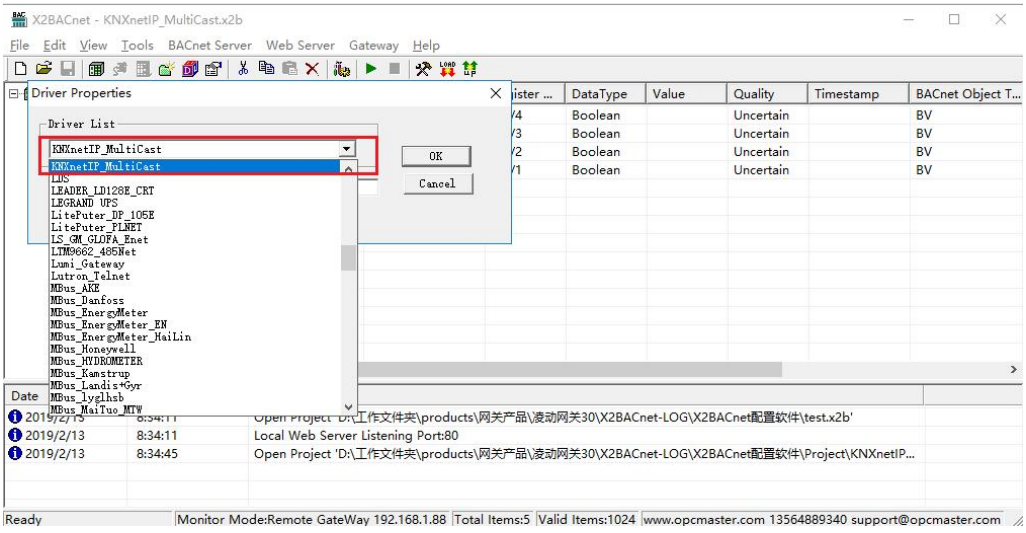


Figure 2-7-2 select driver

2.7.2 NEW CHANNEL

After adding the driver, select the new channel (KNXnetIP_MultiCast) communicates with the network interface, and the IP address is the network interface IP address of the gateway itself (network interface 2 is recommended). The default port number is 3671, and the default timeout time is 1000ms, as shown in figure 2-7-3 below.Note that the timeout is the wait timeout for the requested frame.

Note: channel IP addresses are not filled in KNX system multicast addresses.In addition, the default address of KNX system is 224.0.23.12, which is not recommended to be modified, but the group address should be unique.

Add: 28SenangCrescent,#0511,Bizhub28,Singapore416601 Tel:+6580385403 URL:www.bacnetchina.com
milesgoiiot@gmail.com/sales@opcmaster.com

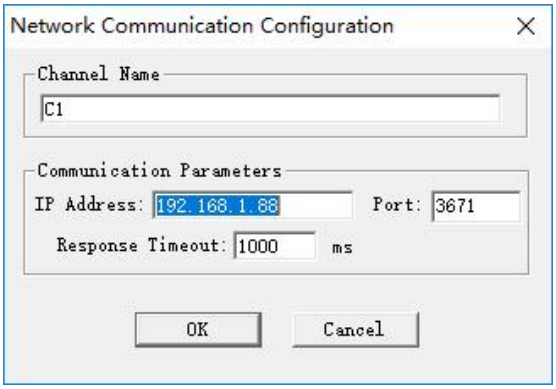


Figure 2-7-3 Network Communication Configuration

2.7.3 NEW DEVICE

After the channel is established, select the new device, and set the device related properties in the popup dialog box. The device default station number is 1, and the request frame interval is 25 milliseconds.If the device does not support group packages, the group package parameter can be set to 0, as shown in figure 2-7-4 below.Note that the request frame interval is the time between the next frame request and the last frame request.

Note that the station number parameter here is invalid, the default is 1.

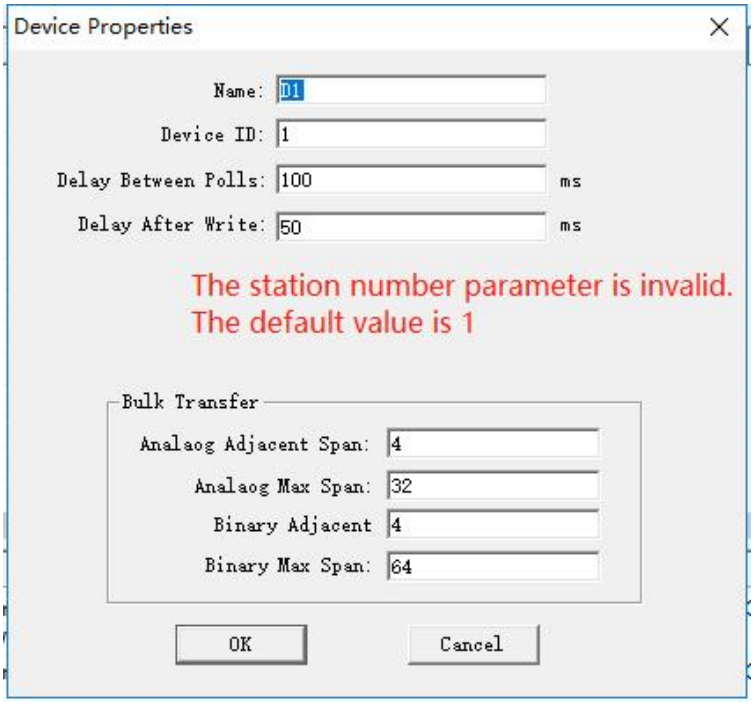


Figure 2-7-4 Device Properties

2.7.4 NEW TAG

After the device is newly created, select add tag(point), or classify and manage tags through the new group. Tag parameters can be set according to the actual situation of the device, as shown in the figure below 2-7-5。

Add: 28SenangCrescent,#0511,Bizhub28,Singapore416601 Tel:+6580385403 URL:www.bacnetchina.com
milesgoiiot@gmail.com/sales@opcmaster.com

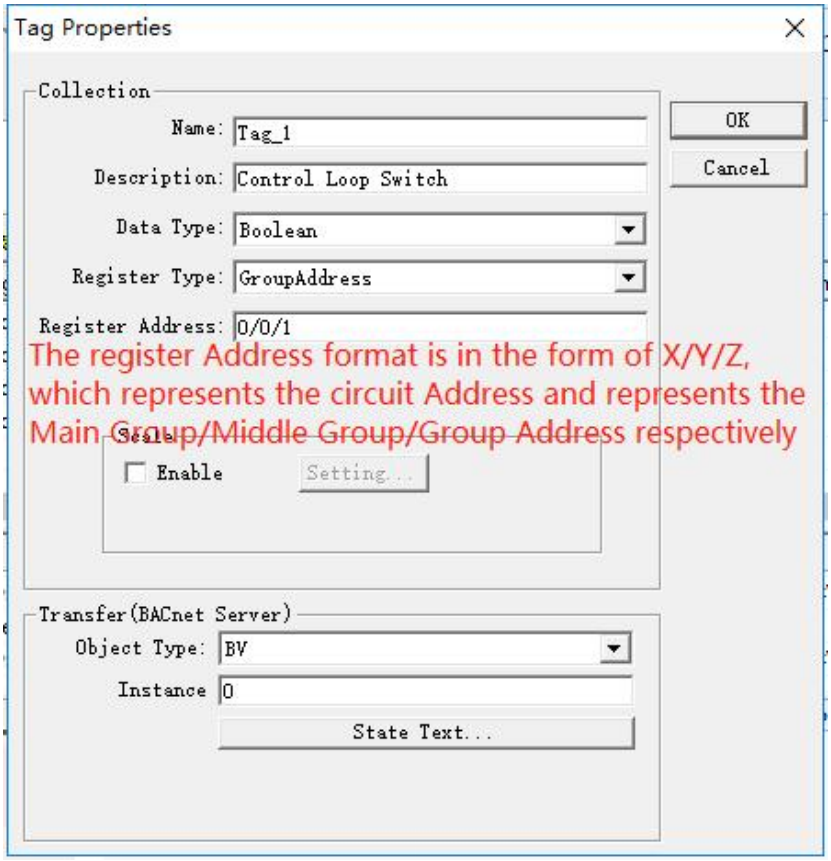


Figure 2-7-5 Tag Properties

Note: in the above Tag attribute, the transfer BACnet can be allocated from 0 to the base address of the station register.After the tag establishment is completed, as shown in the figure below 2-7-6。

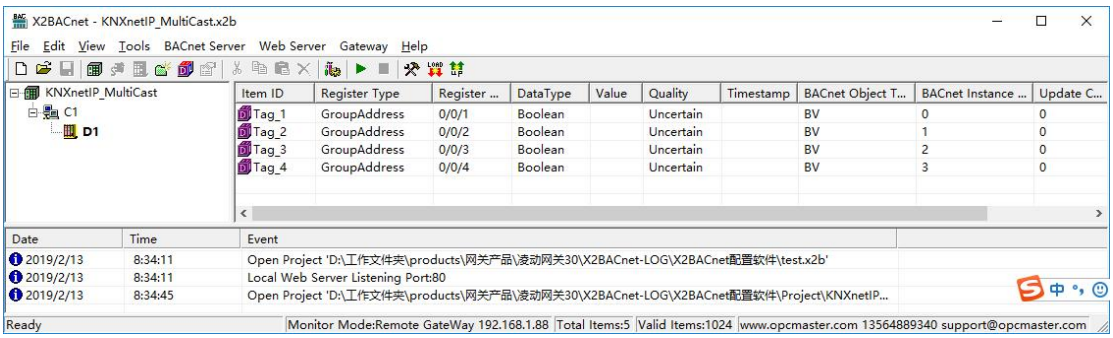


Figure 2-7-6 finish add tags

The data type supported by the acquisition end is only a Boolean type. Since the reading is controlled by the loop switch, the data type can be selected as a Boolean. The specific description is shown in table 2-7-1。

Data type	Description
Boolean	0、1

Table 2-7-1 Data type at the acquisition end

Add: 28SenangCrescent,#0511,Bizhub28,Singapore416601 Tel:+6580385403 URL:www.bacnetchina.com
milesgoiiot@gmail.com/sales@opcmaster.com

The specific description of register types supported by the acquisition side is shown in table 2-7-2.

Main Group0-15 (X total 16)

Middle Group0-7 (Y total 8)

Group address0-255 (Z total 256)

No	Register Type	Description
1	GroupAddress	Control Loop Switch，Read only
2	GroupAddress-WO	Write only

Table 2-7-2 Register type at the acquisition end

2.8 Dynet

DyNet：Philips Dynalite light control protocol

Add: 28SenangCrescent,#0511,Bizhub28,Singapore416601 Tel:+6580385403 URL:www.bacnetchina.com
milesgoiiot@gmail.com/sales@opcmaster.com

2.8.1 NEW DRIVER

Select **New Driver** option from the configuration interface according to the Figure 2-8-1.

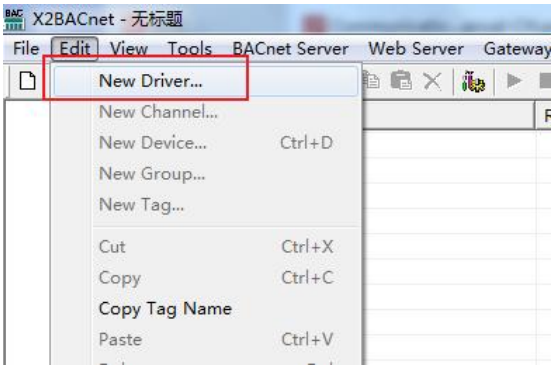


Figure 2-8-1: Select a new Driver

Then select Dynet in the pop-up window, as shown in Figure 2-8-2

Add: 28SenangCrescent,#0511,Bizhub28,Singapore416601 Tel:+6580385403 URL:www.bacnetchina.com
milesgoiiot@gmail.com/sales@opcmaster.com

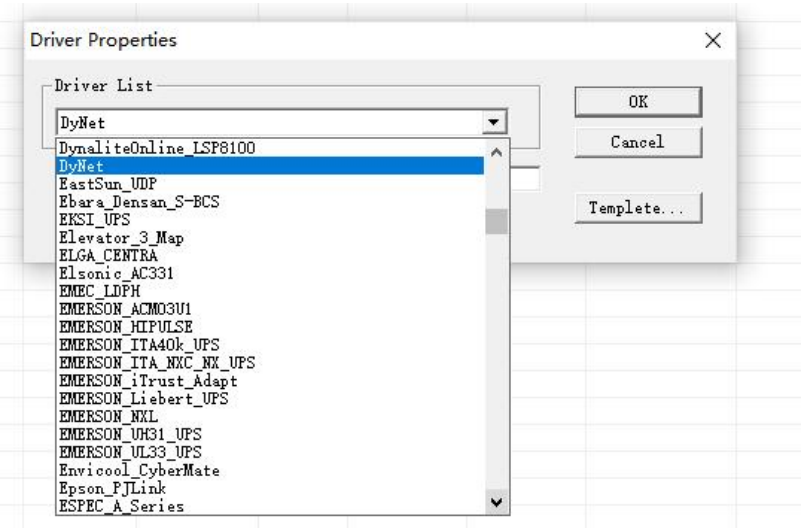


Figure2-8-2: Selecting Driver

2.8.2 NEW CHANNEL

After adding the driver, select the new channel. Dynet is the protocol used in the light control system. It mainly uses RS485 serial port for communication. The default channel is serial port 1. The default communication parameters are as the following. Band Rate: 9600bps, Data Bits: 8, Parity: None, Stop Bits:1, Response Timeout: 5000 ms.

During configuration, if the device response is slow, set Response Timeout as long as possible, as shown in figure 2-8-3 below. Note that the timeout refers to the waiting timeout of the request frame.

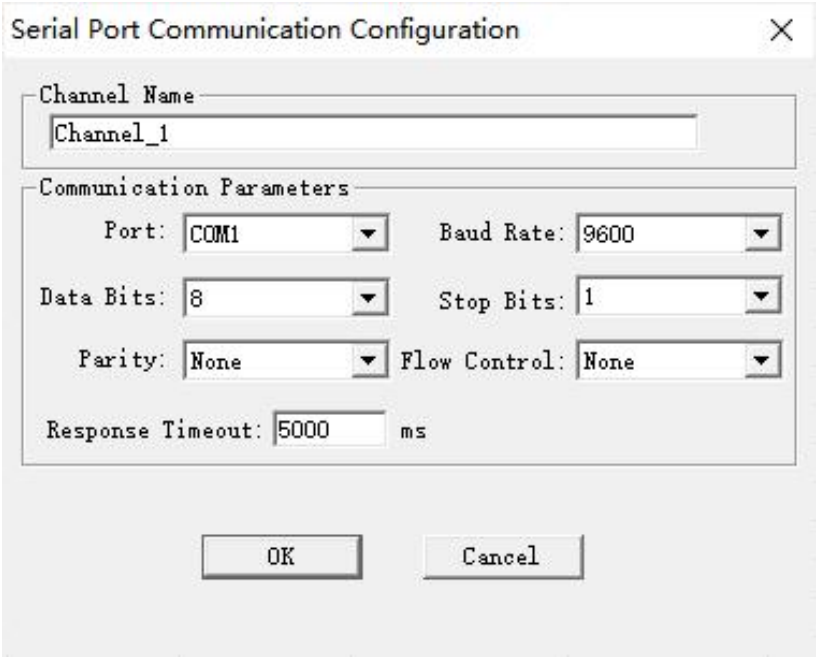


Figure 2-8-3: Channel Parameter settings

2.8.3 NEW DEVICE

Add: 28SenangCrescent,#0511,Bizhub28,Singapore416601 Tel:+6580385403 URL:www.bacnetchina.com
milesgoiiot@gmail.com/sales@opcmaster.com

After the channel is completed, select new device and set the properties of the device in the pop-up dialog box.

The default device ID is 1. The device ID is corresponds to the area of lighting control(for example, a lecture hall is used as an area). The request frame interval is 3000 milliseconds. If the device responds slowly, you can set the request frame longer.

Set all the bulk transfer parameter to 0, as shown in figure 4 below.

Note that the request frame interval refers to the time interval between sending the next frame request and the previous frame request.

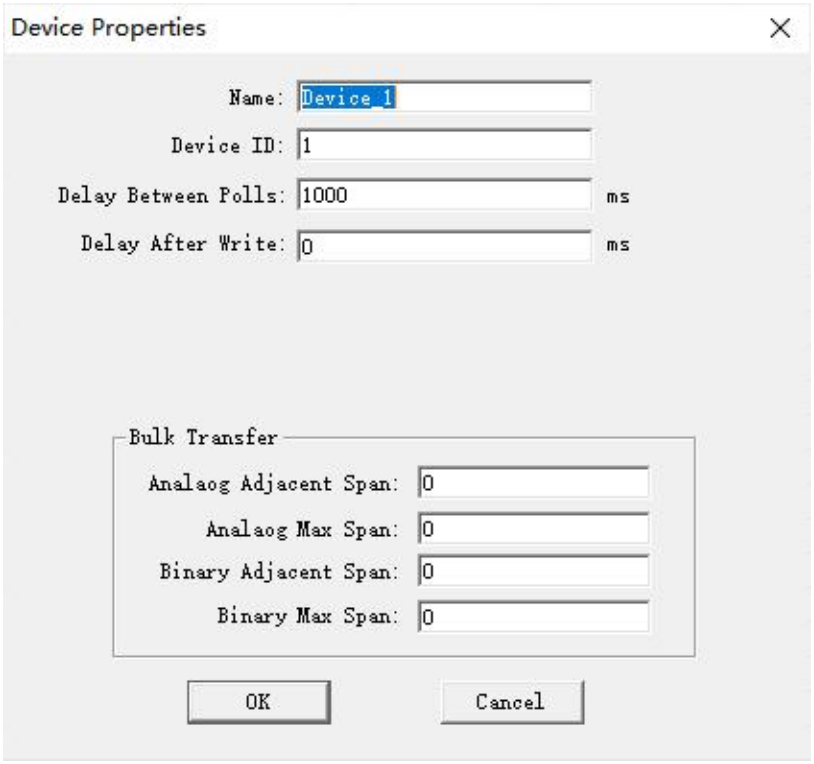


Figure 2-8-4: Device Parameter settings

2.8.4 NEW TAG

When adding a tag, only **Preset**(Preset light scene) and **Channel Level** (Channel brightness) these two register types can be selected, as shown in figure 5 and figure 6 below.

Preset: The default register address of preset (preset light scene) is 10 (fade rate low byte) signal attenuation low byte.

The addition ".wo" after the preset register address indicates that this tag can be written only, can't reading.

Add: 28SenangCrescent,#0511,Bizhub28,Singapore416601 Tel:+6580385403 URL:www.bacnetchina.com
milesgoiiot@gmail.com/sales@opcmaster.com

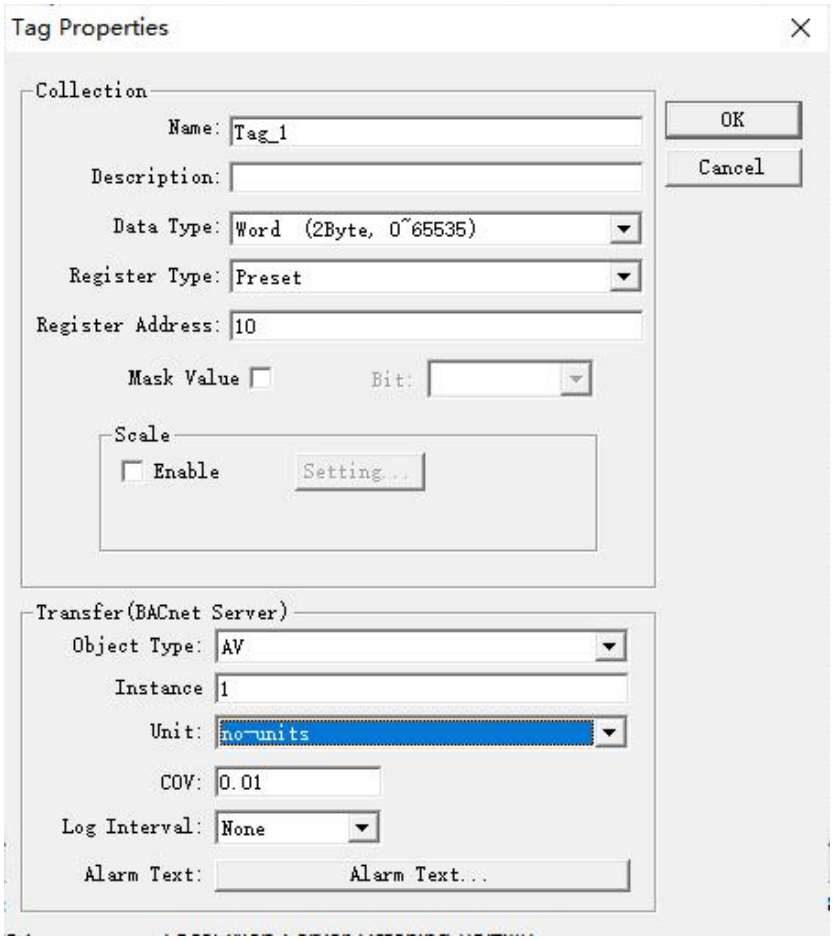


Figure 2-8-5: Tag-Preset

Channel Level : The register address of channel level (channel brightness) indicates the corresponding scene number plus one (the register address is 0 to indicate scene No. 1).

The register address of channel brightness is set to 255 (hexadecimal FF) to indicate all channels in the current area.

The addition of ". X" after the register address of channel level indicates that the operation duration of the current channel is set to 0.1 * X seconds, If ". X" is not added after the channel level register, it means that the system default time is 1 second.

AIR: Add air register type. Only two tags

Address 12 = indoor temperature (read only) the change of indoor temperature of the equipment will also be actively reported

Address 13. wo = set temperature (write only) the change of the set temperature of the equipment will also be actively reported

Add: 28SenangCrescent,#0511,Bizhub28,Singapore416601 Tel:+6580385403 URL:www.bacnetchina.com
milesgoiiot@gmail.com/sales@opcmaster.com

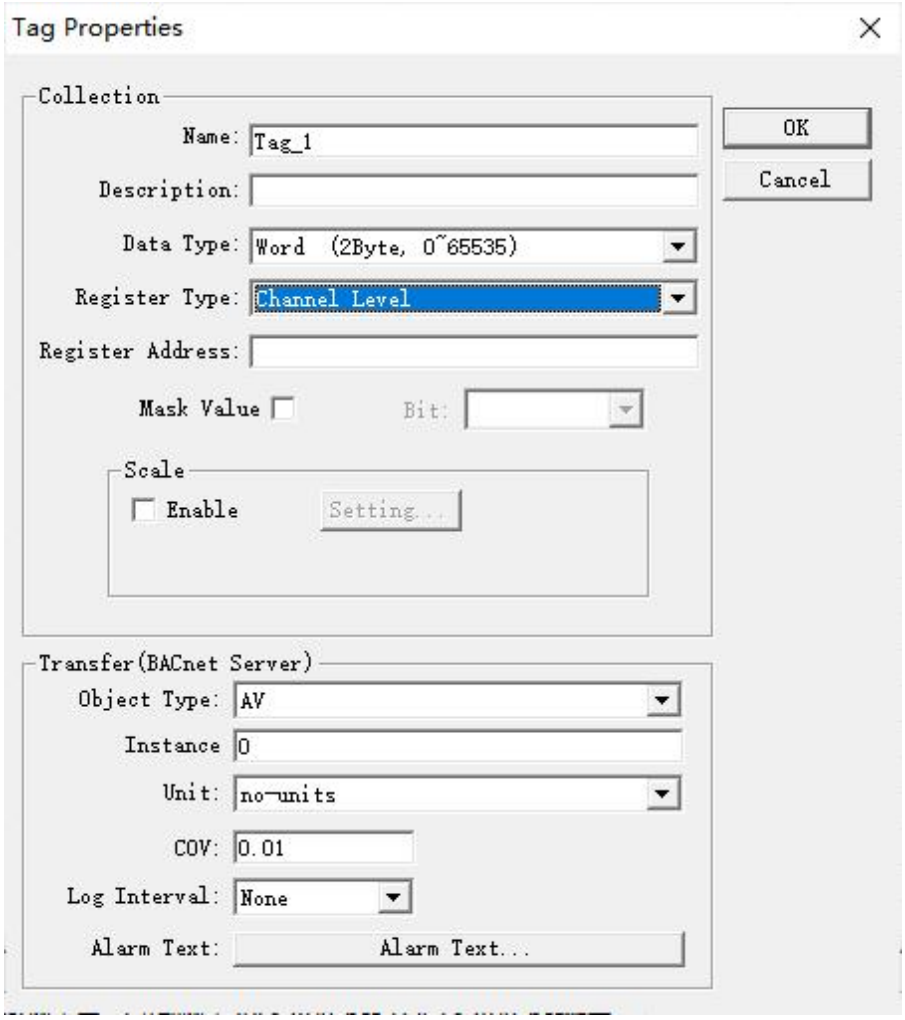


Figure 2-8-6: Tag-Channel Level

The configured point table is as follows, where the value of preset item 1 corresponds to scene P1, 2 corresponds to scene P2, 3 corresponds to scene P3, and so on, as shown in figure7 below. The value of the channel level item corresponds to the brightness value of the current loop. This value refers to the percentage value. For example, when the current value is 73, it means that the brightness is 73%.

Add: 28SenangCrescent,#0511,Bizhub28,Singapore416601 Tel:+6580385403 URL:www.bacnetchina.com
milesgoiiot@gmail.com/sales@opcmaster.com

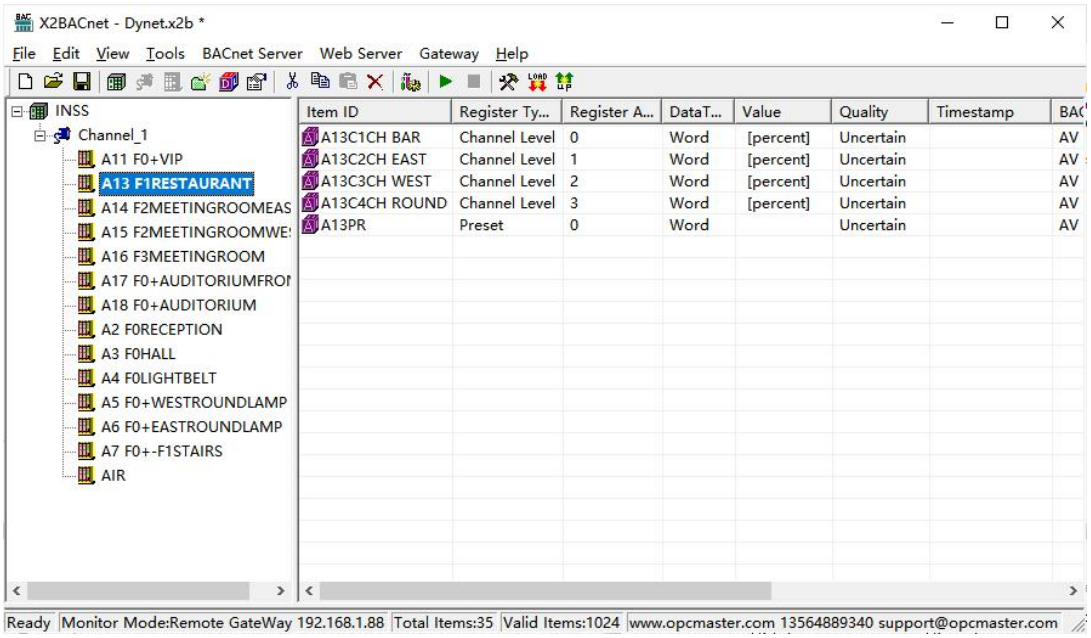


Figure 2-8-7: Adding Tags

Temperature is as the following.

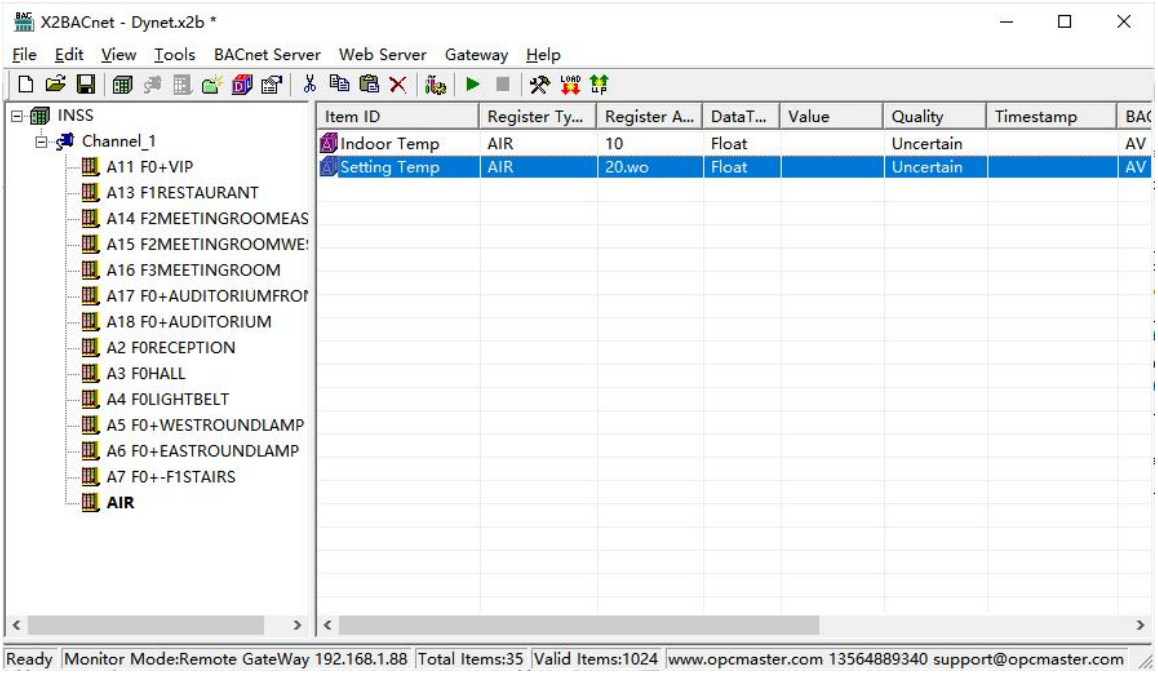


Figure 2-8-8: Adding Tags-AIR

The data types supported at the acquisition end are Long and Float, as shown in the Table 2-8-1

Add: 28SenangCrescent,#0511,Bizhub28,Singapore416601 Tel:+6580385403 URL:www.bacnetchina.com
milesgoiiot@gmail.com/sales@opcmaster.com

Data type	Description
Word	2Byte（0~65535）
Float	4Byte

Table 2-8-1 Data Type

See table 2-8-2 for the specific description of the register types supported by the acquisition end.

No	Register Type	Address Range	Description
1	Preset（Current scene state）	0-255	R&W which means reading the scene state of the current area. The scene state value is 1-8
2	Channel Level（Circuit light brightness）	>=Positive integer	R&W which means reading the brightness of a circuit. For example, the register address is 1, which means reading the brightness of the second circuit.
3	AIR(Temperature control panel)	12,13	Address 12 = indoor temperature (read only) Address 13. Wo = set temperature (write only)

Add: 28SenangCrescent,#0511,Bizhub28,Singapore416601 Tel:+6580385403 URL:www.bacnetchina.com
milesgoiiot@gmail.com/sales@opcmaster.com

2.9 Mitsubishi FX3U（RS232）

2.9.1 NEW DRIVER

Select the "New Driver" option in the menu bar of the upper computer configuration interface, as shown in the figure below 2-9-1。

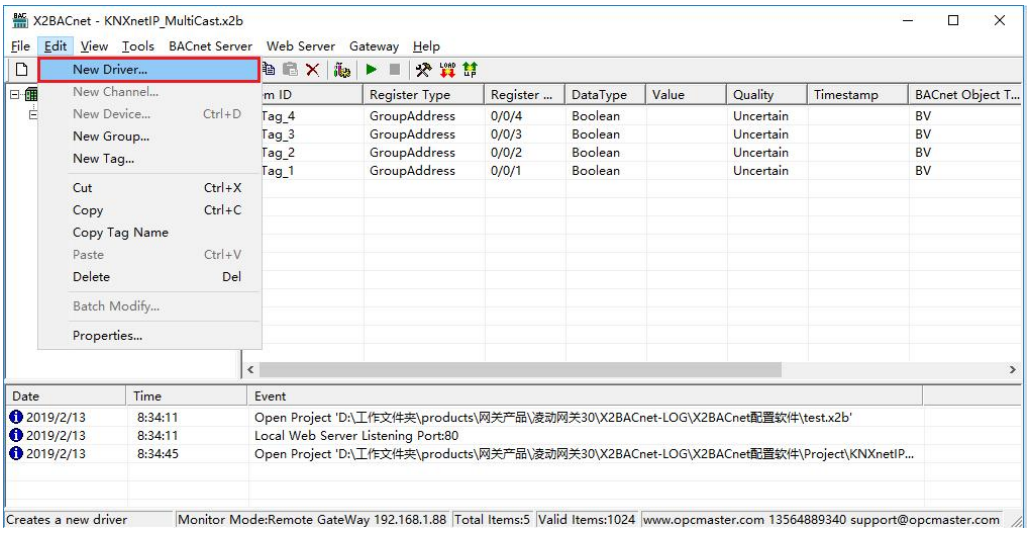


Figure 2-9-1 Select New Driver

Select "Mitsubishi_FX3U" driver in the popup window，as shown in the figure below 2-9-2。

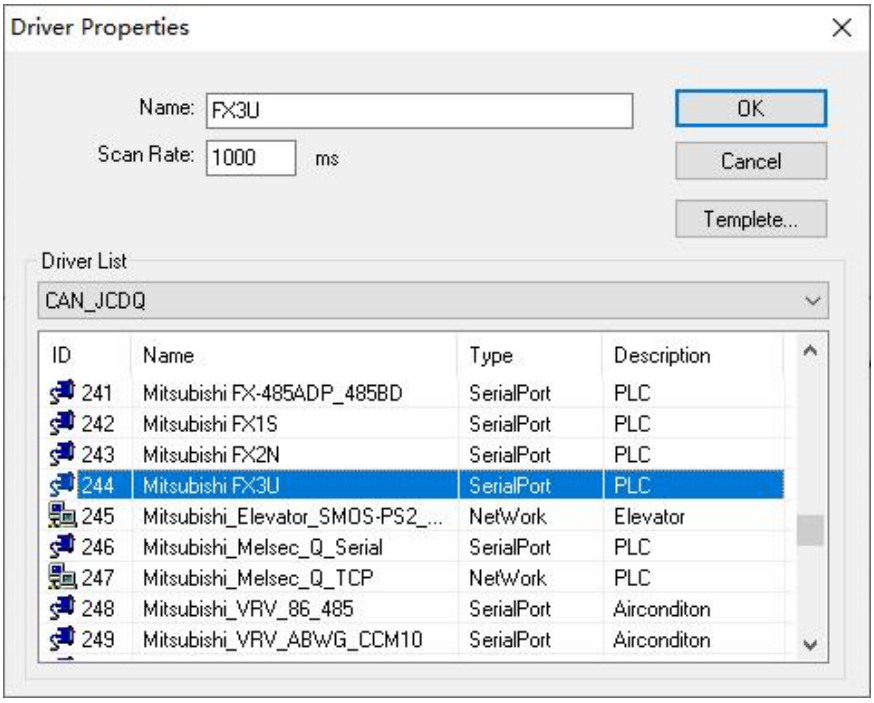


Figure 2-9-2 select driver

2.9.2 NEW CHANNEL

Add: 28SenangCrescent,#0511,Bizhub28,Singapore416601 Tel:+6580385403 URL:www.bacnetchina.com
milesgoiiot@gmail.com/sales@opcmaster.com

After adding the driver, select “new channel”, Mitsubishi FX3U is Mitsubishi FX3U PLC series, mainly in RS-232 communication mode communication, default channel serial port 0, default transmission baud rate optional 9600bps, data format for 7 data bits, 1 stop bit, parity. The default timeout period is 1500ms. If the device responds slowly during configuration, set the timeout period as long as possible, as shown in figure 2-39-3.

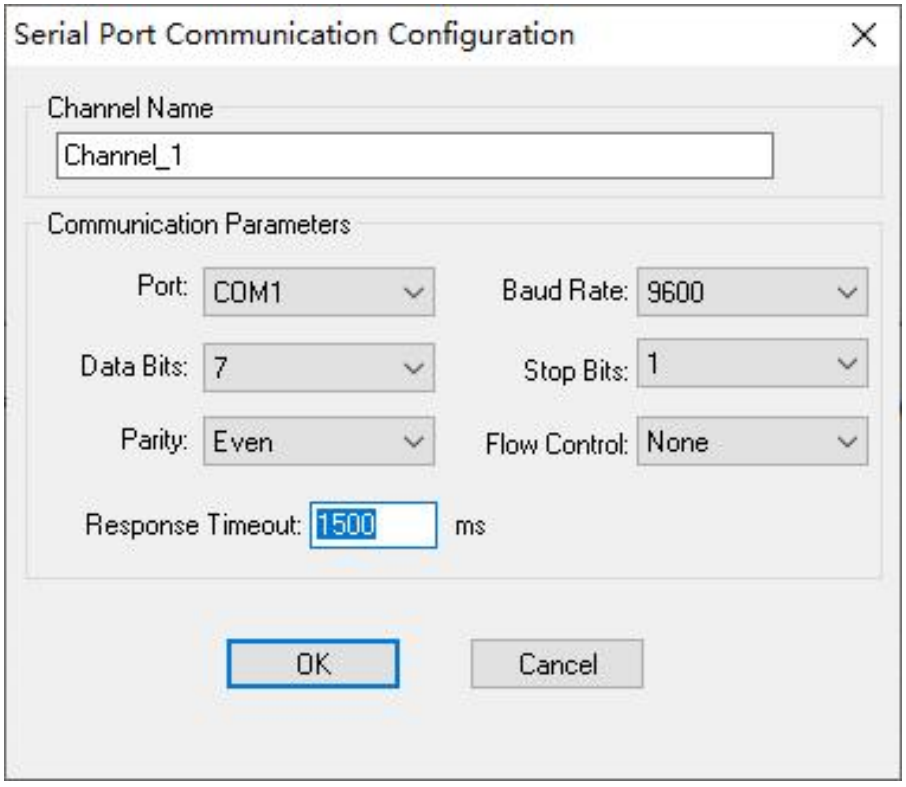


Figure 2-9-3 Communication Parameters Configuration

2.9.3 NEW DEVICE

After channel, select new device, set up the device in the pop up dialog related properties, Device ID by default is 1, the request frame interval defaults to 50 milliseconds (note the request frame interval refers to send the next frame and a frame get a response on the time interval between), if response is slow, the device can be set the request frame a bit longer. If the device does not support bulk transfer, set bulk transfer to 0, as shown in Figure 2-9-4.

Add: 28SenangCrescent,#0511,Bizhub28,Singapore416601 Tel:+6580385403 URL:www.bacnetchina.com
milesgoiiot@gmail.com/sales@opcmaster.com

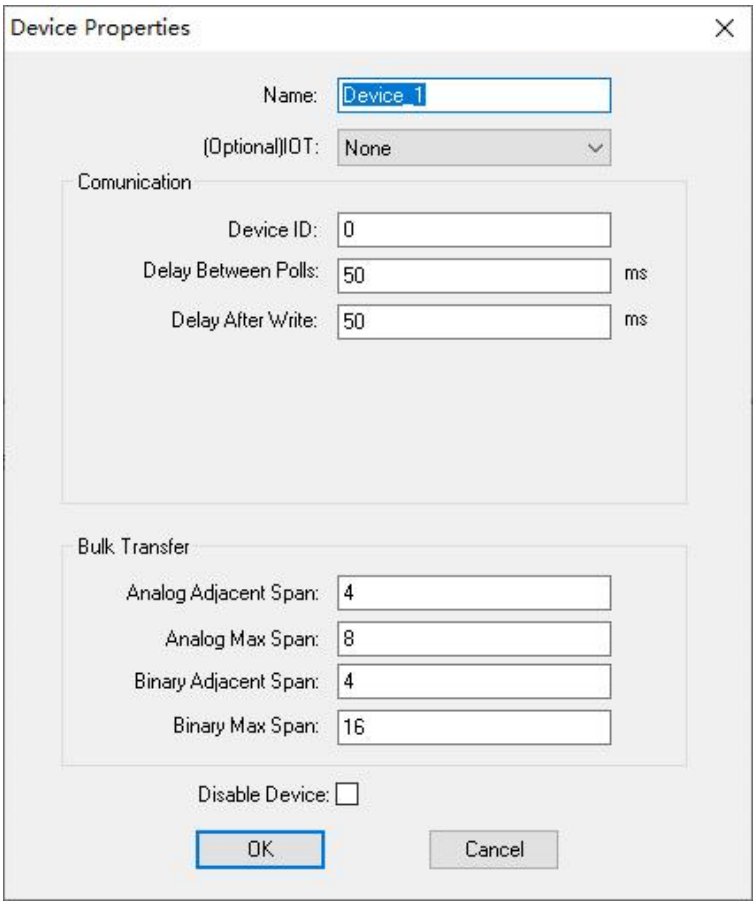


Figure 2-9-4 Device Setup

2.9.4 NEW TAG

After the device is set up, select the new tag(point). When the point is set up, the register type and data type of the acquisition end can be selected according to the type of Mitsubishi PLC component, and the register address is consistent with the Mitsubishi PLC address. If there is special demand, the analog can also support linear conversion, bit and other functions. As shown in Figure 2-9-5.

Note that when the register type is X or Y, the register address should be octal, that is, 0-7 for each significant digit; If the register type is any other types, the register address should be a decimal digit, that is, each significant digit is 0-9.

Add: 28SenangCrescent,#0511,Bizhub28,Singapore416601 Tel:+6580385403 URL:www.bacnetchina.com
milesgoiiot@gmail.com/sales@opcmaster.com

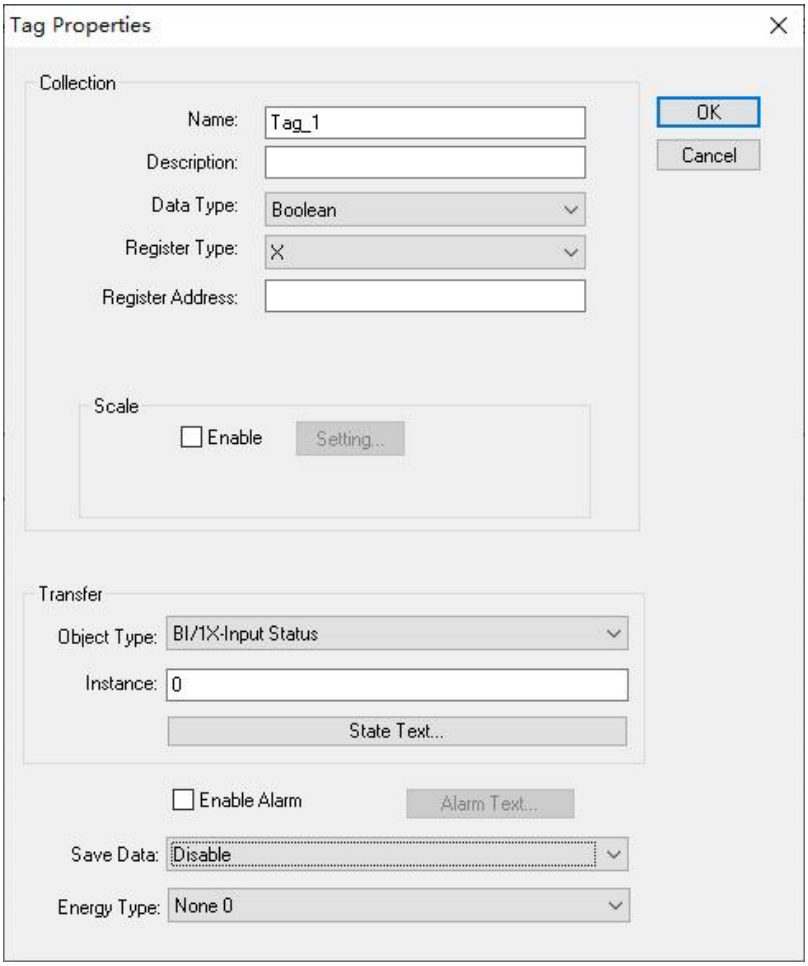


Figure 2-9-5 Setting Tag Parameters

Figure 2-9-5 shows the tag completed. Note that Mitsubishi Fx3U series PLCS have multiple register types, and the register addresses are configured differently when different register types are selected.

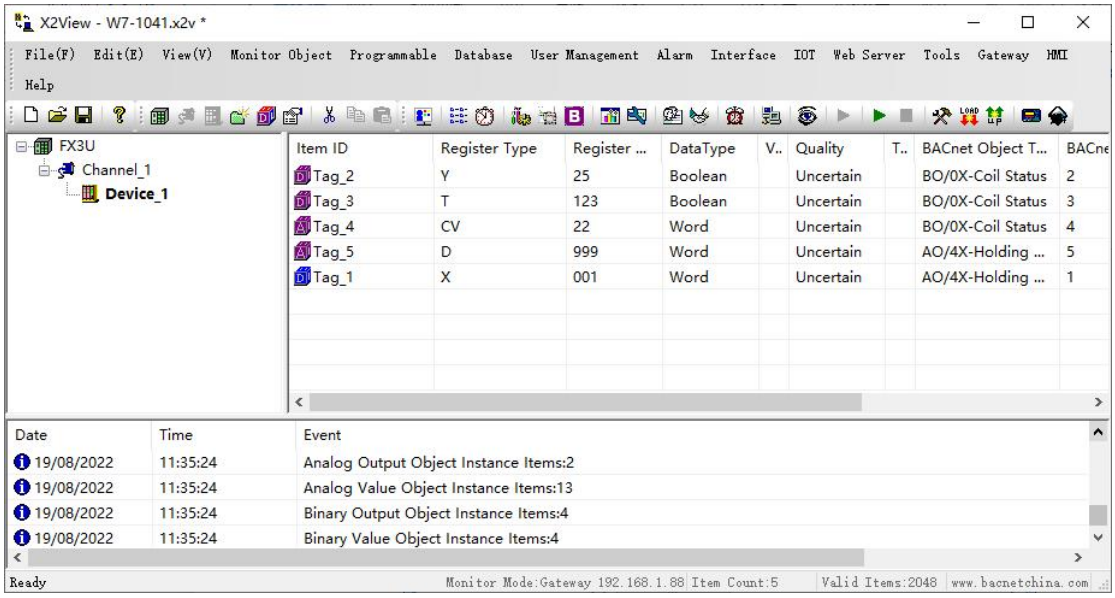


Figure 2-9-6 Tag Complete

Add: 28SenangCrescent,#0511,Bizhub28,Singapore416601 Tel:+6580385403 URL:www.bacnetchina.com
milesgoiiot@gmail.com/sales@opcmaster.com

The collection terminal supports the following data types: Boolean, Word, Short, Dword, Long, Float, and Double, as described in Table-1.

Data Type	Description
Boolean	0、1
Word	2Byte（0~65535）
Short	2Byte（-32768~32767）
Dword	4Byte（0~4294967295）
Long	4Byte（-2147483648~2147483647）
Float	4Byte
Double	8Byte

Table 2-9-1 Data type of the collection end

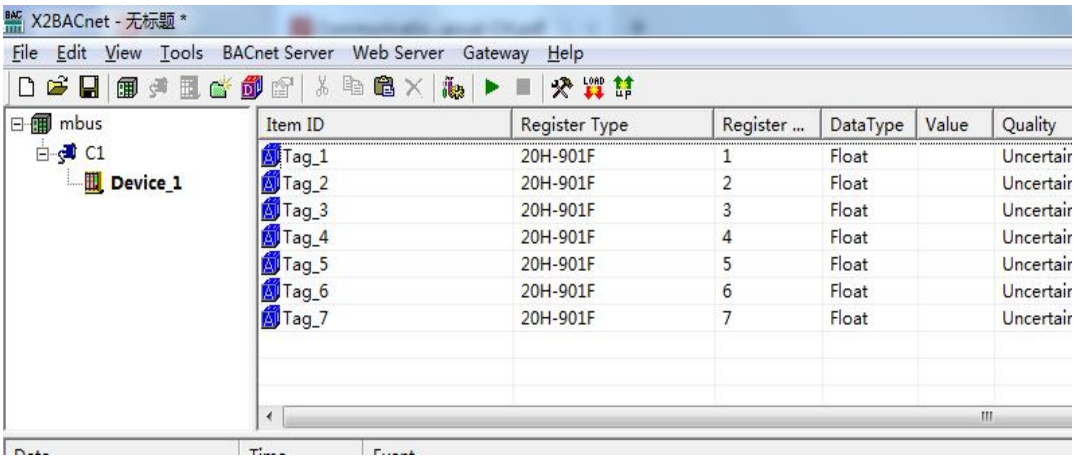


Figure 2-9-7: Adding Tags

The data types supported at the acquisition end are Long and Float, as shown in the Table 1

Data type	Description
Long	4Byte（-2147483648~2147483647）
Float	4Byte

Table 2-9-2 Data type of the collection end-2

There is only one register type supported by the acquisition terminal (note that the order of data meaning defined by each manufacturer may be different.

The following register address meanings are for reference only) as shown in Table 2-9-3.

Add: 28SenangCrescent,#0511,Bizhub28,Singapore416601 Tel:+6580385403 URL:www.bacnetchina.com
milesgoiiot@gmail.com/sales@opcmaster.com

Serial Number	Register Type	Address Range	Description
1	20~29H (instrument type) and 901F (data identification) are jointly determined	1~8 (data type with Float type)	Address 1 corresponds to cumulative traffic and address 2 corresponds to cumulative heat
			Address 3 corresponds to thermal power and address 4 corresponds to instantaneous traffic
			Address 5 corresponds to the supply temperature and address 6 corresponds to the temperature return
			Address 7 corresponds to the temperature difference and address 8 corresponds to the operating time

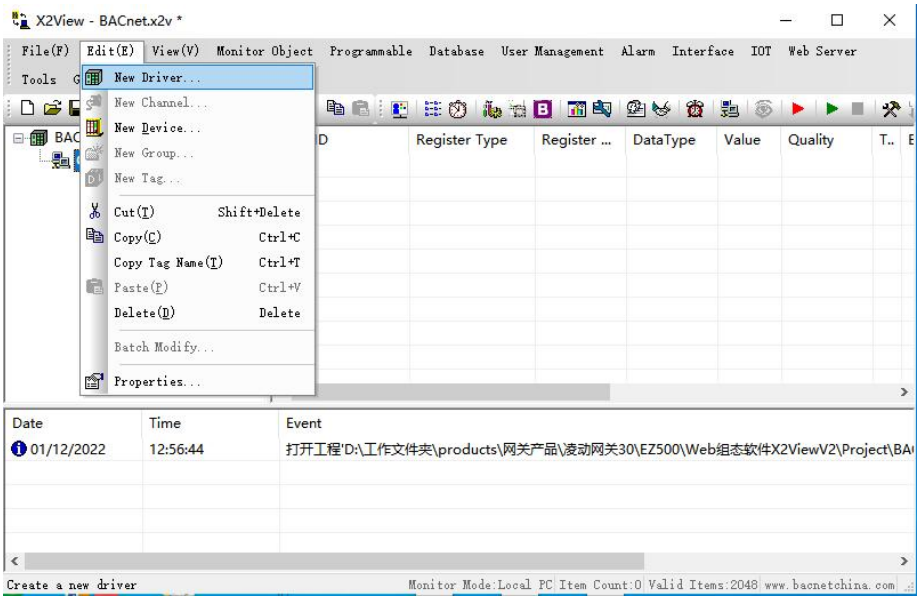
Table 2-9-3 Register

2.10 BACnetIP

BACnetIP driver takes X2View software to collect BACnetIP devices as an example.

2.10.1 NEW DRIVER

Click the menu ***Edit*** and select the ***New Driver…*** or click the button **New Driver** in the toolbar, as shown in the following figure 2-10-1.



Add: 28SenangCrescent,#0511,Bizhub28,Singapore416601 Tel:+6580385403 URL:www.bacnetchina.com
milesgoiiot@gmail.com/sales@opcmaster.com

Figure 2-10-1: Select new Driver

In the popup diag "**Driver Properties**", choose the ***BACnetIP*** from the **Driver List** and then type in a name , as the following Figure 2-10-2 show.

- **Driver List:** All the supported drivers are listed here.
- **Name:** It will be easier distinguished to type a name for the driver.
- **Scan Rate:** It takes effects when there are many devices added to the project. The default value is **1000ms**.

Driver BACnetIP used in X2OPC is different from the other hardware gateway. The differences are as follows：

Common Hardware Gateway: Select BACnetIP

X2OPC: Select BACnetIP1~BACnetIP8 to connect 8 network cards.

Note: BACnetIP cannot be selected here for X2OPC drive. Other settings are the same.

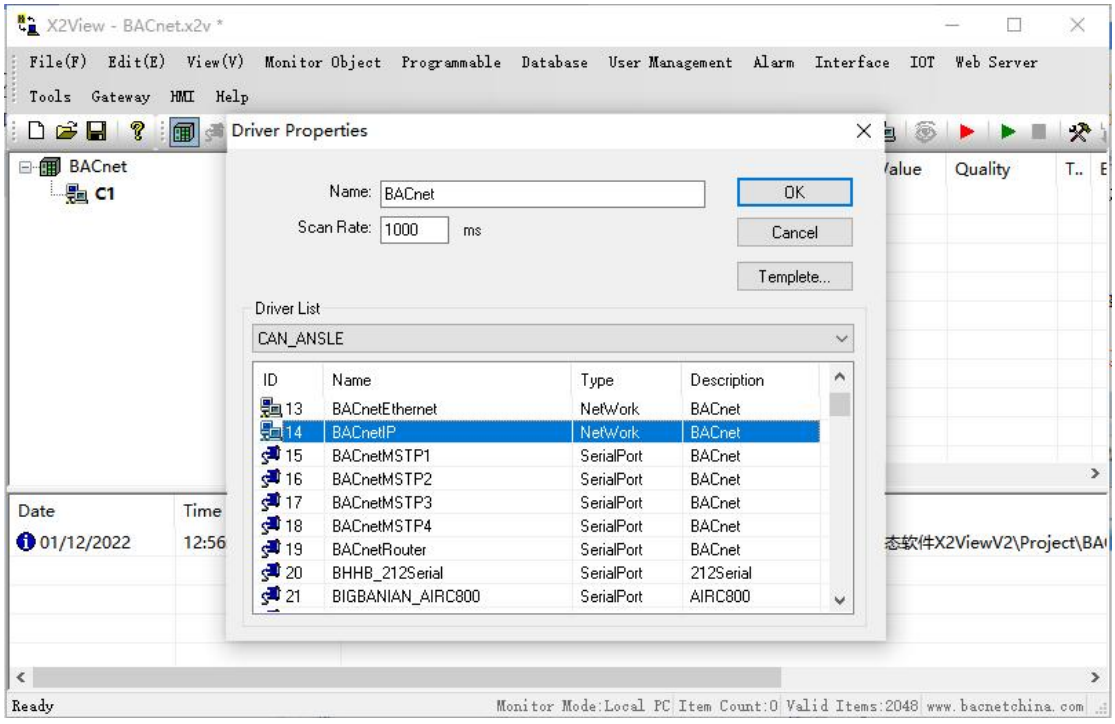


Figure2-10-2 Select BACnetIP Driver

2.10.2 NEW CHANNEL

After adding the drive, click the menu ***Edit*** and select the ***New Channel…*** or click the button **New Channel** in the toolbar.

BACnetIP driver is special. One network card is used as one channel, and the internal fixed port number of the BACnetIP driver is 47808 by default.

Add: 28SenangCrescent,#0511,Bizhub28,Singapore416601 Tel:+6580385403 URL:www.bacnetchina.com
milesgoiiot@gmail.com/sales@opcmaster.com

During configuration, **IP Address** includes the full broadcast address and the serial number of the network card. For example, 255.255.255.255. x, where x represents the serial number of the selected network card, starting from 0. The user can view the serial number of the network card by BACnetScan, as shown in Figure 2-10-3:

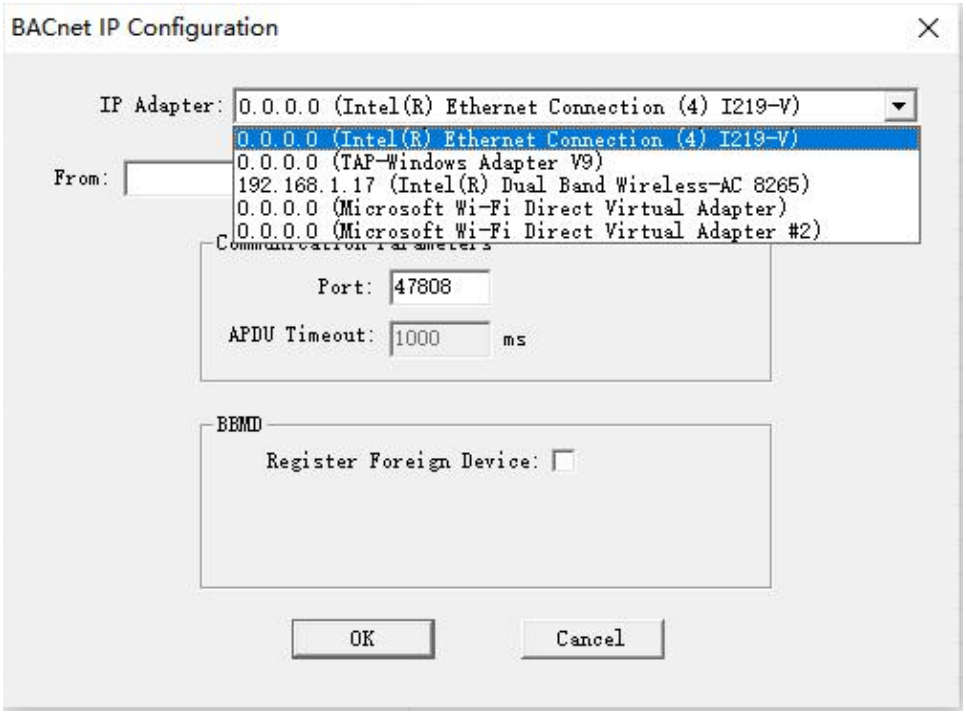


Figure 2-10-3 BACnetIP Configuration Setting

If the gateway is a single network port, directly fill in 255.255.255.0.

If it is a dual network port, fill in 255.255.255.0 for network port 2 collection, and 255.255.255.1 for network port 1 collection

The IP setting in Figure 2-10-4 shows that the first network card is selected to communicate with the BACnetIP device. Note that the timeout of 1000 refers to the waiting timeout of the request frame. Generally, it defaults or sets a large value. If the Modbus gateway is used to collect BACnetIP devices, the IP address is directly set to "255.255.255.255.0".

Add: 28SenangCrescent,#0511,Bizhub28,Singapore416601 Tel:+6580385403 URL:www.bacnetchina.com
milesgoiiot@gmail.com/sales@opcmaster.com

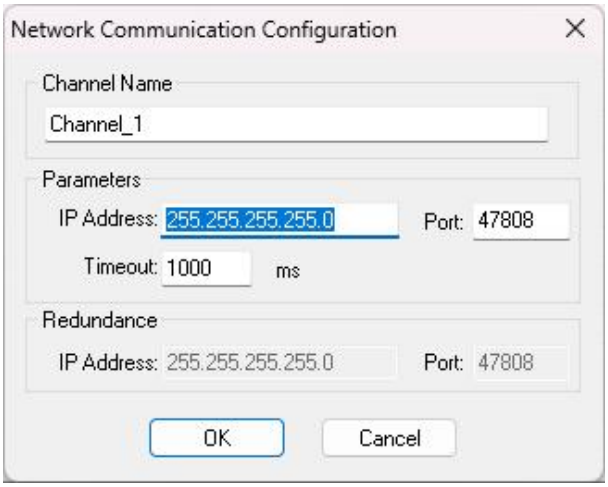


Figure 2-10-4 Network Communication Configuration

2.10.3 NEW DEVICE

After the channel is added, click the menu ***Edit*** and select the ***New Device…*** or click the button **New Device** in the toolbar.In the popup diag "**Device Properties**", set the device parameters and **Bulk Transfer** parameters.

Device ID: The default is 500. It refers to the instance number of BACnet device. Users can search which devices are online on the network by BACnetScan automatic scanning. The request frame interval is 50 milliseconds by default.

How to fill Device ID?

Method 1: Instance number

If the ID addresses of the collected BACent devices are unique in the same network segment, the instance number can be directly filled in here, such as the address found by BACnetScan;

Add: 28SenangCrescent,#0511,Bizhub28,Singapore416601 Tel:+6580385403 URL:www.bacnetchina.com
milesgoiiot@gmail.com/sales@opcmaster.com

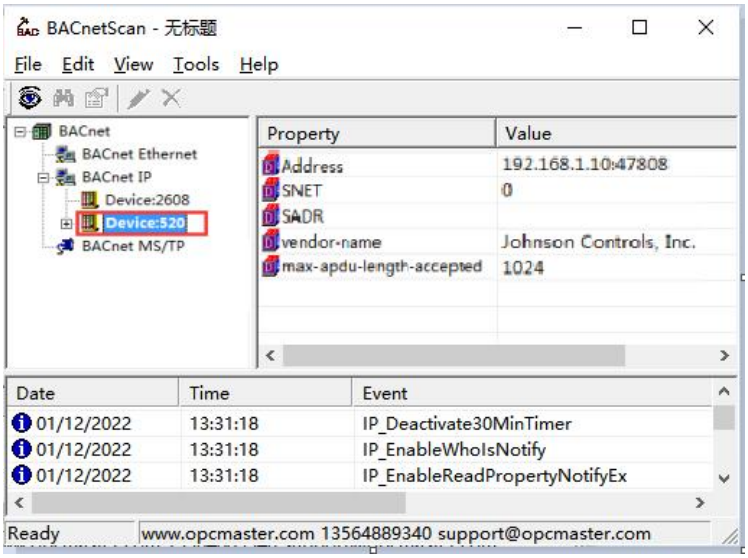


Figure 2-10-5 Instance ID

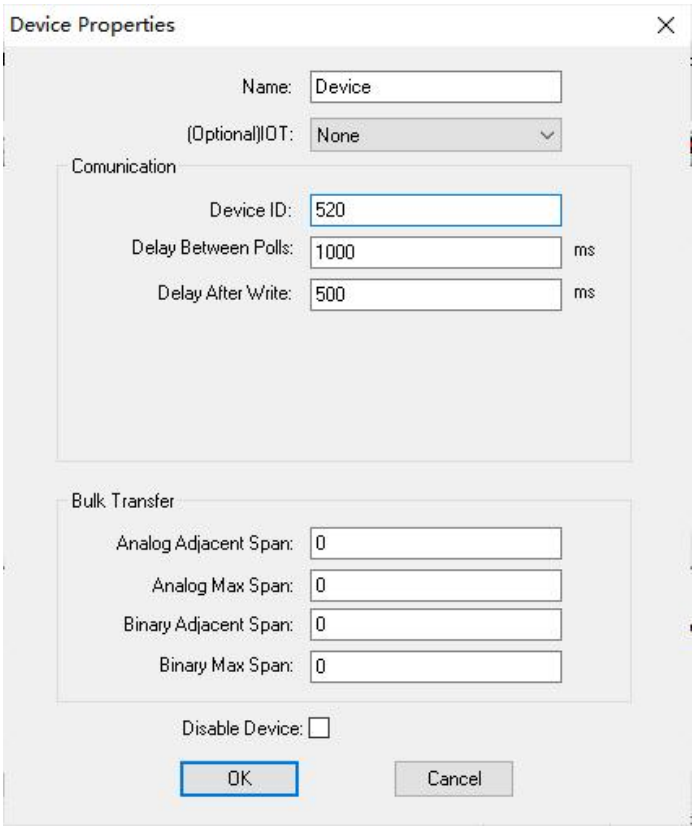


Figure 2-10-6 Device ID-Instance

Method 2: The address can also be filled in according to the device IP (if the device IP is filled in, the device ID is not required)

You can use BACnetScan to search and view them. The filling example is as follows:

Add: 28SenangCrescent,#0511,Bizhub28,Singapore416601 Tel:+6580385403 URL:www.bacnetchina.com
milesgoiiot@gmail.com/sales@opcmaster.com

No	Format	Description	General purpose
2-1	192.178.1.10	Device IP	BACnetIP device across the network segment (not Router), or BACnet device ID of the same network segment is duplicate, and the IP address is not duplicate
2-2	192.178.1.187.1.29	Device IP, Network No:1, MAC address: 29	BACnetIP devices routed through BACnet Router

2-1 IP Adress

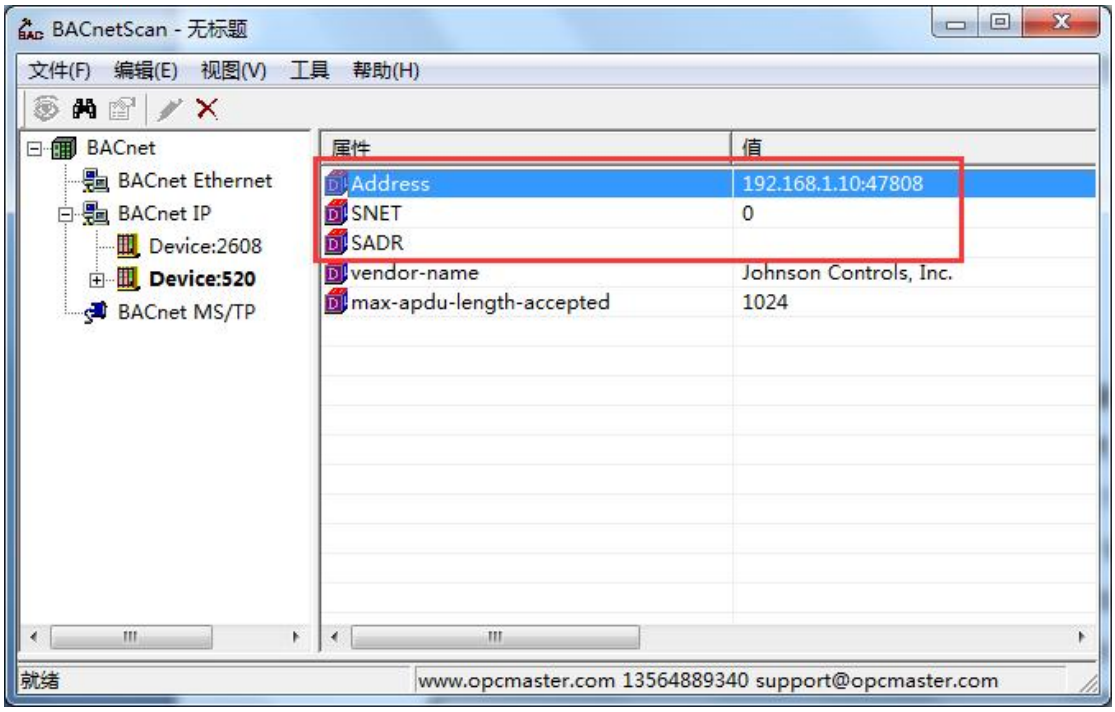


Figure 2-10-7 Device ID

2-2 IP.SNET.SADR (Device IP address, network number, MAC address)

Corresponds to the three attributes scanned by BACnetScan in the following example.

Add: 28SenangCrescent,#0511,Bizhub28,Singapore416601 Tel:+6580385403 URL:www.bacnetchina.com
milesgoiiot@gmail.com/sales@opcmaster.com

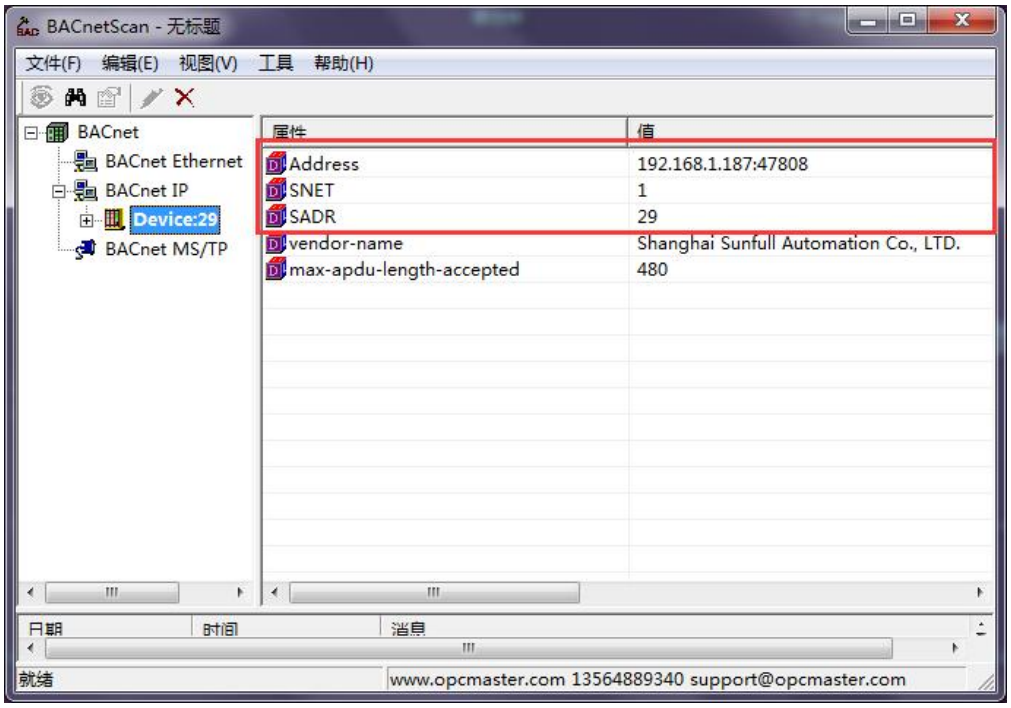


Figure 2-10-8 Through BACnet Router

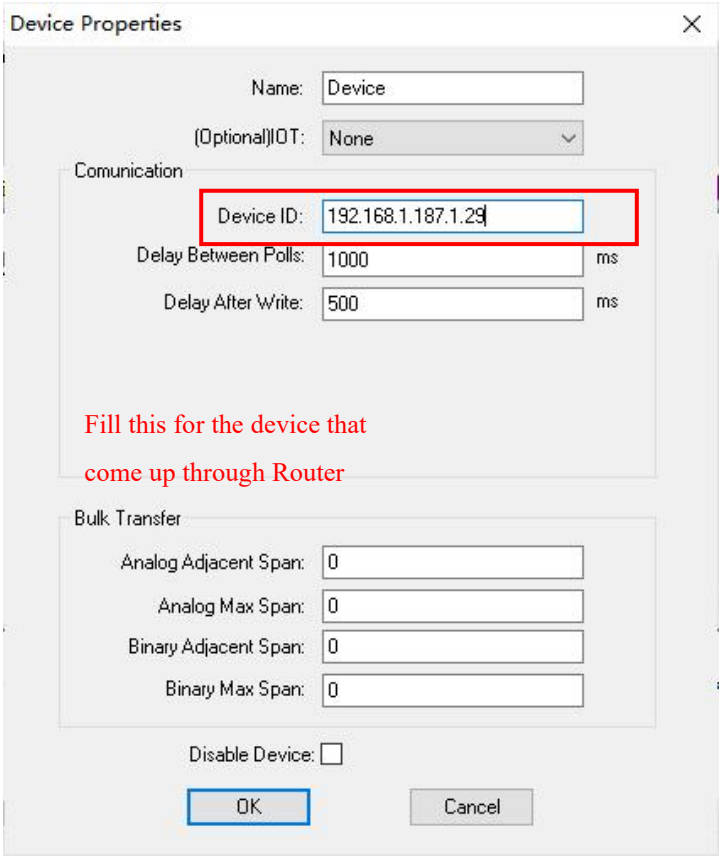


Figure 2-10-9 Device ID-Router

In **bulk transfer**, the four effective parameters are Analog Adjacent Span, Analog Max Span, Binary Adjacent Span, Binary Max Span.

Add: 28SenangCrescent,#0511,Bizhub28,Singapore416601 Tel:+6580385403 URL:www.bacnetchina.com
milesgoiiot@gmail.com/sales@opcmaster.com

Analog Adjacent Span includes the packet length of all objects, ranging from 0 to 90. This parameter has an effect on communication speed. If the BACnetIP device has 90 objects, and this parameter is 0, then an object needs to send a request frame, and the communication speed will be slower. If the parameter is 90, a request frame can read back the current values of 90 objects at once, theoretically equivalent to a 90 times increase in communication speed. If the device does not support reading multiple attributes simultaneously, you can set this parameter to 0.

Binary Adjacent Span and **Binary Max Span** are effective for writing value refresh time, and their specific functions are shown in Table 2-1-1.

Binary Adjacent Span	Binary Max Span	Action after writing values
0	0	First read a single point, then read all objects of the current device
	1	Read objects for the current entire device
	2	read a single point
	Others	No Action
Not 0	0	First read a single point, then read all objects under the device with DeviceID of "Digital Packet Interval"
	1	Read all objects under the device with DeviceID of "Binary Adjacent Span"
	2	read a single point
	Other	No Action

Table2-1-1 Bulk Transfer Description

2.10.4 NEW TAG

Click the menu ***Edit*** and select the ***New Tag…*** or click the button **New Tag** in the toolbar.

In the popup diag “**Tag Properties**”, set the **Collection** and **Transfer** parameters, as the following Figure 2-8 shows.

Add: 28SenangCrescent,#0511,Bizhub28,Singapore416601 Tel:+6580385403 URL:www.bacnetchina.com
milesgoiiot@gmail.com/sales@opcmaster.com

Tags can also be grouped and managed by creating a new group. Right click device and select ***New Group...*** to open new group window. Or click the menu ***Edit*** and select the ***New Group…*** or click the button **New Group** in the toolbar.

- **Date Type:** Boolean\Word\Short\Dword\Long\Float and Double ,as the following Figure 2-1-5 shows.

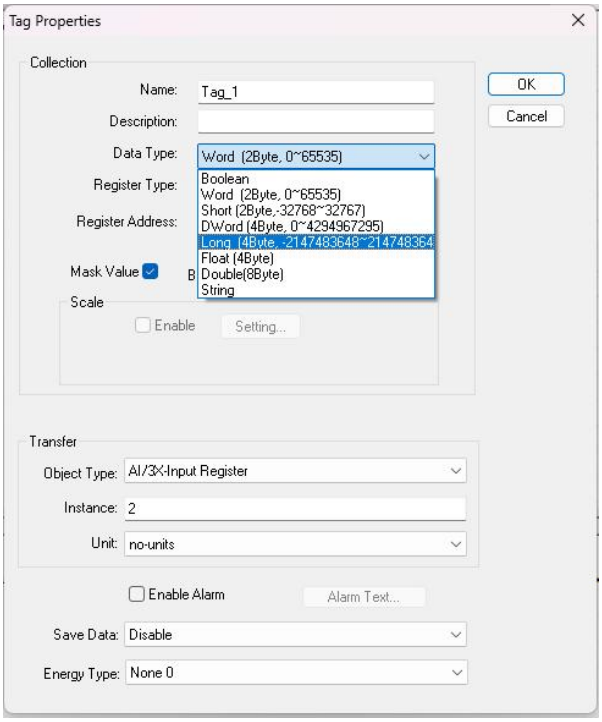


Figure 2-10-10 Data Type

- **Register Type:** AI(Analog Input),AO(Analog Output),AV(Analog Value),BI(Binary Input),BO(Binary Output),BV(Binary Value),MI(Multi-state Input),MO(Multi-state Output),MV(Multi-state Value),Accumulator,Command,Life Safety Poin,Load Control
- **Register Address:** Set it according Directions of the device.

Note:

The register address at the collection end is usually an integer address, representing the object address. Of course, register addresses can also be represented by decimals.

At this time, the integer part still represents the object address, while the decimal part represents the write operation level. BACnet write operation level is divided into 16 levels, including 1, 2, 3,... 16, etc.

If the register address is 2.8, it means that the collected object address value is 2, and the write value operation level is 8.

If the register address is an integer, the default write value operation level is level 16, as shown in Figure 2-1-7.

If used in the BACnet series gateway (BACnetIP to BACnetIP), there is no need to fill in the control level, and the operation level is completely controlled by the upper BACentIP end.

Add: 28SenangCrescent,#0511,Bizhub28,Singapore416601 Tel:+6580385403 URL:www.bacnetchina.com
milesgoiiot@gmail.com/sales@opcmaster.com

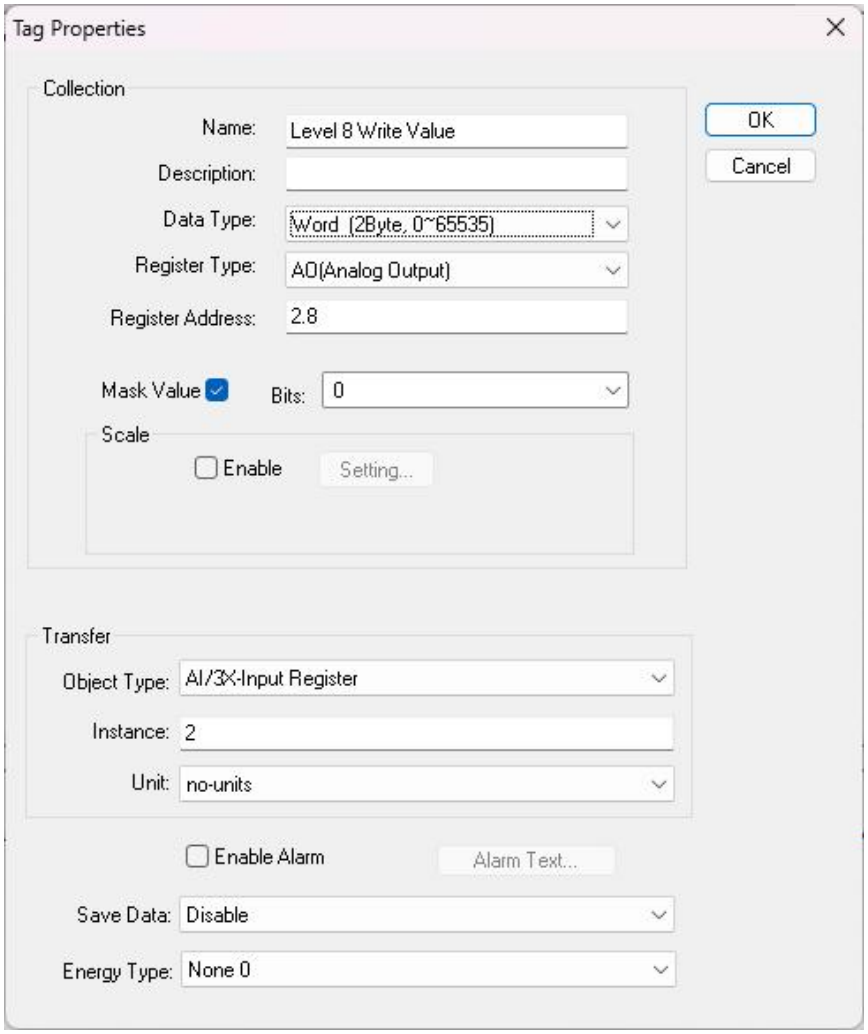


Figure 2-10-11 write operation level

To release level 8, you can create a new point with a register address of 2.8. Release, which is only written but not read. The specific settings are shown in Figure 2-10-12.

Add: 28SenangCrescent,#0511,Bizhub28,Singapore416601 Tel:+6580385403 URL:www.bacnetchina.com
milesgoiiot@gmail.com/sales@opcmaster.com

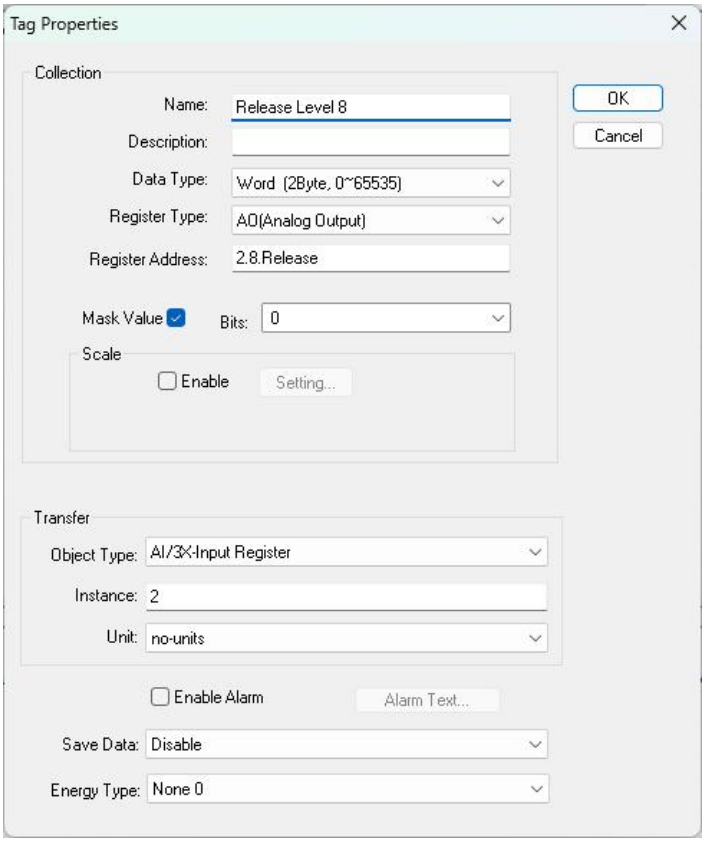


Figure 2-10-12 Release level 8

- **Mask Value:** Check single box “Mask Value” to pick up a bit from 0 to 15 of some register if necessary,as the following Figure 2-10-13 shows.

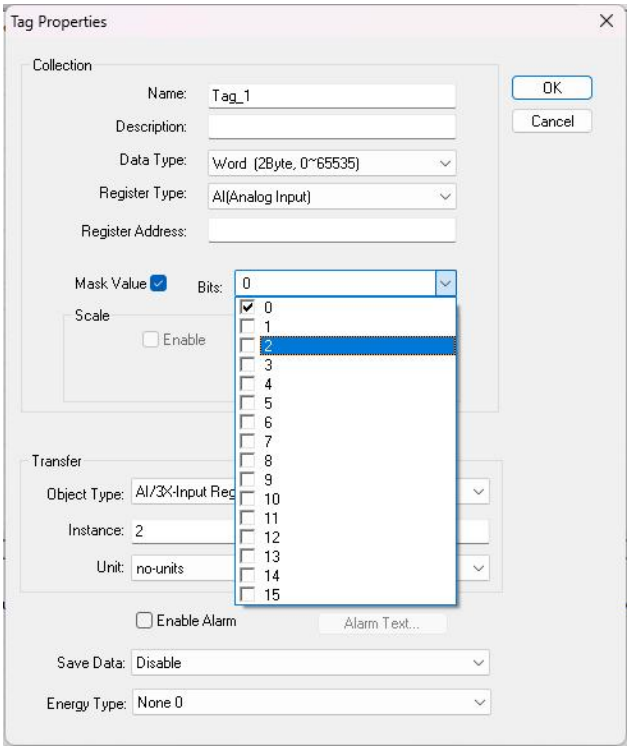


Figure 2-10-13 Tag-MaskValue

Add: 28SenangCrescent,#0511,Bizhub28,Singapore416601 Tel:+6580385403 URL:www.bacnetchina.com
milesgoiiot@gmail.com/sales@opcmaster.com

- **Scale:** Check single box “**Enable**” and click the button “**Setting…**” to enable liner transformation, as the following Figure 2-10-14 shows.

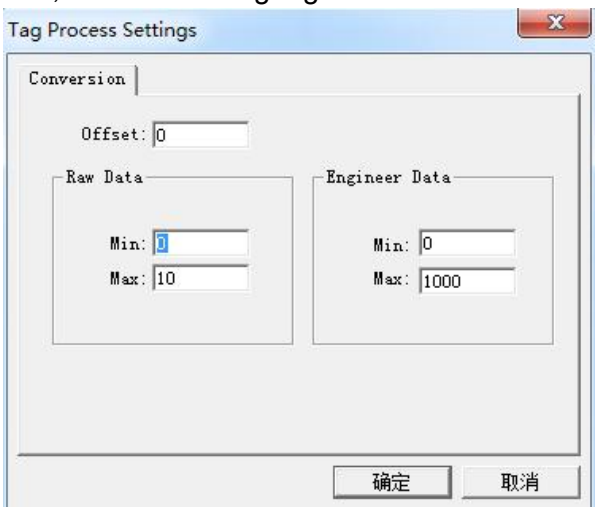


Figure 2-10-14 Tag Process Settings

In the above Tag attributes, the register address refers to the object address, and the BACnet slave register base address on the forwarding end is allocated from 0. After all the tags are established, it is shown in Figure 2-11-8.

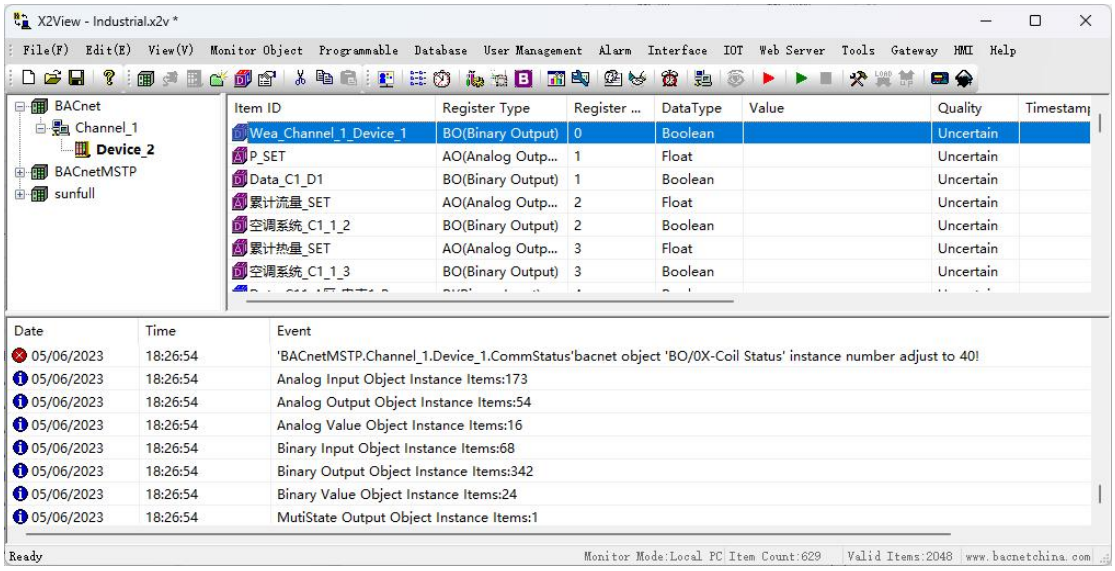


Figure 2-10-8 Add Tag Complete

Quick New Tags Method 1- Automatic Scan Tags

All tags under the device can be scanned through ***Scan Tags***, as shown in Figure 2-10-15.

Add: 28SenangCrescent,#0511,Bizhub28,Singapore416601 Tel:+6580385403 URL:www.bacnetchina.com
milesgoiiot@gmail.com/sales@opcmaster.com

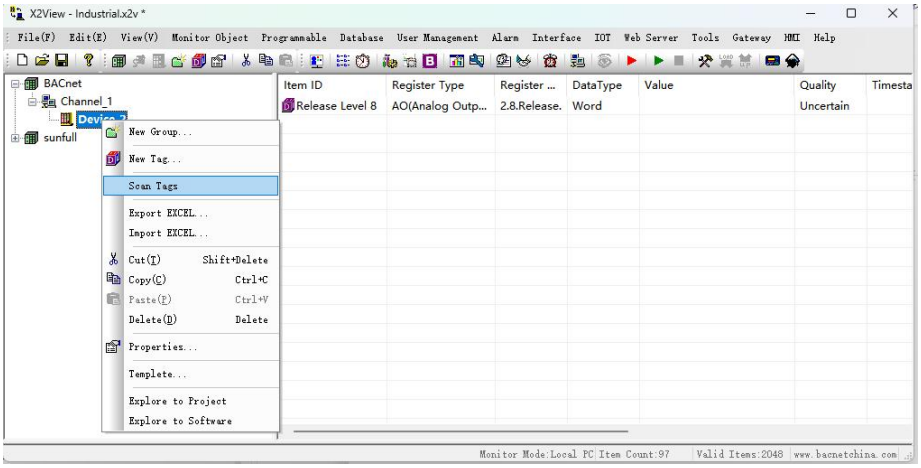


Figure 2-10-15 Scan Tags

Quick New Tags Method 2- Import XLS File

Use BACnetScan tool which is independently developed by Sunfull to scan all tags by BACnetIP function, and export them to an Excel file for editing and saving.

And then back to X2View software, we use the import and export function to import the saved excel file into the project. For example, in BACnetScan, the scanning results are shown in Figure 2-1-16.

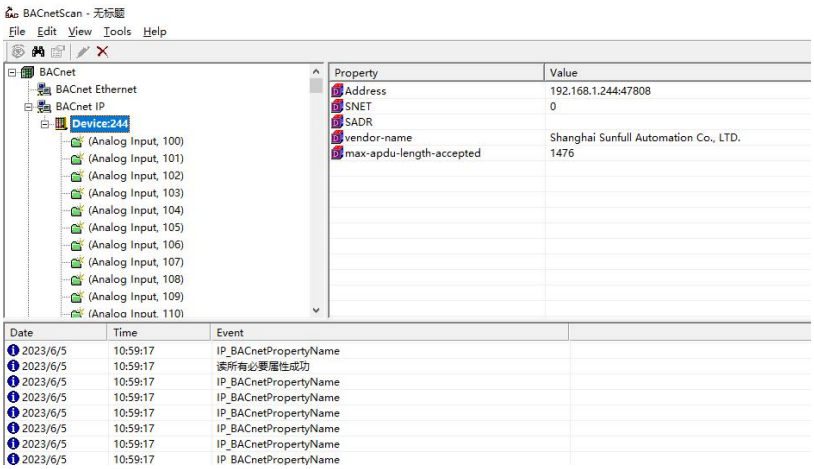


Figure 2-1-16 Scanning Result

Total 60 points scanned in the above figure (10 for each of the 6 register types), and the scanning results will be saved in the Excel table, as shown in Figure 2-1-17.

Add: 28SenangCrescent,#0511,Bizhub28,Singapore416601 Tel:+6580385403 URL:www.bacnetchina.com
milesgoiiot@gmail.com/sales@opcmaster.com

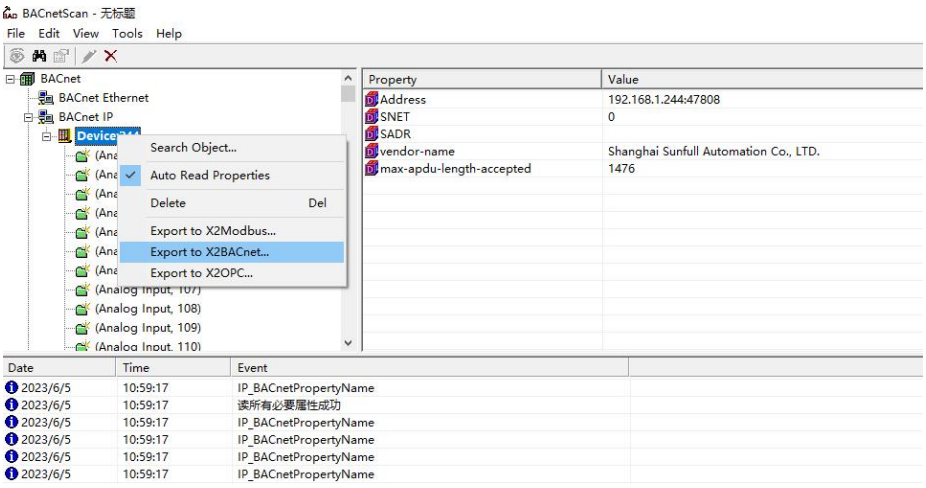


Figure 2-1-17 Export EXCEl

Then import the edited Excelfile into X2View, as shown in Figure 2-10.

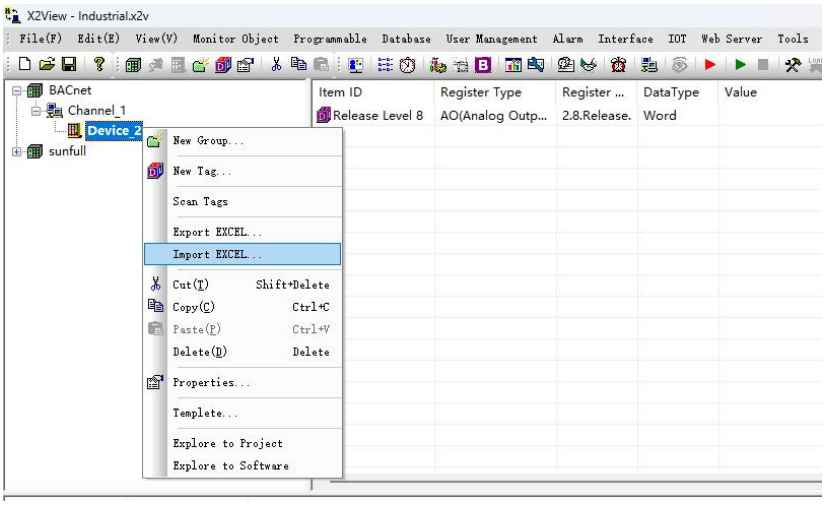


Figure 2-1-18 Import EXCEL

Noted that the default is to import CSV, and users need to select the XLS file type to find the imported XLS file. Select as shown in Figure 2-11, and all tags are successfully imported.

Add: 28SenangCrescent,#0511,Bizhub28,Singapore416601 Tel:+6580385403 URL:www.bacnetchina.com
milesgoiiot@gmail.com/sales@opcmaster.com

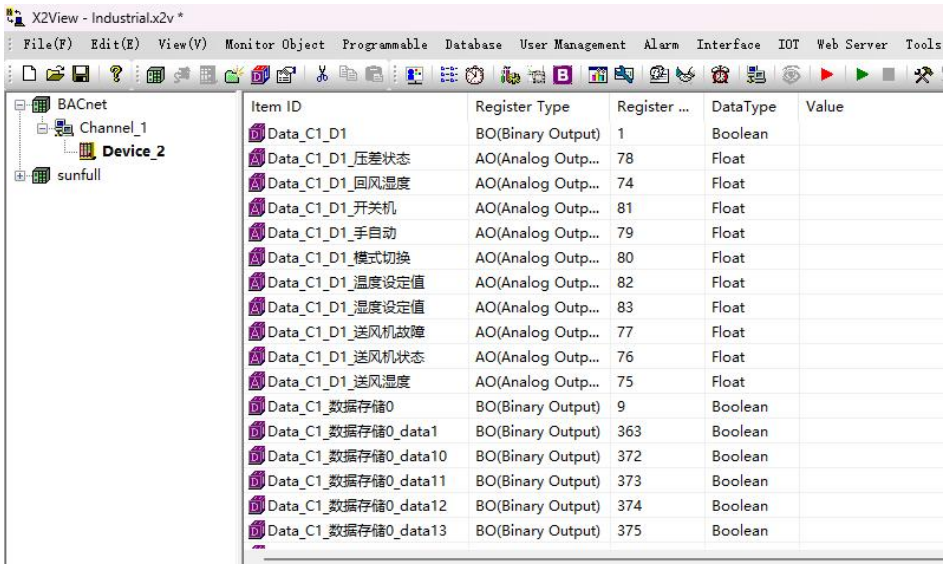


Figure 2-1-19 Import Successfully

Note: In the Tag attribute above, the register address refers to the Instance number of the object.

The data types supported by the collection end include Boolean, Dword, and Float. Among them, Float type is suitable for AI, AO, and AV registers, Boolean type is suitable for BI, BO, and BV registers, and Dword type is suitable for MI, MO, and MV registers, as shown in Table 2-1-2.

Data Type	Description
Boolean	0、1, Suitable for BI, BO, BV types
Dword	4Byte(0~4294967295), Suitable for MI，MO，MV types
Float	4Byte，Suitable for AI，AO，AV types

Table 2-1-2 Data type of Collection

The register types supported from the collection end include AI, AO, AV, BI, BO, BV, MI, MO, and MV, as shown in Tables 2-1-3.

No	Register Type	Address Range	Description
1	AI(Analog Input)	0~4194303	Analog Input, Read-Only (continuously changing object type)

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milesgoiiot@gmail.com/sales@opcmaster.com

2	AO(Analog Output)	0~4194303	Analog Output, Read & Write(continuously changing object types)
3	AV(Analog Value)	0~4194303	Analog Value, Read & Write(continuously changing object types)
4	BI(Binary Input)	0~4194303	Binary Input, Read-Only(Object types with only 0 and 1)
5	BO(Binary Output)	0~4194303	Binary Output, Read & Write(Object types with only 0 and 1)
6	BV(Binary Value)	0~4194303	Binary Value, Read & Write(Object types with only 0 and 1)
7	MI(Multi-state Input)	0~4194303	Multi-State Input, Read-Only (continuously changing object type)
8	MO(Multi-state Output)	0~4194303	Multi-State Output, Read & Write(continuously changing object types)
9	MV(Multi-state Value)	0~4194303	Multi-State Value, Read & Write(continuously changing object types)

Table2-1-3 Collection Register type

2.11 BACnetIPClient

2.11.1 NEW DRIVER

Compared to 2.10 **BACnetIP** driver, **BACnetIPClient** driver is no longer associated with the network card.

It supports **multiple channels**, resulting in improved communication speed. The station number can be left empty or set as a combination of the **network number and MAC address**.

To create a new driver, click **"Edit"** in the menu bar and select **"New Driver"**, as shown in the image below, as shown in Figure 2-11-1.

Add: 28SenangCrescent,#0511,Bizhub28,Singapore416601 Tel:+6580385403 URL:www.bacnetchina.com
milesgoiiot@gmail.com/sales@opcmaster.com

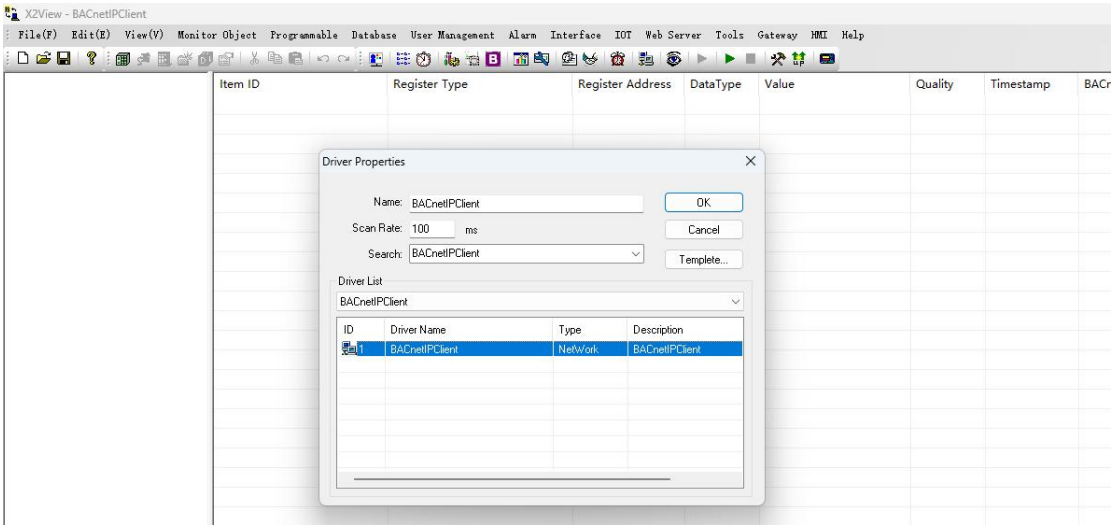


Figure 2-11-1 Selecting BACnetIPClient Driver

2.11.2.NEW CHANNEL

Take collecting BACnetIP device "192.178.1.86" as an example (fill in the actual IP address and port of the device).

First, The device is searched via BACnetScan as shown in Figure 2-11-2.(BACnetScan is a self-developed scanning tool by MILESGO, featuring simple operation, fast scanning speed, and convenience for on-site debugging. For more information, please refer to: http://www.bacnetchina.com/news_info.asp?ml_id=239)

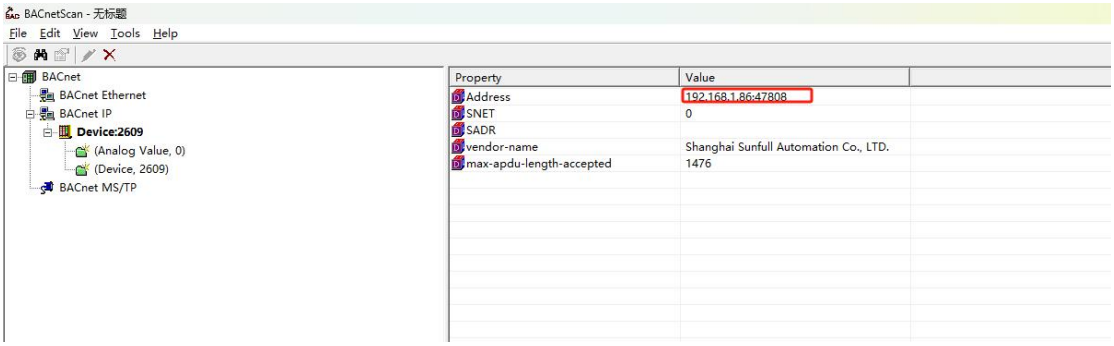


Figure 2-11-2 The BACnetIP discovered by BACnetScan

Then, create a channel in X2View and fill in the IP Address according to the IP displayed by BACnetScan,as shown in Figure 2-11-3.

Add: 28SenangCrescent,#0511,Bizhub28,Singapore416601 Tel:+6580385403 URL:www.bacnetchina.com
milesgoiiot@gmail.com/sales@opcmaster.com

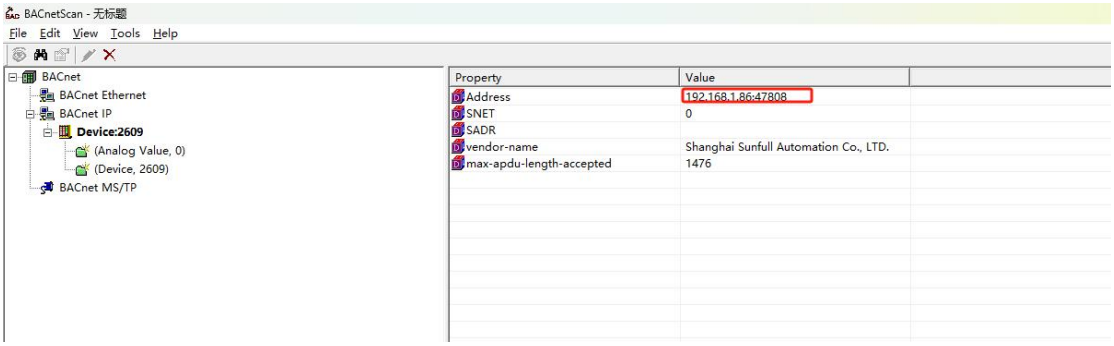


Figure 2-11-3 Channel Parameter Configuration

2.11.3.NEW DEVICE

Method 1: Collecting BACnet IP Devices.

Taking the collection of BACnet IP device "192.178.1.86" as an example.

The BACnet device, as discovered through BACnetScan, is shown in Figure 2-11-4, with SNET (Network Number) being: 0, and SADR (MAC Address) left blank.

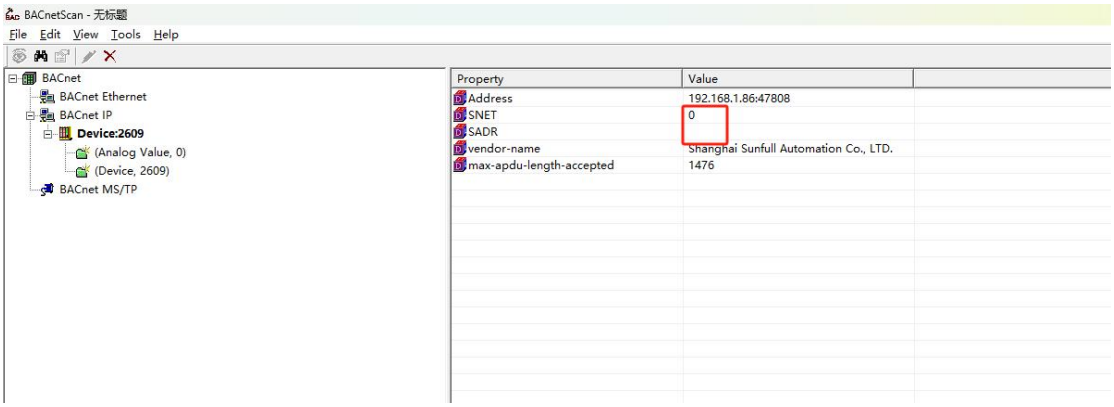


Figure 2-11-4 The BACnetIP devices Searched by BACnetScan.

Create a new device and leave the Device ID blank, as shown in Figure 2-11-5.

Add: 28SenangCrescent,#0511,Bizhub28,Singapore416601 Tel:+6580385403 URL:www.bacnetchina.com
milesgoiiot@gmail.com/sales@opcmaster.com

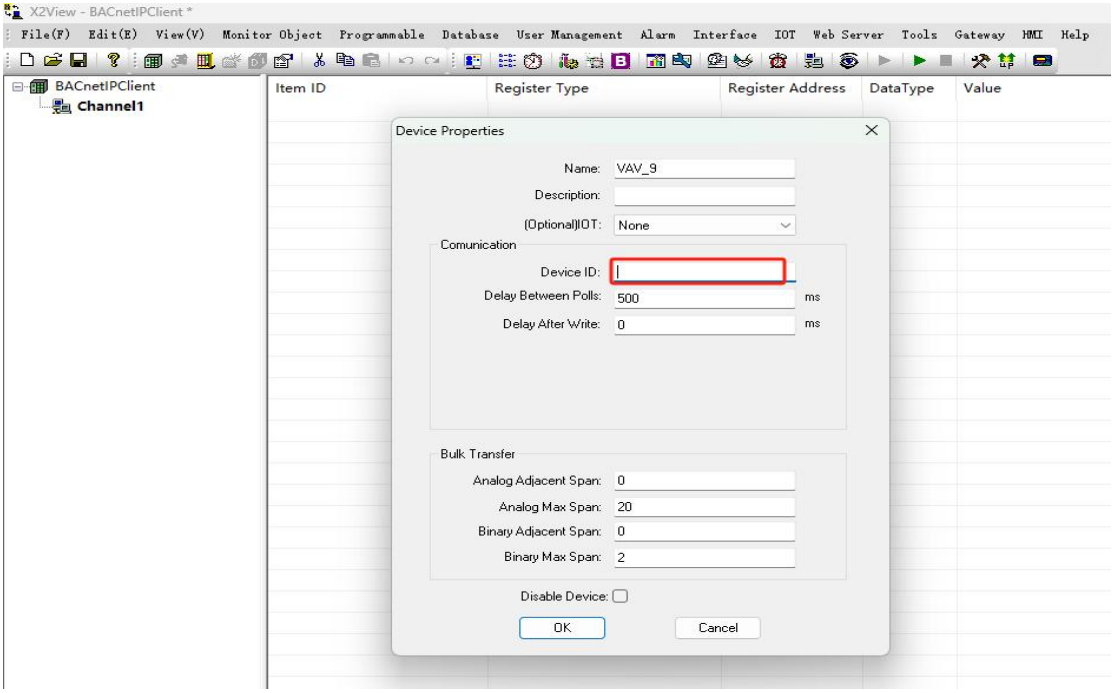


Figure 2-11-5 Set BACnetIP Device Properties

Method 2: Collecting BACnet Router

The attributes of a BACnet routing device include the network number (SNET) and MAC address(SADR). The DeviceID should be filled in the format "SNET.SADR". To collect data from the BACnet router "192.178.1.86" as an example.

BACnetScan searches for BACnet routing devices, and it can be seen that both SNET and SADR (MAC Address) are not empty, as shown in Figure 2-11-6.

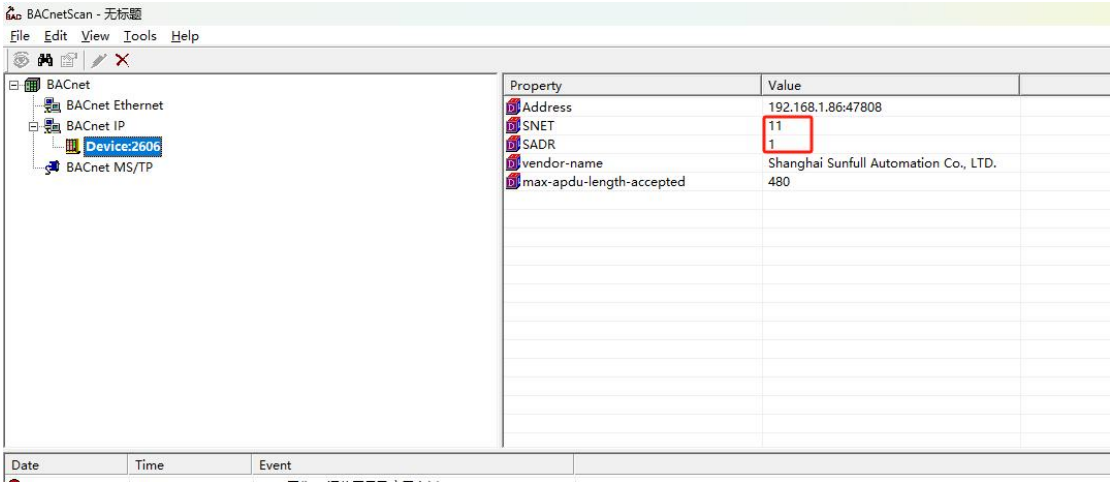


Figure 2-11-6 BACnet routing devices Searched by BACnetScan

Then, create a routing device in X2View, the Device ID in the device properties should be filled in the format: SNET.SADR (Network Number.MAC Address), as shown in Figure 2-11-7.

Add: 28SenangCrescent,#0511,Bizhub28,Singapore416601 Tel:+6580385403 URL:www.bacnetchina.com
milesgoiiot@gmail.com/sales@opcmaster.com

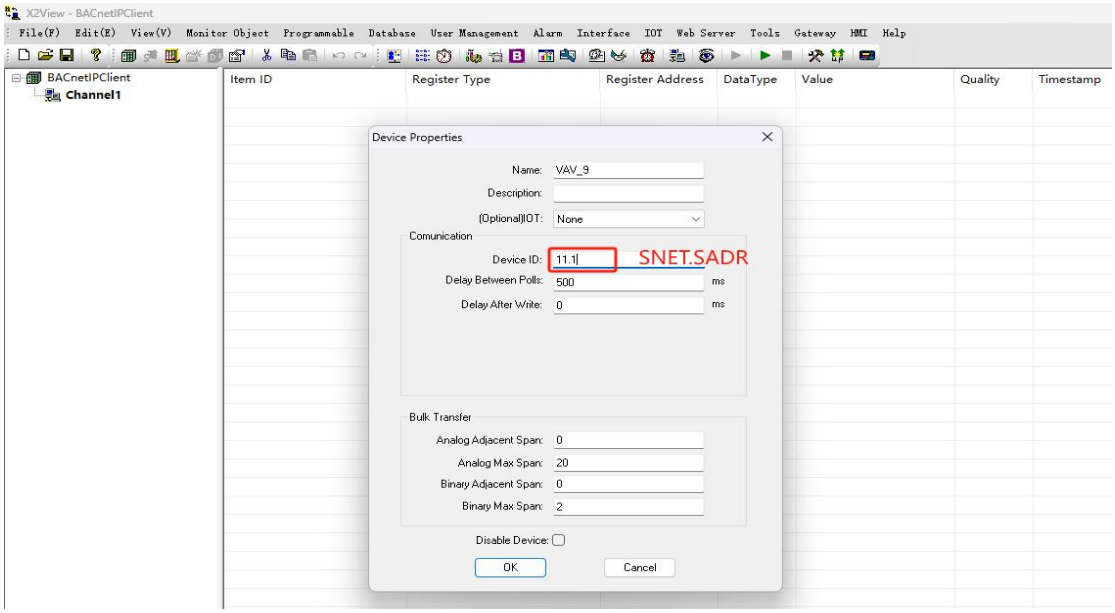


Figure 2-11-7 Device Property Configuration

Bulk Transfer includes four attributes, If the device does not support reading multiple attributes simultaneously, input 0.

Anlog Adjacent Span: default 0

Analog Max Span: the number of analog objects that can be read in a single frame, with a value range of 0-90, default is 20.

Binary Adjacent Span: default 0

Binary Max Span: the number of binary objects that can be read in a single frame, default 2

2.11.4.NEW TAG

Quickly export to Excel through BACnetScan scanning, and then import the exported Excel into the project. As shown in Figures 2-11-8 and 2-11-9.

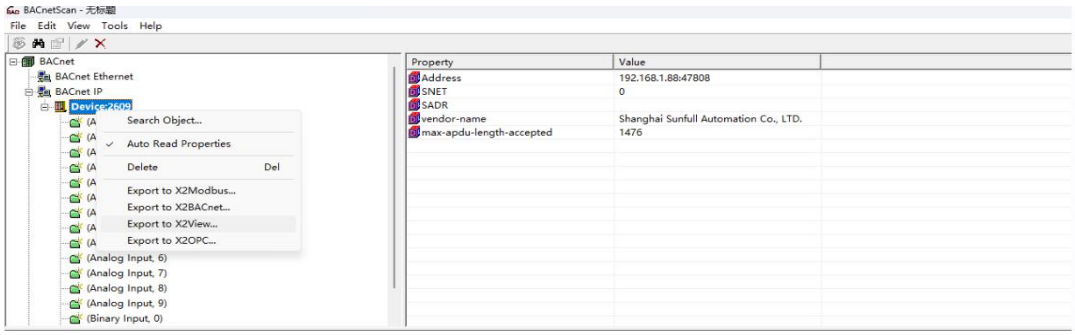


Figure 2-11-8 BACnetScan search device.

Add: 28SenangCrescent,#0511,Bizhub28,Singapore416601 Tel:+6580385403 URL:www.bacnetchina.com
milesgoiiot@gmail.com/sales@opcmaster.com

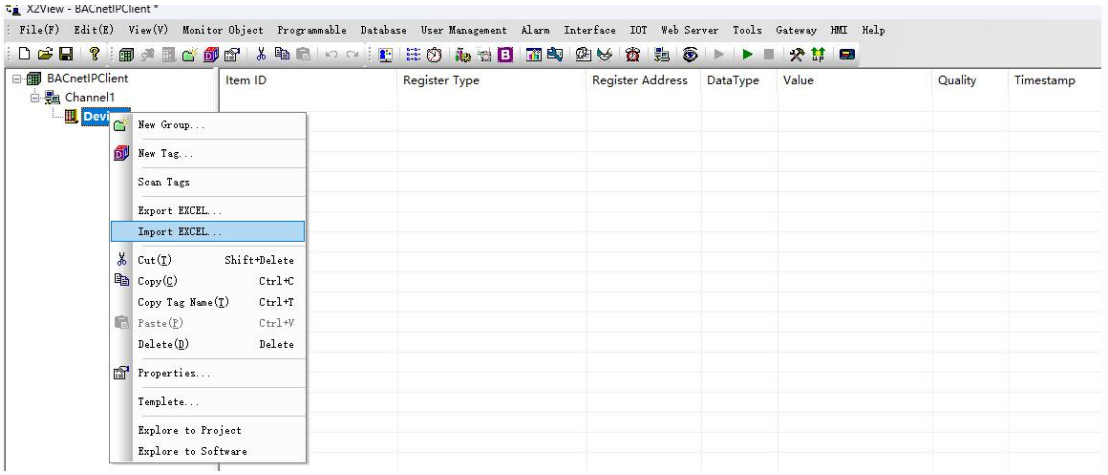


Figure 2-11-9 Import the tag list.

BACnetIP Write Priority Level: The write priority level ranges from **1** to **16**, with the default being level 16. For other levels, the register address should be formatted as the below:

[register Address].[level]

For example, if the register address of the collection object is 2 and the write priority level is 8, the register address should be filled in as **2.8**, as shown in Figure 2-11-10. (If BACnetIP is forwarding to BACnetIP, there is no need to specify the level).

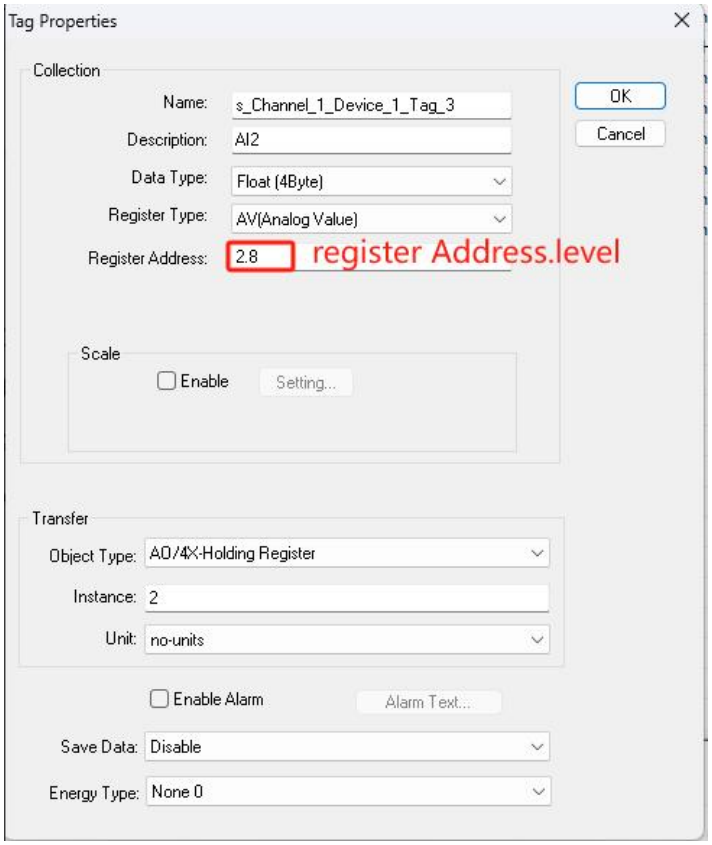


Figure 2-11-10 Fill in the register address with the level

Add: 28SenangCrescent,#0511,Bizhub28,Singapore416601 Tel:+6580385403 URL:www.bacnetchina.com
milesgoiiot@gmail.com/sales@opcmaster.com

BACnetIP Write Priority Level Release: To release a write priority level, create a write-only point and use the below format

[register address].[release level].Release

For example, to release the write value of level 8 for object 2, fill in the register as **2.8.Release**, as shown in Figure 2-11-11.

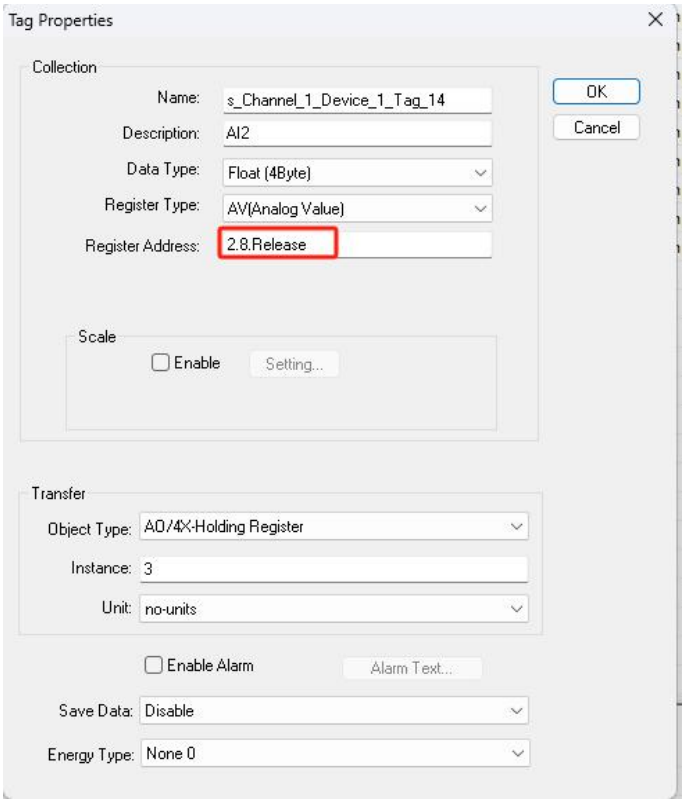
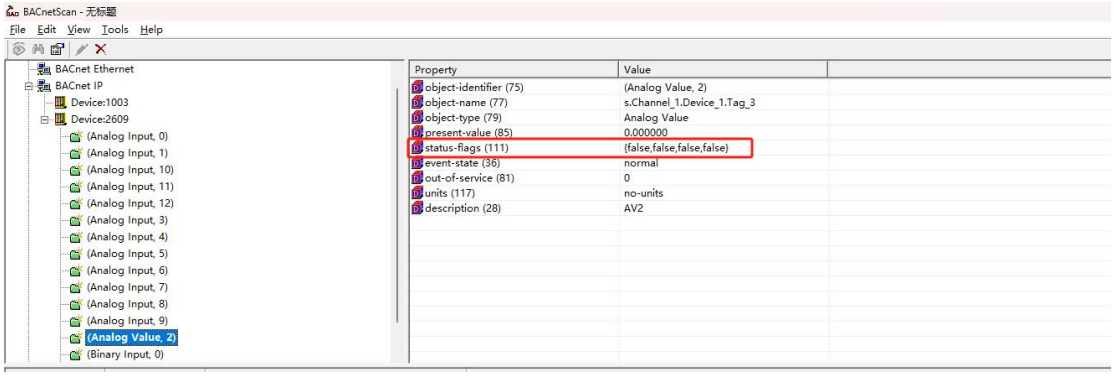


Figure 2-11-11 Release BACnet Write Priority Level

To read other attributes of a BACnet object, the register address should be formatted as the below:

[register address]@[object attribute ID]

For example, to read the value of the attribute "status-flags" (ID 111) of the AV object 2 scanned by BACnetScan, create a tag and fill in the register address as **2@111**, as shown in the figure 2-11-12 and 2-11-13.



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milesgoiiot@gmail.com/sales@opcmaster.com

Figure 2-11-12 BACnet Display Object Properties

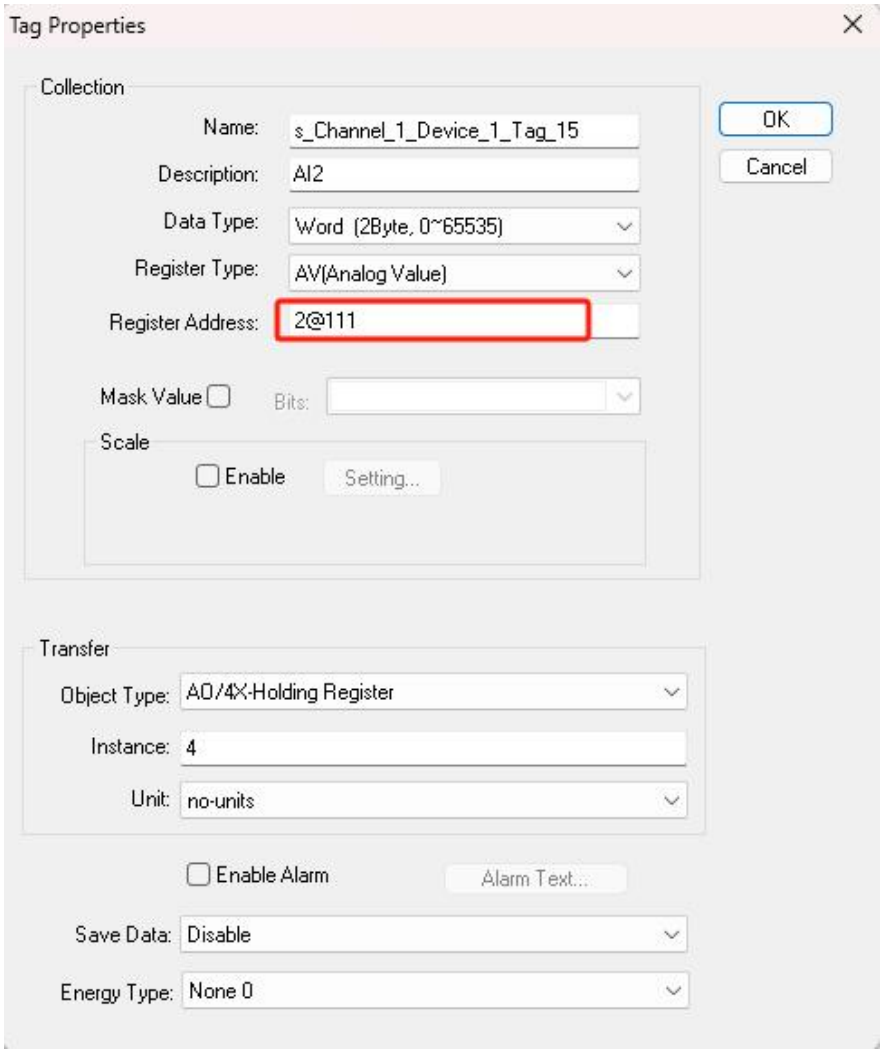

Figure 2-11-13 Read Other Attribute Values of BACnet Objects

2.12 BACnetMSTP

2.12.1 NEW DRIVER

Click the menu ***Edit*** and select the ***New Driver…*** or click the button **New Driver** in the toolbar, as shown in the following figure 2-12-1.

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milesgoiiot@gmail.com/sales@opcmaster.com

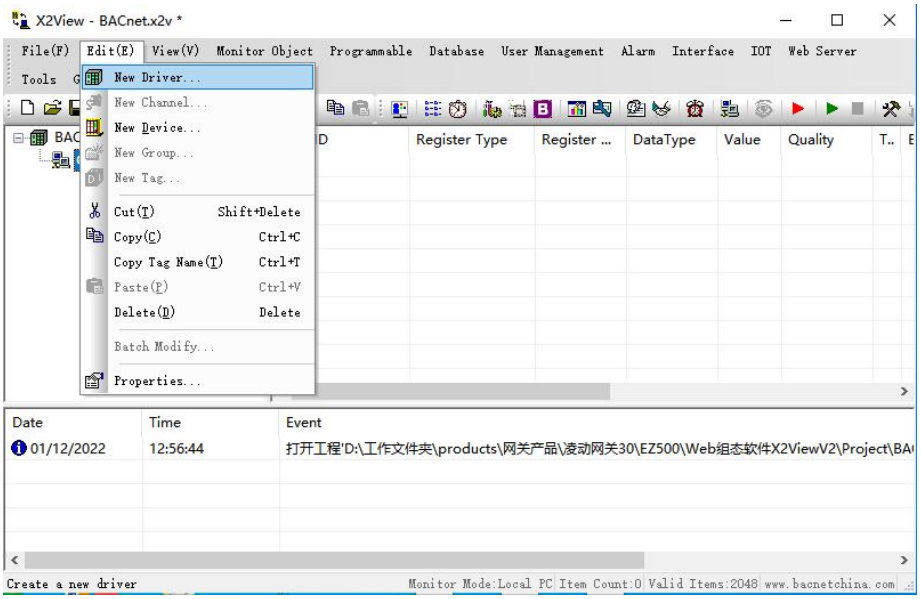

Figure 2-12-1 Select new Driver

In the popup diag "**Driver Properties**", choose the ***BACnetMSTP1*** from the **Driver List** and then type in a name , as the following Figure 2-12-2 show.

- **Driver List:** All the supported drivers are listed here.
- **Name:** It will be easier distinguished to type a name for the driver.
- **Scan Rate:** It takes effects when there are many devices added to the project. The default value is **1000ms**.

One COM port is enabled to collect MSTP, an additional MSTP driver needs to be created. If two buses are used, namely COM1 and COM2, the driver BACnetMSTP1 corresponds to COM1 and BACnetMSTP2 corresponds to COM2. Therefore, there are BACnetMSTP1, BACnetMSTP2, BACnetMSTP3, and BACnetMSTP4, combined with four COM ports, as shown in Figure 2-12-2.

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milesgoiiot@gmail.com/sales@opcmaster.com

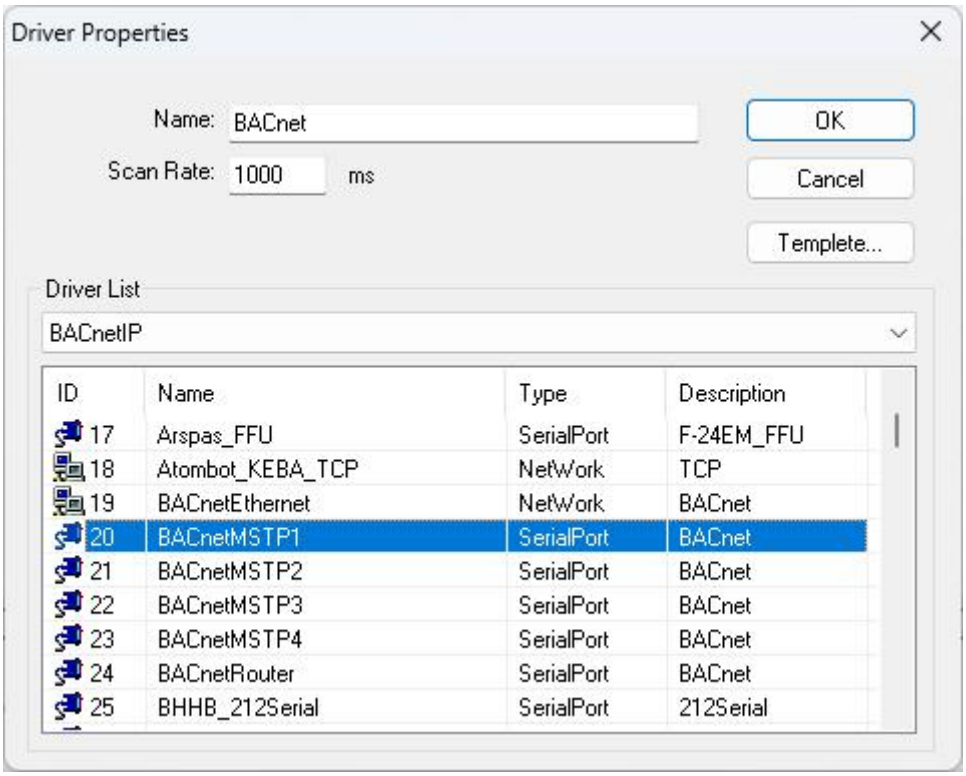

Figure2-12-2 Select BACnetIP Driver

2.12.2 NEW CHANNEL

After adding the drive, click the menu ***Edit*** and select the ***New Channel…*** or click the button **New Channel** in the toolbar. In the popup diag "**Serial Port Communication Configuration**", set the **Channel Name** and **Communication Parameters**, as the following Figure 2-12-3 shows.

- **Channel Name:** It will be easier distinguished to type a name for the channel, *e.g. COM1*, *Channel_1*, etc.
- **Port:** The communication ports of *Protocol Gateway*. The default value is **COM1**.
- **Baud Rate:** Set it according to the Directions of the device. The default value is **38400**.
- **Date Bits:** Set it according to the Directions of the device. The default value is **8**
- **Stop Bits:** Set it according to the Directions of the device. The default value is **1**.
- **Parity:** Set it according to the Directions of the device. The default value is **None**.
- **Flow Control:** Set it according to the Directions of the device. The default value is **None**.
- **Response Timeout:** The default value is **50ms**. Note: The timeout time generally does not need to be modified.
- **Source ID**: The MAC address of gateway com1 itself. The default is 127.

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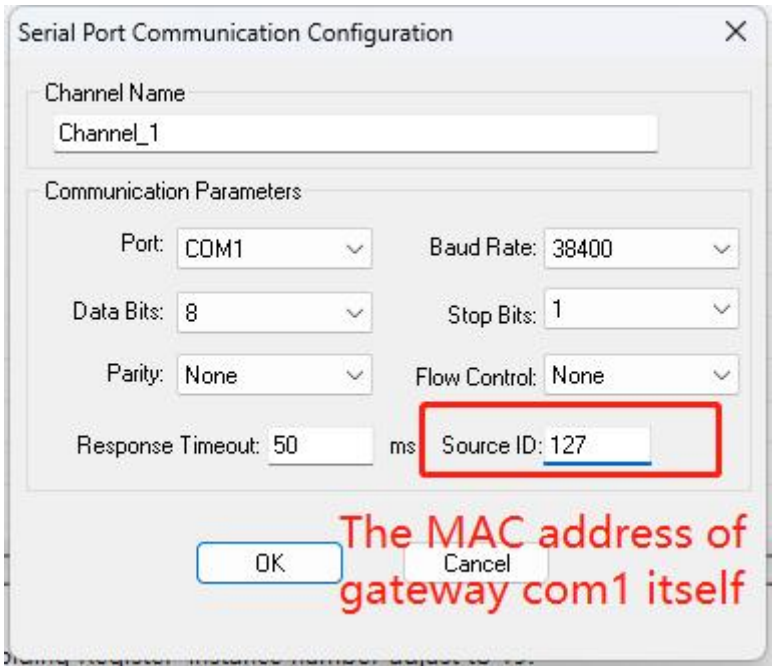

Figure 2-12-3 Set Communication Parameters

2.12.3 NEW DEVICE

Click the menu ***Edit*** and select the ***New Device…*** or click the button **New Device** in the toolbar. In the popup diag "**Device Properties**", set the device parameters and **Bulk Transfer** parameters, as the following Figure 2-12-4 shows.

- **Device ID:** It is the device address,the default value is **1**. Users can query which devices on the bus are online through BACnetScan automatic scanning.
- **Delay Between Polls:** It is the time between a response frame and the next request frame. The default value is **50ms**.
- **Delay After Write:** The default value is **50ms**.

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milesgoiiot@gmail.com/sales@opcmaster.com

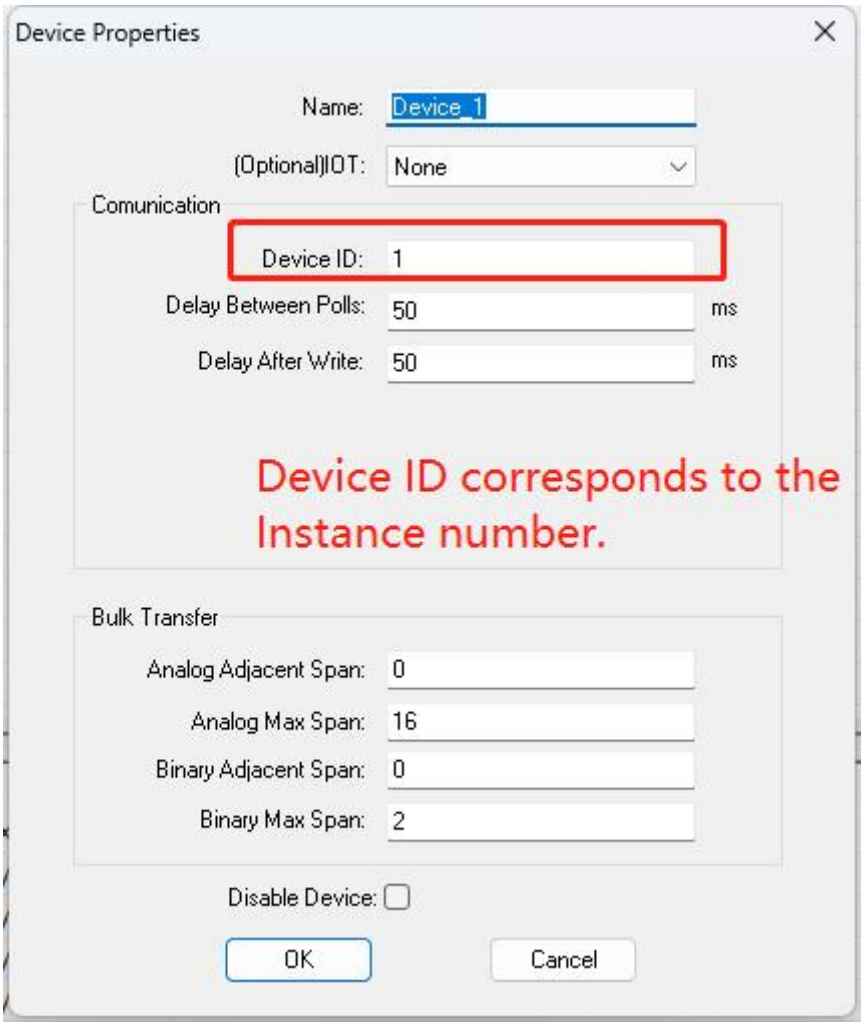

Figure 2-12-4 Device Properties

- **Bulk Transfer:** It allows transmitting and receving several frames at the same time. **Note:** However, if devices don't provide a good analogue to this, there is simply no way to enable this function. At this time you have to set all the Bulk Transfer parameters as zero.

It have four effective parameters are Analog Adjacent Span, Analog Max Span, Binary Adjacent Span, Binary Max Span.

Analog Adjacent Span includes the packet length of all objects, ranging from 0 to 90. This parameter has an effect on communication speed. If the BACnetIP device has 90 objects, and this parameter is 0, then an object needs to send a request frame, and the communication speed will be slower. If the parameter is 90, a request frame can read back the current values of 90 objects at once, theoretically equivalent to a 90 times increase in

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communication speed. If the device does not support reading multiple attributes simultaneously, you can set this parameter to 0.

Binary Adjacent Span and **Binary Max Span** are effective for writing value refresh time, and their specific functions are shown in Table 2-12-1.

Binary Adjacent Span	Binary Max Span	Action after writing values
0	0	First read a single point, then read all objects of the current device
	1	Read objects for the current entire device
	2	read a single point
	Others	No Action
Not 0	0	First read a single point, then read all objects under the device with DeviceID of "Digital Packet Interval"
	1	Read all objects under the device with DeviceID of "Binary Adjacent Span"
	2	read a single point
	Other	No Action

Table2-12-1 Bulk Transfer Description

2.12.4 NEW TAG

Click the menu ***Edit*** and select the ***New Tag…*** or click the button **New Tag** in the toolbar.

In the popup diag "**Tag Properties**", set the **Collection** and **Transfer** parameters, as the following Figure 2-12-8 shows.

Tags can also be grouped and managed by creating a new group. Right click device and select ***New Group...*** to open new group window. Or click the menu ***Edit*** and select the ***New Group…*** or click the button **New Group** in the toolbar.

- **Date Type:** Boolean\Word\Short\Dword\Long\Float and Double ,as the following Figure 2-12-5 shows.

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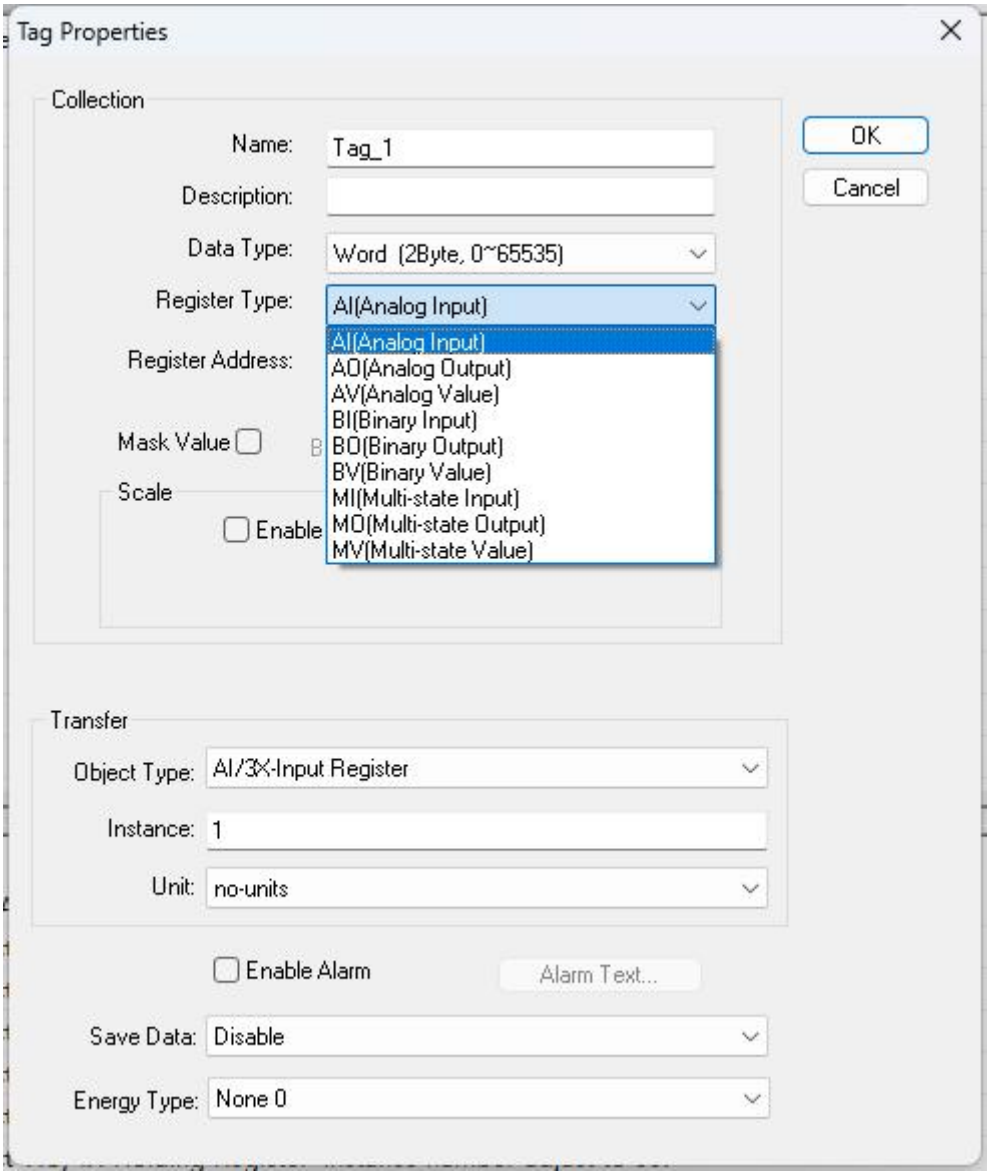

Figure 2-12-10 Data Type

- **Register Type:** AI(Analog Input),AO(Analog Output),AV(Analog Value),BI(Binary Input),BO(Binary Output),BV(Binary Value),MI(Multi-state Input),MO(Multi-state Output),MV(Multi-state Value),Accumulator,Command,Life Safety Poin,Load Control
- **Register Address:** Set it according Directions of the device.

Note:

The register address at the collection end is usually an integer address, representing the object address. Of course, register addresses can also be represented by decimals.

At this time, the integer part still represents the object address, while the decimal part represents the write operation level. BACnet write operation level is divided into 16 levels, including 1, 2, 3, ... 16, etc.

If the register address is 2.8, it means that the collected object address value is 2, and the write value operation level is 8.

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If the register address is an integer, the default write value operation level is level 16, as shown in Figure 2-12-7.

If used in the BACnet series gateway (BACnetIP to BACnetIP), there is no need to fill in the control level, and the operation level is completely controlled by the upper BACentIP end.

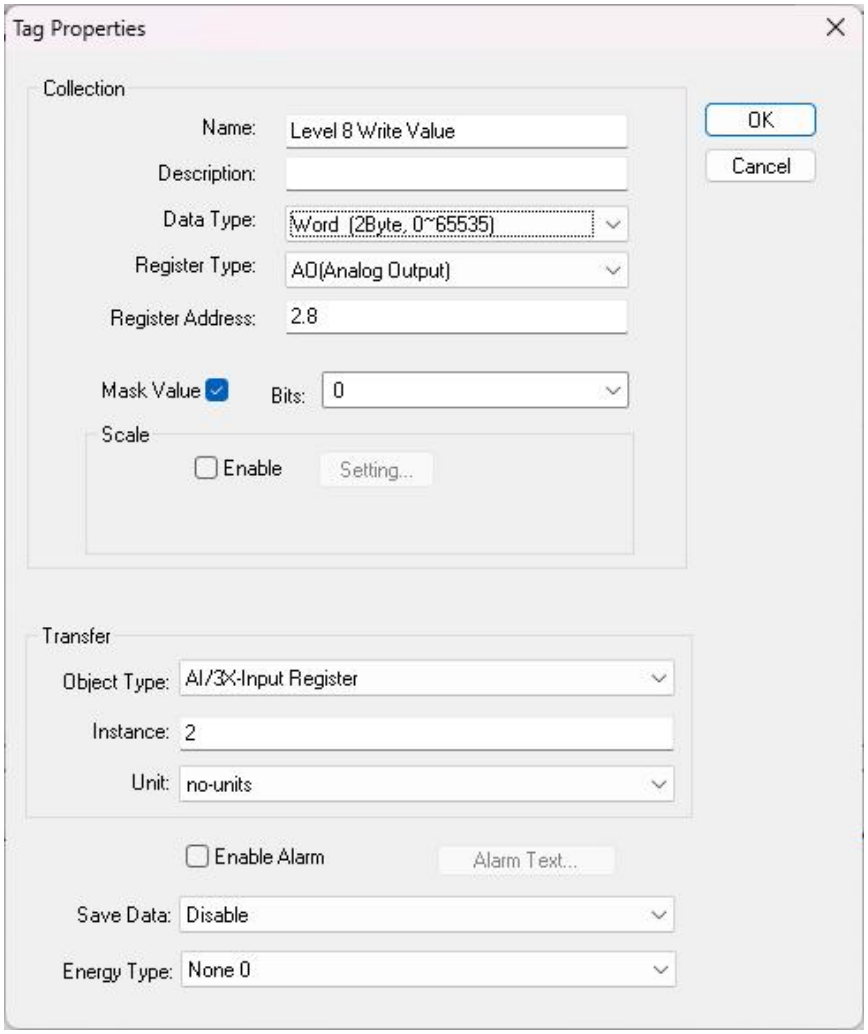

Figure 2-12-11 write operation level

To release level 8, you can create a new point with a register address of 2.8. Release, which is only written but not read. The specific settings are shown in Figure 2-12-12.

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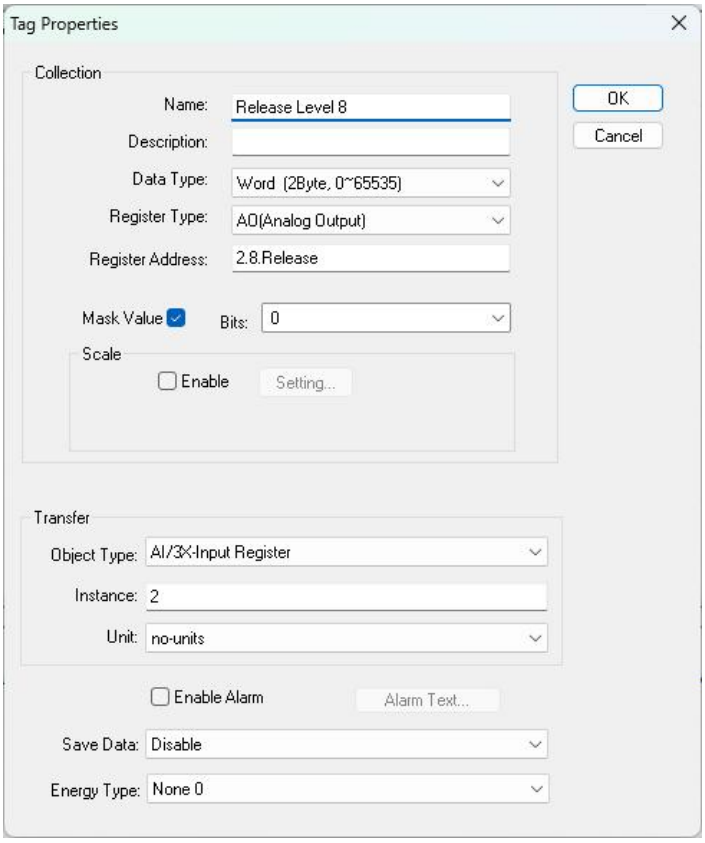

Figure 2-12-12 Release level 8

- **Mask Value:** Check single box “Mask Value” to pick up a bit from 0 to 15 of some register if necessary,as the following Figure 2-12-13 shows.

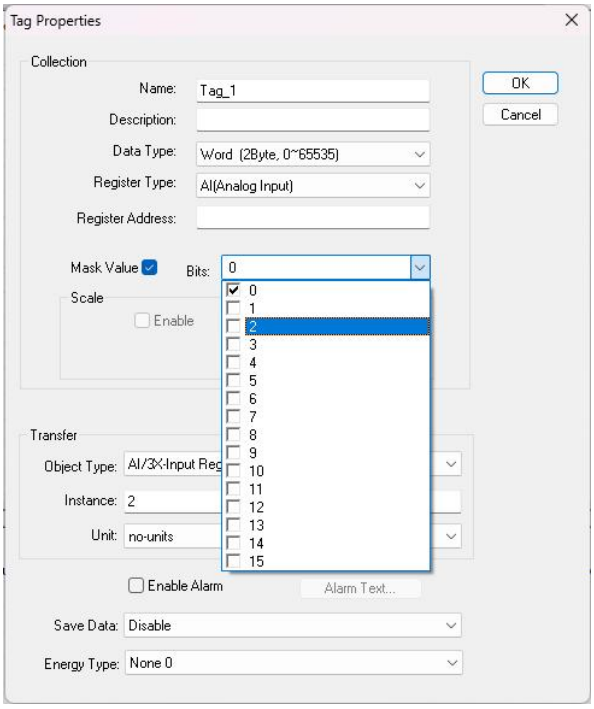

Figure 2-12-13 Tag-MaskValue

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- **Scale:** Check single box "**Enable**" and click the button "**Setting…**" to enable liner transformation, as the following Figure 2-12-14 shows.

Figure 2-12-14 Tag Process Settings

In the above Tag attributes, the register address refers to the object address, and the BACnet slave register base address on the forwarding end is allocated from 0. After the tags are established, it is shown in Figure 2-12-8.

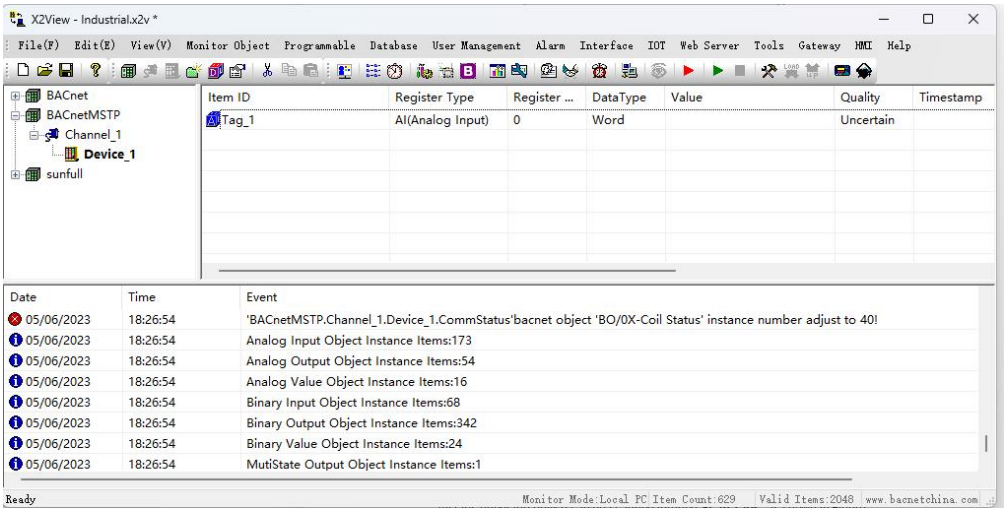

Figure 2-12-8 Add Tag Complete

Quick New Tags Method 1- Automatic Scan Tags

All tags under the device can be scanned through Scan Tags, as shown in Figure 2-12-15.

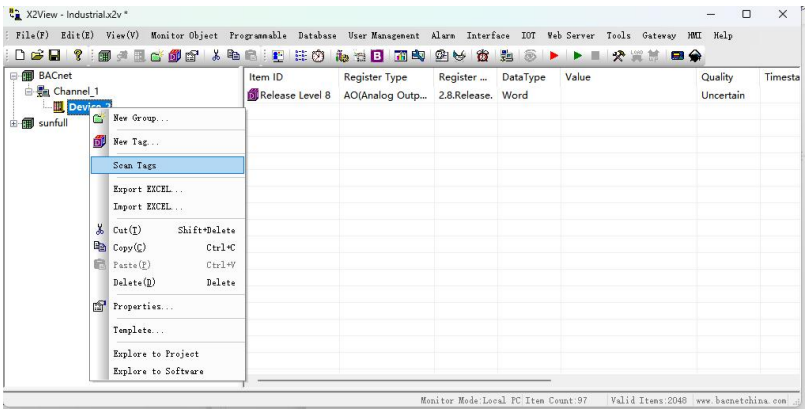

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Figure 2-12-15 Scan Tags

Quick New Tags Method 2- Import XLS File

Use BACnetScan tool which is independently developed by Sunfull to scan all tags by BACnetIP function, and export them to an Excel file for editing and saving.

And then back to X2View software, we use the import and export function to import the saved excel file into the project. For example, in BACnetScan, the scanning results are shown in Figure 2-1-16.

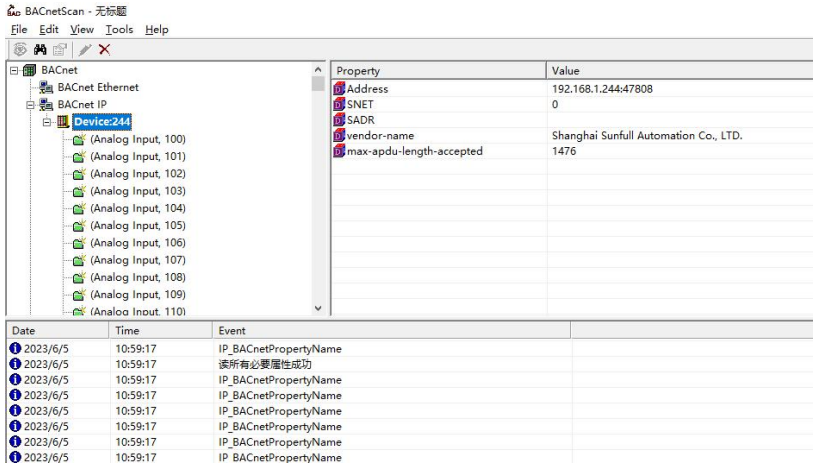

Figure 2-12-16 Scanning Result

Total 60 points scanned in the above figure (10 for each of the 6 register types), and the scanning results will be saved in the Excel table, as shown in Figure 2-12-17.

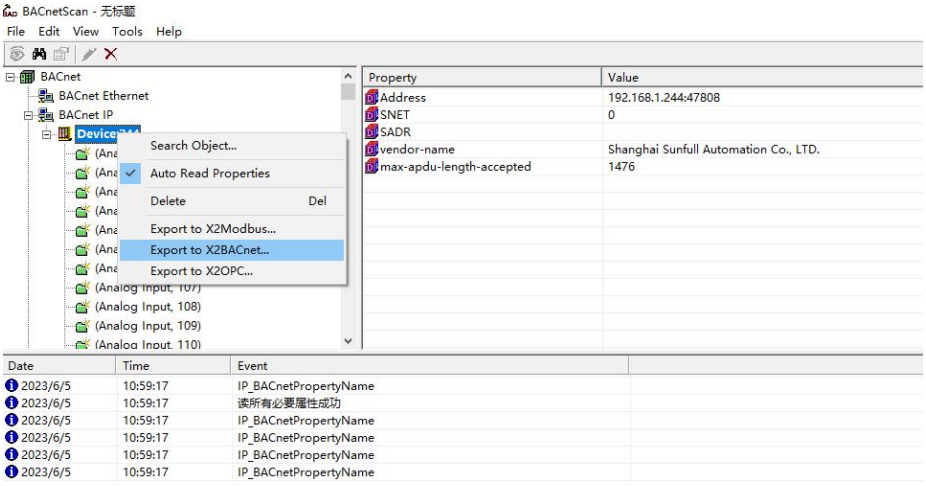

Figure 2-12-17 Export EXCEl

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milesgoiiot@gmail.com/sales@opcmaster.com

Then import the edited Excel file into X2View, as shown in Figure 2-12-18.

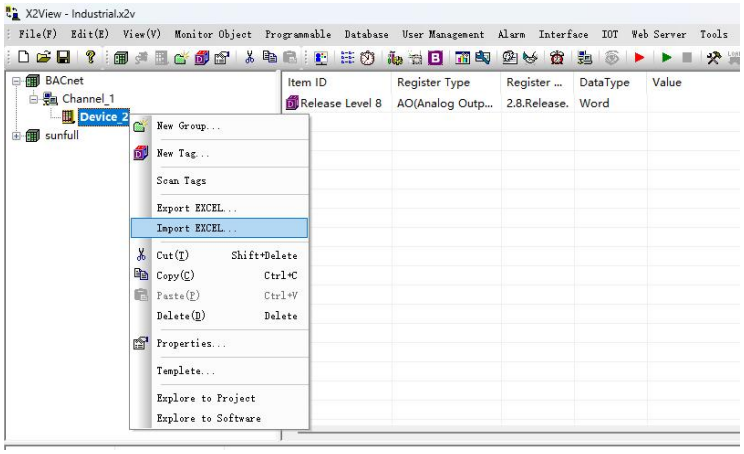

Figure 2-12-18 Import EXCEL

Noted that the default is to import CSV, and users need to select the XLS file type to find the imported XLS file. Select as shown in Figure 2-12-19, and all tags are successfully imported.

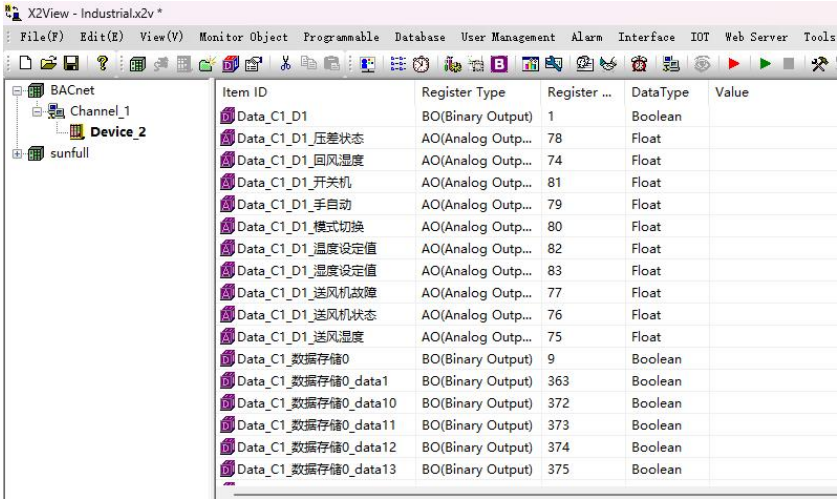

Figure 2-12-19 Import Successfully

Note: In the Tag attribute above, the register address refers to the Instance number of the object.

The data types supported by the collection end include Boolean, Dword, and Float. Among them, Float type is suitable for AI, AO, and AV registers, Boolean type is suitable for BI, BO, and BV registers, and Dword type is suitable for MI, MO, and MV registers, as shown in Table 2-12-2.

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Data Type	Description
Boolean	0、1，Suitable for BI, BO, BV types
Dword	4Byte(0~4294967295), Suitable for MI，MO，MV types
Float	4Byte，Suitable for AI，AO，AV types

Table 2-12-2 Data type of Collection

The register types supported from the collection end include AI, AO, AV, BI, BO, BV, MI, MO, and MV, as shown in Tables 2-12-3.

No	Register Type	Address Range	Description
1	AI(Analog Input)	0~4194303	Analog Input, Read-Only (continuously changing object type)
2	AO(Analog Output)	0~4194303	Analog Output, Read & Write(continuously changing object types)
3	AV(Analog Value)	0~4194303	Analog Value, Read & Write(continuously changing object types)
4	BI(Binary Input)	0~4194303	Binary Input, Read-Only(Object types with only 0 and 1)
5	BO(Binary Output)	0~4194303	Binary Output, Read & Write(Object types with only 0 and 1)
6	BV(Binary Value)	0~4194303	Binary Value, Read & Write(Object types with only 0 and 1)
7	MI(Multi-state Input)	0~4194303	Multi-State Input, Read-Only (continuously changing object type)
8	MO(Multi-state Output)	0~4194303	Multi-State Output, Read & Write(continuously changing object types)
9	MV(Multi-state Value)	0~4194303	Multi-State Value, Read & Write(continuously changing object types)

Table2-12-3 Collection Register type

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2.13 EST3_CRT（EDWARD FIRE ALARM SYSTEM）

2.13.1 NEW DRIVER

Click the menu ***Edit*** and select the ***New Driver…*** or click the button **New Driver** in the toolbar, as shown in the following figure 2-13-1.

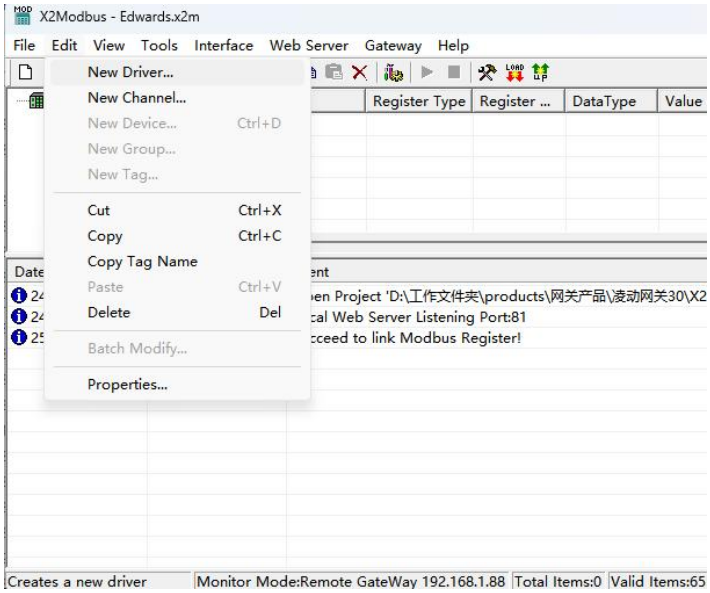

Figure 2-13-1: Select new Driver

In the popup diag “**Driver Properties**”, choose the ***EST3_CRT*** from the **Driver List** and then type in a name , as the following Figure 2-13-2 show.

- **Driver List:** All the supported drivers are listed here.
- **Name:** It will be easier distinguished to type a name for the driver.
- **Scan Rate:** It takes effects when there are many devices added to the project. The default value is **1000ms**.
- **Template:** Click to check the sample project of selected driver

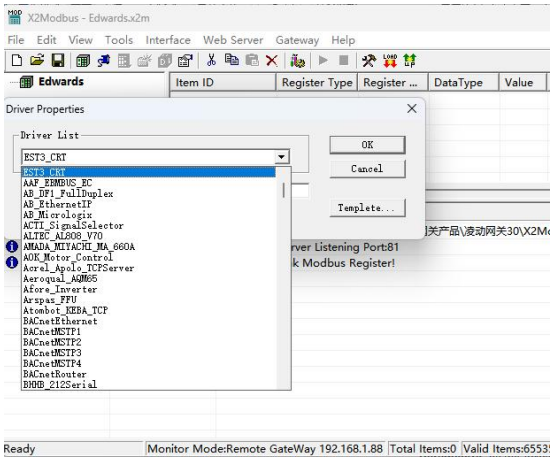

Figure2-13-2 Select Driver

2.13.2 NEW CHANNEL

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After adding the driver, click the menu ***Edit*** and select the ***New Channel…*** or click the button **New Channel** in the toolbar. EST3_ CRT is the communication protocol for the Edward Fire Alarm System, which communicates through serial port,

In the popup diag "**Serial Port Communication Configuration**", set the **Channel Name** and **Communication Parameters**, as the following Figure 2-13-3 shows.

- **Channel Name:** It will be easier distinguished to type a name for the channel, *e.g. COM1*, *Channel_1*, etc.
- **Port:** The communication ports of *Protocol Gateway*. The default value is **COM1**.
- **Baud Rate:** Set it according to the Directions of the device. The default value is **38400**.
- **Date Bits:** Set it according to the Directions of the device. The default value is **8**
- **Stop Bits:** Set it according to the Directions of the device. The default value is **1**.
- **Parity:** Set it according to the Directions of the device. The default value is **None**.
- **Flow Control:** Set it according to the Directions of the device. The default value is **None**.
- **Response Timeout:** The default value is **50ms**. Note: The timeout time generally does not need to be modified.

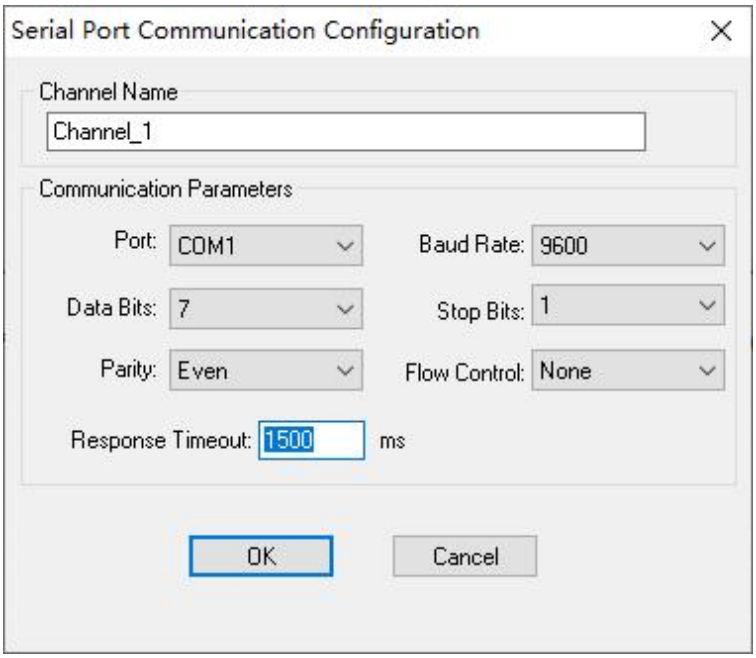

Figure 2-13-3 Set Communication Parameters

2.13.3 NEW DEVICE

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milesgoiiot@gmail.com/sales@opcmaster.com

Click the menu ***Edit*** and select the ***New Device…*** or click the button **New Device** in the toolbar. In the popup diag "**Device Properties**", set the device parameters and **Bulk Transfer** parameters, as the following Figure 2-13-4 shows.

- **Device ID:** It is the device address,the default value is **02**.
- **Delay Between Polls:** It is the time between a response frame and the next request frame. The default value is 100**0ms**.
- **Delay After Write:** The default value is **500ms**.

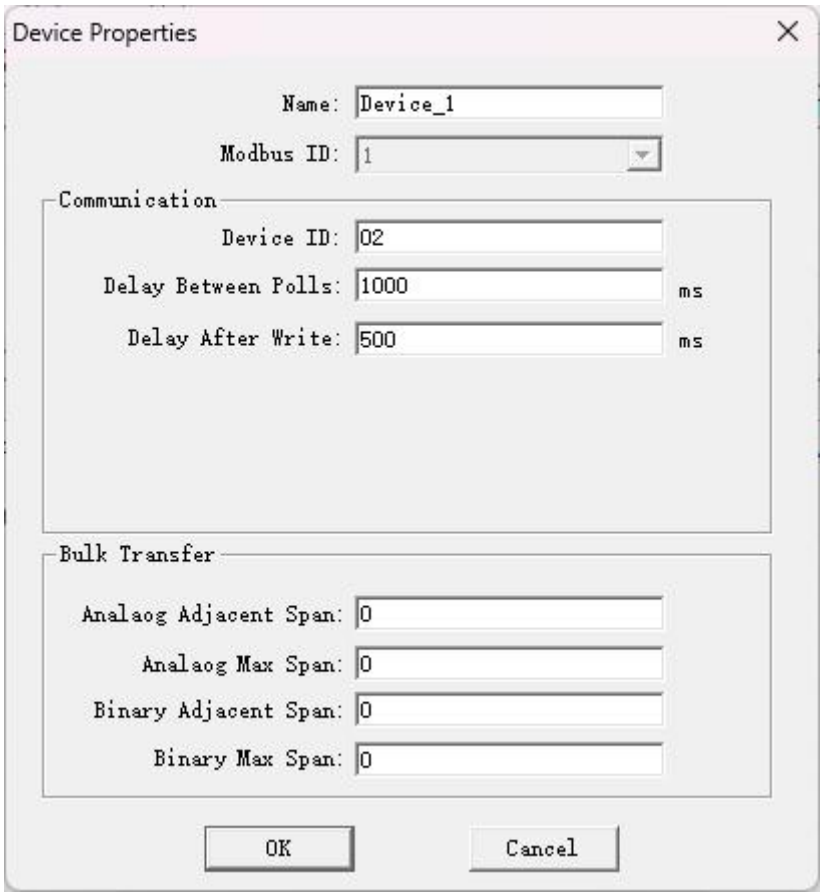

Figure 2-13-4 Device Properties

2.13.4 NEW TAG

Click the menu ***Edit*** and select the ***New Tag…*** or click the button **New Tag** in the toolbar.

In the popup diag "**Tag Properties**", set the **Collection** and **Transfer** parameters, as the following Figure 2-13-8 shows.

Tags can also be grouped and managed by creating a new group. Right click device and select ***New Group...*** to open new group window. Or click the menu ***Edit*** and select the ***New Group…*** or click the button **New Group** in the toolbar.

- **Date Type:** Boolean\Word\Short\Dword\Long\Float\Double\String ,as the following Figure 2-13-5 shows.

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milesgoiiot@gmail.com/sales@opcmaster.com

- **Register Type:** AlarmContent;
- **Register Address:**

Way1: Composed of 5 digits. The first two digits represent the card number, and the last three digits represent the device number.

As shown in the following message:
Recovery: 15:58:17 02/13/2019 Control Panel: 20
Card: 33 Device: 0001
Automatic status P20 Minsheng Road
Hand Automatic/Automatic status

Here, **Control Panel No**= 20, **Card No**=33; **Device No**=001;
So, Register Address=33001

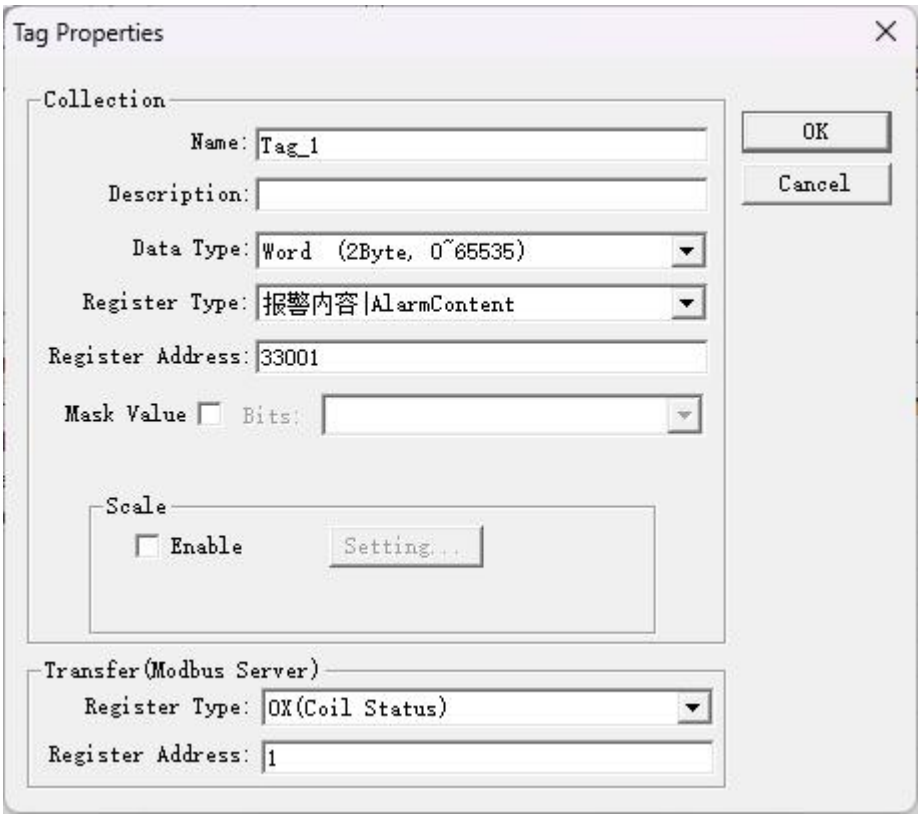


Figure 2-13-5 Register Address-way1

Way2: Composed of 5 digits.

The middle is separated by a decimal point. The first decimal place represents the card number, and the second decimal place represents the device number.

As shown in the following message:
Recovery: 15:58:17 02/13/2019 Control Panel: 20
Card: 33 Device: 0001
Automatic status P20 Minsheng Road
Hand Automatic/Automatic status

Add: 28SenangCrescent,#0511,Bizhub28,Singapore416601 Tel:+6580385403 URL:www.bacnetchina.com
milesgoiiot@gmail.com/sales@opcmaster.com

Here, **Control Panel No**= 20, **Card No**=33; **Device No**=001;
So, Register Address=33.1

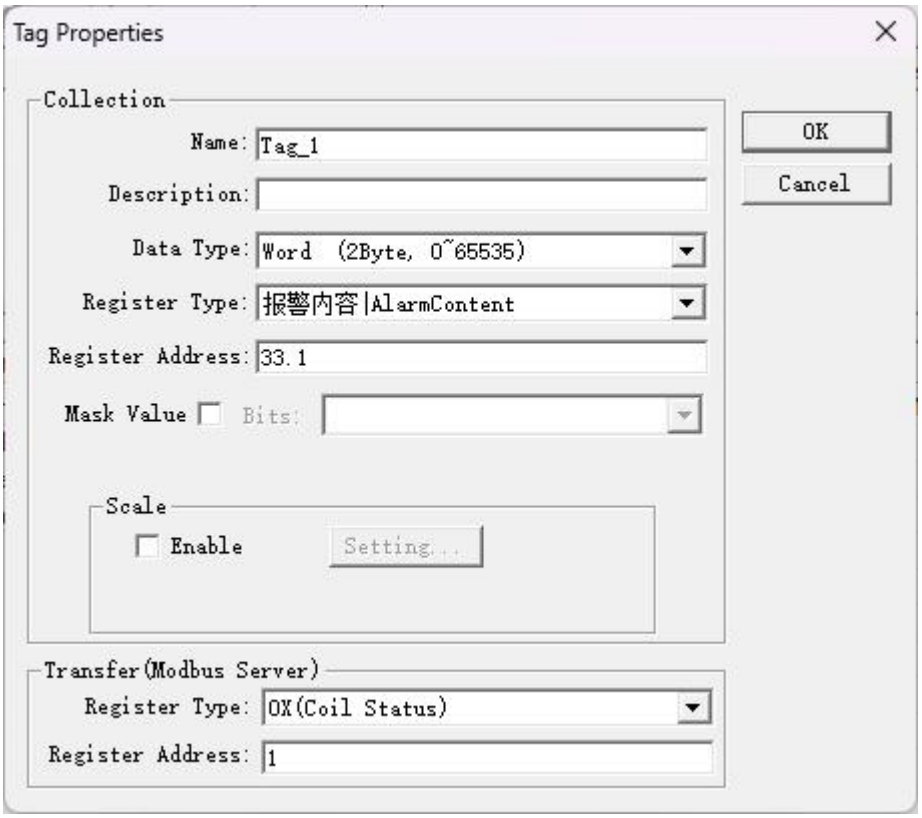


Figure 2-13-5 Register Address-way2

After the tags are established, it is shown in Figure 2-13-6.

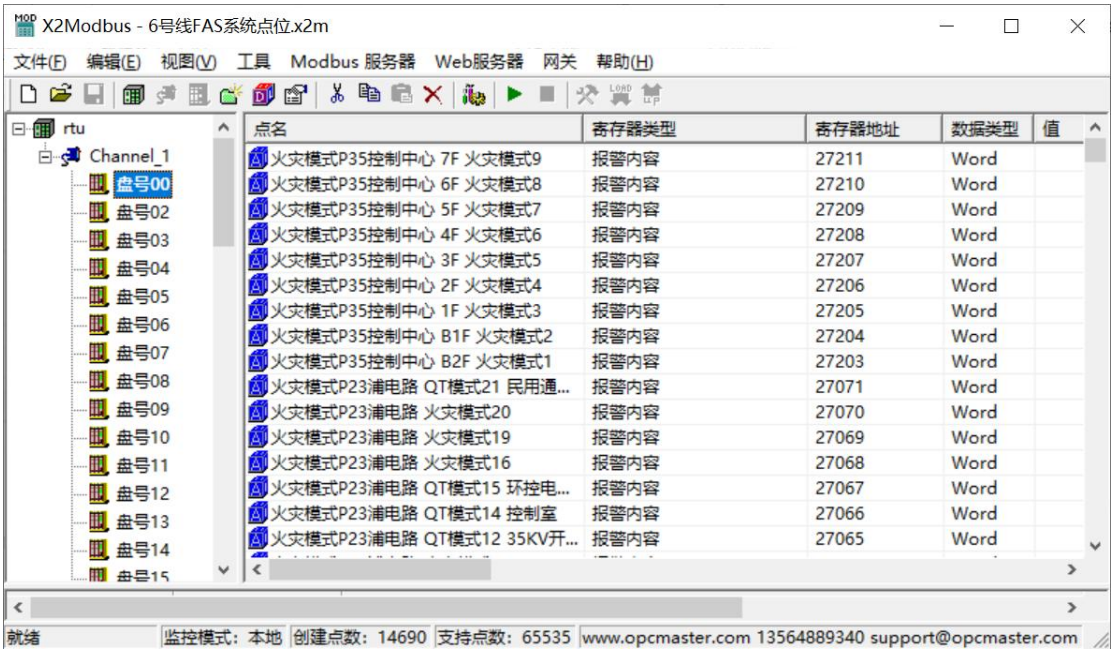


Figure 2-13-6 Tag list

Add: 28SenangCrescent,#0511,Bizhub28,Singapore416601 Tel:+6580385403 URL:www.bacnetchina.com
milesgoiiot@gmail.com/sales@opcmaster.com

The data types supported at the collection end are Long and Float, as shown in the Table 1

Data type	Description
Word	2Byte（0~65535）
Float	4Byte

Table 2-13-1 Data type of the collection end-2

The following register address meanings are for reference only) as shown in Table 2-13-2.

Serial Number	Register Type	Address Range	Description
1	AlarmContent	~~	0=recovery; Linkage feedback recovery 1=switch; Hand report; Warm sensation; Fire alarm; Water flow; And group; Indication. 2=monitoring; Supervision; Linkage feedback; Linkage activation; Indication. 3=Fault; 4=isolation; Shielding; 5=initial state;

Table2-13-2 Collection Register type

2.14 MYSQL

2.14.1 NEW DRIVER

Click the menu ***Edit*** and select the ***New Driver…*** or click the button **New Driver** in the toolbar, as shown in the following figure 2-14-1.

Add: 28SenangCrescent,#0511,Bizhub28,Singapore416601 Tel:+6580385403 URL:www.bacnetchina.com
milesgoiiot@gmail.com/sales@opcmaster.com

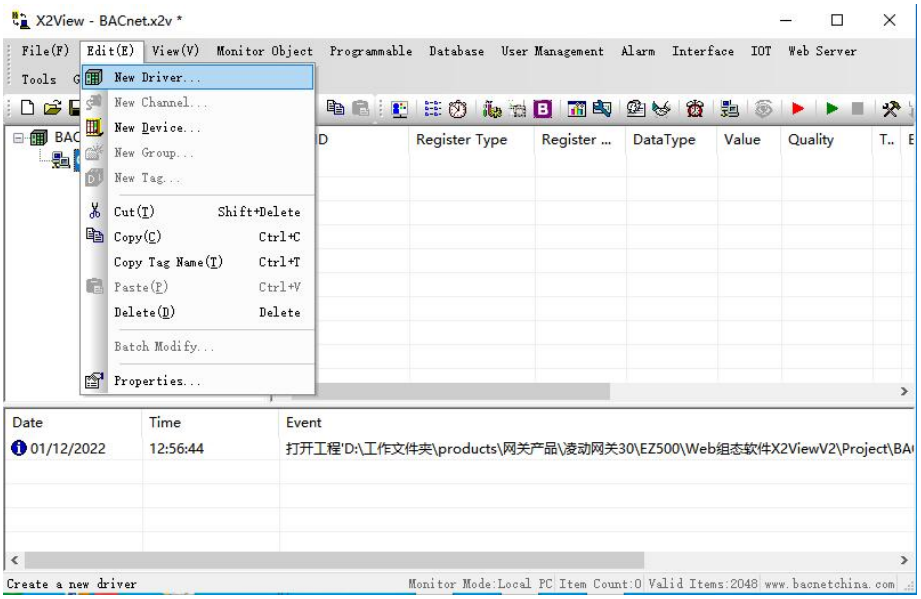


Figure 2-14-1: Select new Driver

In the popup diag "**Driver Properties**", choose the ***MySQL*** from the **Driver List** and then type in a name , as the following Figure 2-14-2 show.

- **Driver List:** All the supported drivers are listed here.
- **Name:** It will be easier distinguished to type a name for the driver.
- **Scan Rate:** It takes effects when there are many devices added to the project. The default value is **1000ms**.
- **Template:** Click to check the sample project of selected driver

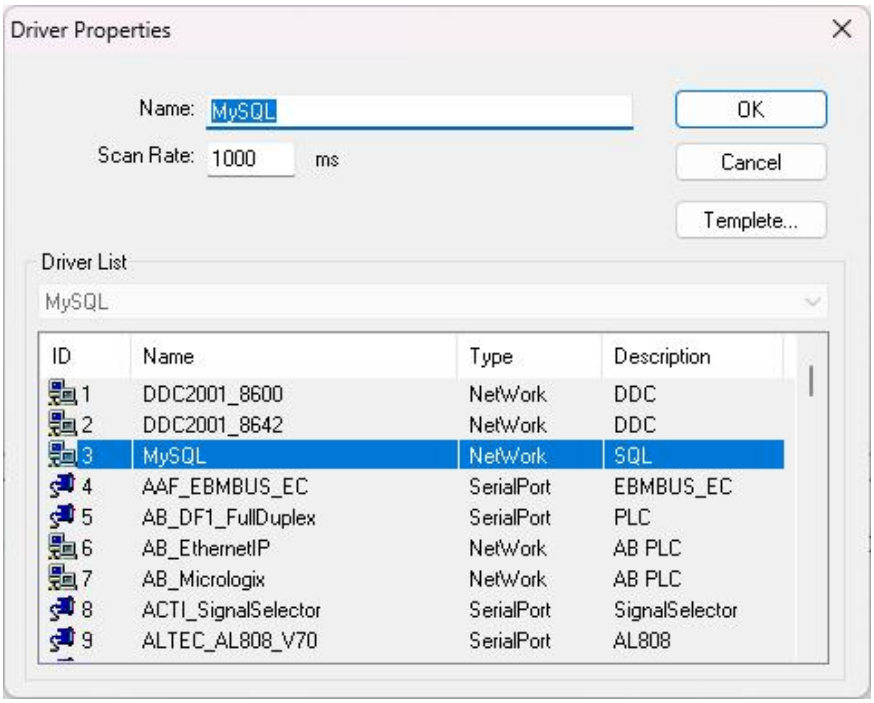


Figure2-14-2 Select MySQL Driver

2.14.2 NEW CHANNEL

Add: 28SenangCrescent,#0511,Bizhub28,Singapore416601 Tel:+6580385403 URL:www.bacnetchina.com
milesgoiiot@gmail.com/sales@opcmaster.com

After adding the drive, click the menu ***Edit*** and select the ***New Channel…*** or click the button **New Channel** in the toolbar. MySQL driver is used to read data from MySQL databases.

IP Address: Communicate through a ethernet port, with the IP address being the IP of the MySQL database server.

Port: The default port number is 3306 (which can be modified according to the actual MySQL database server port number).

Timeoute: The default timeout is 1000ms.

Source ID: The username and password (Format: username.password; for example, root.admin) for the MySQL database connection on the main site are shown in Figure 2-14-3.

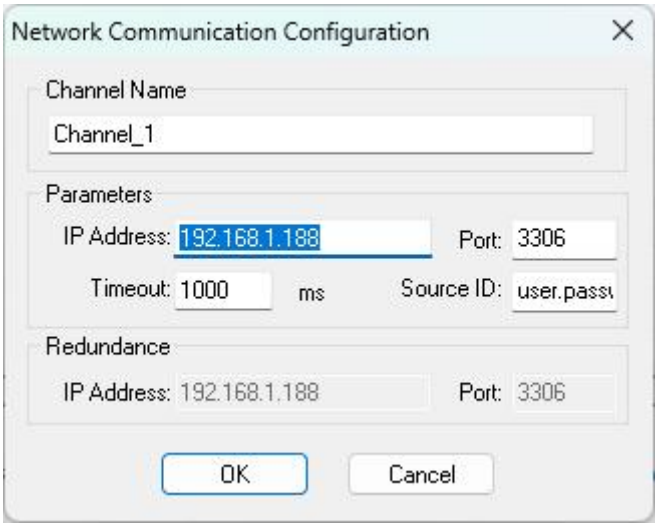


Figure2-14-3 Select MySQL Driver

2.14.3 NEW DEVICE

Click the menu ***Edit*** and select the ***New Device…*** or click the button **New Device** in the toolbar. In the popup diag ”**Device Properties**”, set the device parameters and **Bulk Transfer** parameters, as the following Figure 2-14-4 shows.

- **Device ID:** It's the corresponding database name and table name (format: database name, table name; for example: DataName, TableName).

Add: 28SenangCrescent,#0511,Bizhub28,Singapore416601 Tel:+6580385403 URL:www.bacnetchina.com
milesgoiiot@gmail.com/sales@opcmaster.com

Delay Between Polls: It is the time between a response frame and the next request frame. The default value is **5000ms**. as shown in Figure 2-14-4. Note that currently only versions below 5.7 are supported.

- **Delay After Write:** The default value is **0ms**.

Format: Database name.Table name; For example: DataName.TableName< Two layer nodes>

Query script: SELECT * from<TableName>

Special format: database name.SQL statement of table name; For example: DataName.TableName.sql< Three layer node>

For example,

SQL=SELECT * From t1 ORDER BY XTimeStamp DESC LIMITED 1

Then execute the query using the SQL script.

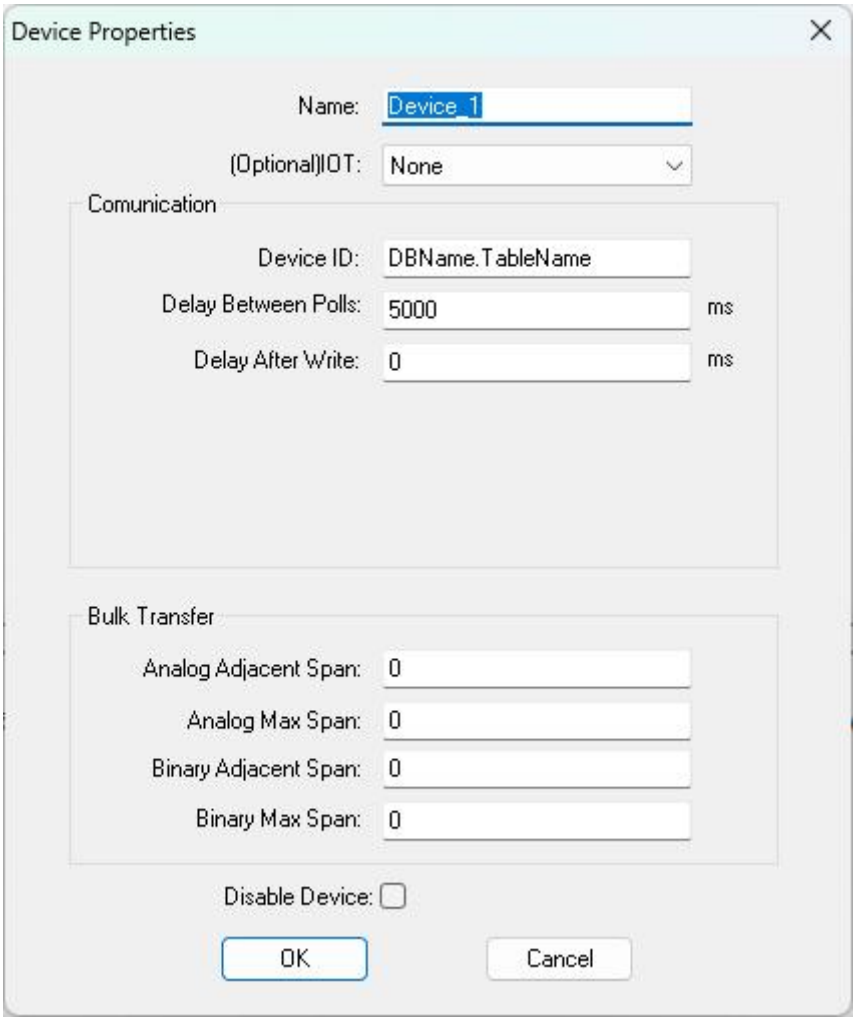


Figure2-14-4 Device Parameter

2.14.4 NEW TAG

Click the menu ***Edit*** and select the ***New Tag…*** or click the button **New Tag** in the toolbar.

In the popup diag "**Tag Properties**", set the **Collection** and **Transfer** parameters, as the following Figure 2-14-8 shows.

Add: 28SenangCrescent,#0511,Bizhub28,Singapore416601 Tel:+6580385403 URL:www.bacnetchina.com
milesgoiiot@gmail.com/sales@opcmaster.com

Tags can also be grouped and managed by creating a new group. Right click device and select ***New Group...*** to open new group window. Or click the menu ***Edit*** and select the ***New Group…*** or click the button **New Group** in the toolbar.

- **Date Type:** Boolean\Word\Short\Dword\Long\Float\Double\String
- **Register Type:** Row.Column,as the following Figure 2-14-5 shows.
- **Register Address:** 1.2,epresenting the first row and second column in the database table.

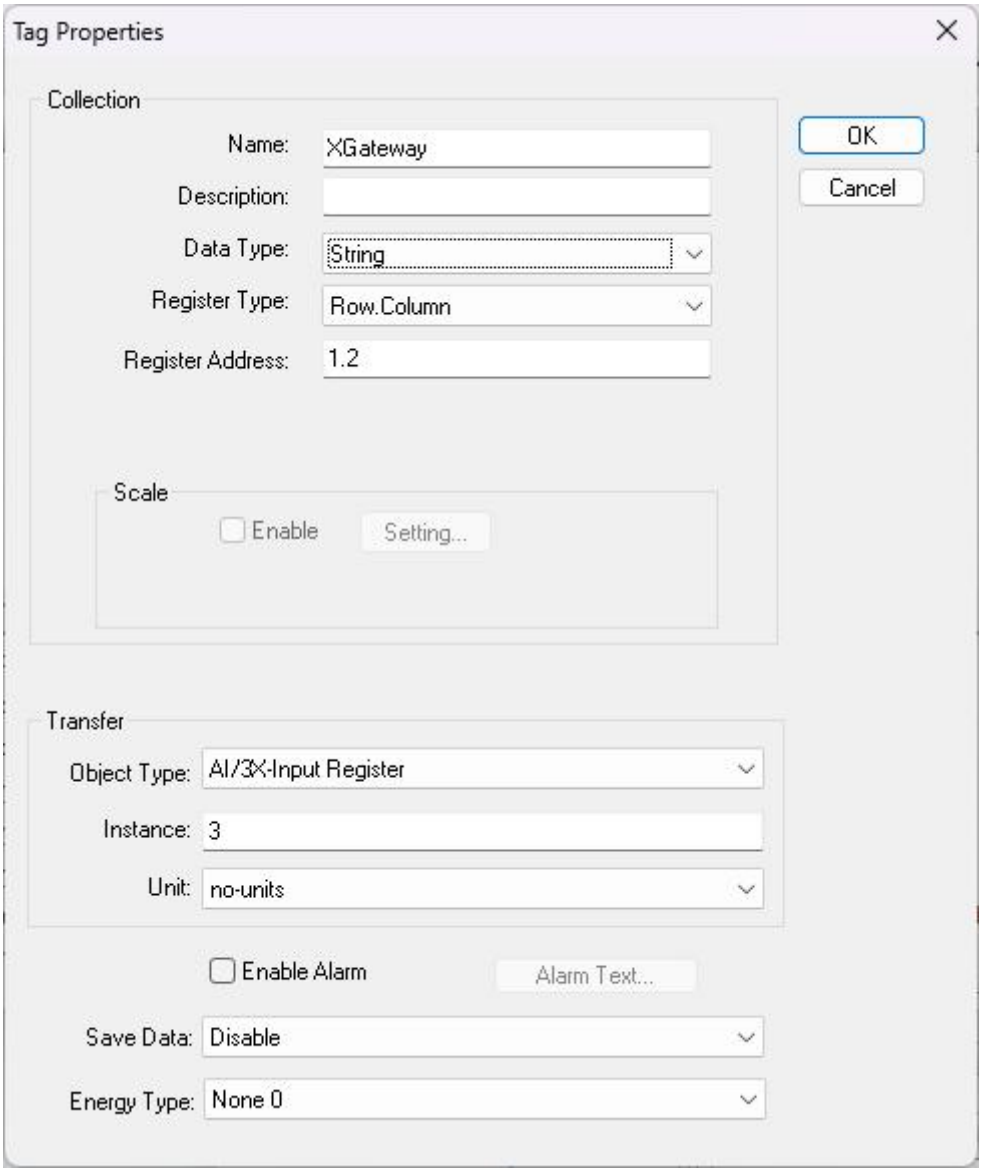


Figure2-14-5 Device Parameter

The MySQL database tables are shown in Figure 2-14-6.

Add: 28SenangCrescent,#0511,Bizhub28,Singapore416601 Tel:+6580385403 URL:www.bacnetchina.com
milesgoiiot@gmail.com/sales@opcmaster.com

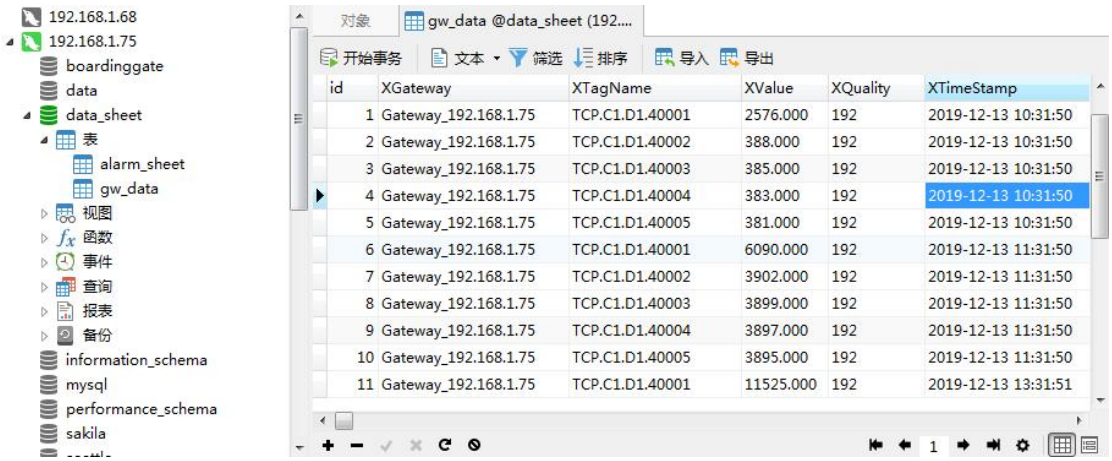


Figure2-14-5 My SQL Database

Tag addition completed. As shown in Figure 2-14-6.

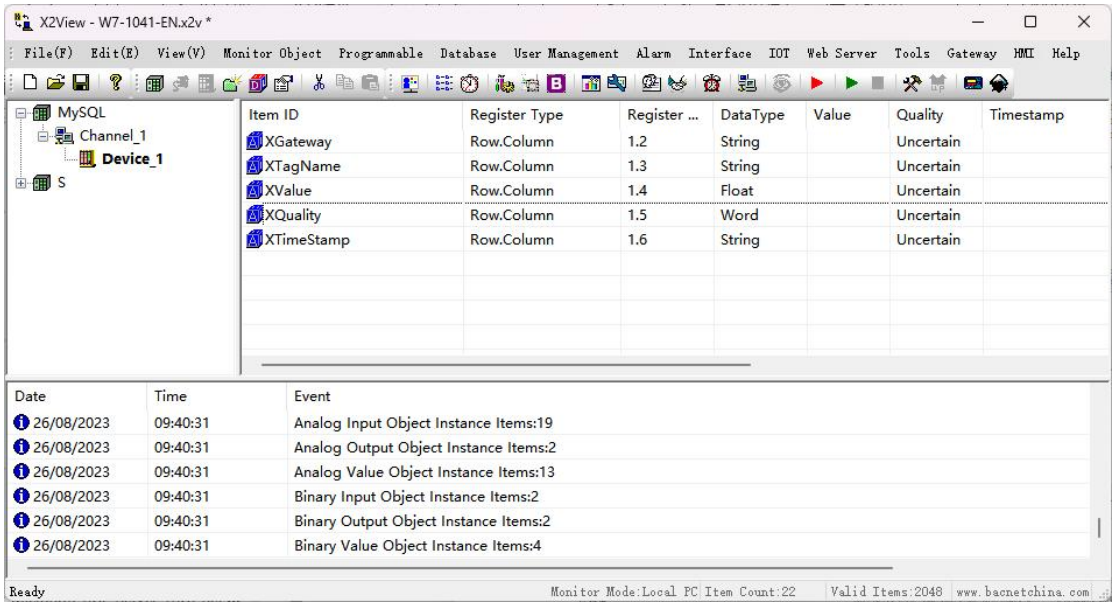


Figure2-14-5 My SQL Database

2.15 MICROSOFT_SQL_SERVER

2.15.1 NEW DRIVER

Click the menu ***Edit*** and select the ***New Driver…*** or click the button **New Driver** in the toolbar, as shown in the following figure 2-15-1.

Add: 28SenangCrescent,#0511,Bizhub28,Singapore416601 Tel:+6580385403 URL:www.bacnetchina.com
milesgoiiot@gmail.com/sales@opcmaster.com

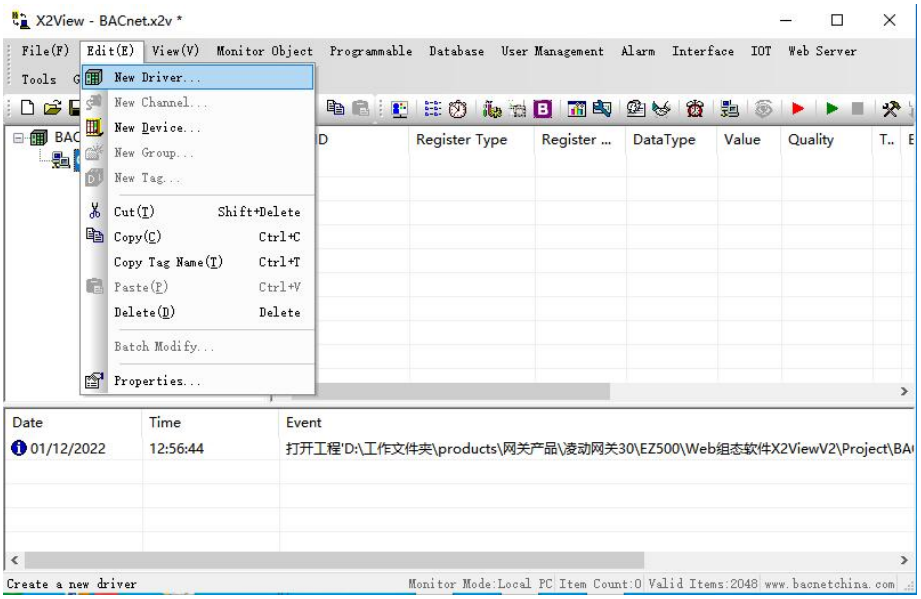


Figure 2-15-1: Select new Driver

In the popup diag “**Driver Properties**”, choose the **MicroSoft_SQL_Server** from the **Driver List** and then type in a name , as the following Figure 2-15-2 show.

- **Driver List:** All the supported drivers are listed here.
- **Name:** It will be easier distinguished to type a name for the driver.
- **Scan Rate:** It takes effects when there are many devices added to the project. The default value is **1000ms**.
- **Template:** Click to check the sample project of selected driver

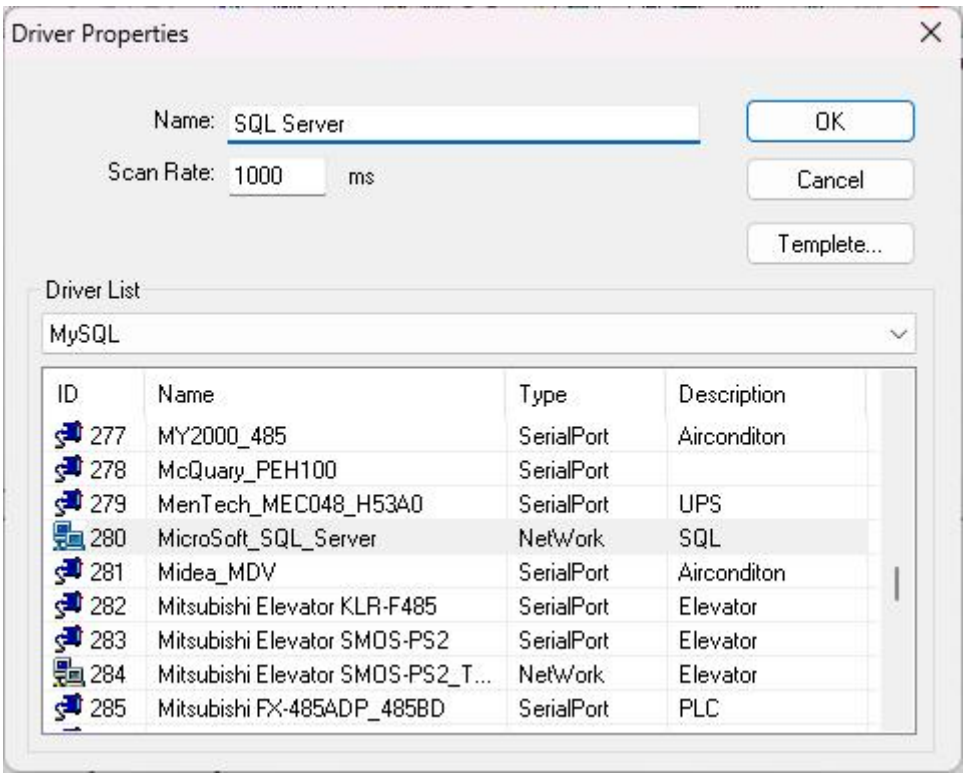


Figure2-14-2 Select Driver

Add: 28SenangCrescent,#0511,Bizhub28,Singapore416601 Tel:+6580385403 URL:www.bacnetchina.com
milesgoiiot@gmail.com/sales@opcmaster.com

2.15.2 NEW CHANNEL

After adding the drive, click the menu ***Edit*** and select the ***New Channel…*** or click the button **New Channel** in the toolbar. SQL Server driver is used to read data from MySQL databases.

IP Address: IP of SQL Server database server

Port: The default port number is 1433 (which can be modified according to the actual SQL Server database server port number).

Timeoute: The default timeout is 1000ms.

Source ID: The username and password (Format: username.password; for example, root.admin) for the SQL Server database connection on the main site are shown in Figure 2-15-3.

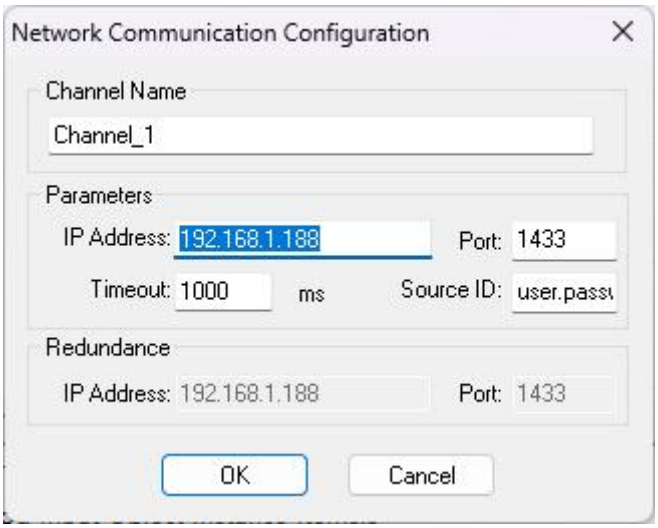


Figure2-15-3 Select SQL Server Driver

2.15.3 NEW DEVICE

Click the menu ***Edit*** and select the ***New Device…*** or click the button **New Device** in the toolbar. In the popup diag "**Device Properties**", set the device parameters and **Bulk Transfer** parameters, as the following Figure 2-15-4 shows.

- **Device ID:** It's the corresponding database name and table name (format: database name, table name; for example: DataName, TableName).

Add: 28SenangCrescent,#0511,Bizhub28,Singapore416601 Tel:+6580385403 URL:www.bacnetchina.com
milesgoiiot@gmail.com/sales@opcmaster.com

Delay Between Polls: It is the time between a response frame and the next request frame. The default value is **5000ms**. as shown in Figure 2-15-4. Note that currently only versions below 5.7 are supported.

- **Delay After Write:** The default value is **0ms**.

Format: Database name.Table name; For example: DataName.TableName< Two layer nodes>

Query script: SELECT * from<TableName>

Special format: database name.SQL statement of table name; For example: DataName.TableName.sql< Three layer node>

For example,

SQL=SELECT * From t1 ORDER BY XTimeStamp DESC LIMITED 1

Then execute the query using the SQL script.

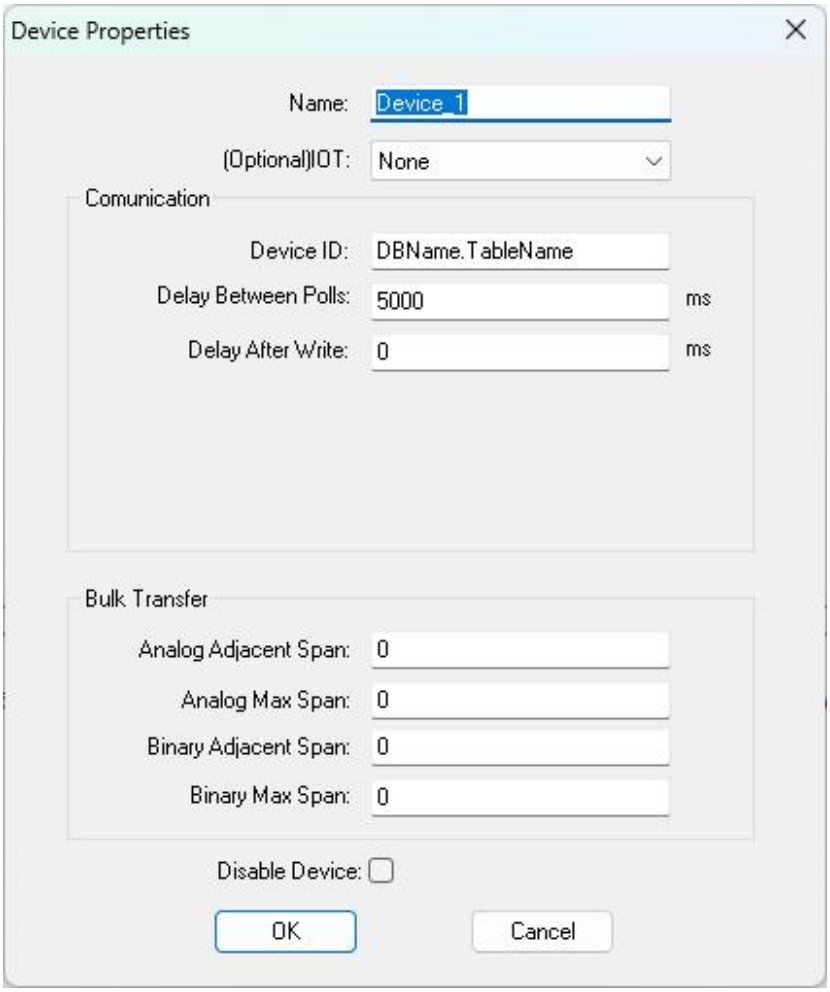


Figure2-14-4 Device Parameter

2.15.4 NEW TAG

Click the menu ***Edit*** and select the ***New Tag…*** or click the button **New Tag** in the toolbar.

In the popup diag "**Tag Properties**", set the **Collection** and **Transfer** parameters, as the following Figure 2-15-8 shows.

Add: 28SenangCrescent,#0511,Bizhub28,Singapore416601 Tel:+6580385403 URL:www.bacnetchina.com
milesgoiiot@gmail.com/sales@opcmaster.com

Tags can also be grouped and managed by creating a new group. Right click device and select ***New Group...*** to open new group window. Or click the menu ***Edit*** and select the ***New Group…*** or click the button **New Group** in the toolbar.

- **Date Type:** Boolean\Word\Short\Dword\Long\Float\Double\String
- **Register Type:** Row.Column,as the following Figure 2-14-5 shows.
- **Register Address:** 1.2,epresenting the first row and second column in the database table.

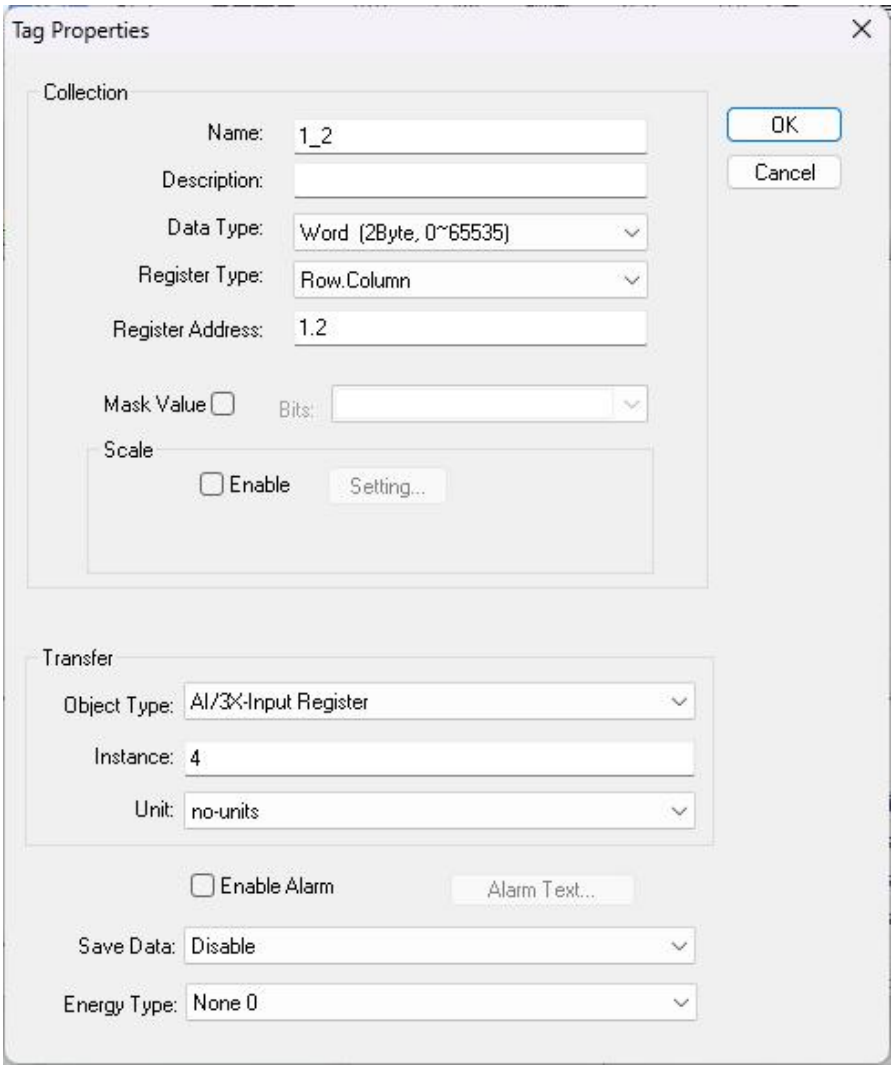


Figure2-15-5 Device Parameter

The SQL Server database tables are shown in Figure 2-15-6.

Add: 28SenangCrescent,#0511,Bizhub28,Singapore416601 Tel:+6580385403 URL:www.bacnetchina.com
milesgoiiot@gmail.com/sales@opcmaster.com

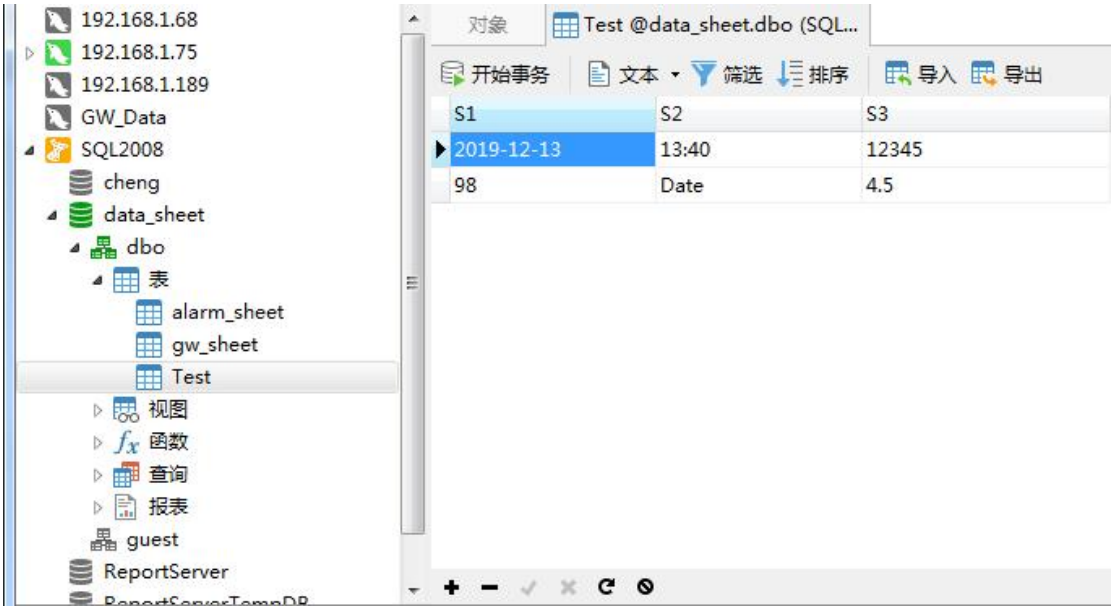


Figure2-15-5 SQL Server Database

Tag addition completed. As shown in Figure 2-15-6.

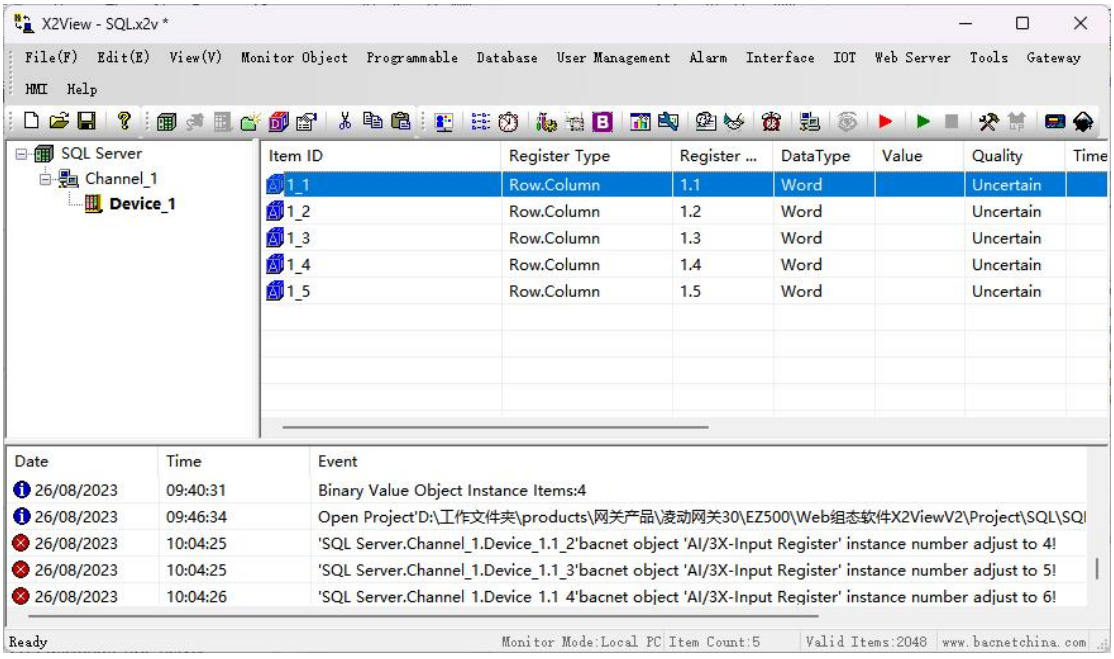


Figure2-15-5 SQL Server Database

2.16 SamSung_DVM_Protocol

Samsung Air Conditioning

2.16.1 NEW DRIVER

Add: 28SenangCrescent,#0511,Bizhub28,Singapore416601 Tel:+6580385403 URL:www.bacnetchina.com
milesgoiiot@gmail.com/sales@opcmaster.com

Click the menu ***Edit*** and select the ***New Driver…*** or click the button **New Driver** in the toolbar. In the popup diag "**Driver Properties**", choose the ***ModbusRTUClient*** from the **Driver List** and then type in a name , as the following Figure 2-16-1 and Figure 2-16-2 show.

- **Driver List:** All the supported drivers are listed here.
- **Name:** It will be easier distinguished to type a name for the driver.
- **Scan Rate:** It takes effects when there are many devices added to the project. The default value is **1000ms**.

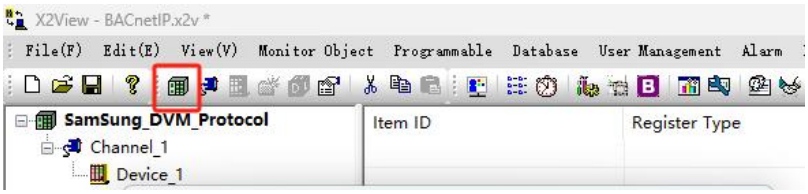


Figure 2-16-1 Choose the driver

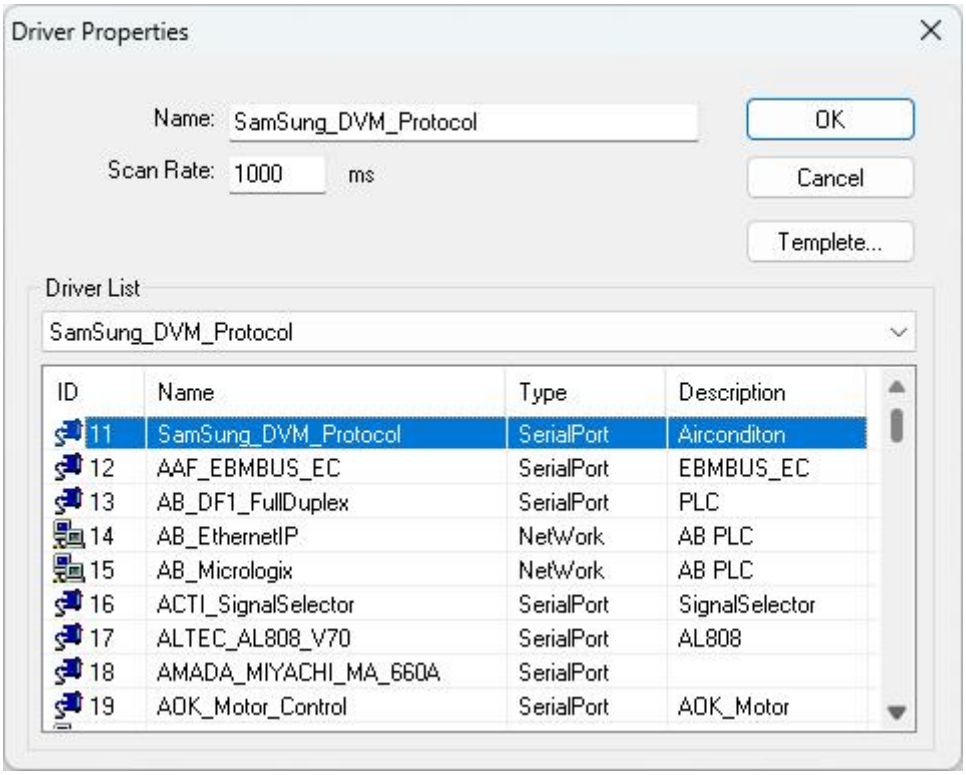


Figure 2-16-2 Type in a name

2.16.2 NEW CHANNEL

Click the menu ***Edit*** and select the ***New Channel…*** or click the button **New Channel** in the toolbar. In the popup diag "**Serial Port Communication Configuration**", set the **Channel Name** and **Communication Parameters**, as the following Figure 2-1-3 shows.

- **Channel Name:** It will be easier distinguished to type a name for the channel, *e.g. COM1*, Floor1 etc.

Add: 28SenangCrescent,#0511,Bizhub28,Singapore416601 Tel:+6580385403 URL:www.bacnetchina.com
milesgoiiot@gmail.com/sales@opcmaster.com

- **Port:** The communication ports of *Protocol Gateway*. The default value is **COM1**.
- **Baud Rate:** Set it according to the Directions of the device. The default value is **9600**.
- **Date Bits:** Set it according to the Directions of the device. The default value is **8**
- **Stop Bits:** Set it according to the Directions of the device. The default value is **1**.
- **Parity:** Set it according to the Directions of the device. The default value is **Even**.
- **Flow Control:** Set it according to the Directions of the device. The default value is **None**.
- **Response Timeout:** If the device responds slowly, try to set the timeout time as long as possible. The default value is **1500ms**.

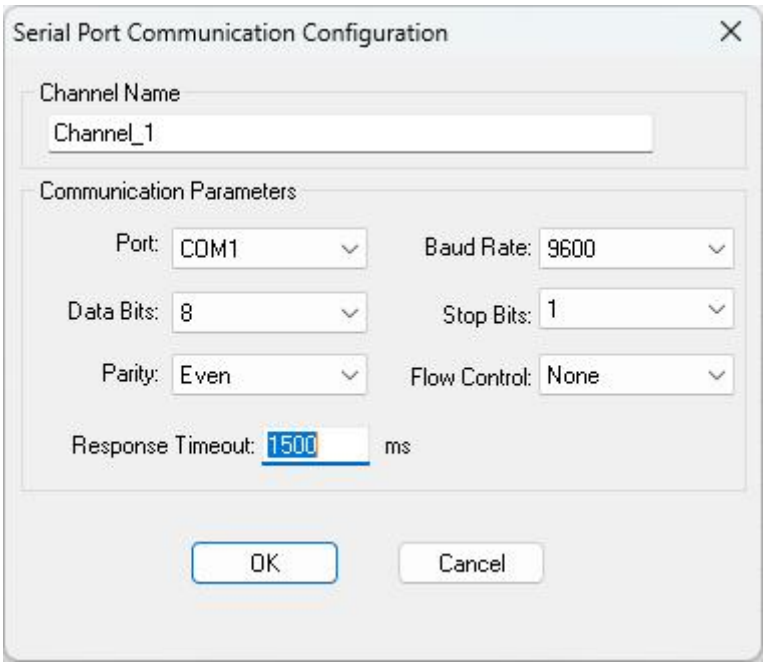


Figure 2-16-3 Set Communication Parameters

2.16.3 NEW DEVICE

Click the menu ***Edit*** and select the ***New Device…*** or click the button **New Device** in the toolbar. In the popup diag ”**Device Properties**”, set the device parameters and **Bulk Transfer** parameters, as the following Figure 2-16-4 shows.

- **Device ID:** It is the device address, and it can be usually found in the operation panel of the device. The default value is **0-0**. 6-0 in the figure represents the first outdoor unit address 6; The second indoor unit address is 0;
- **Delay Between Polls:** It is the time between a response frame and the next request frame. The default value is 10**00ms**.
- **Bulk Transfer:** It allows transmitting and receving several frames at the same time. **Note:** However, if devices don’t provide a good analogue to this, there is simply no way to enable this function. At this time you have to set all the Bulk Transfer parameters as zero.

Add: 28SenangCrescent,#0511,Bizhub28,Singapore416601 Tel:+6580385403 URL:www.bacnetchina.com
milesgoiiot@gmail.com/sales@opcmaster.com

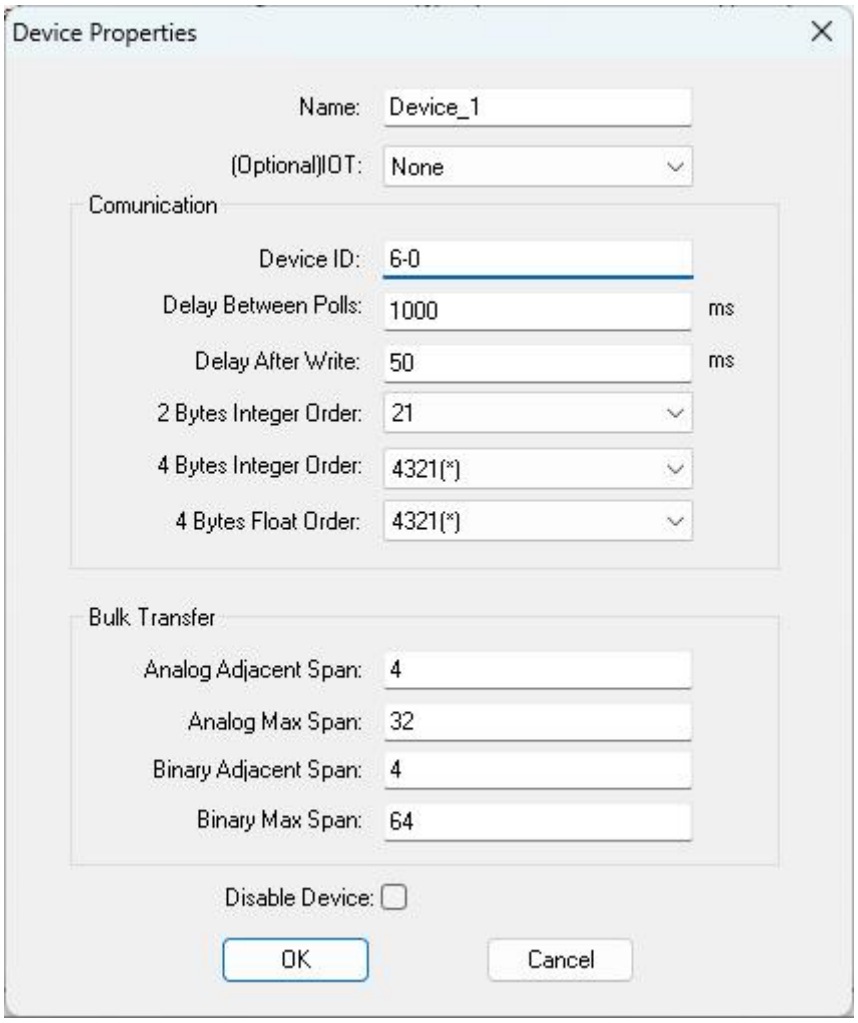


Figure 2-16-4 Set Device Properties

2.16.4 NEW TAG

Click the menu ***Edit*** and select the ***New Tag…*** or click the button **New Tag** in the toolbar. In the popup diag "**Tag Properties**", set the **Collection** and **Transfer(BACnet Server)** parameters, as the following Figure 2-8 shows.

- **Date Type:** Boolean\Word\Short\Dword\Long\Float and Double ,as the following Figure 2-16-5 shows.

Add: 28SenangCrescent,#0511,Bizhub28,Singapore416601 Tel:+6580385403 URL:www.bacnetchina.com
milesgoiiot@gmail.com/sales@opcmaster.com

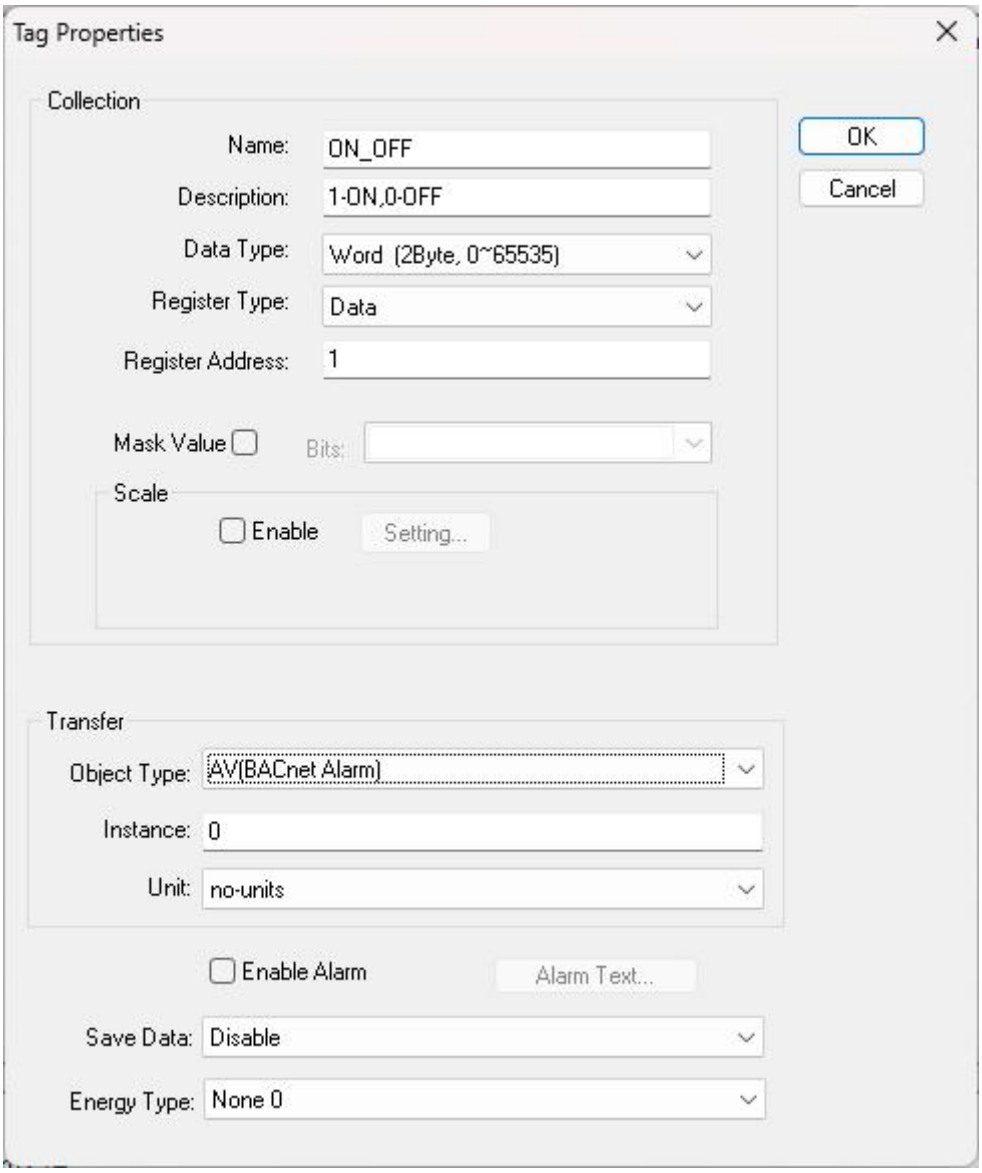


Figure 2-16-5 Date Type

- **Register Type:** data
- **Register Address:** Set it according Directions of the device.
- **Mask Value:** Check single box “Mask Value” to pick up a bit from 0 to 15 of some register if necessary,as the following Figure 2-16-6 shows.

Add: 28SenangCrescent,#0511,Bizhub28,Singapore416601 Tel:+6580385403 URL:www.bacnetchina.com
milesgoiiot@gmail.com/sales@opcmaster.com

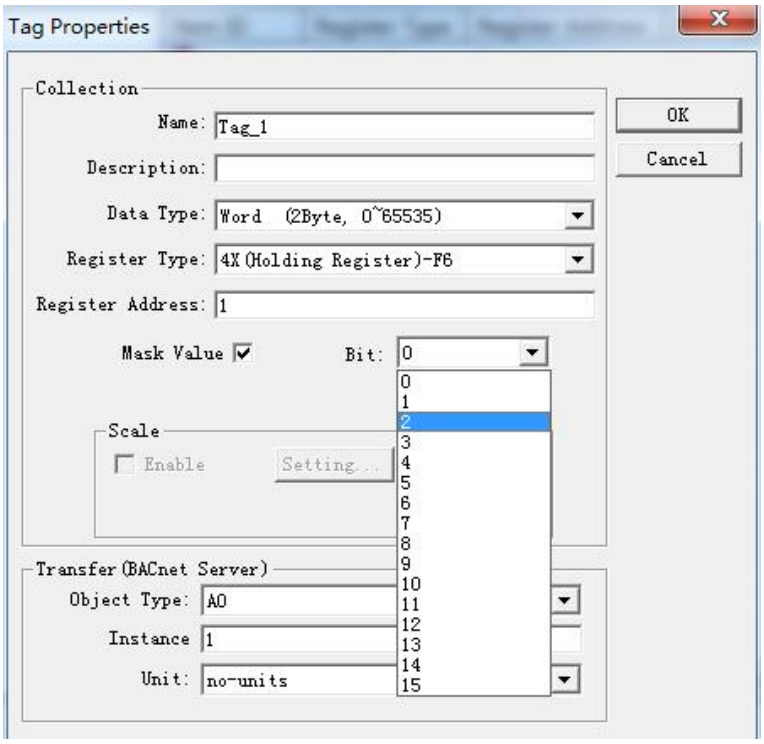


Figure 2-16-6 select Bit

- **Scale:** Check single box "**Enable**" and click the button "**Setting…**" to enable liner transformation, as the following Figure 2-16-7 shows.

Figure 2-16-7 Tag Process Settings

- **Transfer:**
  Object Type

Add: 28SenangCrescent,#0511,Bizhub28,Singapore416601 Tel:+6580385403 URL:www.bacnetchina.com
milesgoiiot@gmail.com/sales@opcmaster.com

Name	Description	Properties
BI	Binary Input	Read Only
BO	Binary Output	Read & Write
BV	Binary Value	Read & Write
AI	Analog Input	Read Only
AO	Analog Output	Read & Write
AV	Analog Value	Read & Write

Instance: The number of BACnet registers begins from zero.

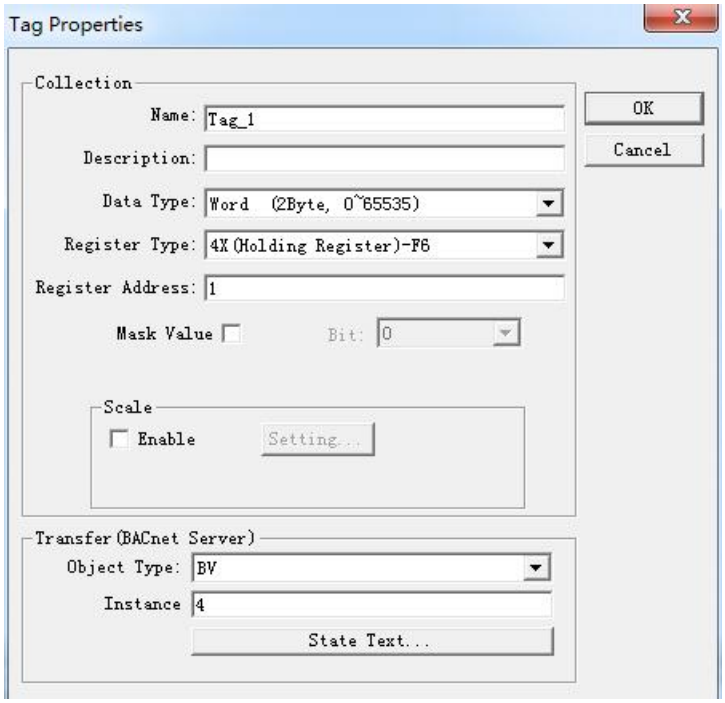


Figure 2-16-8 Set Tag Properties

The monitoring point table information of indoor air conditioning units is shown in Table 2-16-1.

Data Type	Register Address	Access Authority	Description
Short	1	R/W	ON_OFF(0 OFF, 1 ON)
Short	2	R/W	Control mode (0:Auto 1:Cooling 2:Dry 3:Fan 4:Heating)
Short	3	R/W	Wind speed (0 automatic 1 low 2 3 high)

Add: 28SenangCrescent,#0511,Bizhub28,Singapore416601 Tel:+6580385403 URL:www.bacnetchina.com
milesgoiiot@gmail.com/sales@opcmaster.com

Short	4	R/W	Swing (0 off 1 on)
Short	5	R/W	Alarm status (0 normal 1 alarm)
Short	6	R/W	Set temperature (needs to be reduced by 10 times)
Short	7	R	Actual temperature (needs to be reduced by 10 times)
Short	8	R	Error code (0 no errors)
Short	9	R/W	Remote control restrictions (0 unrestricted 1 restricted)

Table 2-16-1 Monitoring point table information of indoor air conditioning units

Add other tags in the same way.

2.17 DAIKIN_HBS

Dajin Air Conditioning HBS Gateway can connect DAIKIN air conditioner like the below picture.

Figure 2-17-1 DAIKIN Air Condirioner

The Wiring method for single outdoor unit and multiple indoor units can refer to the below pircture.

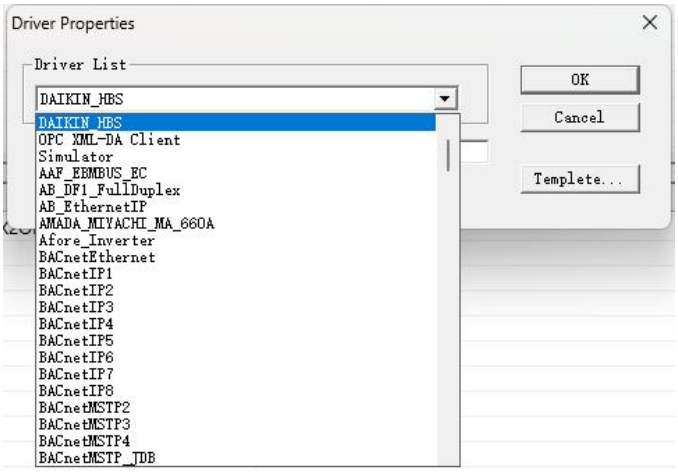
Add: 28SenangCrescent,#0511,Bizhub28,Singapore416601 Tel:+6580385403 URL:www.bacnetchina.com
milesgoiiot@gmail.com/sales@opcmaster.com

Figure 2-17-2 Wiring

2.17.1 NEW DRIVER

Click the menu ***Edit*** and select the ***New Driver…*** or click the button **New Driver** in the toolbar. In the popup diag "**Driver Properties**", choose the ***ModbusTCPClient*** from the **Driver List** and then type in a name , as the following Figure 2-17-3 and Figure 2-17-4 show.

- **Scan Rate:** It takes effects when there are many devices added to the project. The default value is **100ms**.



Add: 28SenangCrescent,#0511,Bizhub28,Singapore416601 Tel:+6580385403 URL:www.bacnetchina.com
milesgoiiot@gmail.com/sales@opcmaster.com

Figure 2-17-3 Choose a driver

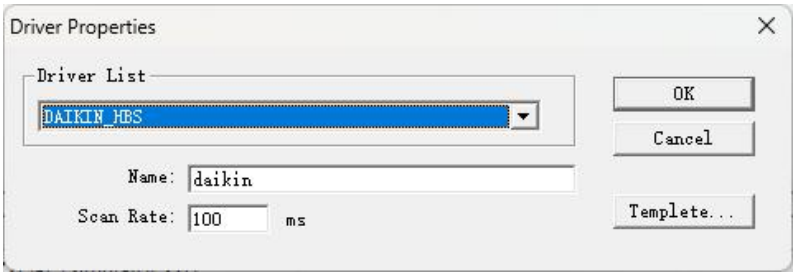


Figure 2-17-4 Type in a name

2.17.2 NEW CHANNEL

Click the menu ***Edit*** and select the ***New Channel…*** or click the button **New Channel** in the toolbar. In the popup diag "**Serial Port Communication Configuration**", set the **Channel Name** and **Communication Parameters**, as the following Figure 2-17-5 shows.

DAIKIN_ HBS is the internal HBS protocol of the Dajin indoor unit air conditioner, which enters the gateway through our HBS-RS485 converter. The default communication parameters are 19200bps, 8, no check bit, 1 stop bit, and a default timeout time of 1500 milliseconds.

- **Channel Name:** It will be easier distinguished to type a name for the channel, *e.g. COM1*, Floor1 etc.
- **Port:** The communication ports of *Protocol Gateway*. The default value is **COM1**.
- **Baud Rate:** Set it according to the Directions of the device. The default value is **19200**.
- **Date Bits:** Set it according to the Directions of the device. The default value is **8**
- **Stop Bits:** Set it according to the Directions of the device. The default value is **1**.
- **Parity:** Set it according to the Directions of the device. The default value is **None**.
- **Flow Control:** Set it according to the Directions of the device. The default value is **None**.
- **Response Timeout:** It will be error when the time between request frame and response frame is larger than the time in Response Timeout . The default value is **1500ms**.

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milesgoiiot@gmail.com/sales@opcmaster.com

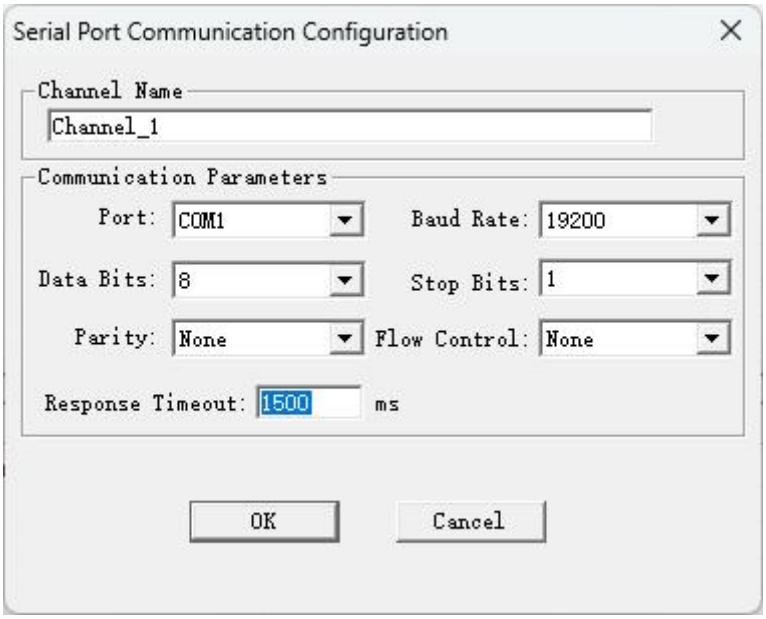

Figure 2-17-5 Serial Port Communication Configuration

2.17.3 NEW DEVICE

Click the menu ***Edit*** and select the ***New Device…*** or click the button **New Device** in the toolbar. In the popup diag "**Device Properties**", set the device parameters and **Bulk Transfer** parameters, the device packaging parameter is set to 0, ,as the following Figure 2-17-6 shows.

- **Device ID:** It is the device address, and it can be usually found in the operation panel of the device. The default value is **1**.

Delay Between Polls: Note that the request frame interval refers to the time interval between issuing the next frame request and the previous frame request.The default value is **100ms**.

- **Bulk Transfer:** It allows transmitting and receving several frames at the same time. **Note:** However, if devices don't provide a good analogue to this, there is simply no way to enable this function. At this time you have to set all the Bulk Transfer parameters as zero.

Note: Device ID represents the station number of the indoor unit of the Daikin air conditioner, and Milesgo HBS-RS485 converter can tow 16 indoor units.

1-1, it indicates that the indoor unit address is 1-00.

1-2, it indicates that the indoor unit address is 1-01.

...

4-16, it indicates that the indoor unit address is 4-15.

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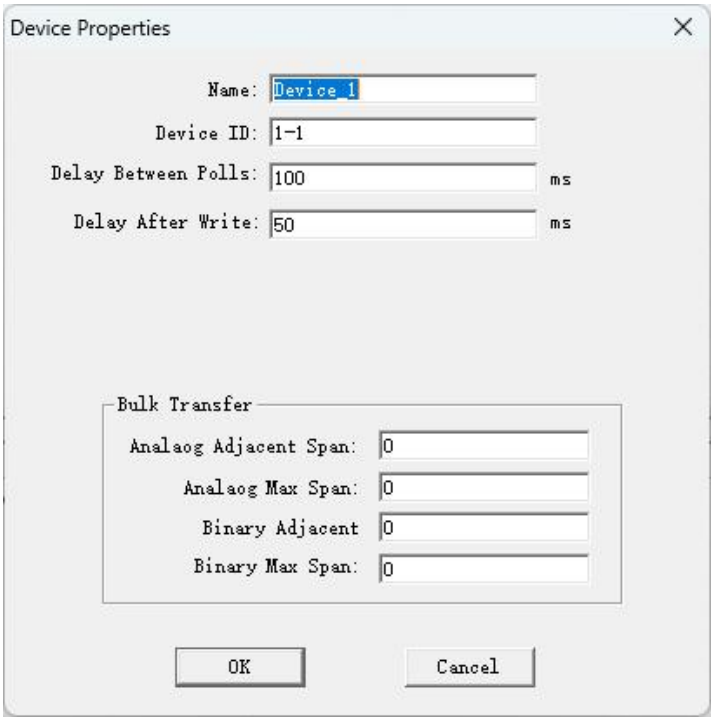

Figure 2-17-6 Set Device Properties

2.17.4 NEW TAG

Click the menu ***Edit*** and select the ***New Tag…*** or click the button **New Tag** in the toolbar. In the popup diag "**Tag Properties**", set the **Collection** and **Transfer(BACnet Server)** parameters, as the following Figure 2-17-7 shows.

- **Date Type:** Boolean\Word\Short\Dword\Long\Float and Double ,as the following Figure 2-17-7 shows.
- **Register Type:** data
- **Register Address:** The register address ranges from 0 to 4, representing 5 data such as on/off mode, wind speed, temperature setting, and indoor temperature.
- **Mask Value:** Check single box "Mask Value" to pick up a bit from 0 to 15 of some register if necessary,as the following Figure 2-17-7 shows.

Note: In the above Tag attributes, the base address of the BACnet slave register on the forwarding end can be allocated starting from 0. The label establishment is completed, as shown in Figure 2-17-7.

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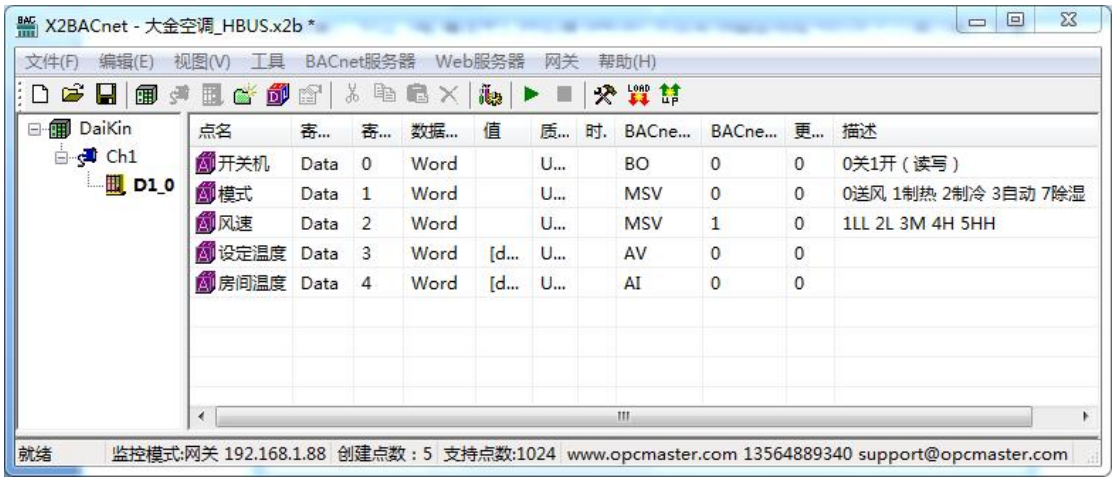

Figure 2-17-7 Tag list

The data type supported of the collection end is only Word type, and the specific description is shown in Table 2-17-1.

Data Type	Description
Word	2Byte

Table 2-17-1 Data Type of Collection

The register type of the collection end is only Data (the detailed register address meaning can be explained in the corresponding protocol document), as shown in Table 2-17-2.

NO	Register Type	Address Range	Descriptioon
1	Data	0	On/off (R&W) 1 is on, 0 is off
		1	Mode (R&W) 0: Ventilation; 1: Heating; 2: Refrigeration; 3: Automatic; 7: Dehumidification
		2	Air volume (R&W)
		3	1: LL; 2: L; 3: M; 4: H; 5: HH
		4	Set temperature (R&W)

Table 2-17-2 Register Type

2.18 Modbus_DAIKIN_IRACC

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2.18.1 NEW DRIVER

Click the menu Edit and select the New Driver… or click the button New Driver in the toolbar. In the popup diag “Driver Properties”, choose the Modbus_DAIKIN_IRACC from the Driver List and then type in a name , as the following Figure 2-18-3 and Figure 2-18-4 show.

- **Scan Rate:** It takes effects when there are many devices added to the project. The default value is **100ms**.

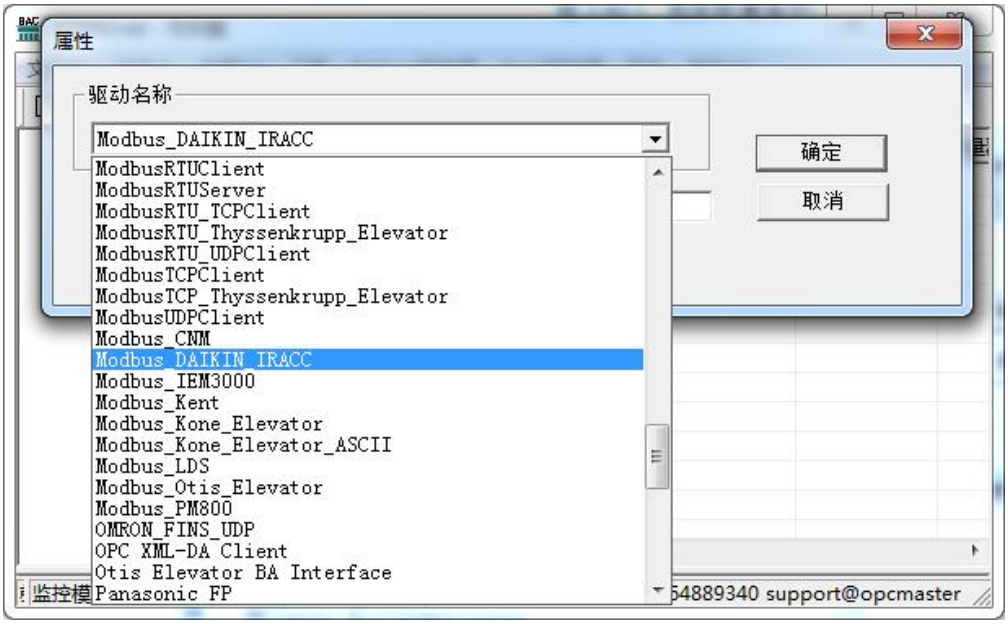

Figure 2-18-3 Choose a driver

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milesgoiiot@gmail.com/sales@opcmaster.com

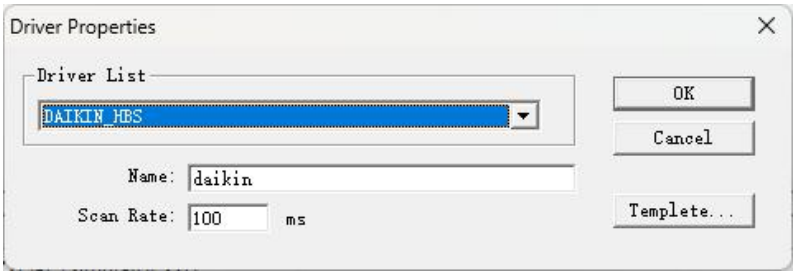

Figure 2-18-4 Type in a name

2.18.2 NEW CHANNEL

Click the menu ***Edit*** and select the ***New Channel...*** or click the button **New Channel** in the toolbar. In the popup diag "**Serial Port Communication Configuration**", set the **Channel Name** and **Communication Parameters**, as the following Figure 2-18-5 shows.

Modbus_ DAIKIN_ IRACC is a non-standard Modbus interface protocol for the Daikin air conditioning gateway, mainly communicating through RS-485 communication. The default channel is serial port 1, with default communication parameters of 9600bps, 8, no check bit, 1 stop bit, and a default timeout time of 1500 milliseconds.

When configuring, if the device responds slowly, try to set the timeout time as long as possible, as shown in Figure 2-18-5.

Note that the timeout time refers to the waiting timeout time for the main station to request frames.

- **Response Timeout:** It will be error when the time between request frame and response frame is larger than the time in Response Timeout . The default value is **1500ms**.

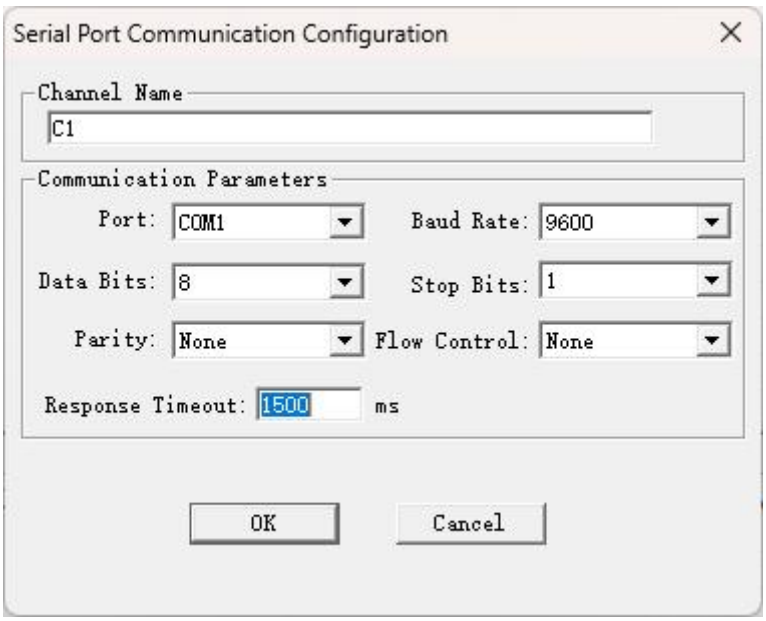

Figure 2-18-5 Serial Port Communication Configuration

2.18.3 NEW DEVICE

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milesgoiiot@gmail.com/sales@opcmaster.com

Click the menu ***Edit*** and select the ***New Device…*** or click the button **New Device** in the toolbar. In the popup diag "**Device Properties**", set the device parameters and **Bulk Transfer** parameters, the device packaging parameter is set to 0, as the following Figure 2-18-6 shows.

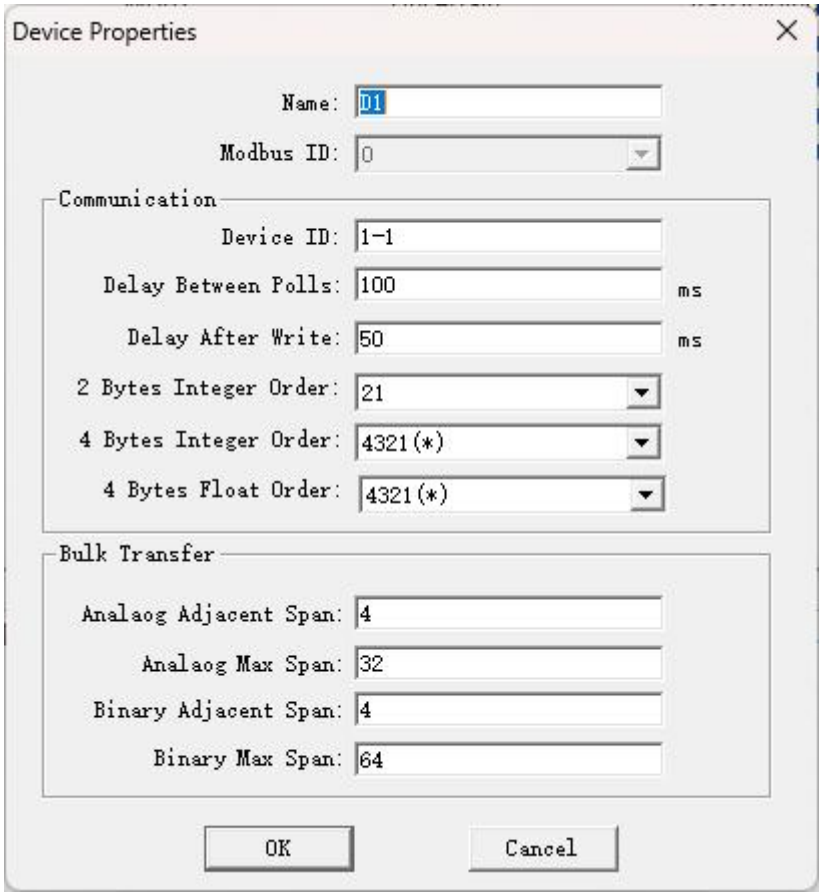

Figure 2-18-6 Set Device Properties

- **Delay Between Polls:** The default value is **100ms**.Note that the request frame interval refers to the time interval between issuing the next frame request and the previous frame request.
- **Bulk Transfer:** It allows transmitting and receving several frames at the same time. **Note:** However, if devices don't provide a good analogue to this, there is simply no way to enable this function. At this time you have to set all the Bulk Transfer parameters as zero.
- **Device ID:** The default value is **1**.

Note: Device ID consists of the Daikin Gateway station number and the Daikin Air Conditioning indoor unit station number.

1-1, it indicates that the indoor unit address is 1-00.

1-2, it indicates that the indoor unit address is 1-01.

...

4-16, it indicates that the indoor unit address is 4-15.

2-1, it indicates that the Dakin Gateway station number is 2 and the indoor unit station number is 1-0.

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And so on

The specific correspondence is shown in the table below.

Address	Corresponding Daikinindoor unit address	Remark
1-1~1-16	1-00~1-15	The gateway address of Daikin is 1
1-17~1-32	2-00~2-16	The gateway address of Daikin is 1
1-33~1-48	3-00~3-15	The gateway address of Daikin is 1
1-49~1-64	4-00~4-15	The gateway address of Daikin is 1
2-1~2-17	1-00~1-15	The gateway address of Daikin is 2
2-18~2-32	2-00~2-16	The gateway address of Daikin is 2
2-33~2-48	3-00~3-15	The gateway address of Daikin is 2
2-49~2-64	4-00~4-15	The gateway address of Daikin is 2
…	…	…

Table 2-18-1 Address

2.18.4 NEW TAG

Click the menu ***Edit*** and select the ***New Tag…*** or click the button **New Tag** in the toolbar. In the popup diag "**Tag Properties**", set the **Collection** and **Transfer(BACnet Server)** parameters, as the following Figure 2-18-7 shows.

- **Date Type:** Boolean\Word\Short\Dword\Long\Float and Double ,as the following Figure 2-18-7 shows.
- **Register Type:** data
- **Register Address:** The register address ranges from 1 to 7, representing 5 data such as on/off mode, wind speed, temperature setting, and indoor temperature.
- **Mask Value:** Check single box "Mask Value" to pick up a bit from 0 to 15 of some register if necessary,as the following Figure 2-18-7 shows.

Note: In the above Tag attributes, the base address of the BACnet slave register on the forwarding end can be allocated starting from 0. The label establishment is completed, as shown in Figure 2-18-7.

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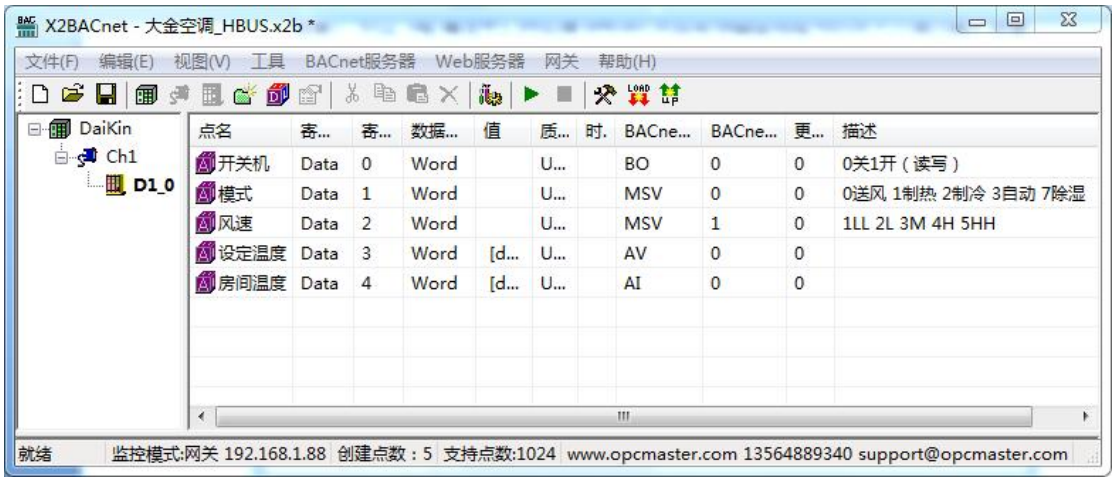

Figure 2-18-7 Tag list

The data type supported of the collection end is only Word type, and the specific description is shown in Table 2-18-1.

Data Type	Description
Word	2Byte

Table 2-18-1 Data Type of Collection

The register type of the collection end is only Data (the detailed register address meaning can be explained in the corresponding protocol document), as shown in Table 2-18-2.

NO	Register Type	Address Range	Descriptioon
1	Data	1	On/off (R&W) 1 is on, 0 is off
		2	Air Volume (R&W) 1: LL; 2: L; 3: M; 4: H; 5: HH
		3	Mode (R&W) 0: Ventilation; 1: Heating; 2: Refrigeration; 3: Automatic; 7: Dehumidification
		4	Set temperature (R&W)
		5	Fault codes(Read Only)
		6	Indoor temperature (Read-Only)
		7	Temperature sensor status (Read-Only)

Table 2-18-2 Register Type

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2.19 Voltronic_Power_UPS

2.19.1 NEW DRIVER

The driver here means the protocol which you will choose to match with the device's protocol. Here we choose the ***Voltronic_Power_UPS*** as the driver.

Click the menu ***Edit*** and select the ***New Driver…*** or click the button **New Driver** in the toolbar. In the popup diag "**Driver Properties**", choose the ***Voltronic_Power_UPS*** from the **Driver List** and then type in a name , as the following Figure 2-19-1 show.

- **Driver List:** All the supported drivers are listed here.
- **Name:** It will be easier distinguished to type a name for the driver.
- **Scan Rate:** It takes effects when there are many devices added to the project. The default value is **100ms**.

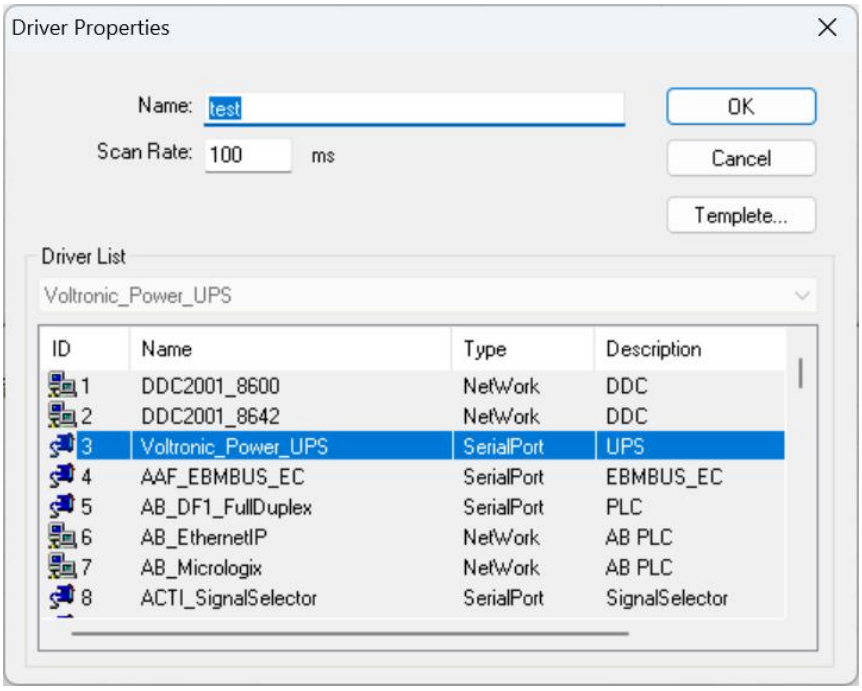

Figure 2-19-1 Choose the driver

2.19.2 NEW CHANNEL

Click the menu ***Edit*** and select the ***New Channel…*** or click the button **New Channel** in the toolbar. In the popup diag "**Serial Port Communication Configuration**", set the **Channel Name** and **Communication Parameters**, as the following Figure 2-19-2 shows.

- **Channel Name:** It will be easier distinguished to type a name for the channel, *e.g. COM1*, Floor1 etc.
- **Port:** The communication ports of *Protocol Gateway*. The default value is **COM1**.
- **Baud Rate:** Set it according to the Directions of the device. The default value is **2400**.

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milesgoiiot@gmail.com/sales@opcmaster.com

- **Date Bits:** Set it according to the Directions of the device. The default value is **8**
- **Stop Bits:** Set it according to the Directions of the device. The default value is **1**.
- **Parity:** Set it according to the Directions of the device. The default value is **None**.
- **Flow Control:** Set it according to the Directions of the device. The default value is **None**.
- **Response Timeout:** It will be error when the time between request frame and response frame is larger than the time in Response Timeout . The default value is **1500ms**.

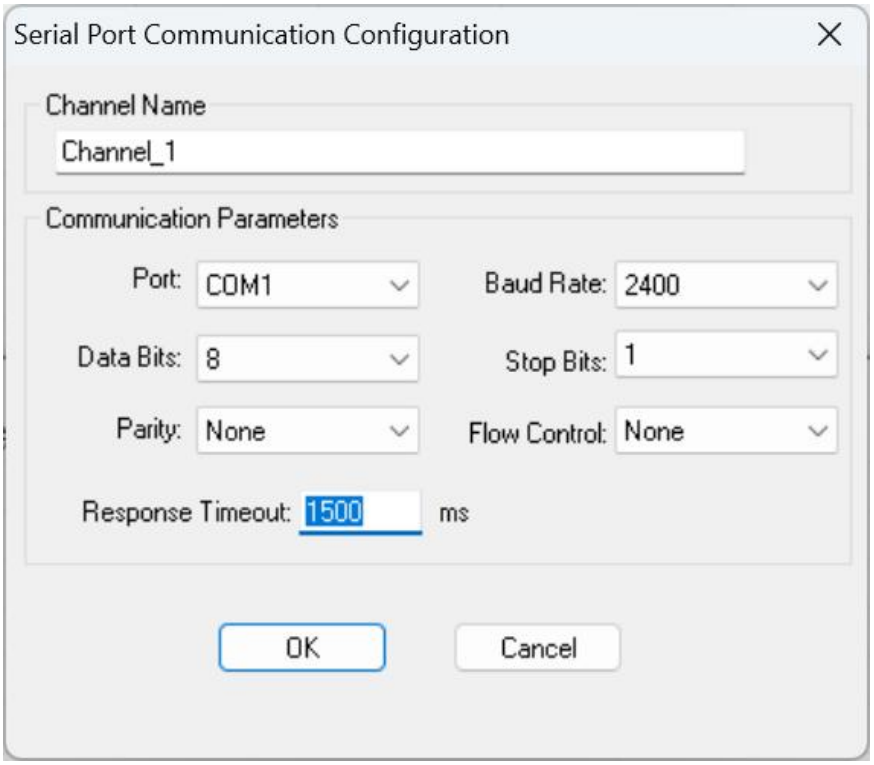

Figure 2-19-2 Set Communication Parameters

2.19.3 NEW DEVICE

Click the menu ***Edit*** and select the ***New Device…*** or click the button **New Device** in the toolbar. In the popup diag "**Device Properties**", set the device parameters and **Bulk Transfer** parameters, as the following Figure 2-19-3 shows.

- **IOT:** Optional. It's not need if you don't need to upload the cloud server.
- **Device ID:** Empty is ok. Don't need to be filled in.
- **Delay Between Polls:** It is the time between a response frame and the next request frame. The default value is **1000ms**.
- **Bulk Transfer:** It allows transmitting and receving several frames at the same time. **Note:** However, if devices don't provide a good analogue to this, there is simply no way to enable this function. At this time you have to set all the Bulk Transfer parameters as zero. So here is 0.

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milesgoiiot@gmail.com/sales@opcmaster.com

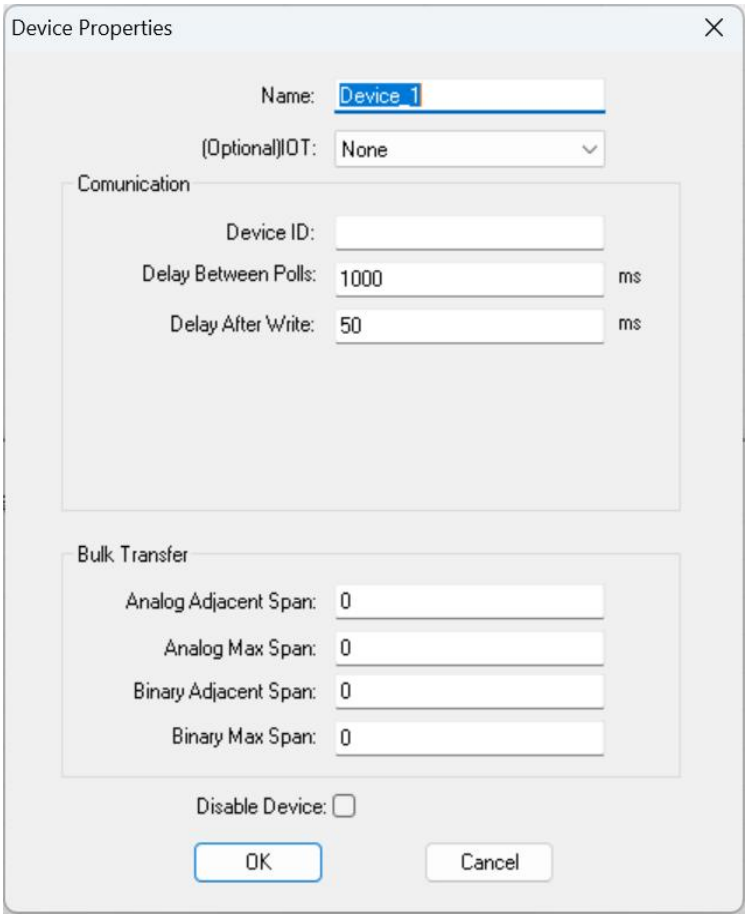

Figure 2-19-3 Set Device Properties

2.19.4 NEW TAG

Click the menu ***Edit*** and select the ***New Tag…*** or click the button **New Tag** in the toolbar. In the popup diag "**Tag Properties**", set the **Collection** and **Transfer(BACnet Server)** parameters, as the following Figure 2-19-4 shows.

- **Date Type:** Boolean\Word\Short\Dword\Long\Float and Double .
- **Register Type:** It is for each query instruction.
  Generally, the QGS register (QGS<cr>: The general status parameters inquiry) is used to read UPS data. Other types are established according to user needs and can be selected in the software register type. The register address refers to the address of the data field to be read.
- **Register Address:** Set it according Directions of the device.

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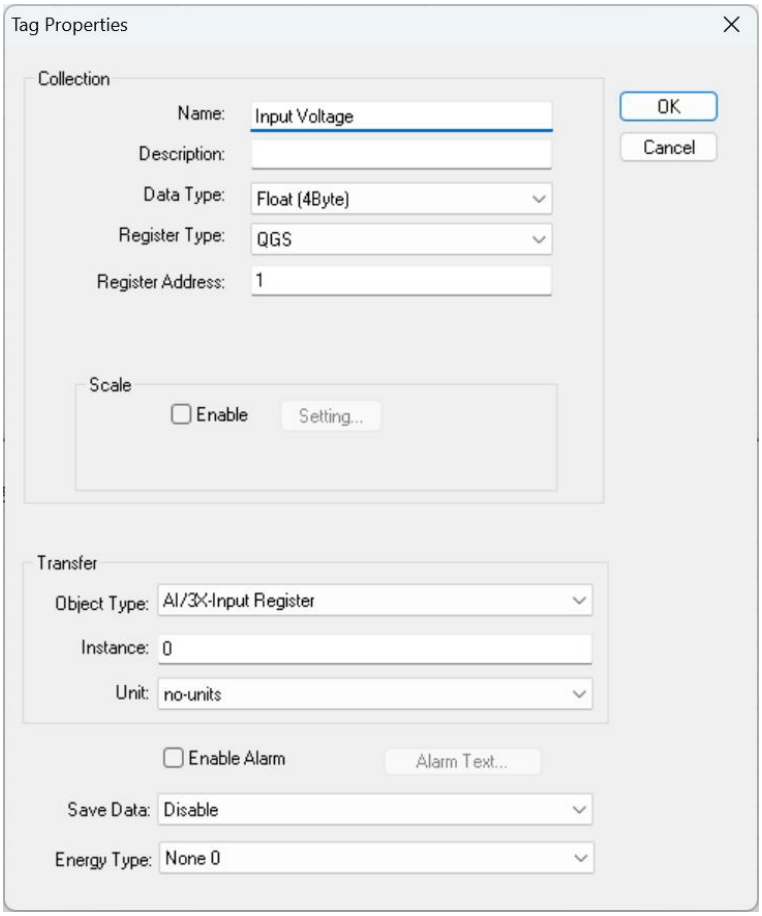

Figure 2-19-4 RegisterType

- **Transfer:**

③ Object Type

Name	Description	Properties
BI	Binary Input	Read Only
BO	Binary Output	Read & Write
BV	Binary Value	Read & Write
AI	Analog Input	Read Only
AO	Analog Output	Read & Write
AV	Analog Value	Read & Write

Table 2-19-1 Object Type

④ Instance: The number of BACnet registers begins from zero.

Note:

The address definition of the QGS register at the acquisition end is shown in Table 2-19-5.

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milesgoiiot@gmail.com/sales@opcmaster.com

For other types, corresponding points can be established according to the protocol document. The points are divided by spaces, with a starting address of 1 and a corresponding+1 for the following addresses.

The following example reads QRI:

Computer: QRI<cr>

UPS: (MMM. M QQ SSS. S RR. R<cr>

Register address 1 is MMM The value of M;

Register address 2 is the value of QQ;

Register address 3 is SSS The value of S;

Register address 4 is RR The value of R;

NO	Register Type	Address	Data Type	Description
1	Input voltage	1	Float	Read Only
2	Input frequency	2	Float	
3	Output voltage	3	Float	
4	Output frequency	4	Float	
5	Output current	5	Float	
6	Output load percent	6	Float	
7	Positive BUS voltage	7	Float	
8	Negative BUS voltage	8	Float	
9	P Battery voltage	9	Float	
10	N Battery voltage	10	Float	
11	Max Temperature	11	Float	
12	Status1	12	Word	
13	Utility Fail	13	Boolean	
14	Battery Low	14	Boolean	
15	Bypass_Boost Active	15	Boolean	
16	UPS Failed	16	Boolean	
17	EPO	17	Boolean	
18	Test in Progress	18	Boolean	
19	Shutdown Active	19	Boolean	
20	bat silence	20	Boolean	
21	Bat test fail	21	Boolean	
22	Bat test OK	22	Boolean	

Table 2-19-2 Definition of QGS Register Address at the Acquisition End

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2.20 BACnetRouter (used as a BACnet router by HMI gateway)

This driver uses the Sunfull HMI gateway/touch screen as a BACnet router, which can meet the needs of the gateway to collect BACnetMSTP data and also serve as a BACnet router, enabling the BA upper computer to integrate with the lower end BACnet MSTP device through BACnetIP, including the function of downloading programs from the device. Please note that using this driver, the BACnetIP method on the gateway forwarding end cannot use port 47808.

2.20.1 NEW DRIVER

Select the "***New Driver*** " option in the menu bar of the X2View configuration interface, as shown in Figure 2-20-1.

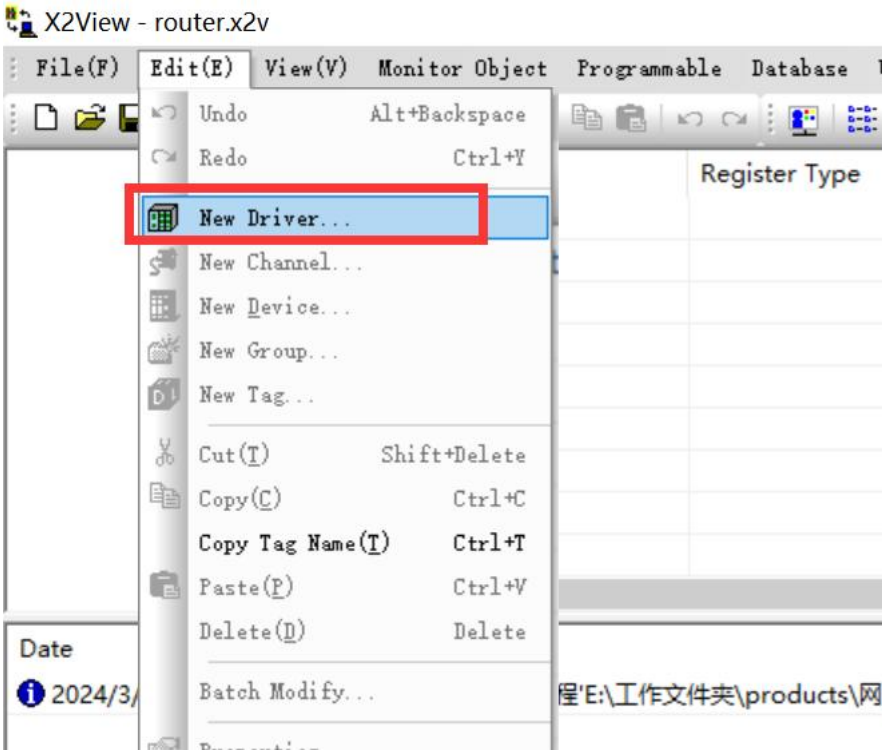

Figure 2-20-1 Selection of New Driver

Select the "***BACnetRoute***r" driver in the pop-up window, with a default polling time of ***1000ms*** and no need to change it. As Figure 2-20-2.

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milesgoiiot@gmail.com/sales@opcmaster.com

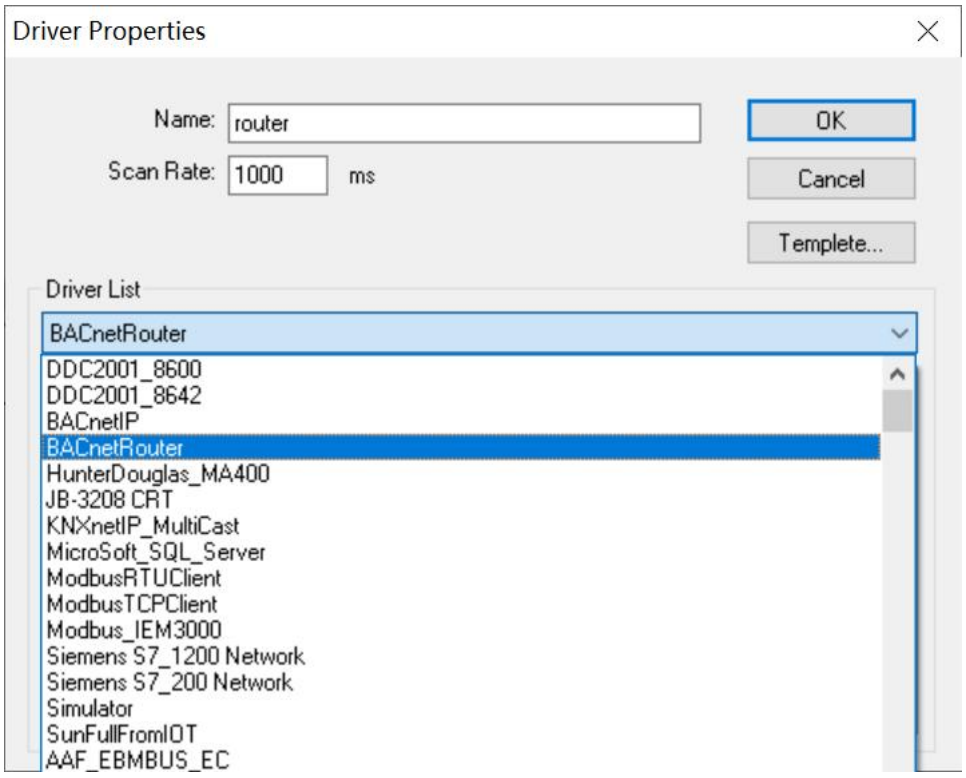

Figure 2-20-2 Selection Drive

2.20.2 NEW CHANNEL

After adding the driver, select the ***new channel*** and use BACnet MSTP as the serial communication port. The default channel is serial ***port 1***, with default communication parameters of ***38400bps, 8, no checksum, 1 stop bit.*** The default timeout time represents the network number assigned to the current bus. When using multiple com ports, it is necessary to ensure the uniqueness of this network number. The main station parameter M.N represents the MAC address range of the gateway itself and the ***MAC address*** range on the bus, with a default value of ***127.127***. Generally, it is not modified. As shown in Figure 2-20-3.

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milesgoiiot@gmail.com/sales@opcmaster.com

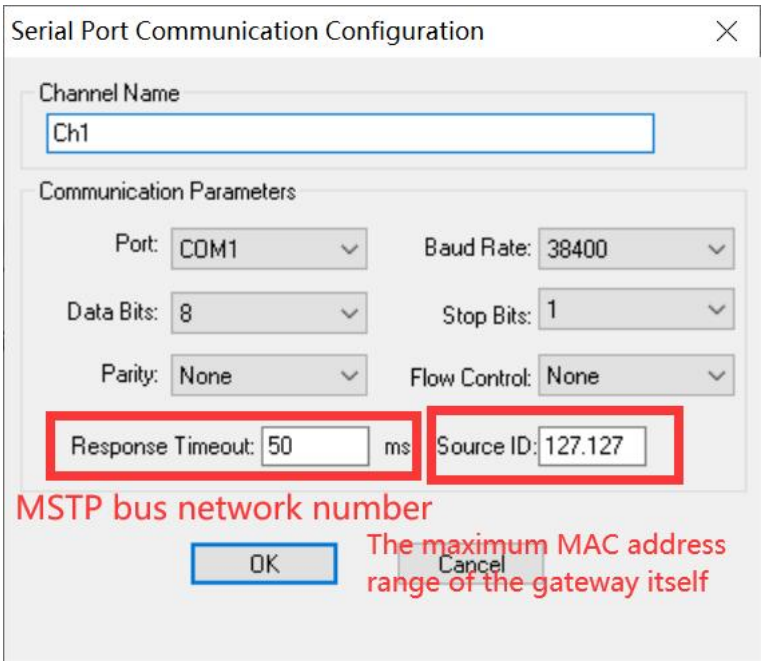

Figure 2-20-3 Channel Parameter Settings

After the channel is established, the project can be directly uploaded, so that the Router function of the gateway/touch screen is opened. Users can use the BACnet Scan tool BACnet IP to ***scan MS/TP*** devices on the bus, as shown in Figure 2-20-4.

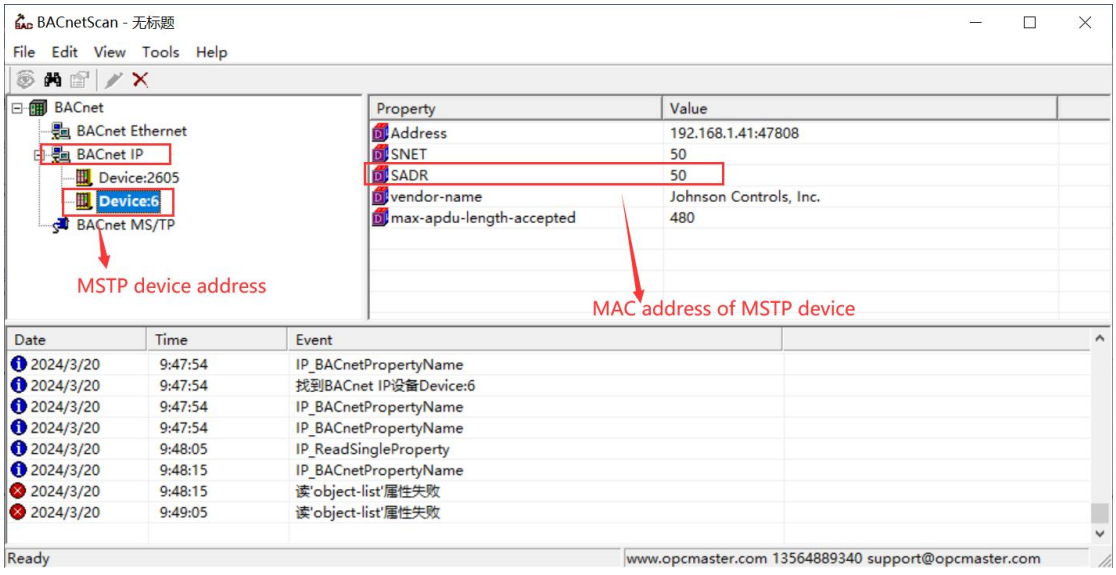

Figure 2-20-4 BACScan Search

2.20.3 NEW DEVICE

If the gateway needs to integrate these devices, you can right-click on the channel and select New Device. In the pop-up dialog box, set the device properties. The station number is the ***MAC address*** of the BACnet MSTP device. Users can use

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BACnetScan to automatically Scan to check which devices are online on the bus, with a request frame interval of ***50 milliseconds***. As shown in Figure 2-20-5.

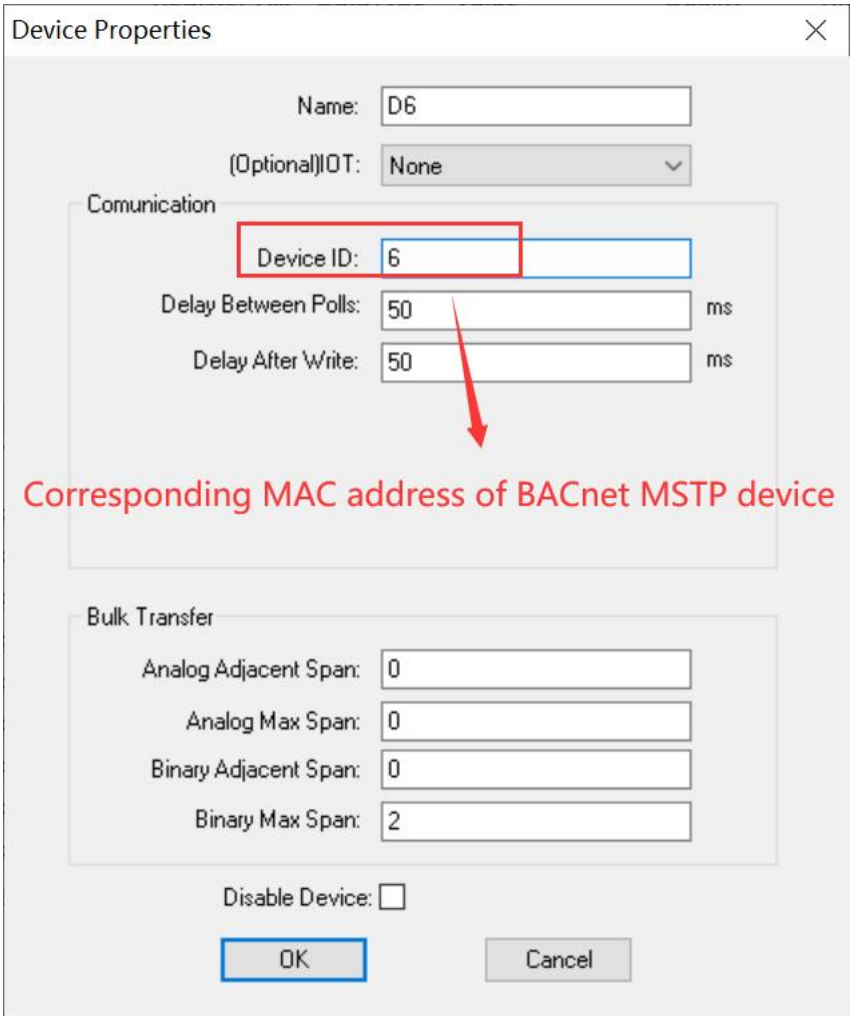

Figure 2-20-5 Adding Devices

In batch transmission, the three effective parameters are the maximum length of analog packets, the interval between digital packets, and the maximum length of digital packets. The maximum length of analog packet includes the packet length of all objects, ranging from 0 to 90. This parameter has an effect on communication speed. If the BACnetIP device has 90 objects, and this parameter is 0, then each object needs to send a request frame, and the communication speed will be slower. If the parameter is 90, a request frame can read back the current values of 90 objects at once, which is theoretically equivalent to a 90 times increase in communication speed. If the device does not support reading multiple properties simultaneously, this parameter can be set to 0.

The interval between digital packets and the maximum length of digital packets are effective for the refresh time of write values, and their specific functions are shown in Table 2-20-1.

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Digital package interval	Maximum length of digital package	Action after writing values
0	0	First read a single point, then read all objects of the current device
	1	Read the current object of the entire device
	2	Read single point
	Other numbers	No action
Non 0	0	First read a single point, then read all objects under the device with DeviceID "Digital Packet Interval"
	1	Read all objects under the device with DeviceID "Digital Packet Interval"
	2	Read single point
	Other numbers	No action

Table 2-20-1 Batch Processing Parameter Description

2.20.4 NEW TAG

After the device is established, select the new label (point) and set the label parameters in the pop-up window. Set the relevant properties as shown in Figure 2-20-6. Users can also import the device point table previously found by the BACScan tool, making it convenient to quickly add points. For details, please refer to section 2.10 BACnetIP.

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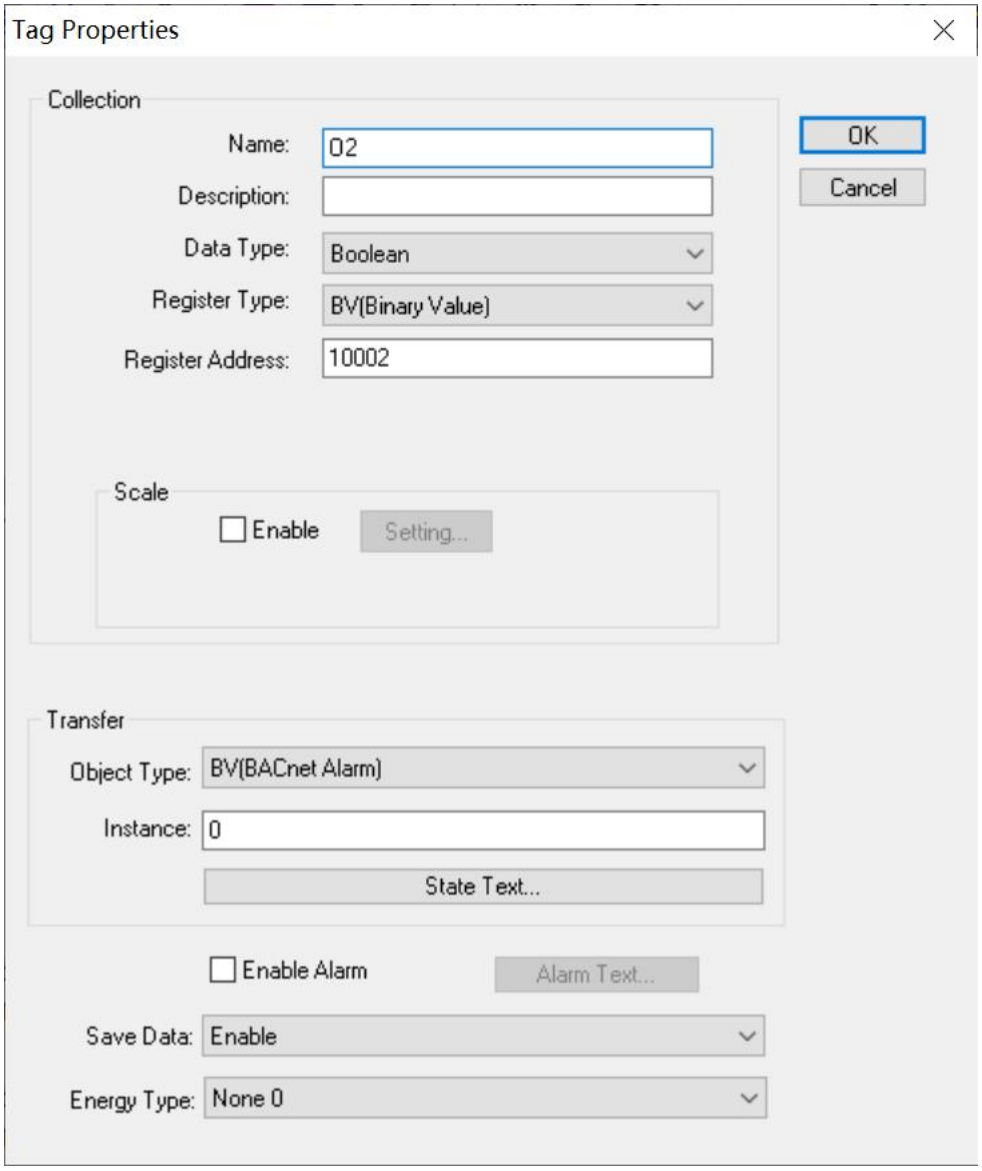

Figure 2-20-6 Label Parameter Setting 1

Note: The register address at the collection end is usually an integer address, representing the address of the bacnet object. Of course, register addresses can also be represented with decimals. At this time, the integer part still represents the object address, while the decimal part represents write operations, etc.The level of BACnet write operations is divided into 16 levels, including 1, 2, 3,... 16, etc. If the register address is 2.8, it means that the collected object address value is 2, and the write operation level is 8. If the register address is an integer, the default write level is level 16, as shown in Figure 2-20-7.

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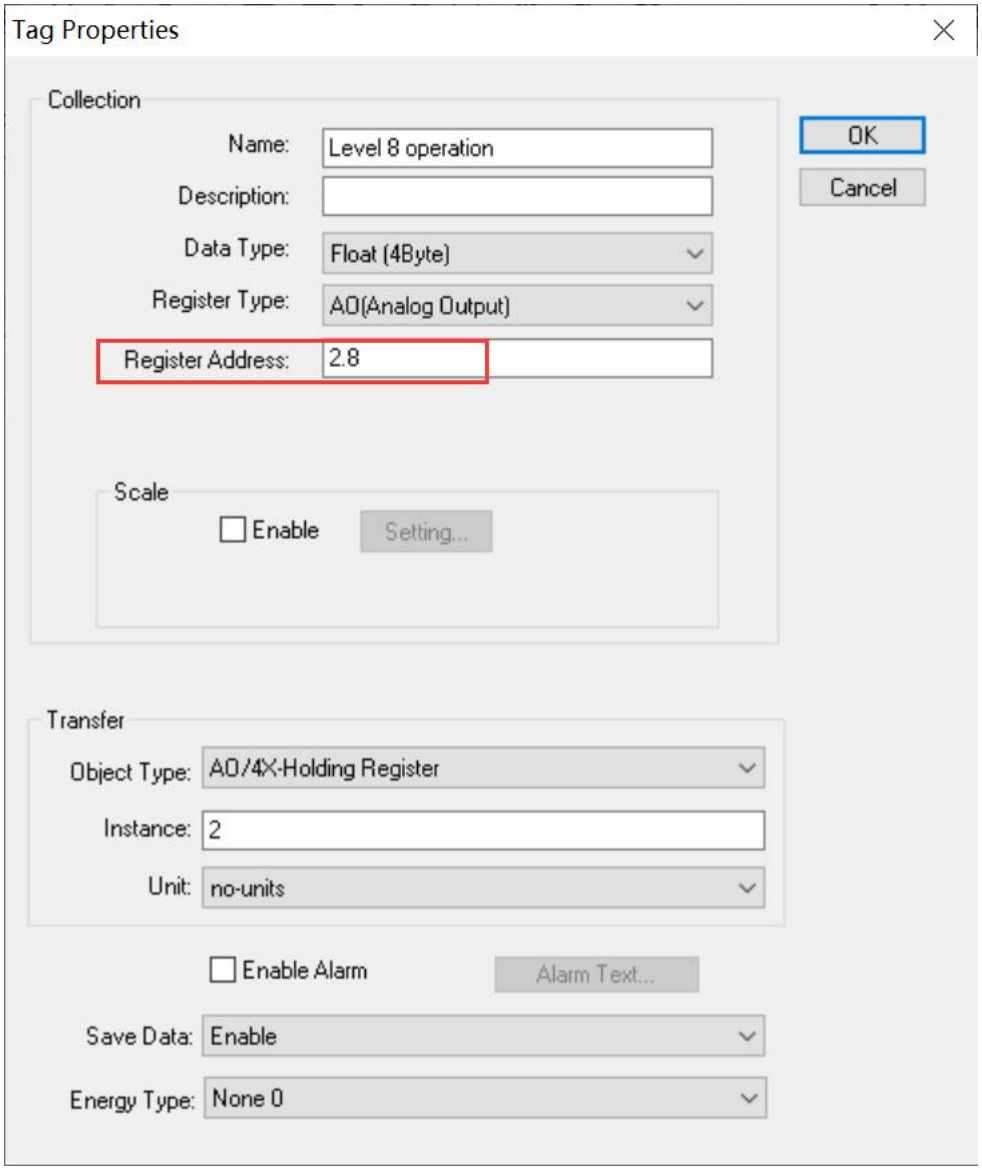

Figure 2-20-7 Label Parameter Setting 2

To release level 8, you can create a new point with a register address of 2.8. Release, which is only written and not read, as shown in Figure 2-20-8.

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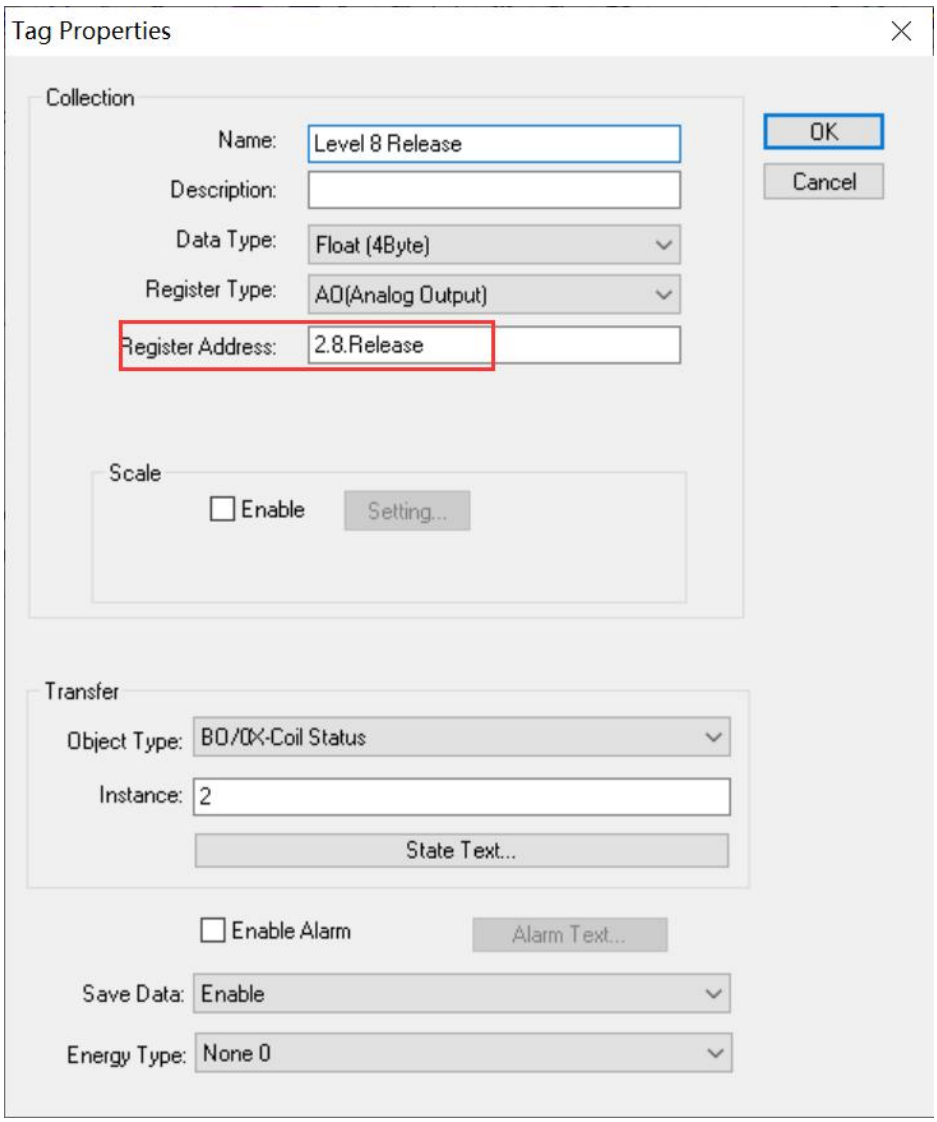

Figure 2-20-8 Label Parameter Setting 3

In the above Tag attributes, the register address refers to the object address, and the BACnet slave register base address on the forwarding end is allocated from 0.

The data types supported by the collection end include Boolean, Dword, and Float, as described in Table 2-20-2.

Data Type	Describe
Boolean	0,1 variables, applicable to BI, BO, BV types
Dword	4Byte (0~4294967295), suitable for MI, MO, MV types
Float	4Byte, suitable for AI, AO, AV types

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Table 2-20-2 Collection End Data Types

The register types supported by the collection end include AI, AO, AV, BI, BO, BV, MI, MO, and MV, as shown in Table 2-20-3.

Serial Number	Register type	Addresses	Describe
1	AI(Analog Input)	0~4194303	Analog quantity, read-only (continuously changing object types)
2	AO(Analog Output)	0~4194303	Analog quantity, readable and writable (continuously changing object types)
3	AV(Analog Value)	0~4194303	Analog quantity, readable and writable (continuously changing object types)
4	BI(Binary Input)	0~4194303	Numeric quantity, read-only (object types with only 0 and 1 values)
5	BO(Binary Output)	0~4194303	Numeric quantity, readable and writable (object types with only 0 and 1 values)
6	BV(Binary Value)	0~4194303	Numeric quantity, readable and writable (object types with only 0 and 1 values)
7	MI(Multi-state Input)	0~4194303	Analog quantity, read-only (continuously changing object types)
8	MO(Multi-state Output)	0~4194303	Analog quantity, readable and writable (continuously changing object types)
9	MV(Multi-state Value)	0~4194303	Analog quantity, readable and writable (continuously changing object types)

Table 2-20-3 Register Types at the Acquisition End

2.21 ModbusRTU_TCPClient (Ethernet port)

2.21.1 NEW DRIVER

The ModbusRTU-TCPClient protocol is still the ModbusRTU protocol for serial ports, simply placing the protocol that was originally running on the serial port onto the network port. Mainly used for communication between serial servers.

Select the "***New Driver***  " option in the menu bar of the upper computer configuration interface, as shown in Figure 2-21-1.

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milesgoiiot@gmail.com/sales@opcmaster.com

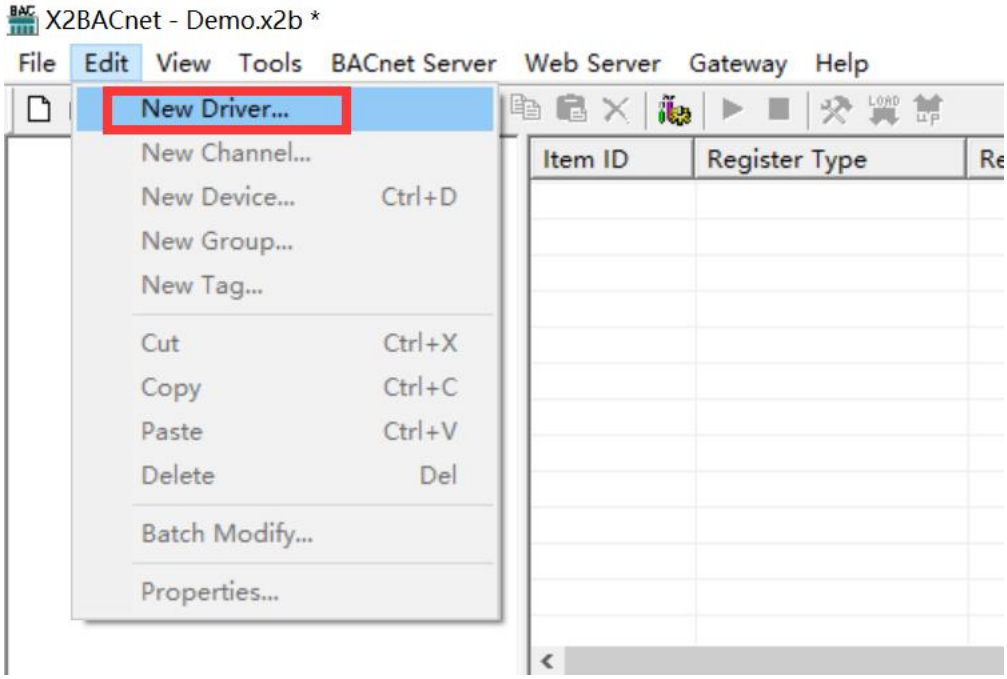

Figure 2-21-1 Selection of New Driver

In the pop-up window, select "ModbusRTU-TCPClient" driver, as shown in Figure 2-21-2.

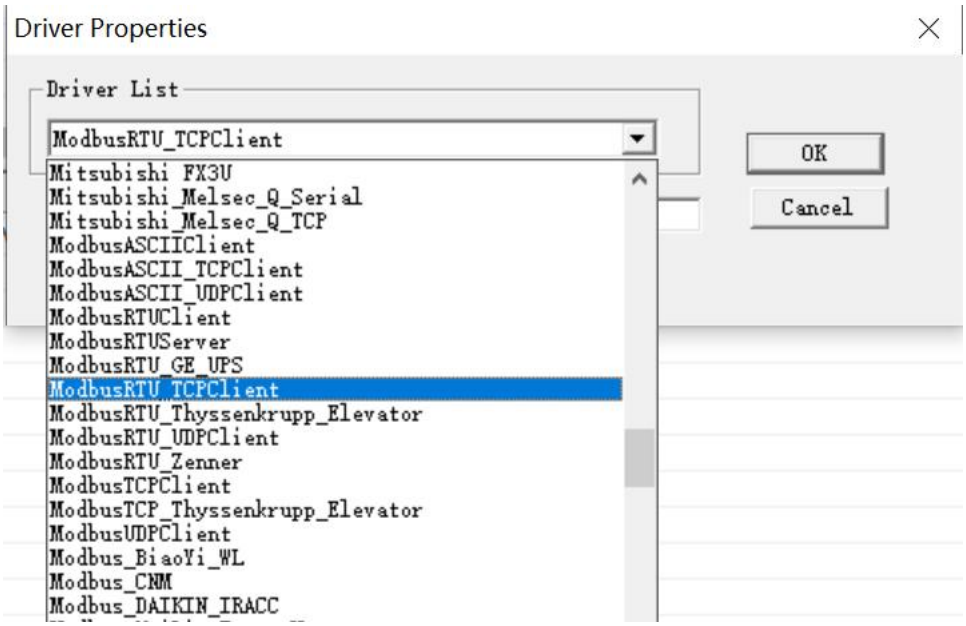

Figure 2-21-2 Selection Drive

2.21.2 NEW CHANNEL

After adding the driver, choose to create a new channel. ModbusRTU-TCP communicates through a network port, with a default port number of 502 and a

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default timeout of 1000ms, as shown in Figure 2-21-3. Note that the timeout refers to the waiting timeout of the request frame.

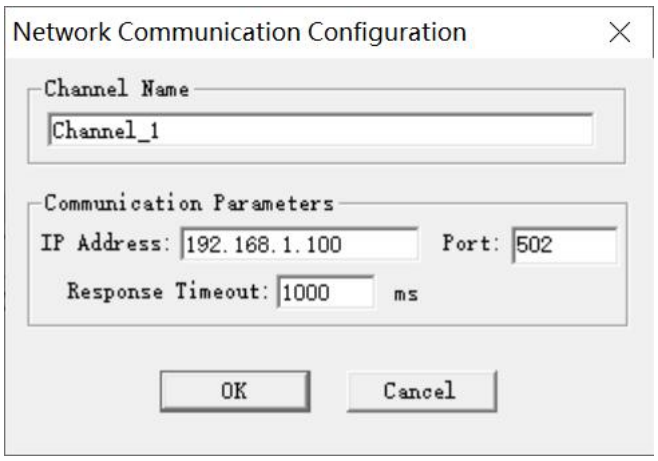

Figure 2-21-3 Channel parameter settings

2.21.3 NEW DEVICE

After the channel is established, select the new device and set the device related properties in the pop-up dialog box. The default station number for the device is 1, and the request frame interval is 25 milliseconds. If the device does not support packaging, you can set the packaging parameters to 0, as shown in Figure 2-21-4. Note that the request frame interval refers to the time interval between issuing the next frame request and receiving a response from the previous frame.

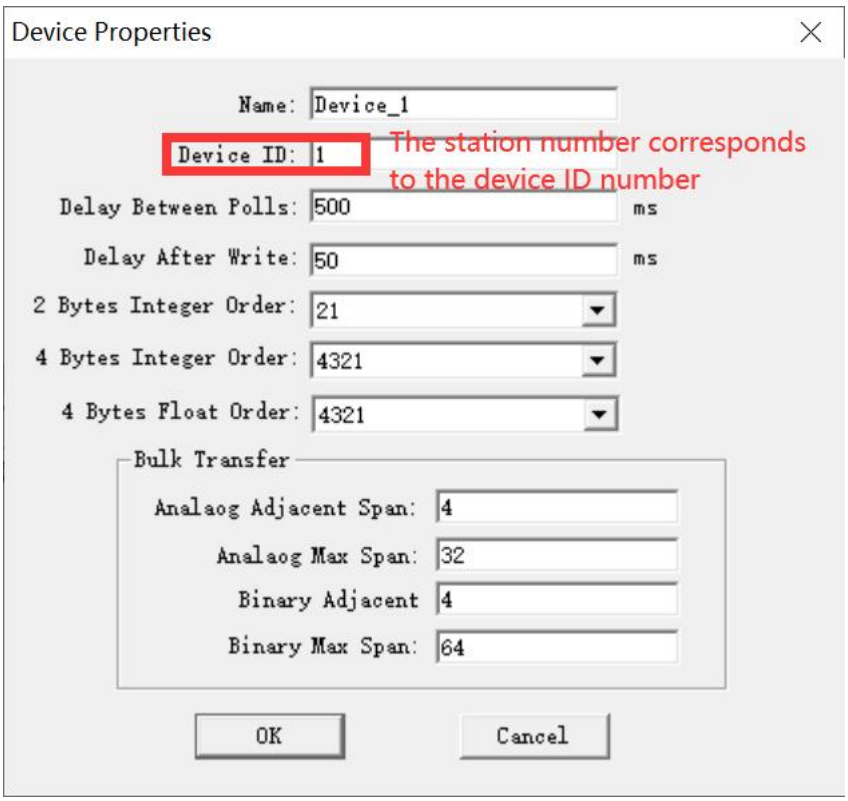

Figure 2-21-4 Equipment Parameter Settings

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2.21.4 NEW TAG

After the device is newly created, choose to add a label (point), or you can classify and manage the labels by creating a new group. The label parameters can be set according to the actual situation of the device, as shown in Figure 2-21-5. When setting label parameters, pay attention that the effective register address of the Modbus on the acquisition end starts from 1.

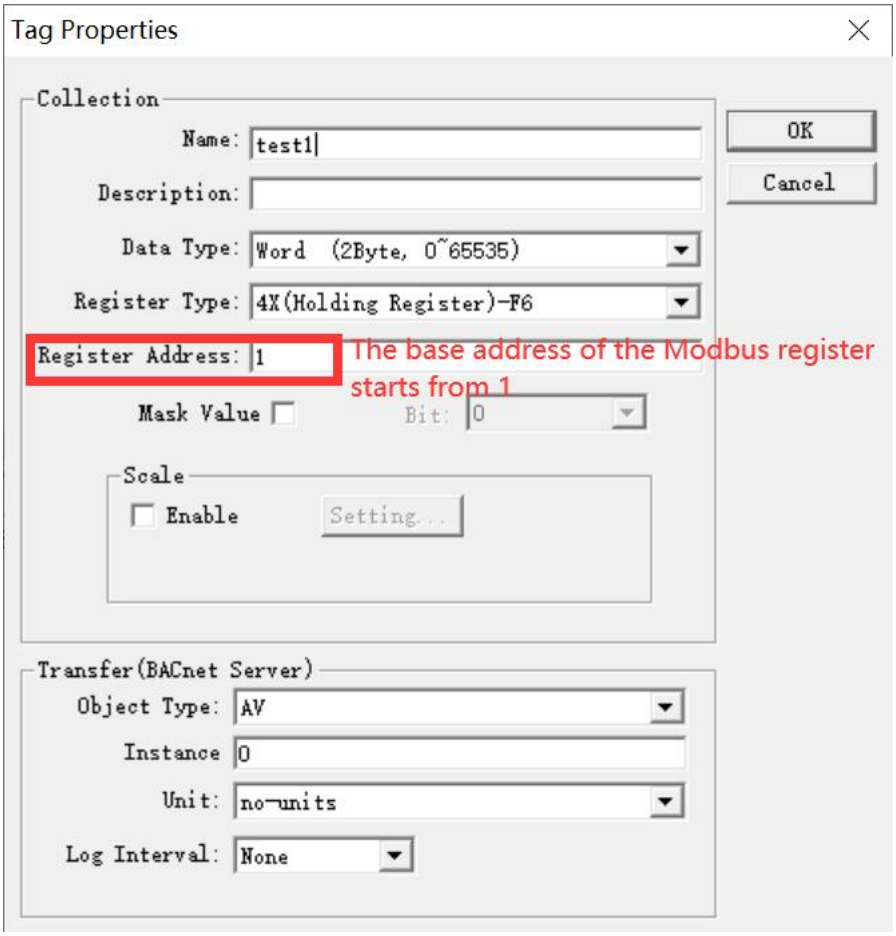

Figure 2-21-5 Collection end label parameter settings

Note: In the above Tag attributes, the base address of the BACnet slave register on the forwarding end can be allocated starting from 0. After the label is established, it is shown in Figure 2-21-6.

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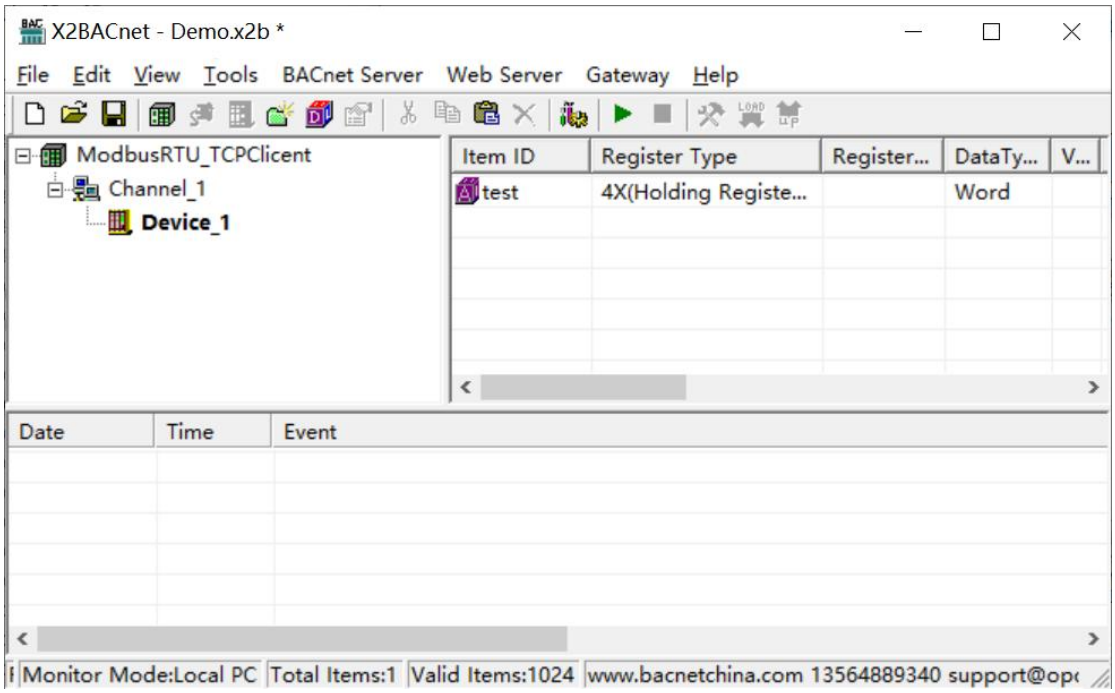

Figure 2-21-6 Adding labels completed

The data types supported by the collection end include Boolean, Word, Short, Dword, Long, Float, and Double. The specific descriptions are shown in Table 2-21-1.

Data Type	Describe
Boolean	0、1variable
Word	2Byte（0 ~ 65535）
Short	2Byte（-32768 ~ 32767）
Dword	4Byte（0 ~ 4294967295）
Long	4Byte（-2147483648 ~ 2147483647）
Float	4Byte
Double	8Byte

Table 2-21-1 Data types at the collection end

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There are four types of registers supported by the collection end, as described in Table 2-21-2.

Serial Number	Register Type	Describe
1	0X（Coil Status）	Numeric quantity, support for reading and writing (only 0 and 1 values change)
2	1X（Coil Status）	Digital quantity, only supports reading (only 0 and 1 values change)
3	3X（Input Register）	Analog quantity, only supports reading (type of continuous variation)
4	4X（Holding Register）	Analog quantity, support for reading and writing (continuously changing types)

Table 2-21-2 Register types supported by the acquisition end

2.22 SnmpClient (Simple Network Management Protocol)

2.22.1 NEW DRIVER

Select the "New Driver" option in the menu bar of the upper computer configuration interface, as shown in Figure 2-22-1.

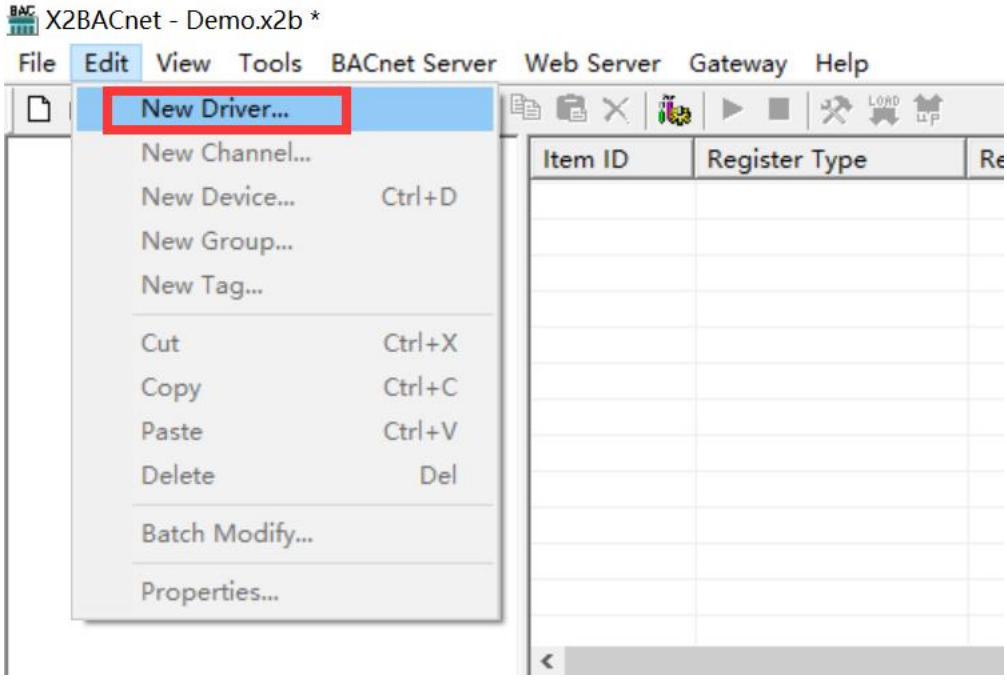

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Figure 2-22-1 Selection of New Driver

Select "SNMPClient" in the pop-up window, as shown in Figure 2-22-2.

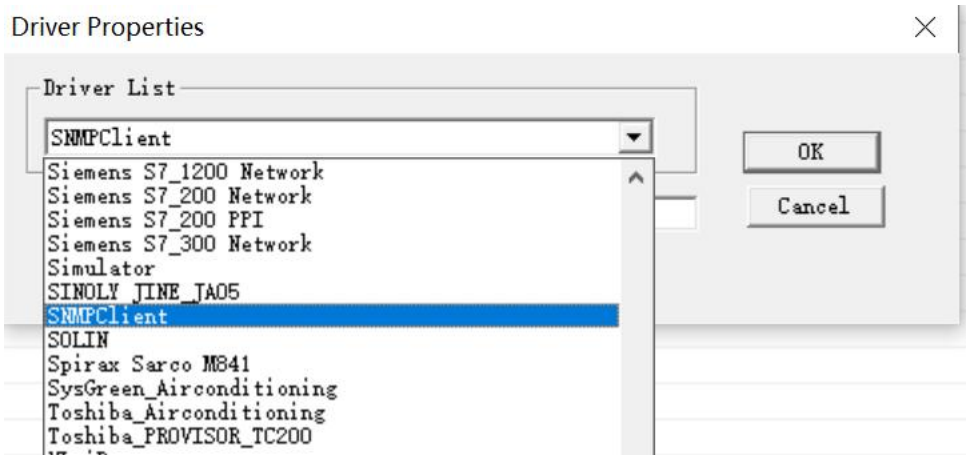

Figure 2-22-2 Selection Drive

2.22.2 NEW CHANNEL

After adding the driver, select the new channel. SNMP (Simple Network Management Protocol) is a protocol that uses network port communication as the main parameters, including the target network IP address. The default port number is 161, and the master station represents the SNMP version number (1 represents V1, 2 or empty represents V2), as shown in Figure 2-22-3. Note that the timeout refers to the waiting timeout of the request frame.

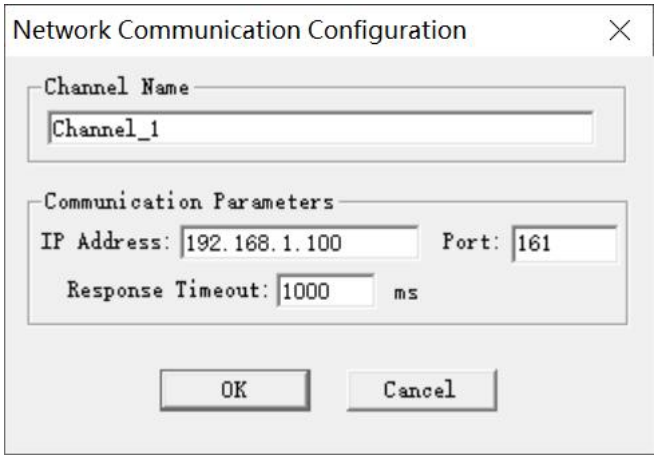

Figure 2-22-3 Channel parameter settings

2.22.3 NEW DEVICE

After the channel is established, select the new device and set the device related properties in the pop-up dialog box. The device station number corresponds to the communication string (group word) in the SNMP protocol. The commonly used communication strings include public (read-only) and Private (read and write), the default station number is set to public, as shown in Figure 2-22-4. Note that the

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request frame interval refers to the time interval between issuing the next frame request and the previous frame request.

Note: If public reading and private writing are required, the station number can be filled in as public private.

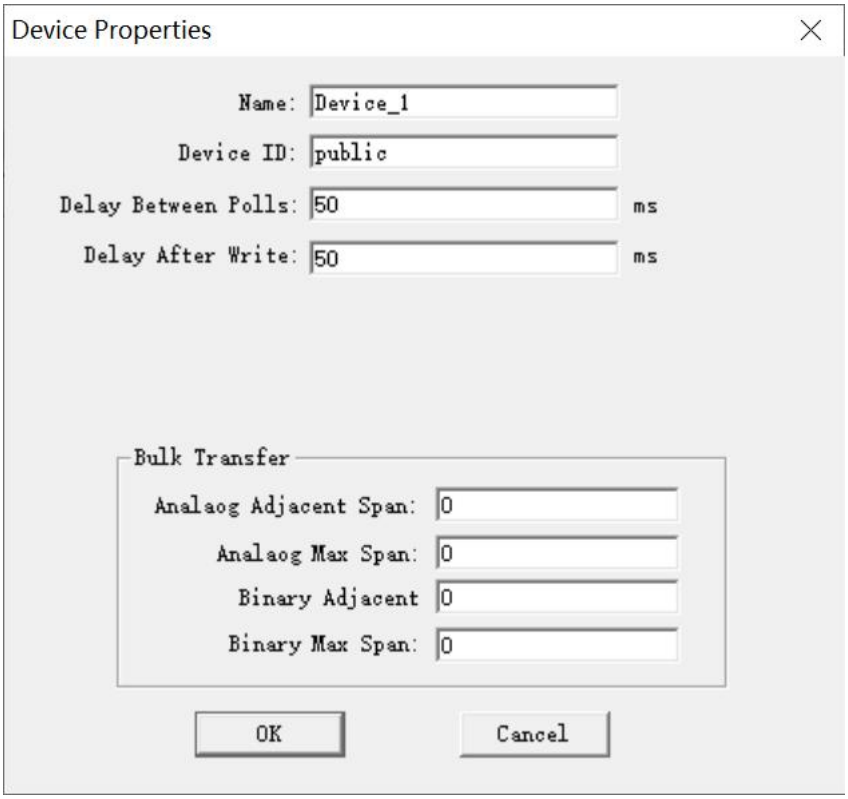

Figure 2-22-4 Equipment Parameter Settings

2.22.4 NEW TAG

Figure 2-22-5 shows a value of 76 for an oid point (. 1.3.6.1.3.1.1.7.0) scanned using SNMP client scanning software. If you need to use this software, please feel free to request it from our company.

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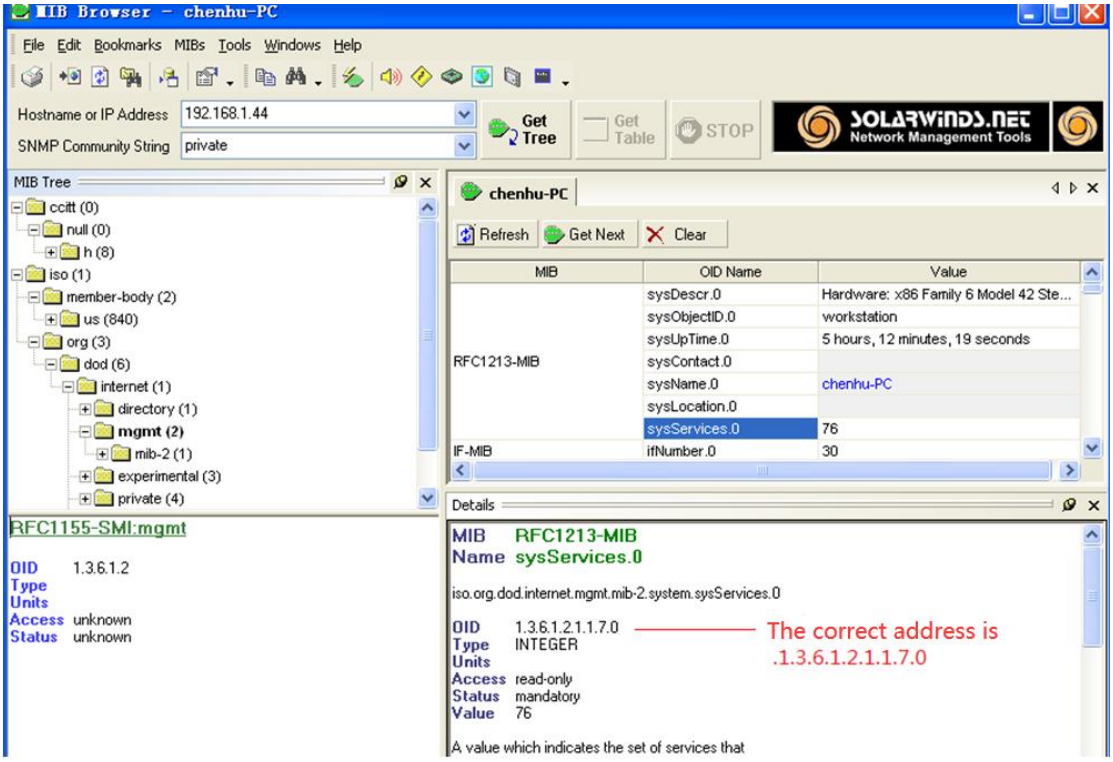

Figure 2-22-5 SNMP client scanning interface

After adding the device, select the new label (point) and set the label parameters in the pop-up window. Note that when configuring on the X2BACnet upper computer, the correct register address for the point should be added to the front of the scanned oid point, as shown in Figure 2-22-6.

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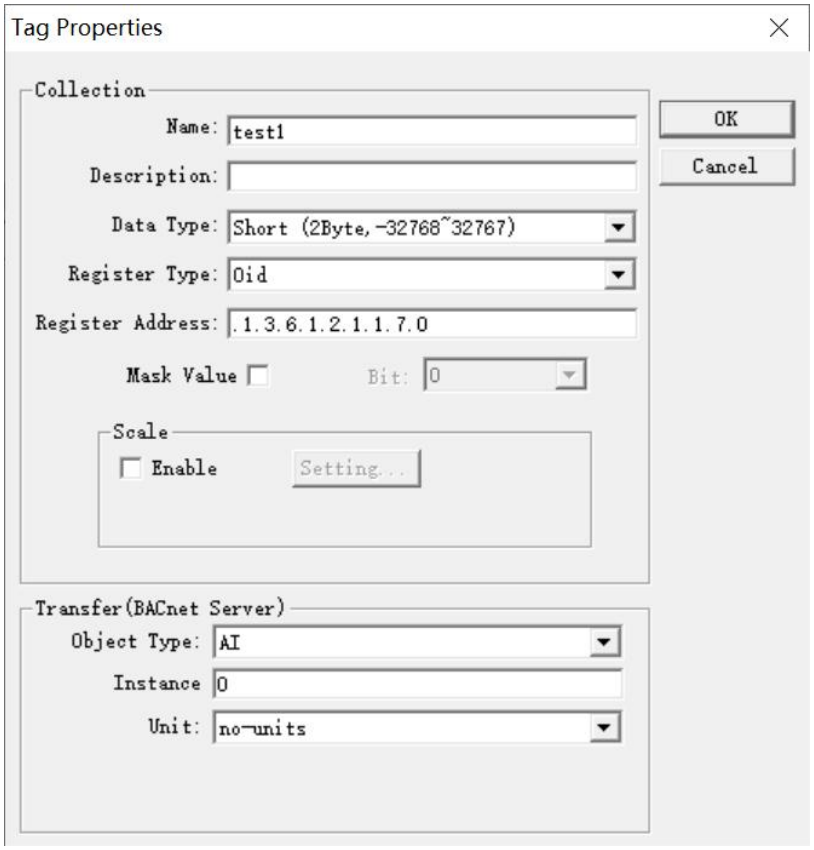

Figure 2-22-6 Label parameter settings

Note: In the above Tag attributes, the base address of the BACnet slave register on the forwarding end can be allocated starting from 0. After the label is established, it is shown in Figure 2-22-7.

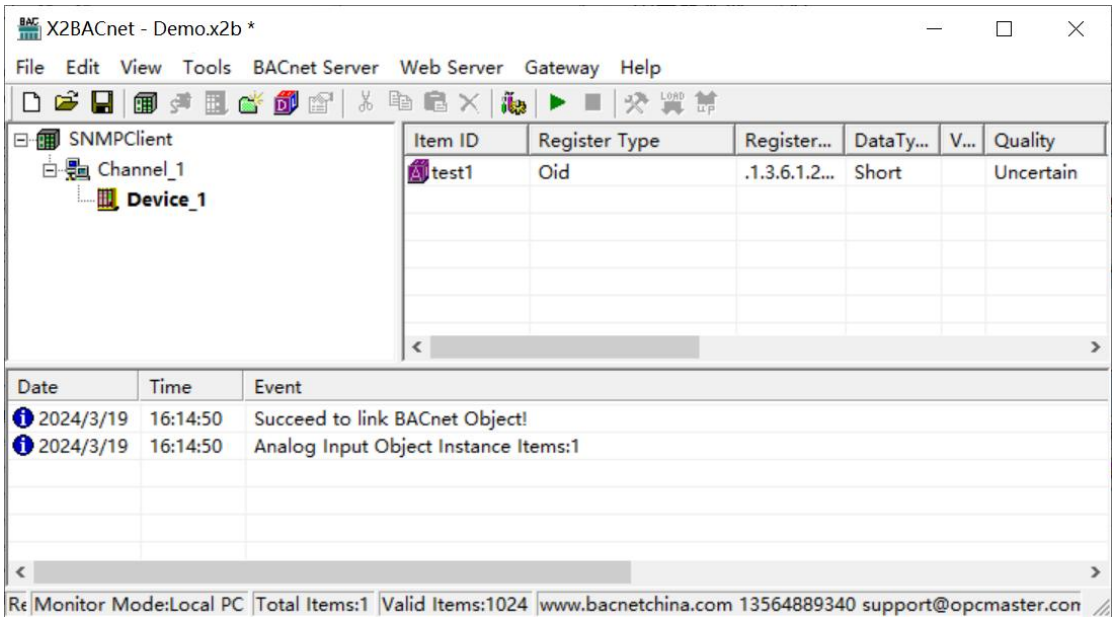

Figure 2-22-7 Adding labels completed

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The data types supported by the collection end include Boolean, Word, Short, Dword, Long, Float, and Double. The specific descriptions are shown in Table 2-22-1.

Data Type	Describe
Boolean	0、1variable
Word	2Byte（0 ~ 65535）
Short	2Byte（-32768 ~ 32767）
Dword	4Byte（0 ~ 4294967295）
Long	4Byte（-2147483648 ~ 2147483647）
Float	4Byte
Double	8Byte

Table 2-22-1 Data types at the collection end

The only supported register type is Oid, as shown in Table 2-22-2.

Protocol	Register Type
SNMP (Simple Network Management Protocol)	Oid

Table 2-22-2 Register Types at the Acquisition End

2.23 Siemens S7_200 PPI (Siemens PLC S7_200 series PPI)

2.23.1 NEW DRIVER

Select the "New Driver" option in the menu bar of the upper computer configuration interface, as shown in Figure 2-23-1.

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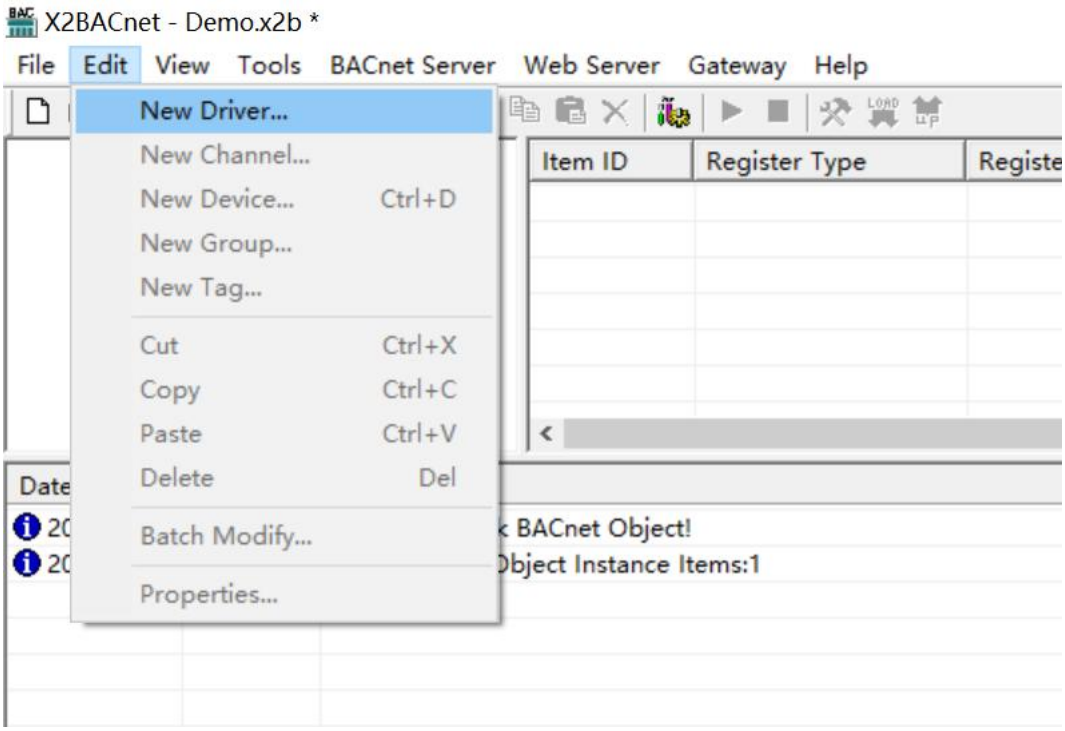

Figure 2-23-1 Selection of New Driver

Select "Siemens S7-200 PPI" in the pop-up window, as shown in Figure 2-23-2.

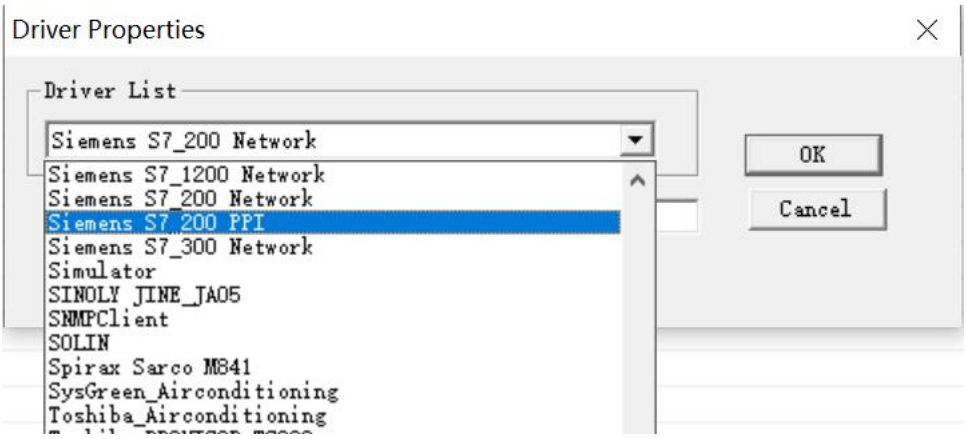

Figure 2-23-2 Selection Drive

2.23.2 NEW CHANNEL

After adding the driver, choose to create a new channel. Siemens S7-200 is a Siemens PLC series that mainly communicates through RS-485 communication. The default channel serial port is 1, and the default transmission baud rate is 9600bps. The data format is 8 data bits, 1 stop bit, and even parity. The default timeout time is 1500ms. When configuring, if the device responds slowly, try to set the timeout time as long as possible, as shown in Figure 2-23-3.

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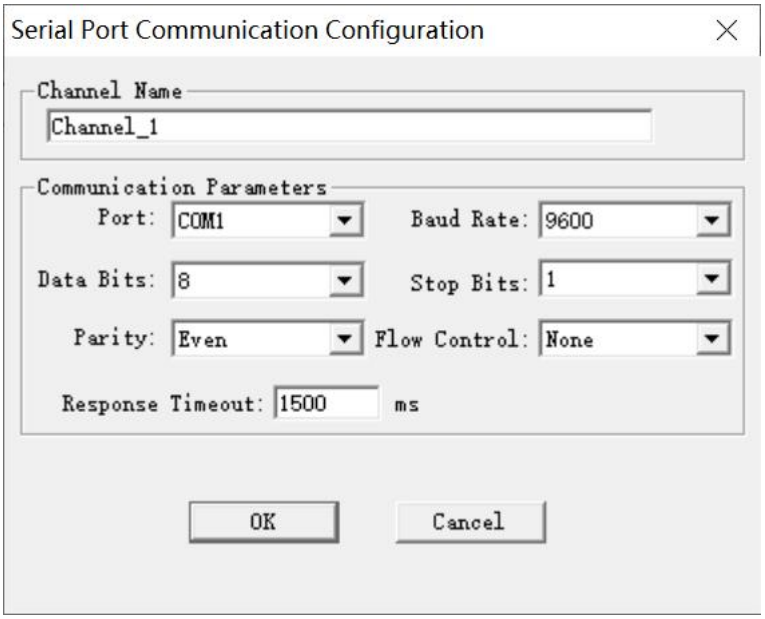

Figure 2-23-3 Channel parameter settings

2.23.3 NEW DEVICE

After establishing the channel, select the new device and set the device related properties in the pop-up dialog box. The default station number for the device is 2, and the request frame interval is set to 50 milliseconds by default. If the device responds slowly, you can set the request frame to be longer. If the device does not support packaging, you can set the packaging parameters to 0, as shown in Figure 2-23-4. Note that the request frame interval refers to the time interval between issuing the next frame request and receiving a response from the previous frame.

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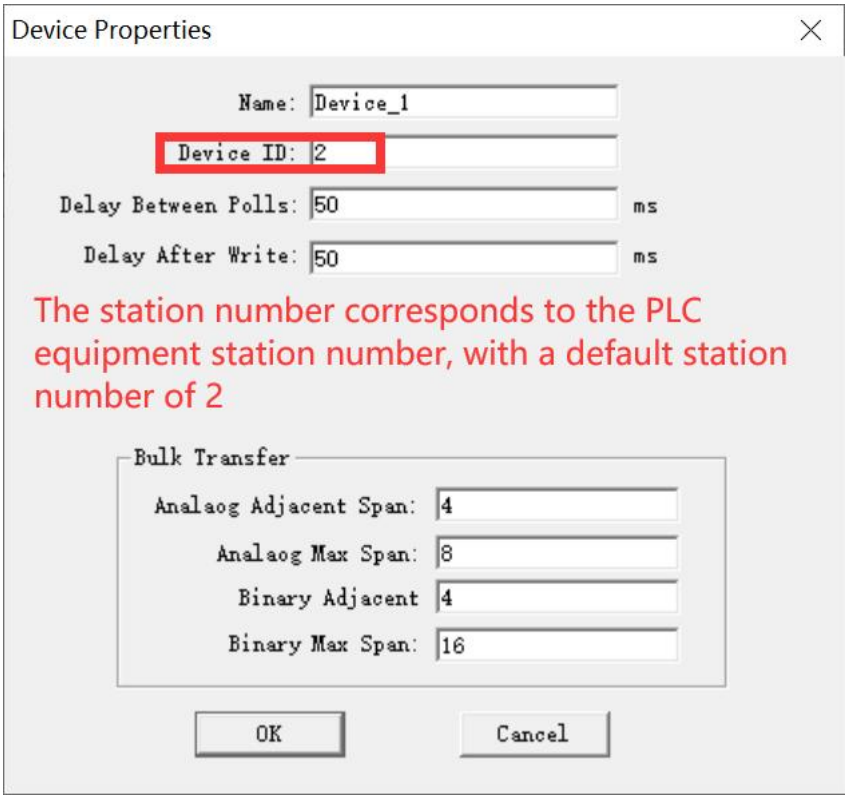

Figure 2-23-4 Equipment Parameter Settings

2.23.4 NEW TAG

After the equipment is established, choose to create a new label (point), as shown in Figure 2-23-5. When establishing a point, the register type and data type of the acquisition end can be selected according to the Siemens PLC component type, and the register address is consistent with the Siemens PLC address. If there are special requirements, analog signals can also support linear conversion, bit taking, and other functions.

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milesgoiiot@gmail.com/sales@opcmaster.com

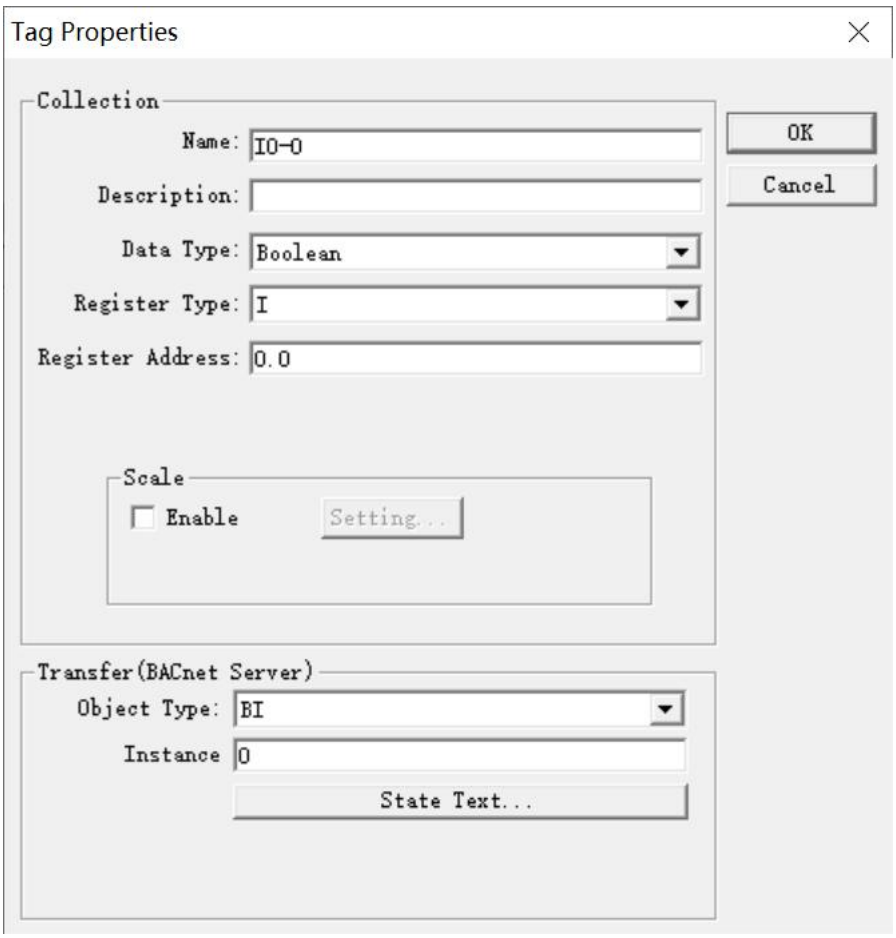

Figure 2-23-5 Label parameter settings

When using the V register address, as the gateway does not support Byte (8-bit) data type, it is recommended that users do not set the VB register address in the PLC. VD and VW are matched with the V register in the gateway.

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milesgoiiot@gmail.com/sales@opcmaster.com

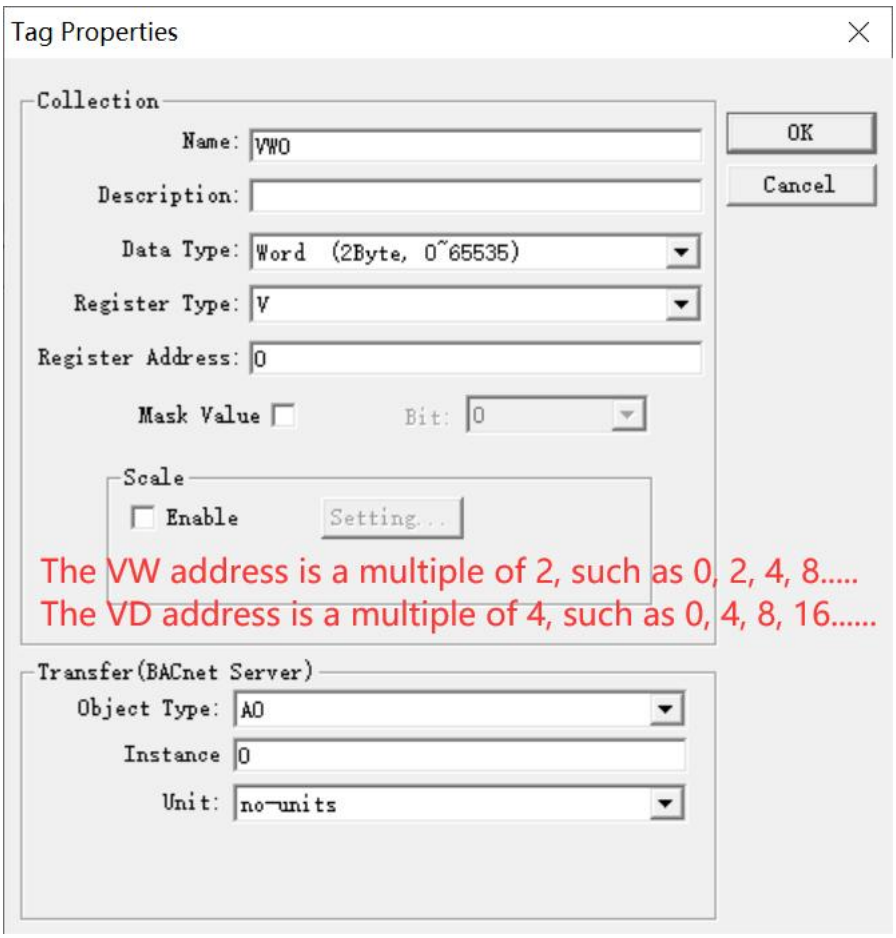

Figure 2-23-6 Taking V Register

Note that the Siemens S7-200 series has multiple register types, and when selecting different register types, the configured register addresses may vary.

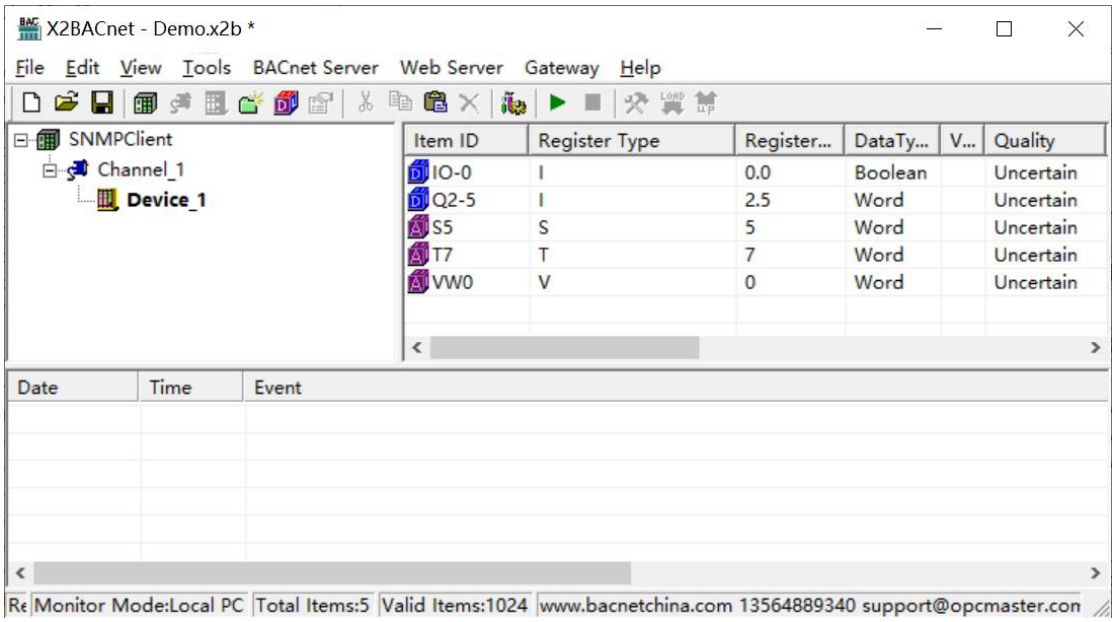

Figure 2-23-7 Label addition completed

Add: 28SenangCrescent,#0511,Bizhub28,Singapore416601 Tel:+6580385403 URL:www.bacnetchina.com
milesgoiiot@gmail.com/sales@opcmaster.com

The supported data types are shown in Table 2-23-1.

Data Type	Describe
Boolean	0、1variable
Word	2Byte（0 ~ 65535）
Short	2Byte（-32768 ~ 32767）
Dword	4Byte（0 ~ 4294967295）
Long	4Byte（-2147483648 ~ 2147483647）
Float	4Byte
Double	8Byte

Table 2-23-1 Data types at the collection end

There are a total of 10 types of registers supported by the collection end (note: Word type addresses have an even starting address, which is a multiple of 2; DWord type addresses have a starting address that is a multiple of 4 to avoid data interference and confusion between addresses when using multi state settings, timers, and other components), as shown in Table 2-23-2.

Serial Number	Register type	Word address format	Dword address format	Bit address format	Describe
1	S	0~30	0~28	0.0~31.7	Read/Write
2	SM	0~548	0~546	0.0~1535.7	Read/Write
3	AI	0~62	-----	------	Read Only
4	AQ	0~62	------	------	Read/Write
5	C	0~255	------	0~255	Read/Write
6	T	0~255	-------	0~255	Read/Write
7	I	0~30	0~28	0.0~31.7	Read Only
8	Q	0~30	0~28	0.0~31.7	Read/Write
9	M	0~30	0~28	0.0~31.7	Read/Write
10	V	0~20476	0~20478	------	Read/Write

Table 2-23-2 Register Types at the Acquisition End

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milesgoiiot@gmail.com/sales@opcmaster.com

2.24 Siemens S7_200 Network (Siemens PLC S7_200 series industrial Ethernet)

2.24.1 NEW DRIVER

Select the "New Driver" option in the menu bar of the upper computer configuration interface, as shown in Figure 2-24-1.

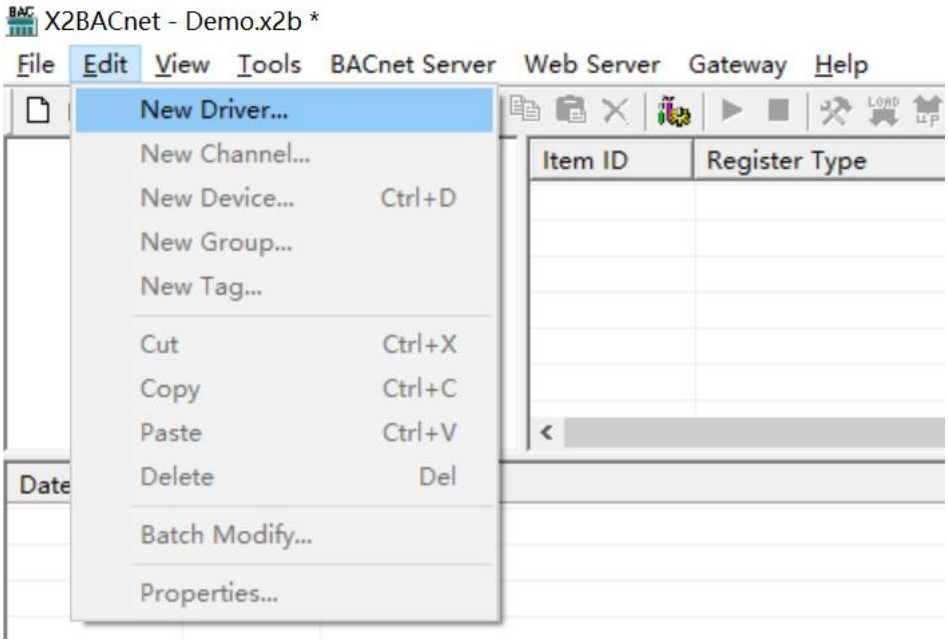
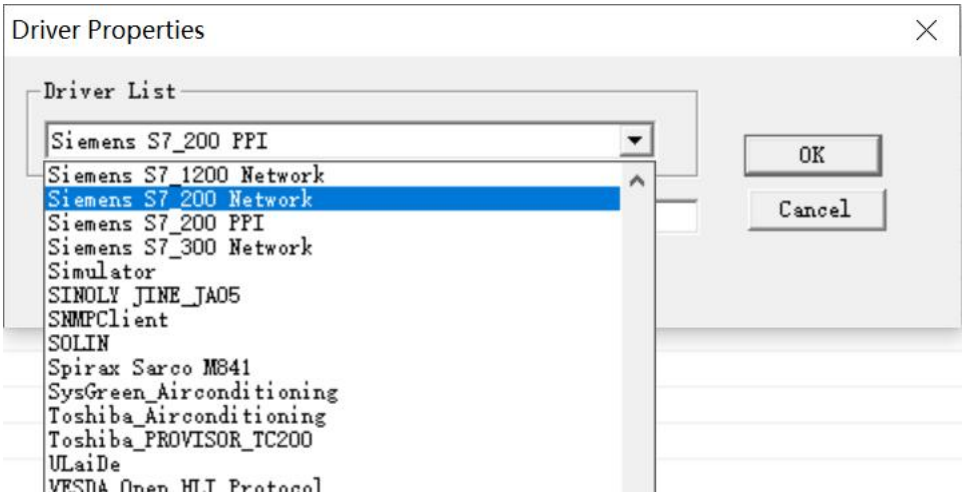


Figure 2-24-1 Selection of New Driver

Select "Siemens S7_200 Network" in the pop-up window, as shown in Figure 2-24-2.



2-24-2 Select Drive

2.24.2 NEW CHANNEL

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milesgoiiot@gmail.com/sales@opcmaster.com

After adding the driver, choose to create a new channel. The Siemens S7_200 Network is a Siemens PLC S7-200 series that mainly communicates through network ports. The default port number is 102, and the default timeout time is 1000ms, as shown in Figure 2-24-3.

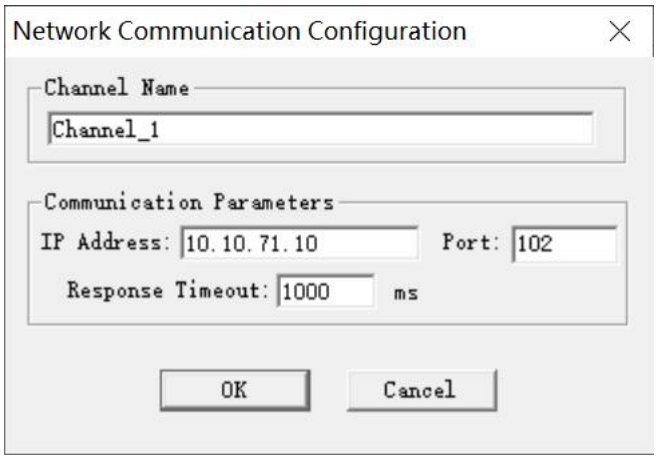

Figure 2-24-3 Channel parameter settings

2.24.3 NEW DEVICE

After establishing the channel, select the new device and set the device related properties in the pop-up dialog box. The device station number consists of the TSAP address of the target PLC and the TSAP address of the gateway itself as the client. The default value is 02.00 (the gateway itself can be omitted). The request frame interval is assumed to be 25 milliseconds by default. If the device responds slowly, the request frame can be set longer. If the device does not support packaging, you can set the packaging parameters to 0, as shown in Figure 2-24-4. Note that the request frame interval refers to the time interval between issuing the next frame request and receiving a response from the previous frame. Note that if it is a Siemens Smart model, the station number can be set to empty.

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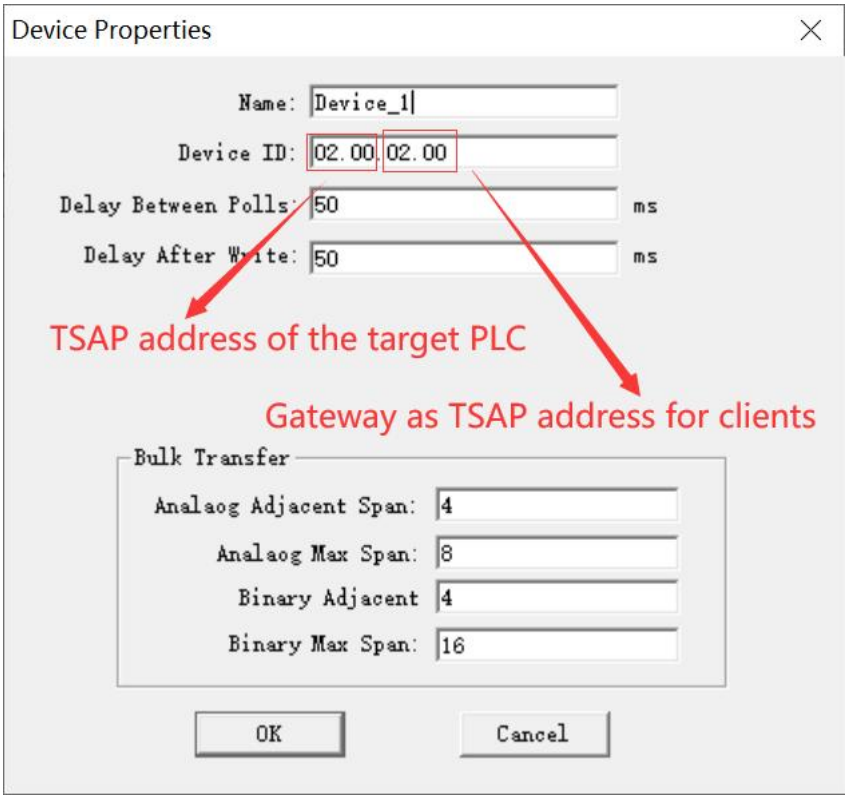

Figure 2-24-4 Equipment Parameter Settings

2.24.4 NEW TAG

After the equipment is established, choose to create a new label (point), as shown in Figure 2-24-5. When establishing a point, the register type and data type of the acquisition end can be selected according to the Siemens PLC component type, and the register address is consistent with the Siemens PLC address. If there are special requirements, analog signals can also support linear conversion, bit taking, and other functions.

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milesgoiiot@gmail.com/sales@opcmaster.com

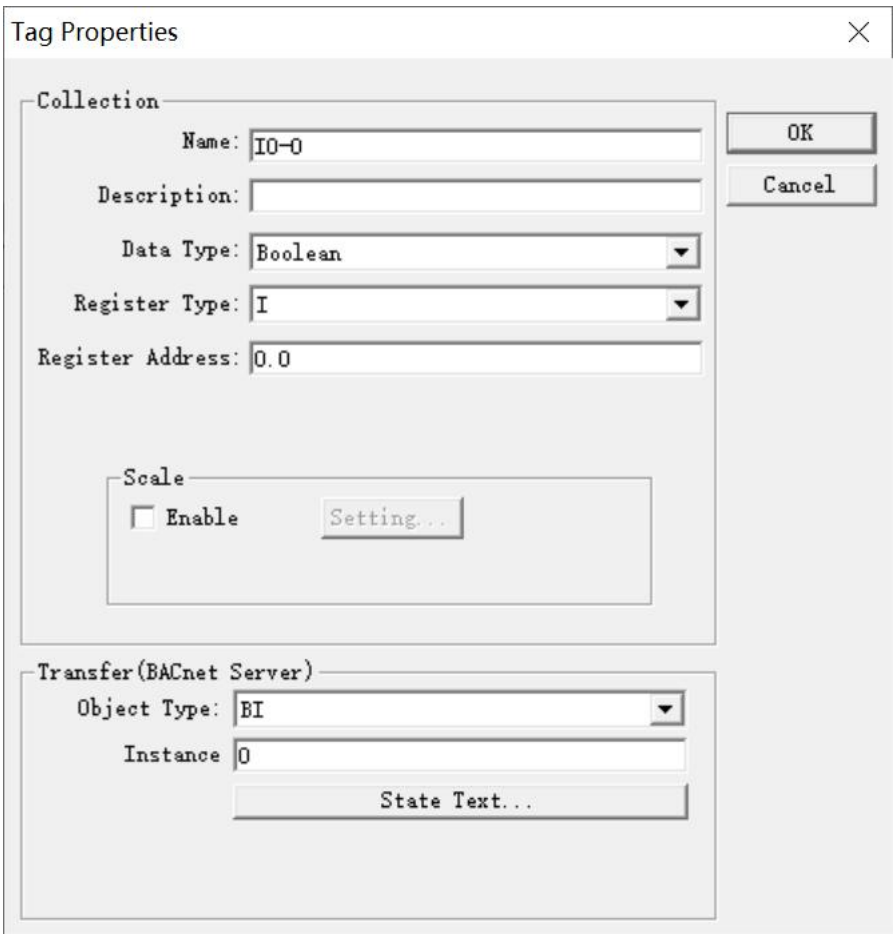

Figure 2-24-5 Label parameter settings

When using the V register address, as the gateway does not support Byte (8-bit) data type, it is recommended that users do not set the VB register address in the PLC. VD and VW are matched with the V register in the gateway.

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milesgoiiot@gmail.com/sales@opcmaster.com

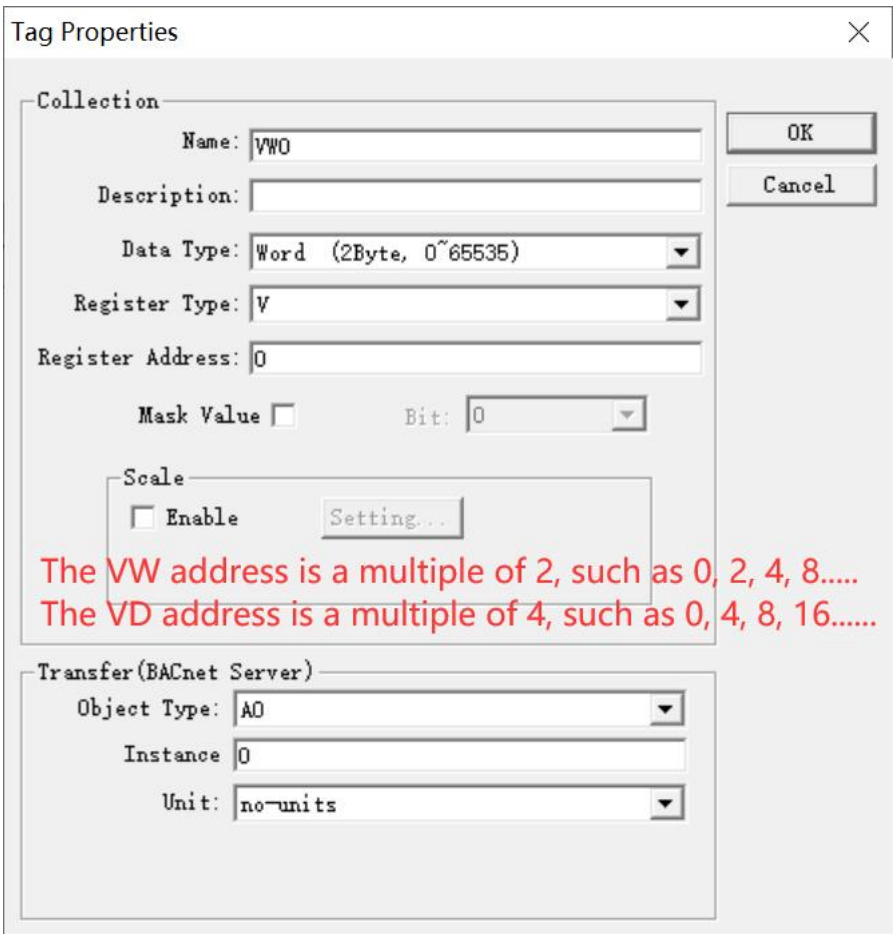

Figure 2-24-6 Taking V Register

Note that the Siemens S7-200 series has multiple register types, and when selecting different register types, the configured register addresses may vary.

2.25 Siemens S7_300 Network (Siemens PLC S7_300 series industrial Ethernet)

2.25.1 NEW DRIVER

Select the "New Driver" option in the menu bar of the upper computer configuration interface, as shown in Figure 2-25-1.

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milesgoiiot@gmail.com/sales@opcmaster.com

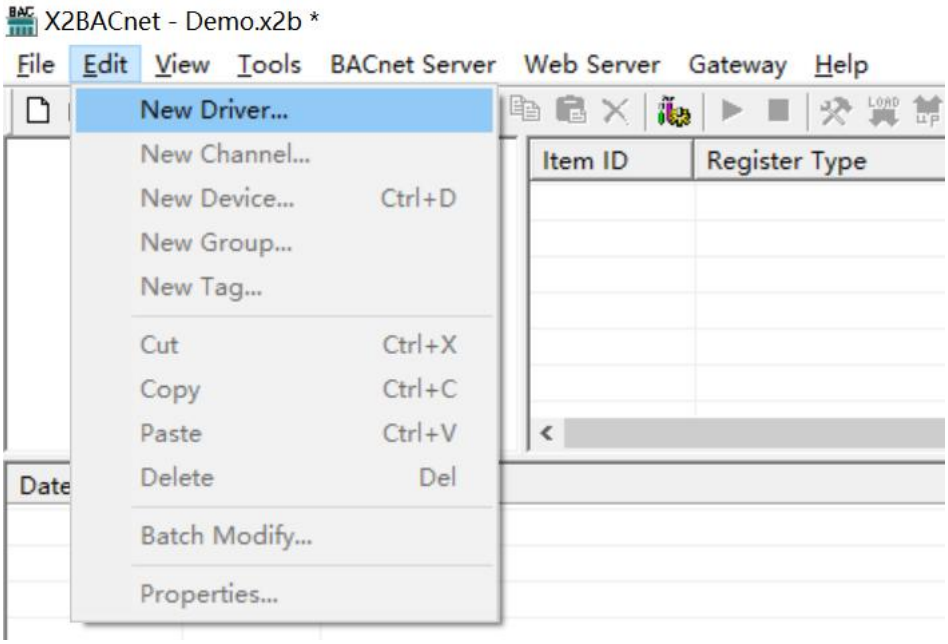

Figure 2-25-1 Selection of New Driver

Select "Siemens S7_200 Network" in the pop-up window, as shown in Figure 2-25-2.

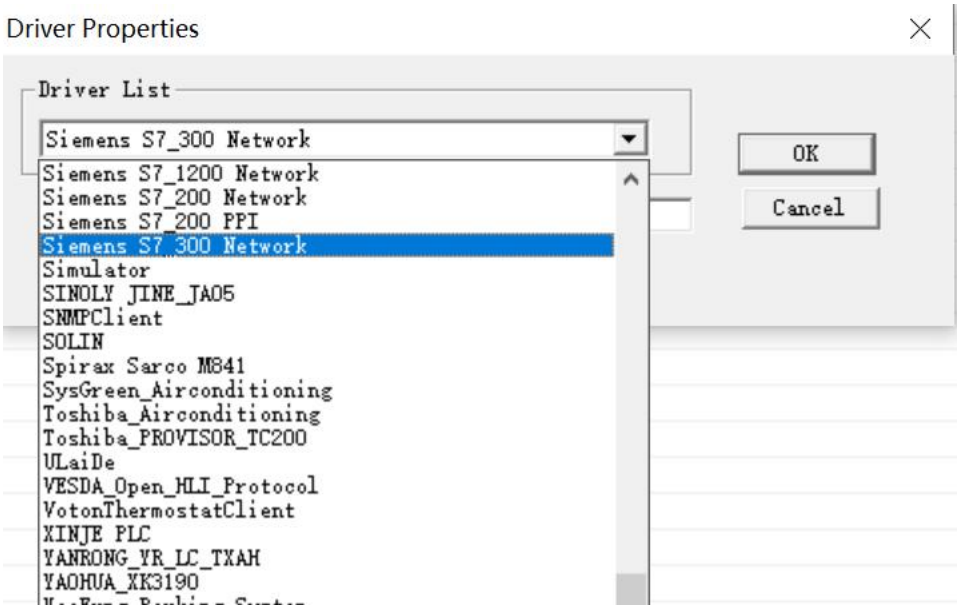

Figure 2-25-2 Selection Drive

2.25.2 NEW CHANNEL

After adding the driver, choose to create a new channel. Siemens S7_200 Network is a Siemens PLC S7-300 series that mainly communicates through network ports. The default port number is 102, and the default timeout time is 1000ms.. Link type 0=PG 1=OP 2=PC, as shown in Figure 2-25-3.

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milesgoiiot@gmail.com/sales@opcmaster.com

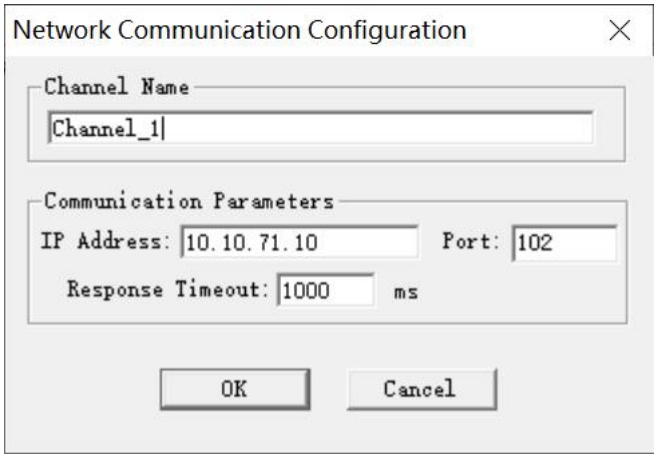

Figure 2-25-3 Channel parameter settings

2.25.3 NEW DEVICE

After establishing the channel, select New Device and set the device related properties and station number in the pop-up dialog box M. N represents the track number (rack number) and slot number, with station number 0.2 corresponding to the default configuration of the 300 model CPU and 0.3 corresponding to the default configuration of the 400 model CPU. 0.2 represents track 0 and slot 2. When connecting Ethernet expansion modules such as CP343-1 or CP443-1, please fill in the actual track number and slot number (default to 1.3). The request frame interval is assumed to be 50 milliseconds by default. If the device responds slowly, the request frame can be set longer. If the device does not support packaging, you can set the packaging parameters to 0, as shown in Figure 2-25-4. Note that the request frame interval refers to the time interval between issuing the next frame request and receiving a response from the previous frame.

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milesgoiiot@gmail.com/sales@opcmaster.com

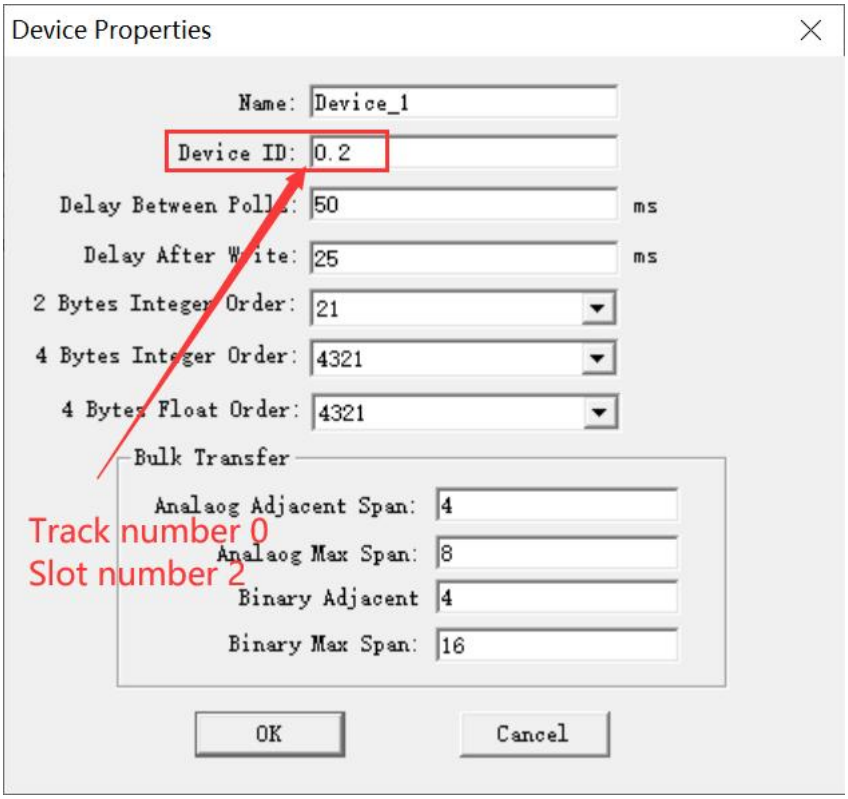

Figure 2-25-4 Equipment Parameter Settings

2.25.4 NEW TAG

After the equipment is established, choose to create a new label (point), as shown in Figure 2-25-5. When establishing a point, the register type and data type of the acquisition end can be selected according to the Siemens PLC component type, and the register address is consistent with the Siemens PLC address. If there are special requirements, analog signals can also support linear conversion, bit taking, and other functions.

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milesgoiiot@gmail.com/sales@opcmaster.com

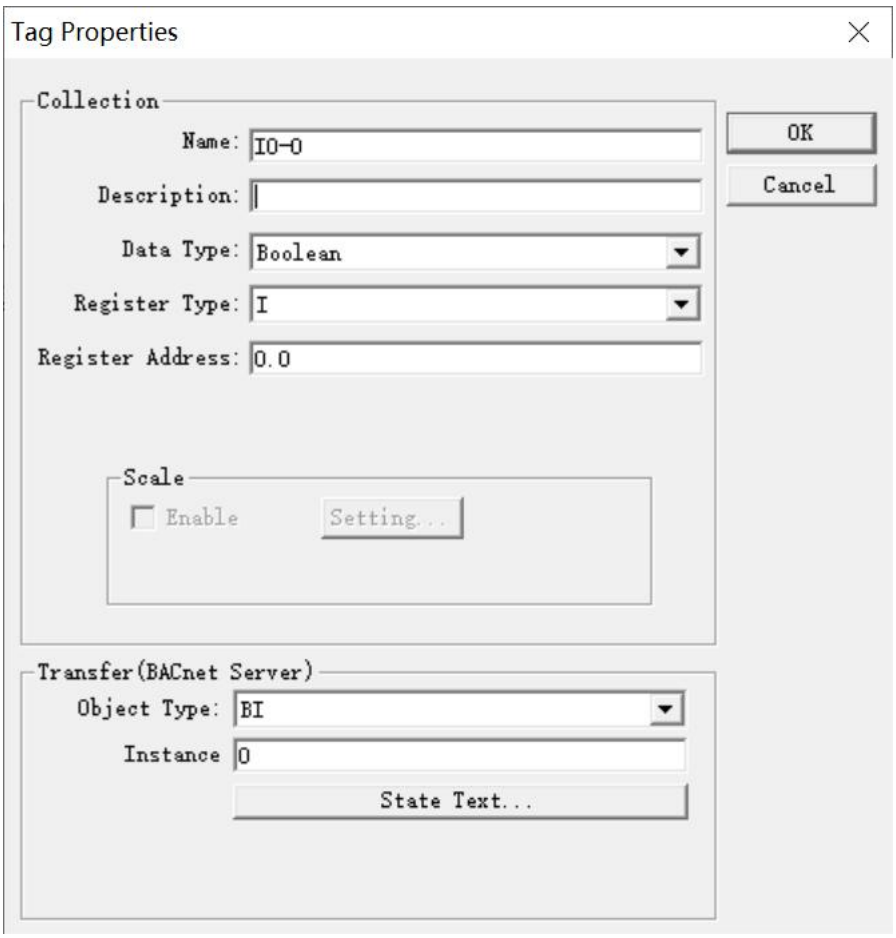

Figure 2-25-5 Label parameter settings

When using the DBn register type, the register address is composed of a combination of DB block address and data address (in M.N form), where the integer M is the DB block address and the decimal N is the data address, as shown in Figure 2-25-6, which represents the PLC data address with DB16 block number and data address 2.

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milesgoiiot@gmail.com/sales@opcmaster.com

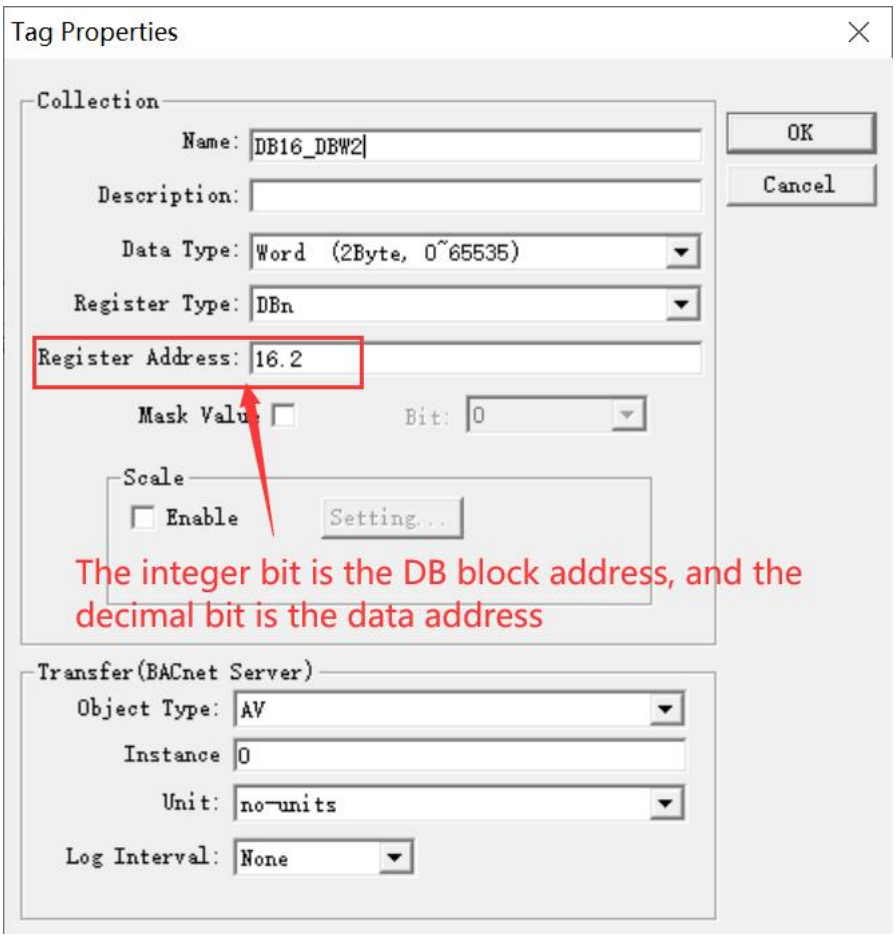

Figure 2-25-6 Taking DBn Registers

Note: If it is a DBB address, every two adjacent byte addresses share one Word data. For example, DBB0 and DBB1 share the DBW0 address, DBB4 and DBB5 share the DBW4 address, and DBB8 and DBB9 share the DBW8 address, then Hibyte and Lobyte suffixes (not case sensitive) can be used for splitting. If the DB120.DBB10 data address is collected, the register address can be written as 120.10.Hibyte. If the DB120.DBB11 address is collected, the corresponding register address can be written as 120.10.Lobyte, as shown in Figure 2-25-7.

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milesgoiiot@gmail.com/sales@opcmaster.com

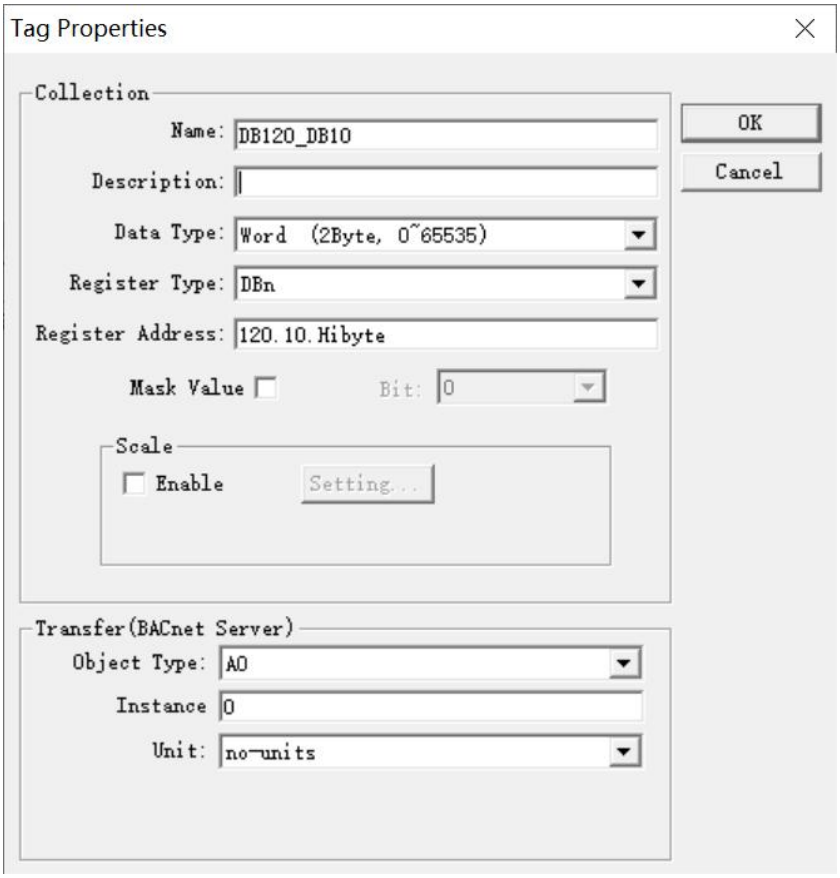

Figure 2-25-7 Collecting DBB addresses

Note that the Siemens S7-300 series has multiple register types, and when selecting different register types, the configured register addresses may vary.

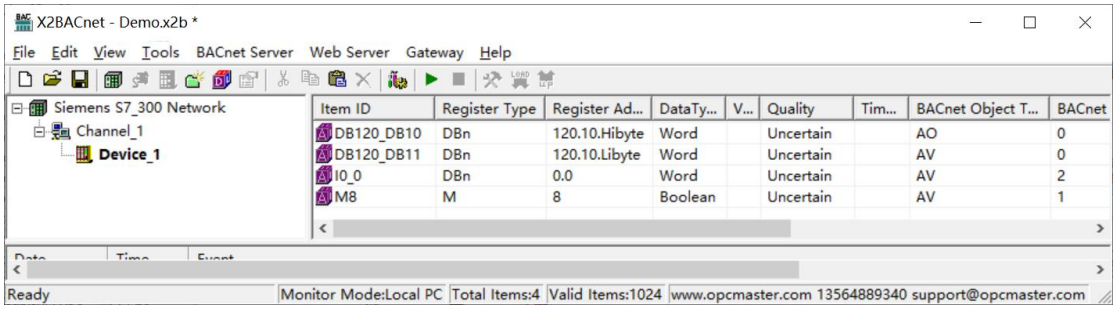

Figure 2-25-8 Label addition completed

The supported data types are shown in Table 2-25-1.

Data Type	Describe
Boolean	0、 1 variable
Word	2Byte（0~65535）
Short	2Byte（-32768~32767）
Dword	4Byte（0~4294967295）
Long	4Byte（-2147483648~2147483647）
Float	4Byte
Double	8Byte

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milesgoiiot@gmail.com/sales@opcmaster.com

Table 2-25-1 Data types at the collection end

The supported register types are shown in Table 2-25-2. Note that the starting address of Word type addresses is an even number, which is a multiple of 2; The starting address of DWord type addresses is a multiple of 4 to avoid data interference and confusion between addresses when using multi state settings, timers, and other components.

When the register type is DBn, the register address consists of a data block address and a data address. The first integer digit represents the DB data block address, ranging from 1 to 65535, and the last decimal digit represents the data address. For example, a register address of 16.2 represents a word variable with a data block number of 16 and an address of 2 (i.e. DB16. DBW2), and similarly, 200.1.2 represents the address of a bit variable with a data block of 200 and an address of 1.2 (i.e. DB200. DBB1.2).

Serial number	Register type	Word address format	Dword address format	Bit address format	Describe
1	I	0~2046	0~2044	0.0~2047.7	read only
2	Q	0~2046	0~2044	0.0~2047.7	Read/Write
3	M	0~2046	0~2044	0.0~2047.7	Read/Write
4	DBn	1.0~65535.65534	1.0~65535.65532	1.0.0~65535.65535.7	Read/Write

Table 2-25-2 Register Types at the Acquisition End

2.26 Siemens S7_1200 Network (Siemens PLC S7_1200 series industrial Ethernet)

Attention: When connecting the gateway to Siemens PLC S7-1200 and PLC S7-1500, the PLC needs to be configured as follows:

PLC settings:

As shown in Figure 1, open the PLC project corresponding to the Botu software and right-click on Properties.

2.26.1 NEW DRIVER

Select the "New Driver" option in the menu bar of the upper computer configuration interface, as shown in Figure 2-25-1.

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milesgoiiot@gmail.com/sales@opcmaster.com

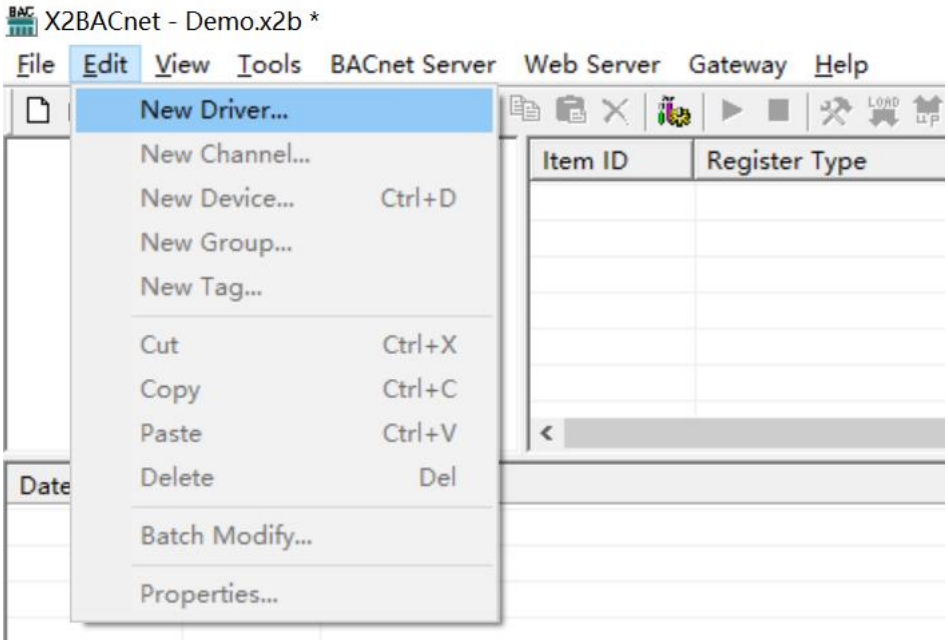

Figure 2-25-1 Selection of New Driver

Select "Siemens S7_1200 Network" in the pop-up window, as shown in Figure 2-25-2.

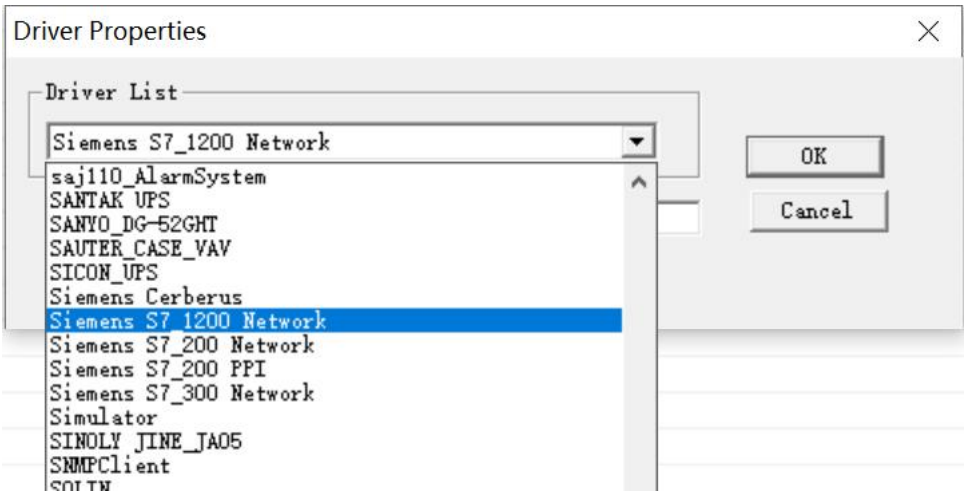

Figure 2-25-2 Selection Drive

2.26.2 NEW CHANNEL

After adding the driver, choose to create a new channel. The Siemens S7-1200 Network is a Siemens PLC S7-1200 series that mainly communicates through network ports. The default port number is 102, and the default timeout time is 1000ms. Link type 0=PG 1=OP 2=PC, as shown in Figure 2-25-3.

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milesgoiiot@gmail.com/sales@opcmaster.com

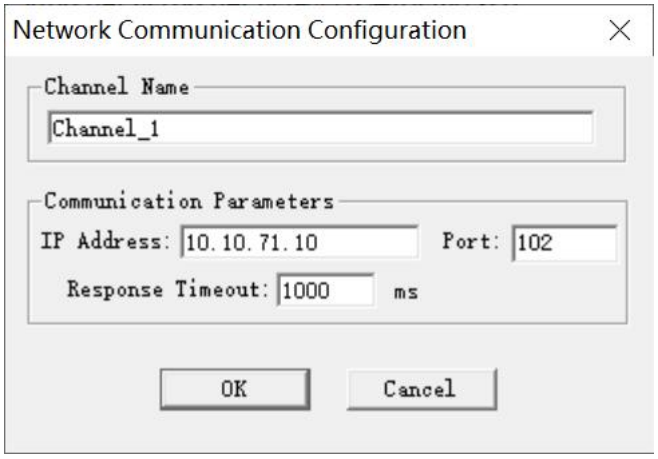
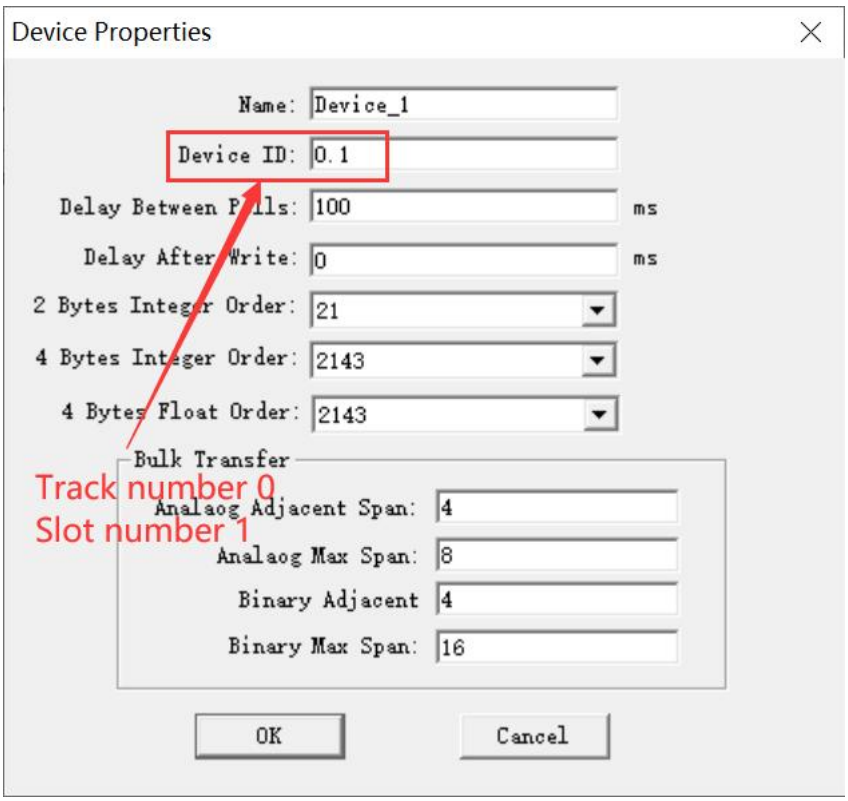


Figure 2-25-3 Channel parameter settings

2.26.3 NEW DEVICE

After the channel is established, select the new device and set the device related properties in the pop-up dialog box. The default station number for the device is 0.1 (can be set to blank), and the station number M.N represents the track number (rack number) and slot number, respectively. For example, 1.3 represents track number 1 and slot number 3. The request frame interval is assumed to be 25 milliseconds by default. If the device responds slowly, the request frame can be set longer. If the device does not support packaging, you can set the packaging parameters to 0, as shown in Figure 2-25-4. Note that the request frame interval refers to the time interval between issuing the next frame request and receiving a response from the previous frame.



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milesgoiiot@gmail.com/sales@opcmaster.com

Figure 2-25-4 Equipment Parameter Settings

2.26.4 NEW TAG

After the equipment is established, choose to create a new label (point), as shown in Figure 2-25-5. When establishing a point, the register type and data type of the acquisition end can be selected based on the Siemens PLC component type, and the register address is consistent with the Siemens PLC address. If there are special requirements, analog signals can also support linear conversion, bit taking, and other functions.

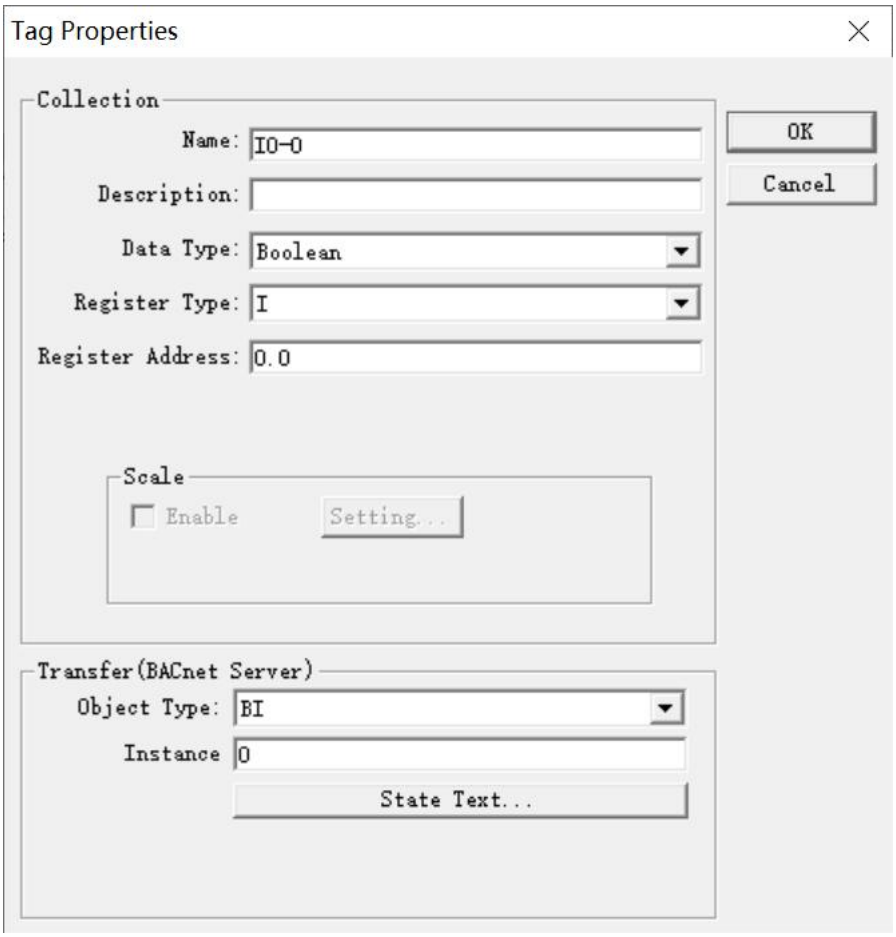

Figure 2-25-5 Label parameter settings

When using the DBn register type, the register address is composed of a combination of DB block address and data address, where the last five bits are the data address and the first few bits are the DB block address, as shown in Figure 2-25-6, which represents the PLC data address with DB16 block number and data address 2.

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milesgoiiot@gmail.com/sales@opcmaster.com

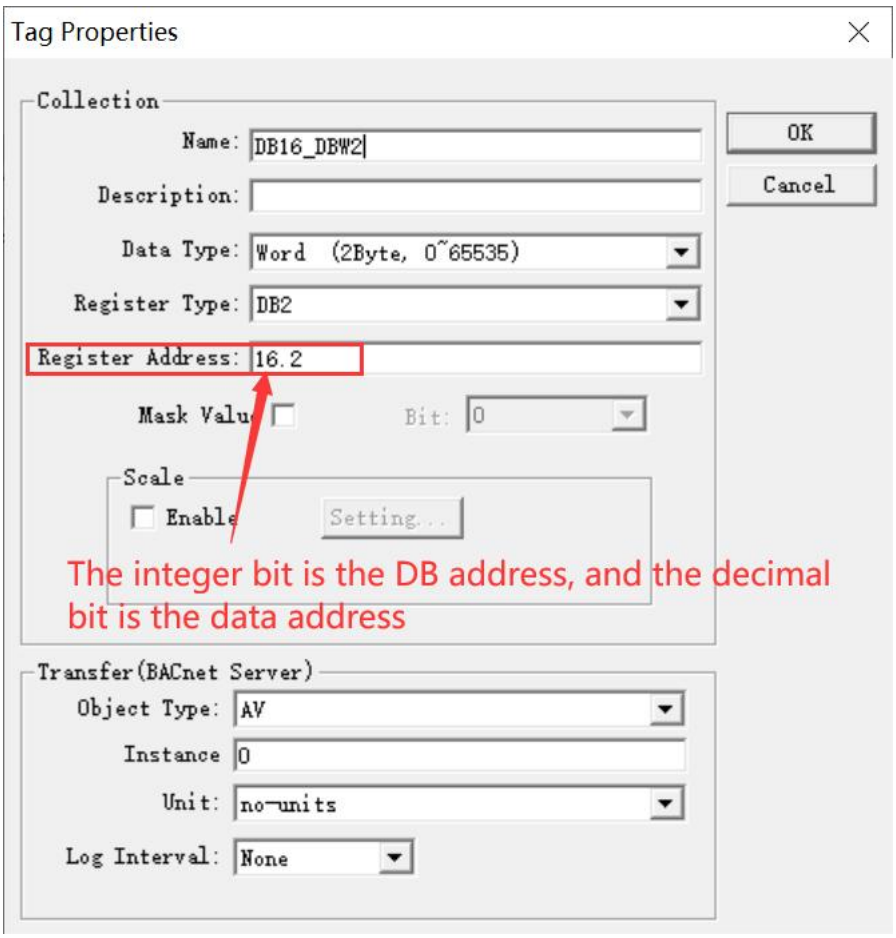

Figure 2-25-6 Taking DBn Registers

Note: If it is a DBB address, every two adjacent byte addresses share one Word data. For example, DBB0 and DBB1 share the DBW0 address, DBB4 and DBB5 share the DBW4 address, and DBB8 and DBB9 share the DBW8 address, then Hibyte and Lobyte suffixes (not case sensitive) can be used for splitting. If the DB120.DBB10 data address is collected, the register address can be written as 120.10.Hibyte. If the DB120.DBB11 address is collected, the corresponding register address can be written as 120.10.Lobyte, as shown in Figure 2-25-7.

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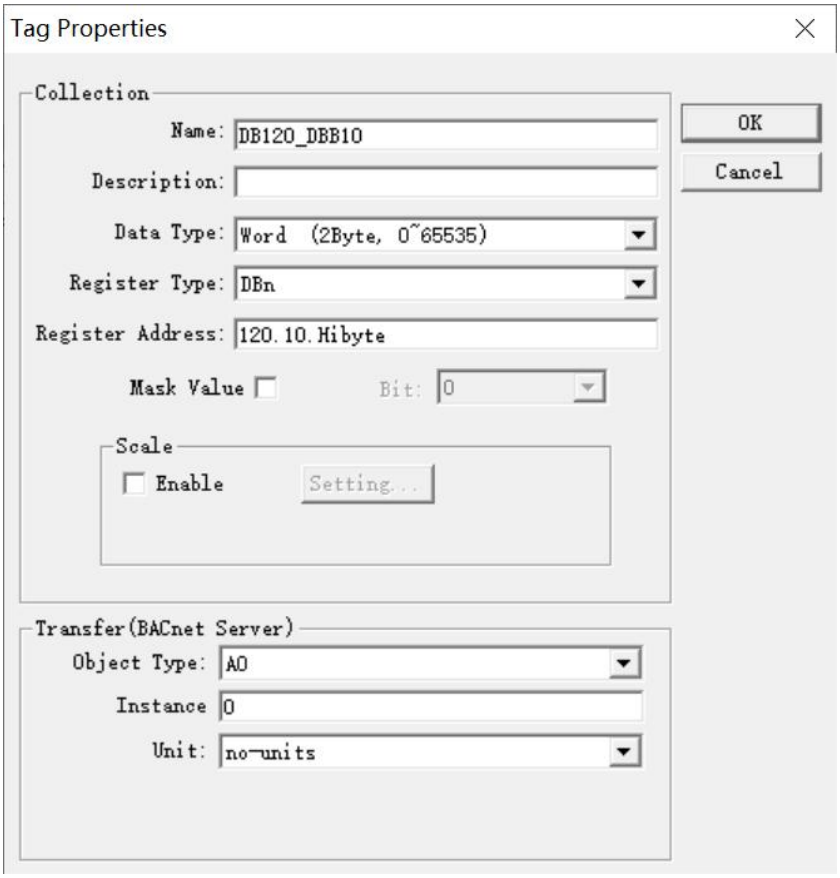
milesgoiiot@gmail.com/sales@opcmaster.com



2-25-7 Collect DBB addresses

Note that the Siemens S7-1200 series has multiple register types, and when selecting different register types, the configured register addresses may vary.

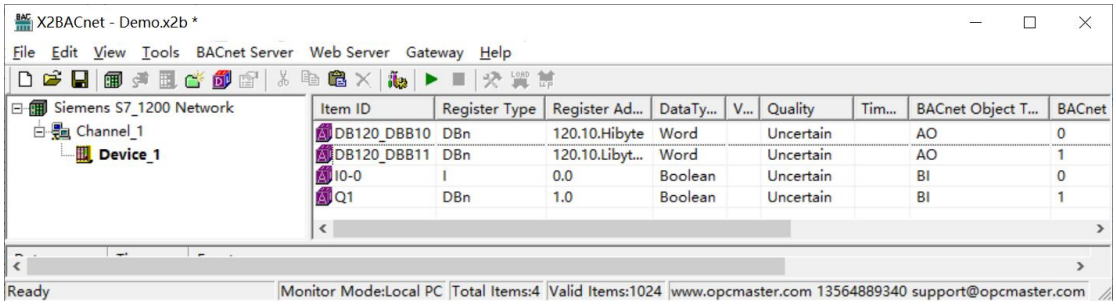


Figure 2-25-7 Label addition completed

The data types supported by the collection end include Boolean, Word, Short, Dword, Long, Float, and Double. The specific descriptions are shown in Table 2-25-1.

Data Type	Describe
Boolean	0、 1 variables
Word	2Byte（0~65535）
Short	2Byte（-32768~32767）
Dword	4Byte（0~4294967295）
Long	4Byte（-2147483648~2147483647）

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milesgoiiot@gmail.com/sales@opcmaster.com

Float	4Byte
Double	8Byte

Table 2-25-1 Data types at the collection end

The supported register types are shown in Table 2-25-2. Note that the starting address of Word type addresses is an even number, which is a multiple of 2; The starting address of DWord type addresses is a multiple of 4 to avoid data interference and confusion between addresses when using multi state settings, timers, and other components.

When the register type is DBn, the register address consists of a data block address and a data address. The first integer digit represents the DB data block address, ranging from 1 to 65535, and the last decimal digit represents the data address. For example, a register address of 16.2 represents a word variable with a data block number of 16 and an address of 2 (i.e. DB16. DBW2), and similarly, 200.1.2 represents the address of a bit variable with a data block of 200 and an address of 1.2 (i.e. DB200. DBB1.2).

Serial number	Register type	Word address format	Dword address format	Bit address format	Describe
1	I	0~2046	0~2044	0.0~2047.7	read only
2	Q	0~2046	0~2044	0.0~2047.7	Read/Write
3	M	0~2046	0~2044	0.0~2047.7	Read/Write
4	DBn	1.0~65535.65534	1.0~65535.65532	1.0.0~65535.65535.7	Read/Write

Table 2-25-2 Register Types at the Acquisition End

2.27 Simulator (Simulation equipment)

2.27.1 NEW DRIVER

Select the "New Driver" option in the menu bar of the upper computer configuration interface, as shown in Figure 2-27-1.

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milesgoiiot@gmail.com/sales@opcmaster.com

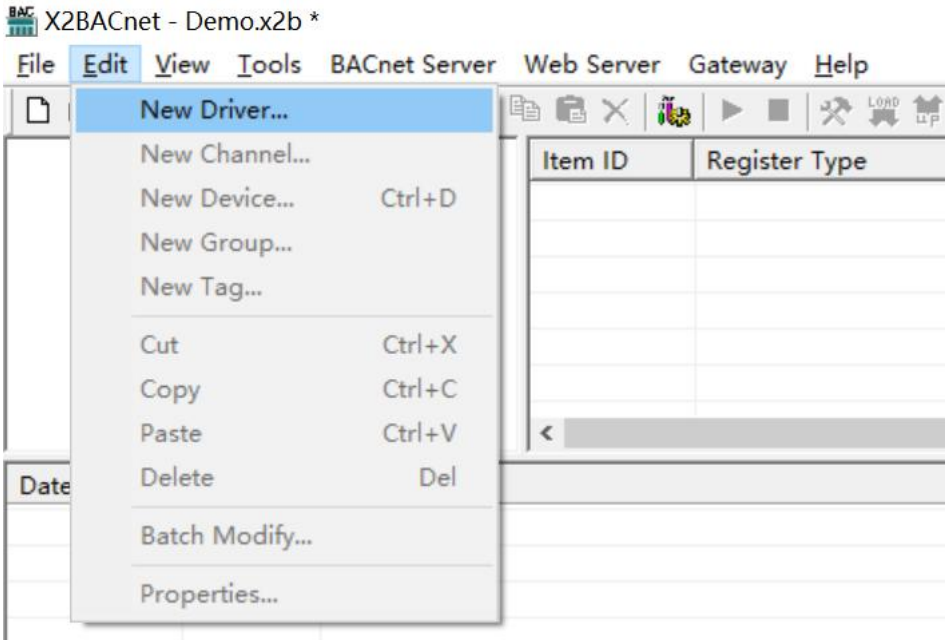

Figure 2-27-1 Selection of New Driver

Select "Simulator" in the pop-up window, as shown in Figure 2-27-2.

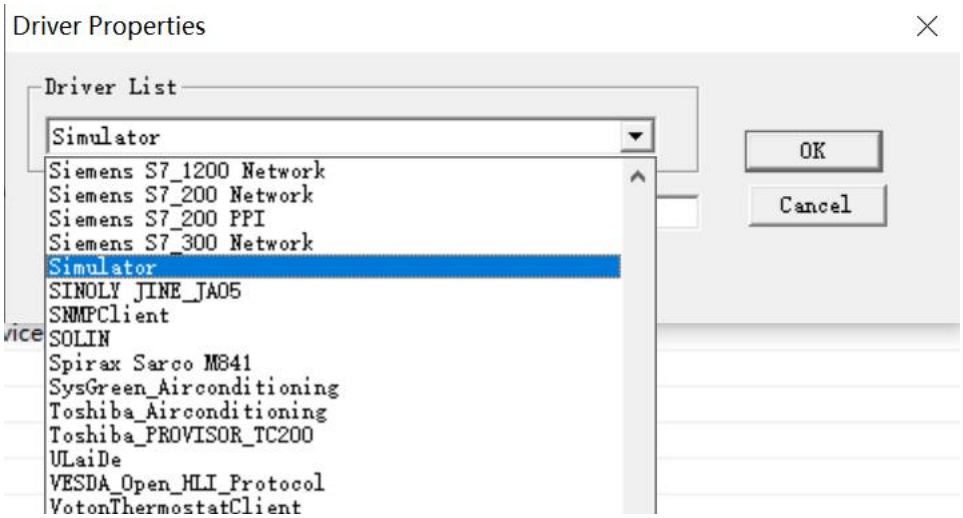

Figure 2-27-2 Selection Drive

2.27.2 NEW CHANNEL

After adding the driver, choose to create a new channel, Simulator (simulation device), and the channel name can be specified by yourself. Communication parameters do not need to be modified, and both IP and port are invalid parameters. Default settings are sufficient, as shown in Figure 2-27-3. Note that the timeout refers to the waiting timeout of the request frame. The channel parameter layer does not need to be set, and default parameters can be used.

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milesgoiiot@gmail.com/sales@opcmaster.com

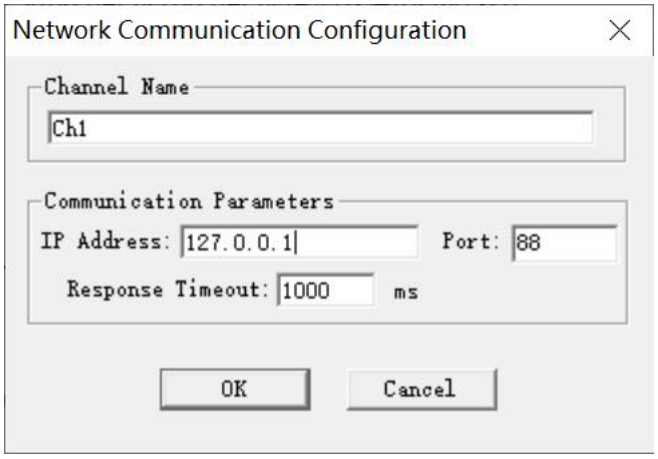

Figure 2-27-3 Channel parameter settings

2.27.3 NEW DEVICE

After establishing the channel, select New Device and set the device related properties in the pop-up dialog box. The default station number for the device is 1, and the request frame interval is 100 milliseconds. Other parameters can be set by default, as shown in Figure 2-27-4. Note that the request frame interval refers to the time interval between issuing the next frame request and receiving a response from the previous frame. The device layer parameters do not need to be set and can be kept as default.

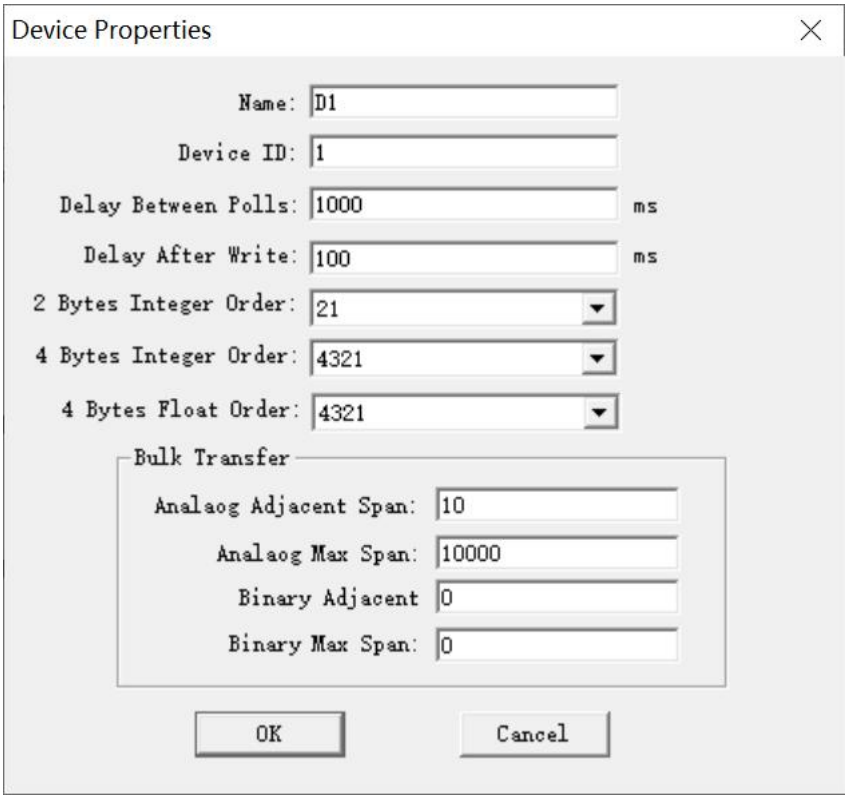

Figure 2-27-4 Equipment Parameter Settings

Add: 28SenangCrescent,#0511,Bizhub28,Singapore416601 Tel:+6580385403 URL:www.bacnetchina.com
milesgoiiot@gmail.com/sales@opcmaster.com

2.27.4 NEW TAG

After the device is newly created, choose to add a label (point), as shown in Figure 2-27-5. When establishing a point, the register address of the acquisition end starts from 0.

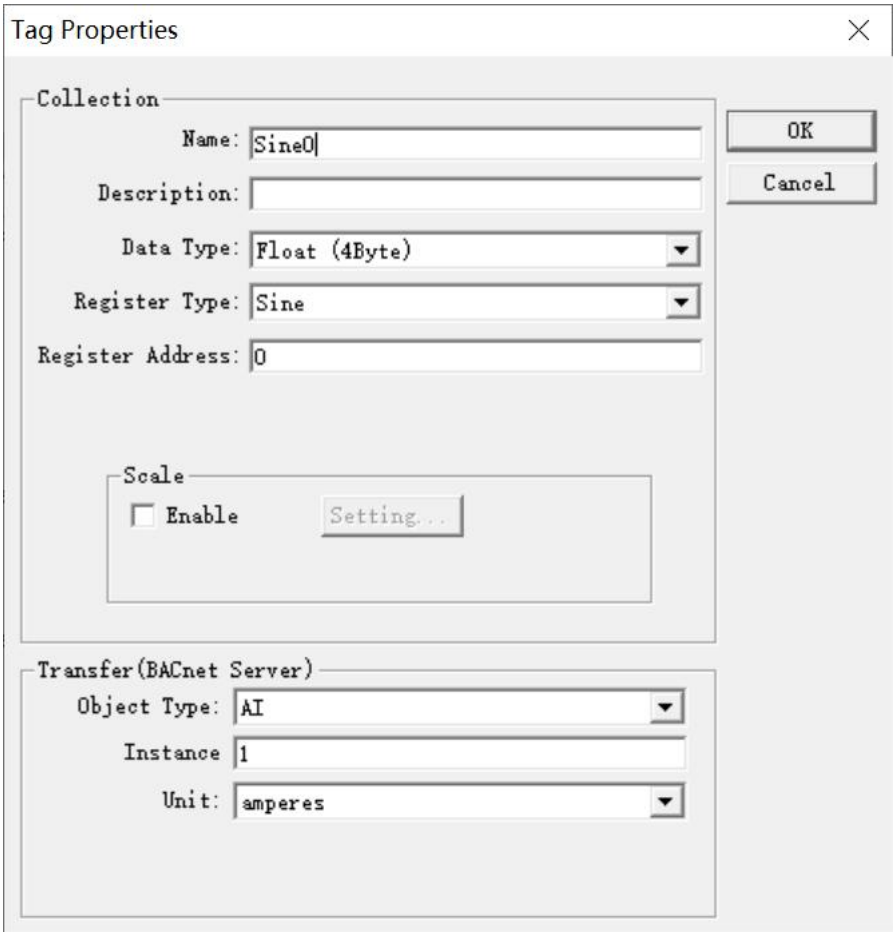

Figure 2-27-5 Label parameter settings

After the label is established, it is shown in Figure 2-27-6.

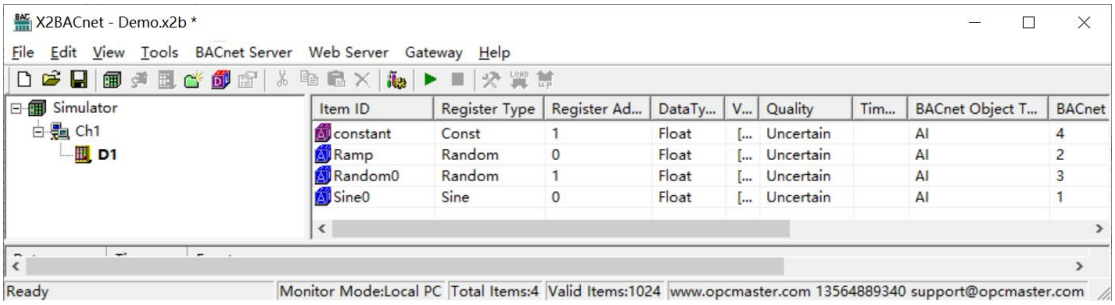

Figure 2-27-6 Adding labels completed

The data types supported by the collection end include Boolean, Word, Short, Dword, Long, Float, and Double. The specific descriptions are shown in Table 2-27-1.

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milesgoiiot@gmail.com/sales@opcmaster.com

Data Type	Describe
Boolean	0、 1 variables
Word	2Byte（0~65535）
Short	2Byte（-32768~32767）
Dword	4Byte（0~4294967295）
Long	4Byte（-2147483648~2147483647）
Float	4Byte
Double	8Byte

Table 2-27-1 Data types at the collection end

The register types supported by the collection end include Sine, Random, Ramp, and Const, as shown in Table 2-27-2.

Serial Number	Register type	Describe
1	Sine	Sine
2	Random	Random
3	Ramp	Gradient value (when selecting Word or Short, increase by 1 per second, with a value range of 0 to the length of the analog package)
4	Const	constant value

Table 2-27-2 Register Types at the Acquisition End

2.28 AB_EthernetIP (AB CompactLogix controller Ethernet communication)

2.28.1 NEW DRIVER

Select the "New Driver" option in the menu bar of the upper computer configuration interface, as shown in Figure 2-28-1.

Add: 28SenangCrescent,#0511,Bizhub28,Singapore416601 Tel:+6580385403 URL:www.bacnetchina.com
milesgoiiot@gmail.com/sales@opcmaster.com

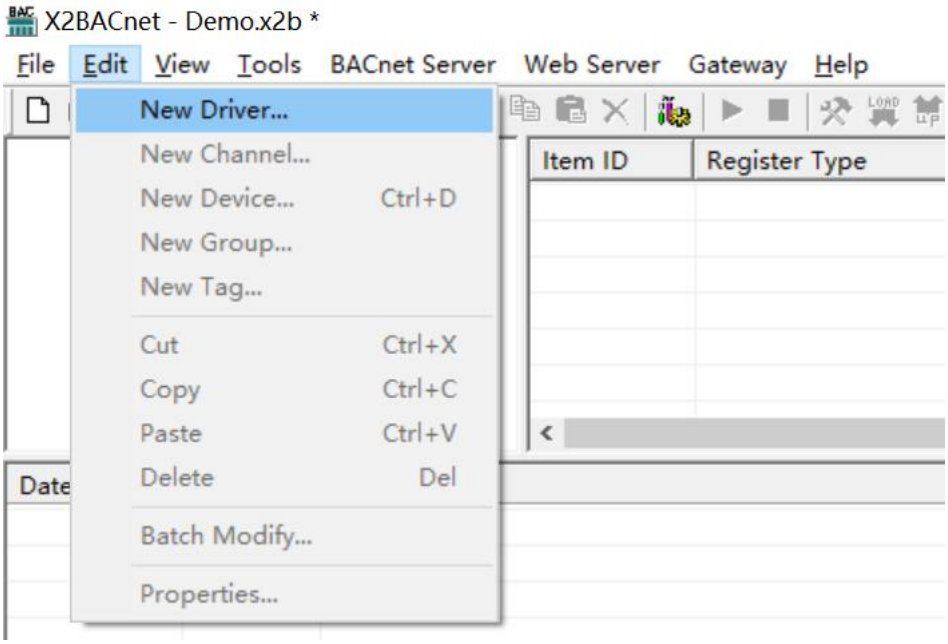

Figure 2-28-1 Selection of New Driver

Select "AB-EthernetIP" in the pop-up window, as shown in Figure 2-28-2.

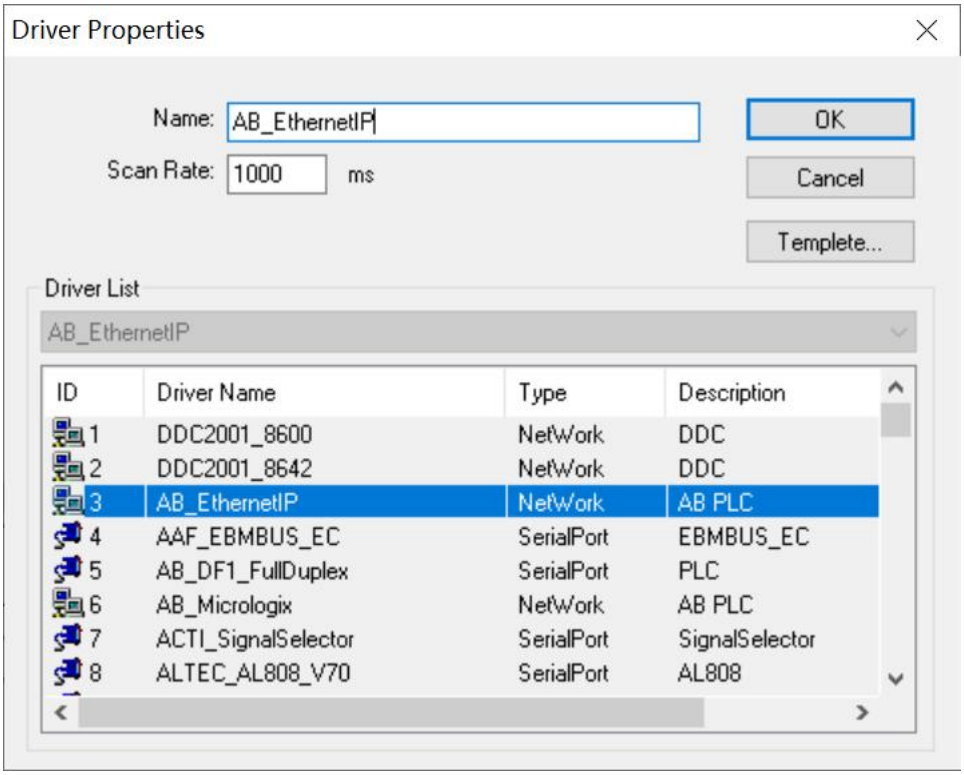

Figure 2-28-2 Selection Drive

2.28.2 NEW CHANNEL

Add: 28SenangCrescent,#0511,Bizhub28,Singapore416601 Tel:+6580385403 URL:www.bacnetchina.com
milesgoiiot@gmail.com/sales@opcmaster.com

After adding the driver, choose to create a new channel. AB-EnternetIP is the communication protocol of AB Company's PLC Ethernet interface, which communicates through network ports. The IP address is the corresponding PLC network port IP address, and the default port number is 44818. The default timeout is 1000ms. As shown in Figure 2-28-3.

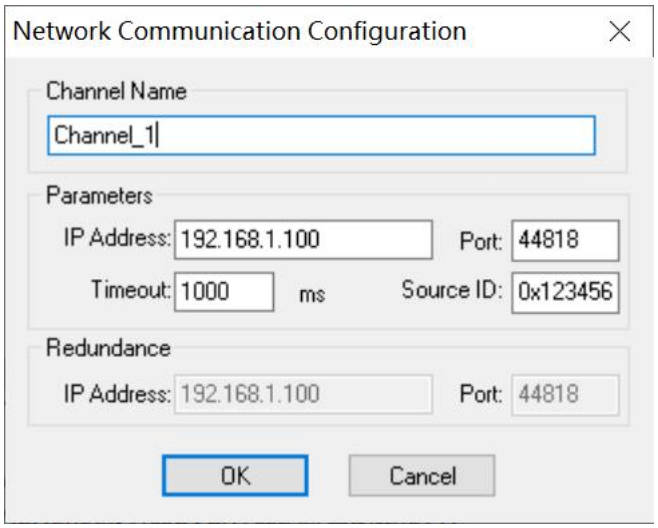

Figure 2-28-3 Channel Parameter Settings

2.28.3 NEW DEVICE

After establishing the channel, select New Device and set the device related properties in the pop-up dialog box. The device station number is the corresponding PLC rack number and controller slot number (default 1.0). Other parameters default, and the request frame interval is the time interval between the next and previous frames, as shown in Figure 2-28-4.

Add: 28SenangCrescent,#0511,Bizhub28,Singapore416601 Tel:+6580385403 URL:www.bacnetchina.com
milesgoiiot@gmail.com/sales@opcmaster.com

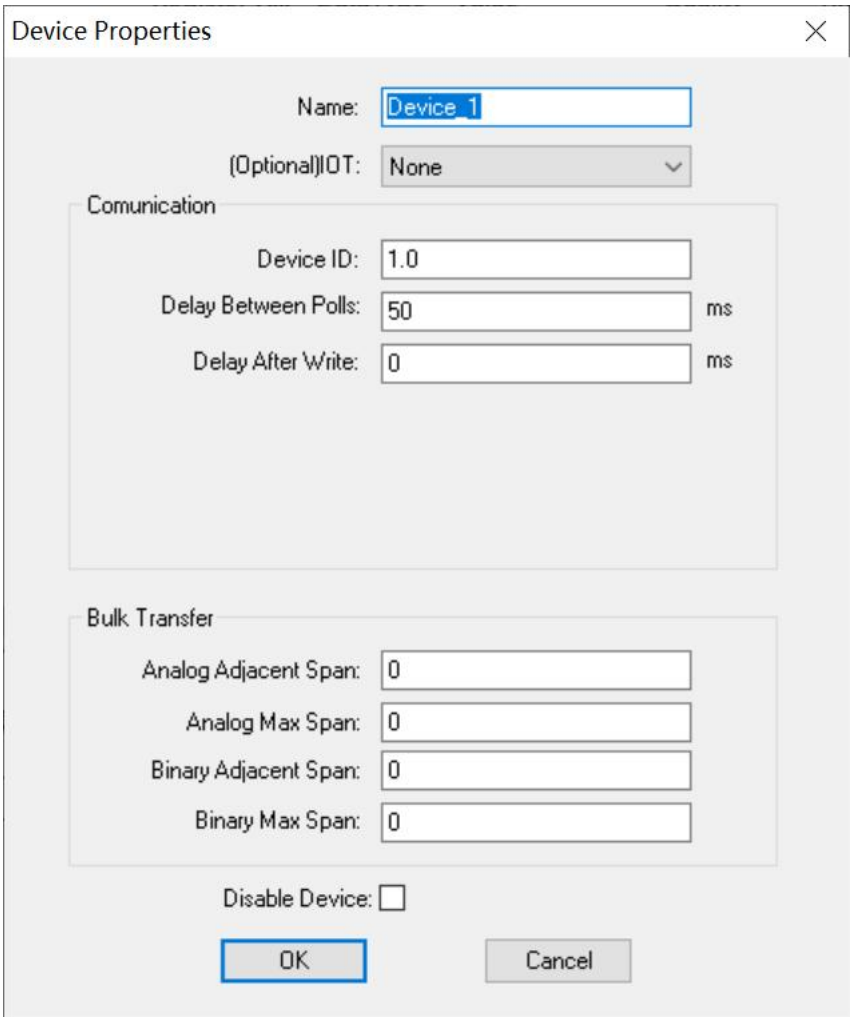

Figure 2-28-4 Equipment Parameter Settings

2.28.4 NEW TAG

When establishing a point, the register type is BOOL and the register address is DO_1. The data type is Boolean, and the specific settings are shown in Figure 2-28-5.

Add: 28SenangCrescent,#0511,Bizhub28,Singapore416601 Tel:+6580385403 URL:www.bacnetchina.com
milesgoiiot@gmail.com/sales@opcmaster.com

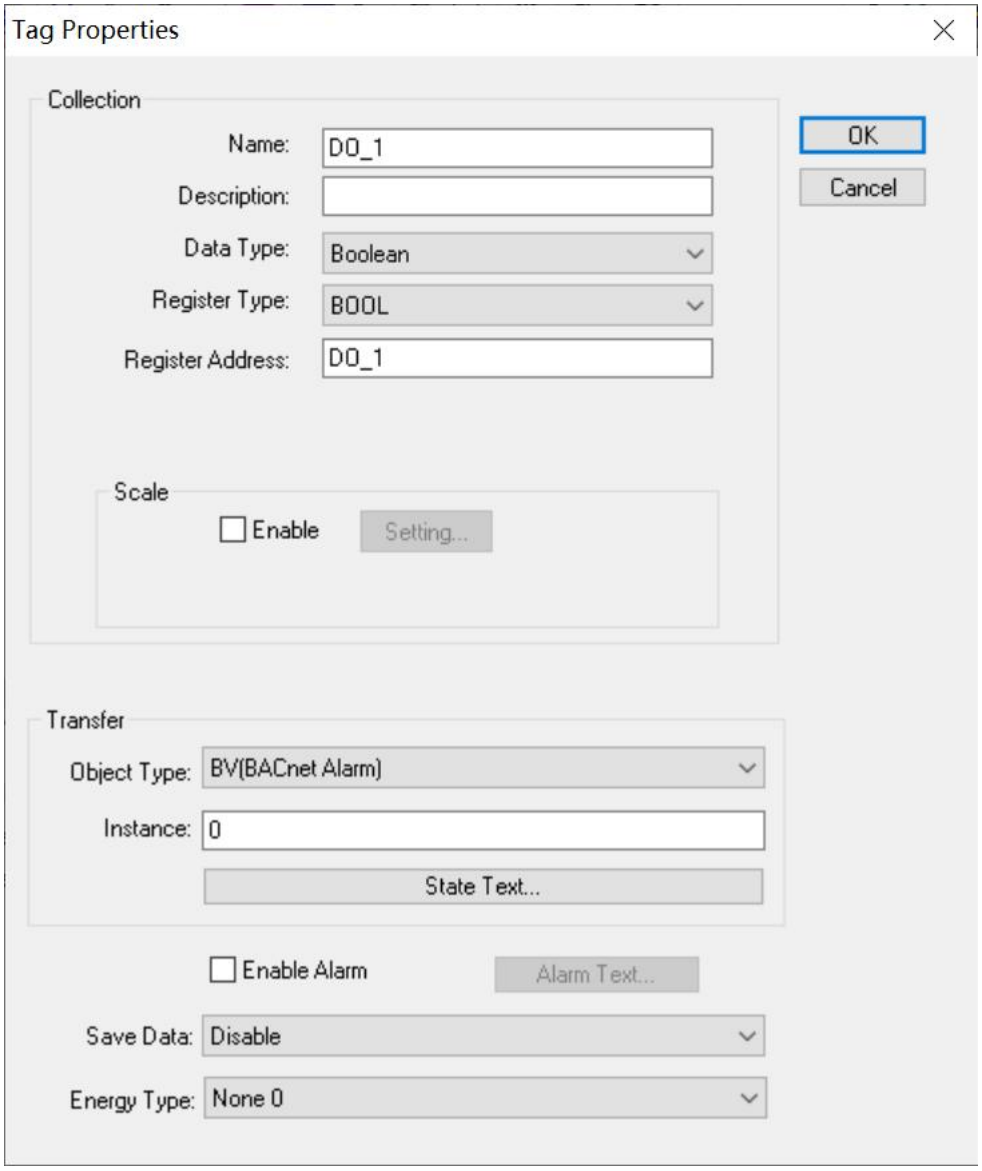

Figure 2-28-5 Label Parameter Settings

Note: ① The register type is the Data Type attribute of the tag Tags in RSLogix5000;

② The register address is the Name attribute of the tag Tags in RSLogix5000;

Label addition completed. As shown in Figure 2-28-6.

Add: 28SenangCrescent,#0511,Bizhub28,Singapore416601 Tel:+6580385403 URL:www.bacnetchina.com
milesgoiiot@gmail.com/sales@opcmaster.com

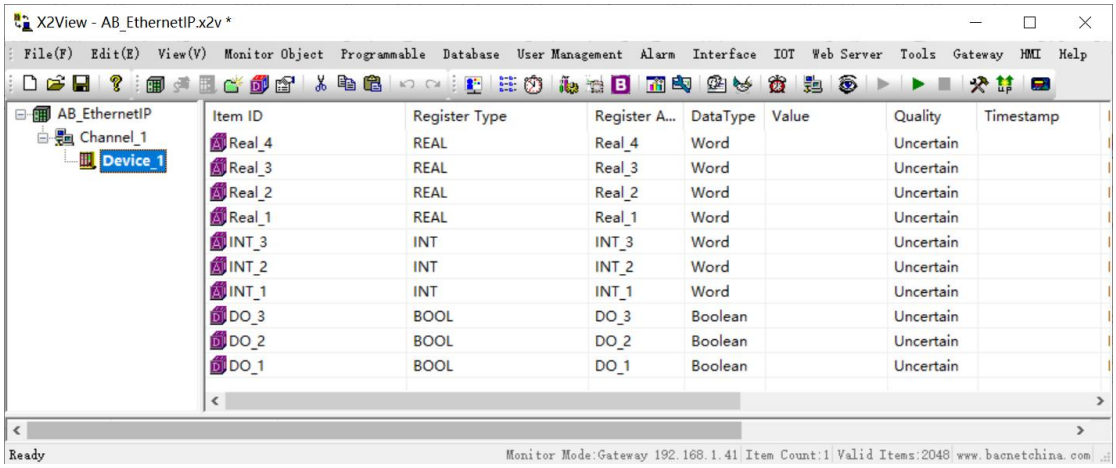

Figure 2-28-6 Label addition completed

The data types supported by the collection end are described in Table 2-28-1.

Data Type	Describe
Boolean	0、 1 variables
Word	2Byte（0~65535）
Short	2Byte（-32768~32767）
Dword	4Byte（0~4294967295）
Long	4Byte（-2147483648~2147483647）
Float	4Byte
Double	8Byte

Table 2-28-1 Data types at the collection end

The specific description of the register types supported by the collection end is shown in Table 2-28-2. For specific meanings of each point, please refer to the example engineering file of the driver.

Serial Number	Register type	Describe
1	BOOL	Read/Write
2	SINT	Read/Write
3	INT	Read/Write
4	DINT	Read/Write
5	REAL	Read/Write

Table 2-28-2 Register Types at the Acquisition End

The appearance of AB CompactLogix controller is shown in Figure 2-28-7.

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milesgoiiot@gmail.com/sales@opcmaster.com

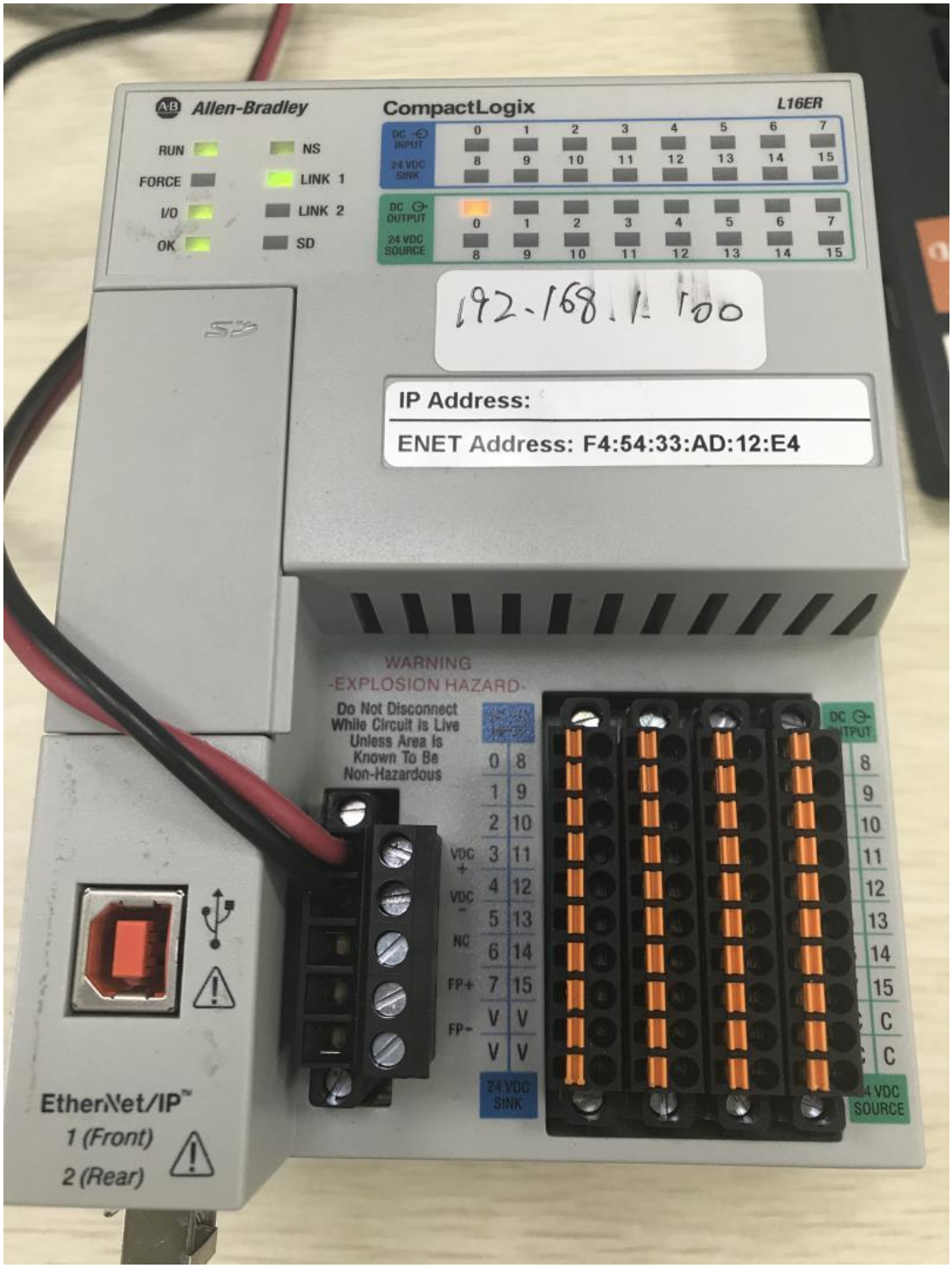

Figure 2-28-7 CompactLogix Controller

2.29 OPC UA Client (OPC UA Specification)

2.29.1 NEW DRIVER

Select the "New Driver" option in the menu bar of the upper computer configuration interface, as shown in Figure 2-29-1.

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milesgoiiot@gmail.com/sales@opcmaster.com

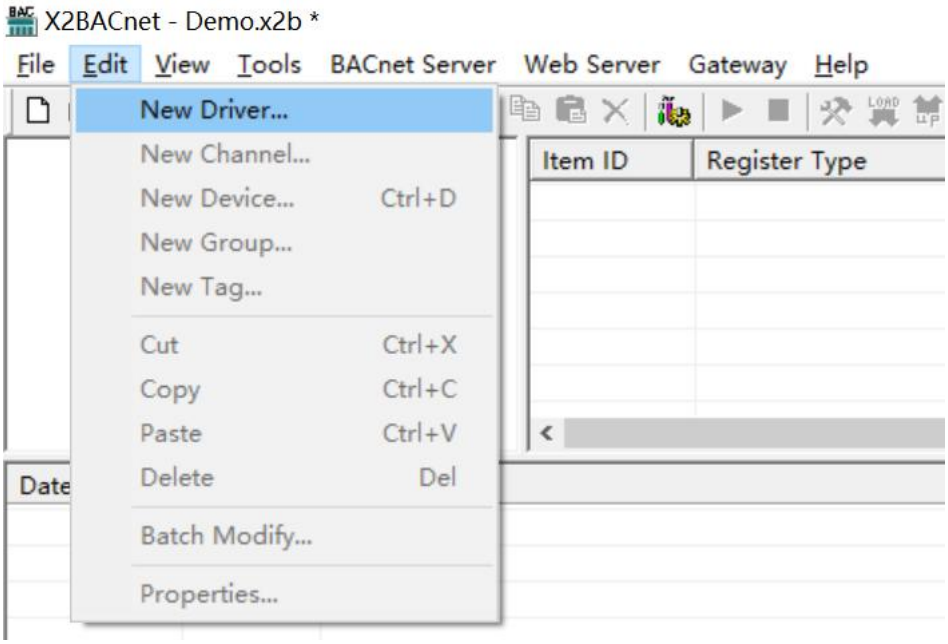

Figure 2-29-1 Select New Driver

Select "OPC UA Client" in the pop-up window, as shown in Figure 2-29-2.

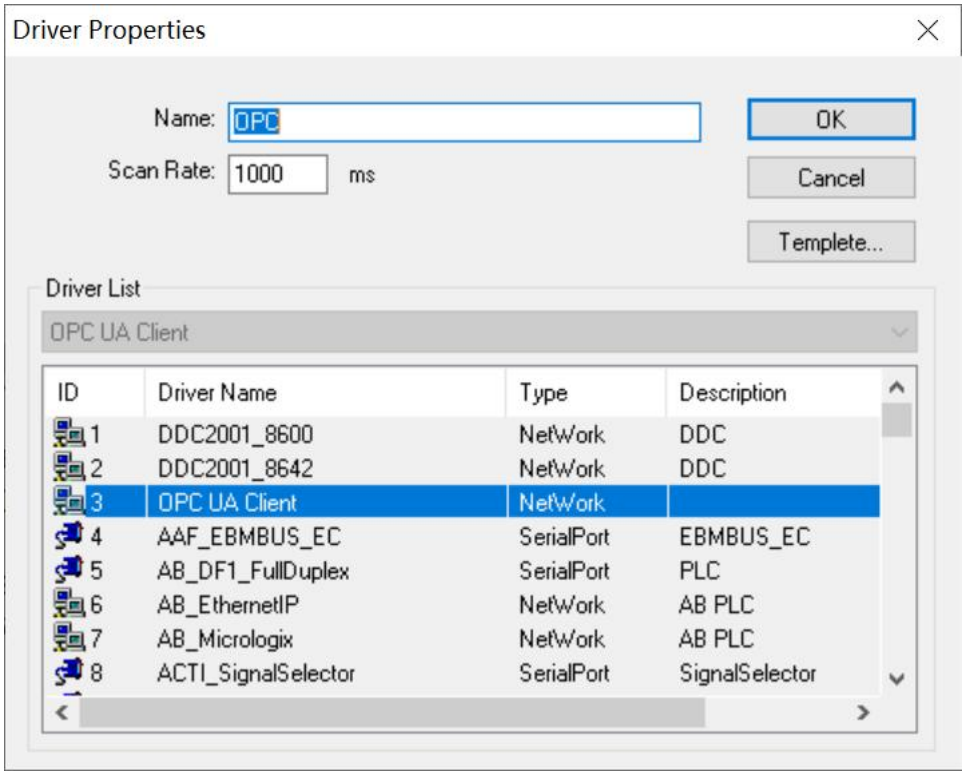

Figure 2-29-2 Selection Drive

2.29.2 NEW CHANNEL

Add: 28SenangCrescent,#0511,Bizhub28,Singapore416601 Tel:+6580385403 URL:www.bacnetchina.com
milesgoiiot@gmail.com/sales@opcmaster.com

After adding the driver, choose to create a new channel and communicate through a network port. The IP address is the IP address of the OPC UA server, and the default port number is 49320 (the port number set by the OPC UA server). The main site, if there is user authentication, consists of a username and password, and anonymous access can be set to blank. The default timeout is 1000ms. As shown in Figure 2-29-3.

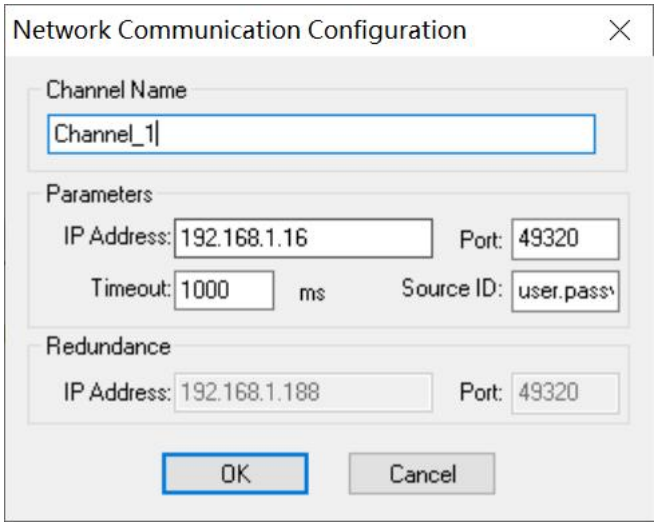

Figure 2-29-3 Channel parameter settings

2.29.3 NEW DEVICE

After establishing the channel, select the new device and set the device related properties in the pop-up dialog box. If the device station number is invalid, it defaults to empty, and other parameters default. The request frame interval is the time interval between the next and previous frames, as shown in Figure 2-29-4.

Add: 28SenangCrescent,#0511,Bizhub28,Singapore416601 Tel:+6580385403 URL:www.bacnetchina.com
milesgoiiot@gmail.com/sales@opcmaster.com

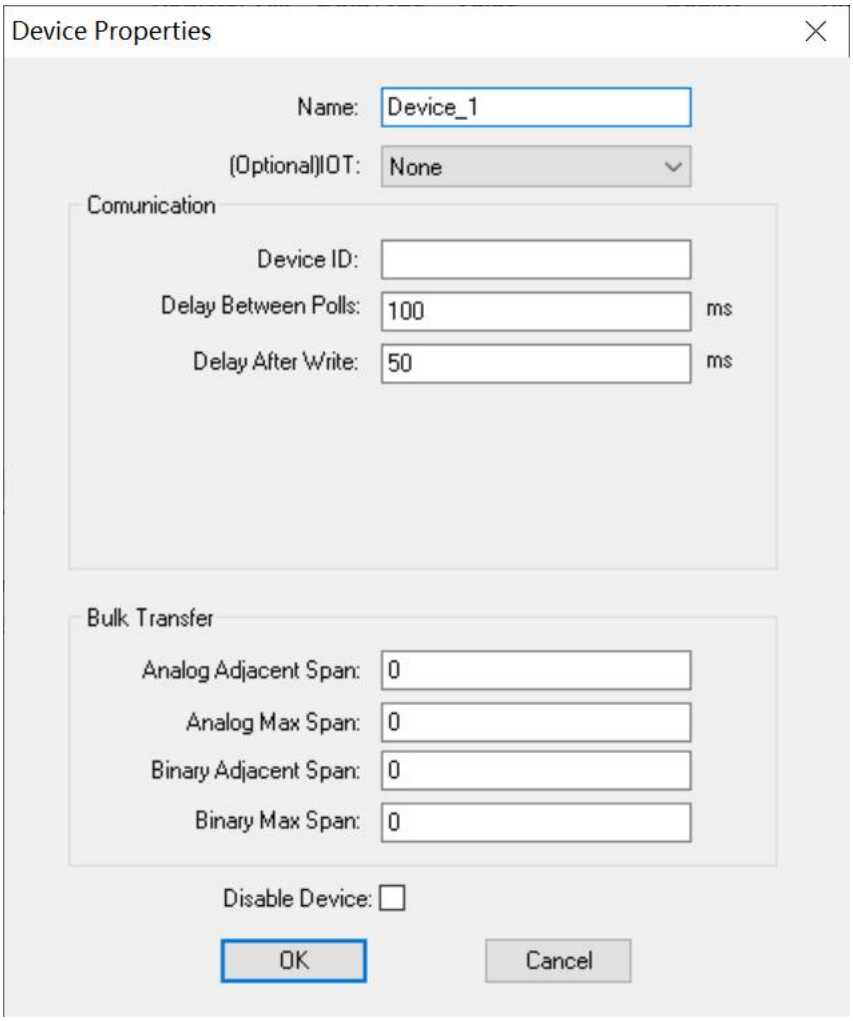

Figure 2-29-4 Equipment Parameter Settings

2.29.4 NEW TAG

When establishing a point, the register type is itemID and the register address is NodeId of the OPC UA server point. The data types are Boolean, Word, Short, Dword, Long, Float, Double. As shown in Figure 2-29-5.

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milesgoiiot@gmail.com/sales@opcmaster.com

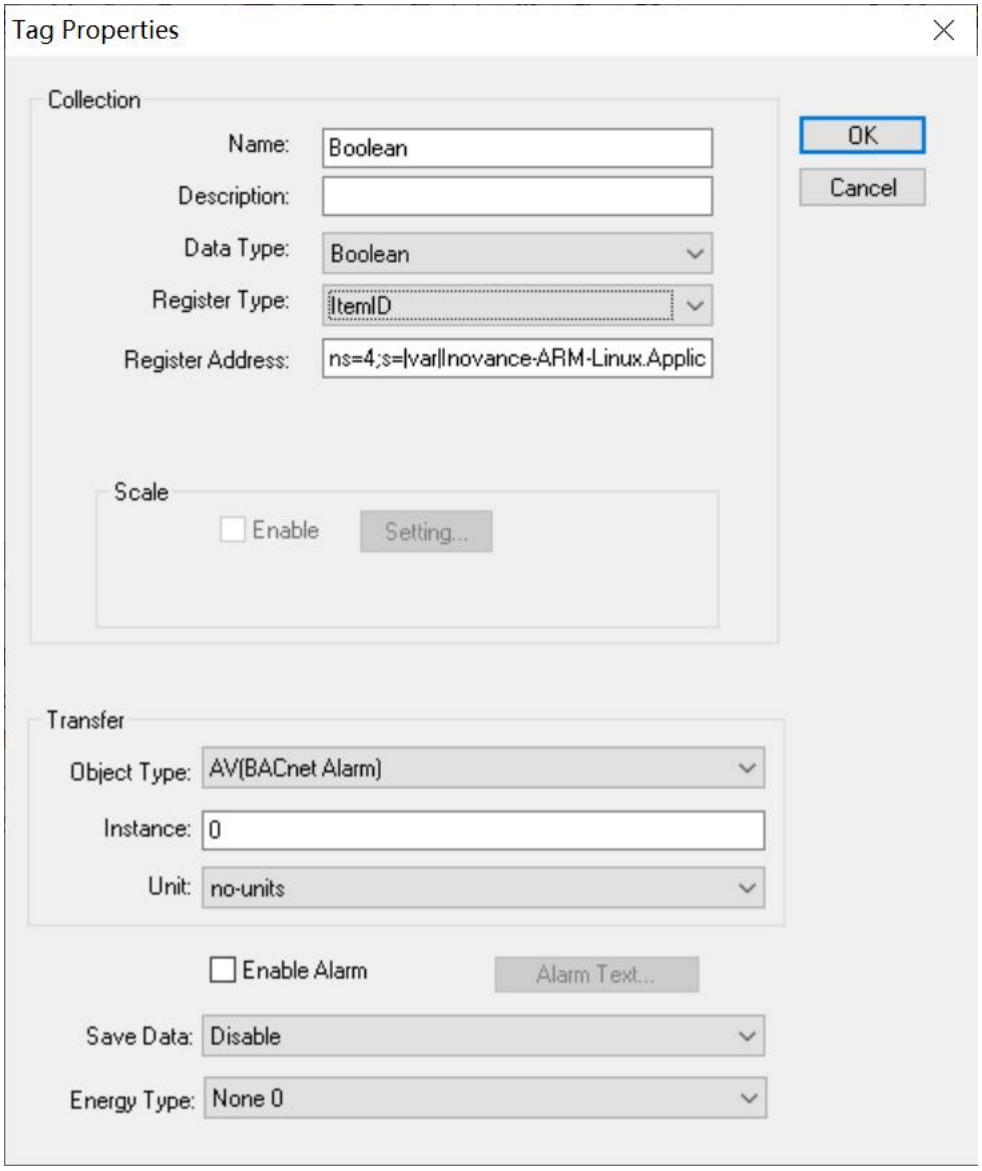

Figure 2-29-5 Label parameter settings

Label addition completed. As shown in Figure 2-29-6.

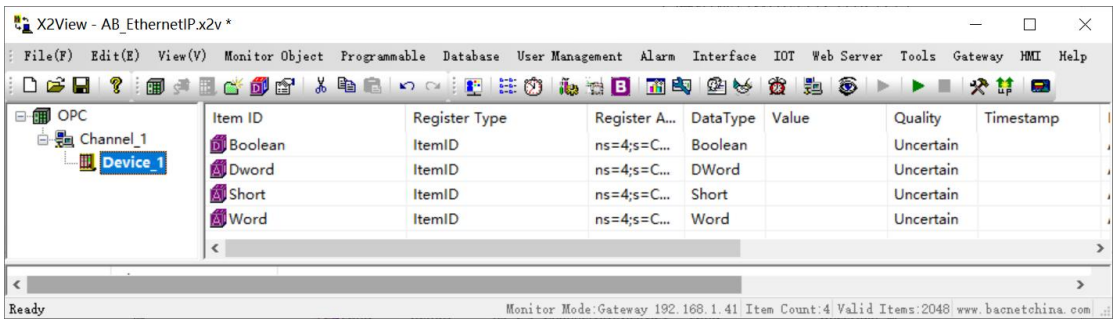

Figure 2-29-6 Label addition completed

The data types supported by the collection end include Boolean, Word, Short, Dword, Long, Float, and Double. The specific descriptions are shown in Table 2-29-1.

Add: 28SenangCrescent,#0511,Bizhub28,Singapore416601 Tel:+6580385403 URL:www.bacnetchina.com
milesgoiiot@gmail.com/sales@opcmaster.com

Data Type	Describe
Boolean	0、1 variables
Word	2Byte（0~65535）
Short	2Byte（-32768~32767）
Dword	4Byte（0~4294967295）
Long	4Byte（-2147483648~2147483647）
Float	4Byte
Double	8Byte

Table 2-29-1 Monitoring Point Table Information

2.30 OMRON_CP1H (Omron CP1H series PLC)

2.30.1 NEW DRIVER

Select the "New Driver" option in the menu bar of the upper computer configuration interface, as shown in Figure 2-30-1.

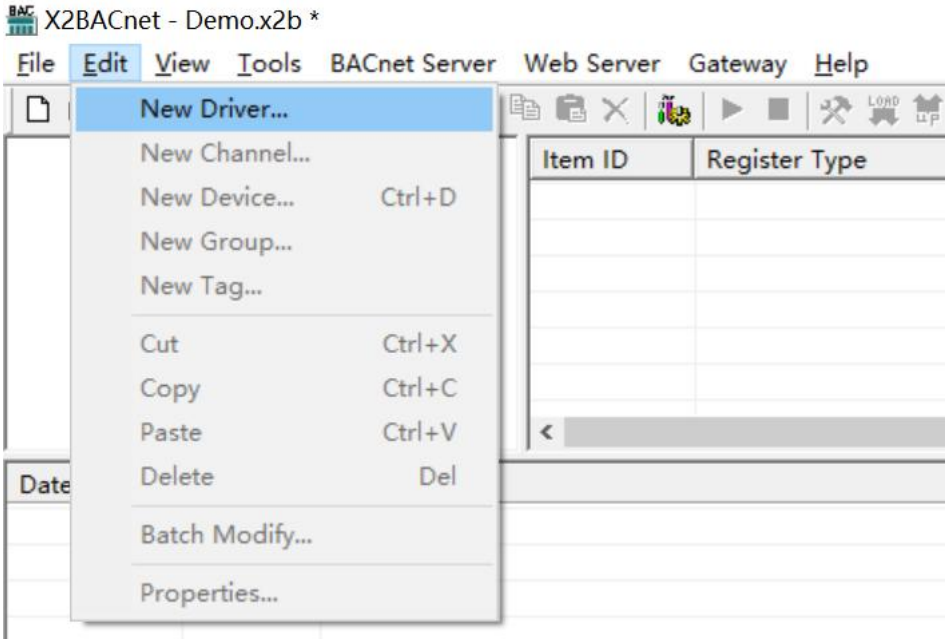

Figure 2-30-1 Selection of New Driver

Select "OMRON-CP1H" in the pop-up window, as shown in Figure 2-30-2.

Add: 28SenangCrescent,#0511,Bizhub28,Singapore416601 Tel:+6580385403 URL:www.bacnetchina.com
milesgoiiot@gmail.com/sales@opcmaster.com

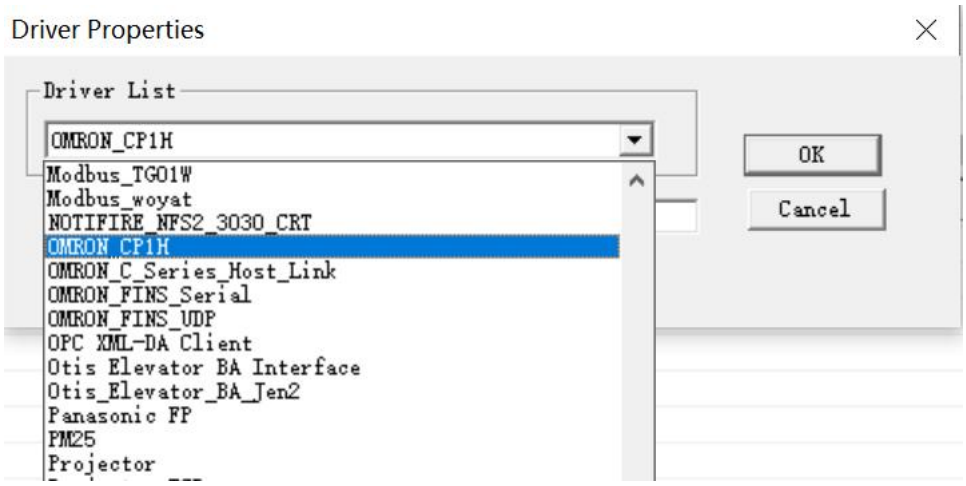

Figure 2-30-2 Selection Drive

2.30.2 NEW CHANNEL

After adding the driver, choose to create a new channel. Omron OMRON-CP1H communicates through serial port, with default channel serial port 1 and default communication parameters of 9600bps, 7 data bits, even parity bits, 2 stop bits, and a default timeout of 1500ms, as shown in Figure 2-30-3. Note that the timeout refers to the waiting timeout of the request frame.

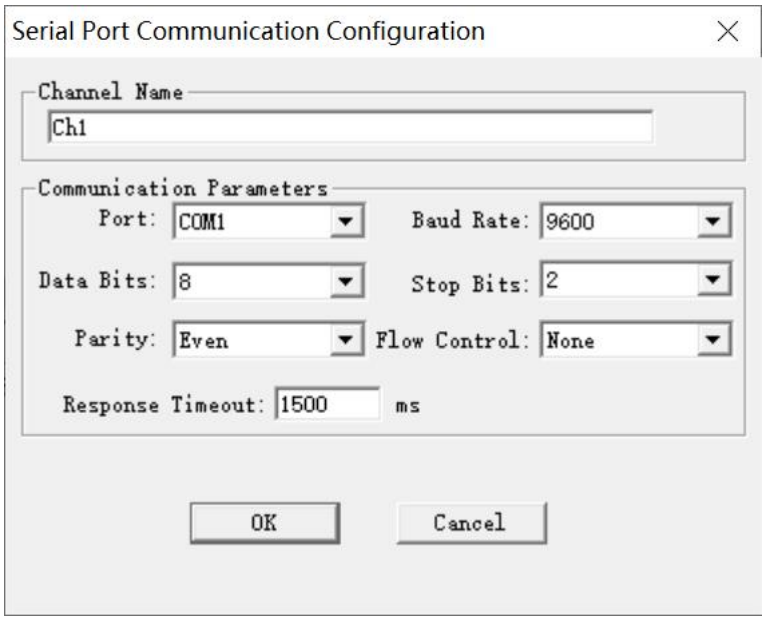

Figure 2-30-3 Channel Parameter Settings

2.30.3 NEW DEVICE

After establishing the channel, select the new device and set the device related properties in the pop-up dialog box. The default station number of the device is 0, and the request frame interval is set to 50 milliseconds by default. If the device responds slowly, you can set the request frame to be longer. If the device does not

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milesgoiiot@gmail.com/sales@opcmaster.com

support packaging, you can set the packaging parameters to 0, as shown in Figure 2-30-4. Note that the request frame interval refers to the time interval between issuing the next frame request and receiving a response from the previous frame.

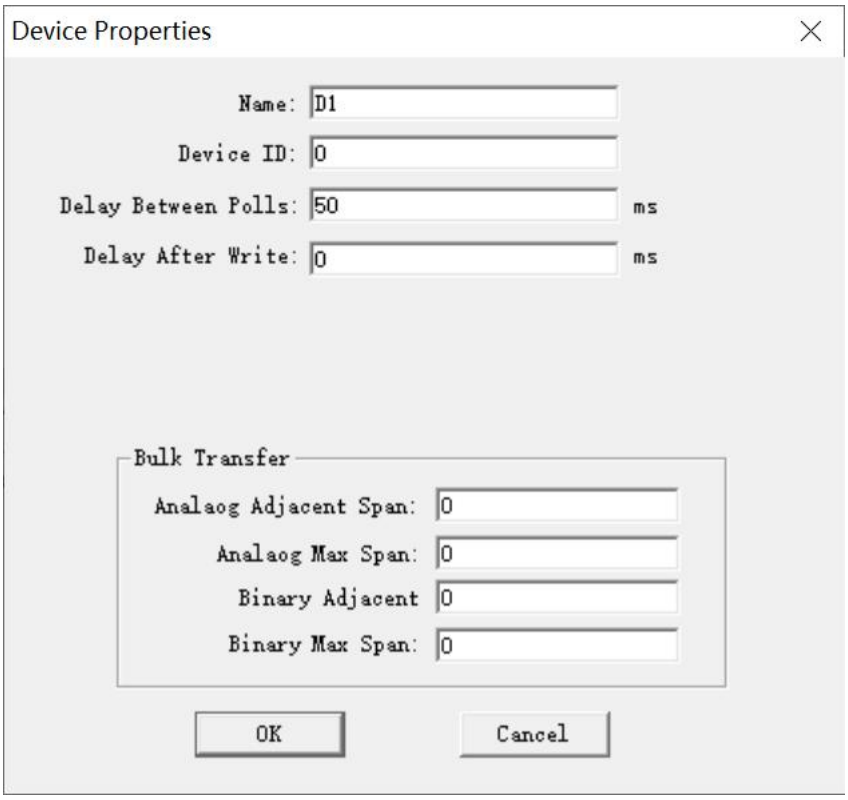

Figure 2-30-4 Equipment Parameter Settings

2.30.4 NEW TAG

After the device is established, choose to create a new label (point), as shown in Figure 2-30-5. When establishing a point, the register type and data type of the acquisition end can be selected based on the type of Omron PLC component, and the register address is consistent with the Omron PLC address. If there are special requirements, analog signals can also support linear conversion, bit taking, and other functions.

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milesgoiiot@gmail.com/sales@opcmaster.com

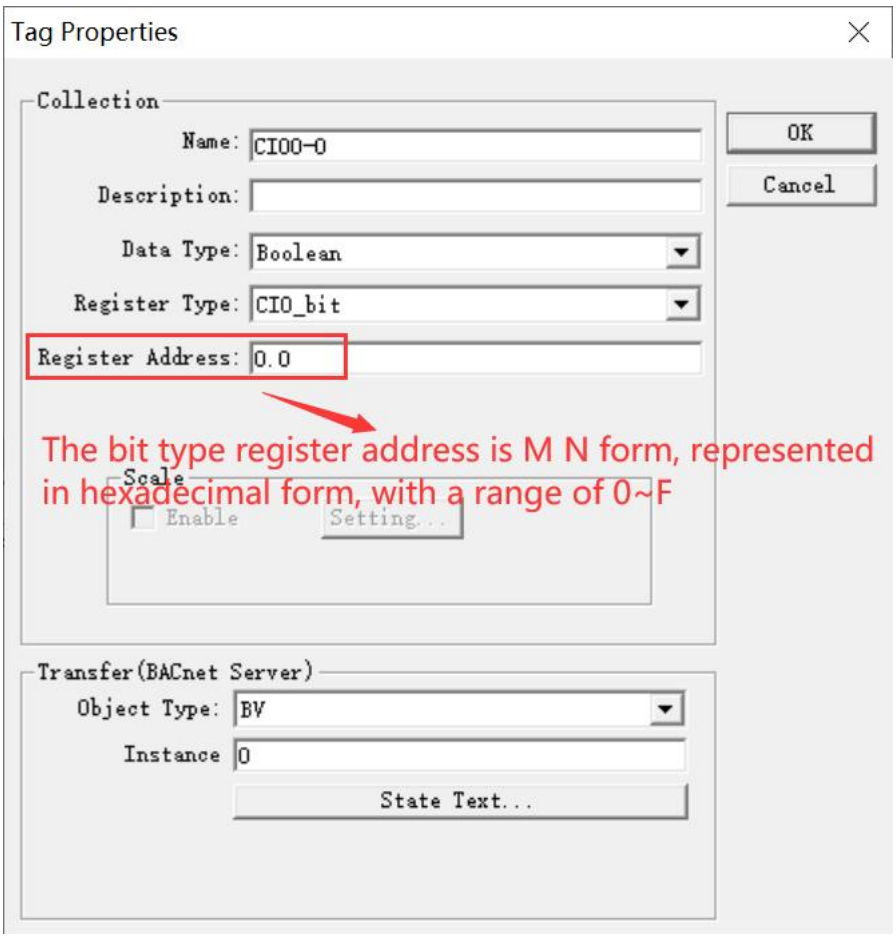

Figure 2-30-5 Label Parameter Settings

Note that this driver has multiple register types, and when selecting different register types, the configured register addresses may vary.

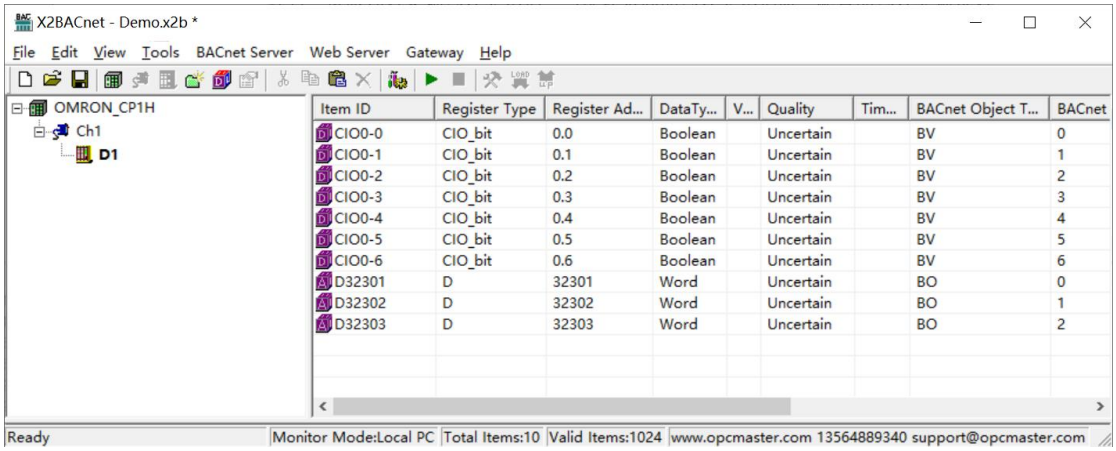

Figure 2-30-6: After adding labels

Note that this model of PLC can support RS232 and RS485 communication methods. The RS485 method requires setting the CP1W-C1F11 expansion card dial switch, and setting 2, 3, 5, and 6 to on, as shown in Figure 2-30-7.

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milesgoiiot@gmail.com/sales@opcmaster.com

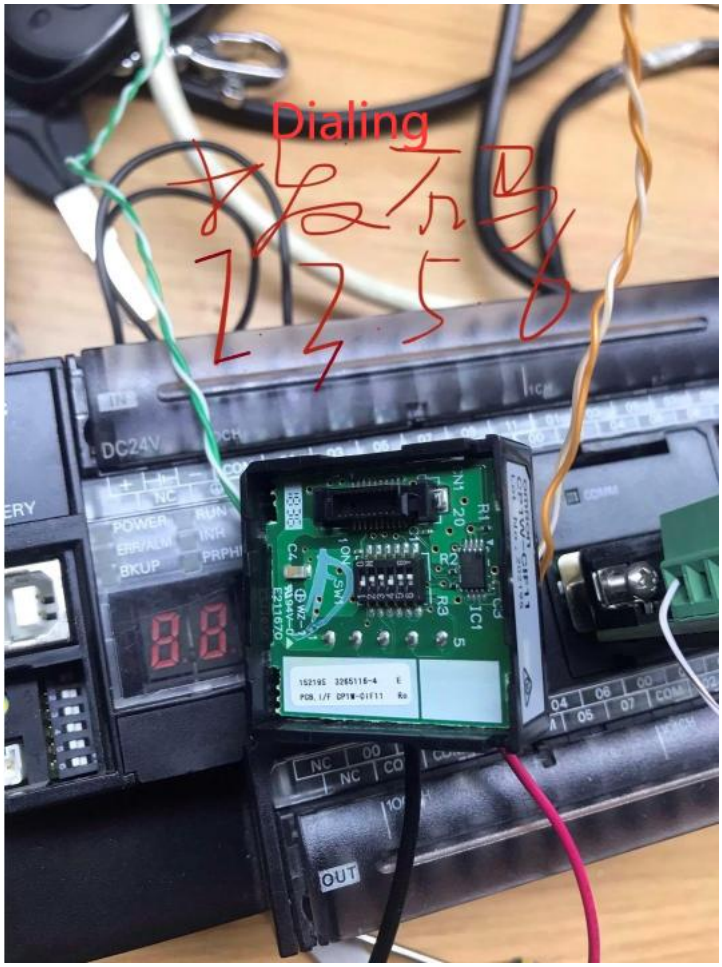

Figure 2-30-7 RS485 Mode

Pay attention to 485 wiring. Any combination of RDA - RDB+or SDA - SDB+on the expansion card can be used. RDB+(SDB+) is the 485 positive terminal, connected to gateway COM port A. RDA - (SDB -) is the 485 negative terminal, connected to gateway COM port B.

RS232 mode requires connecting the pins 2, 3, and 9 of the DB9 frame port of the PLC to the RX, TX, and GND terminals of the gateway, as shown in Figure 2-30-8.

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milesgoiiot@gmail.com/sales@opcmaster.com

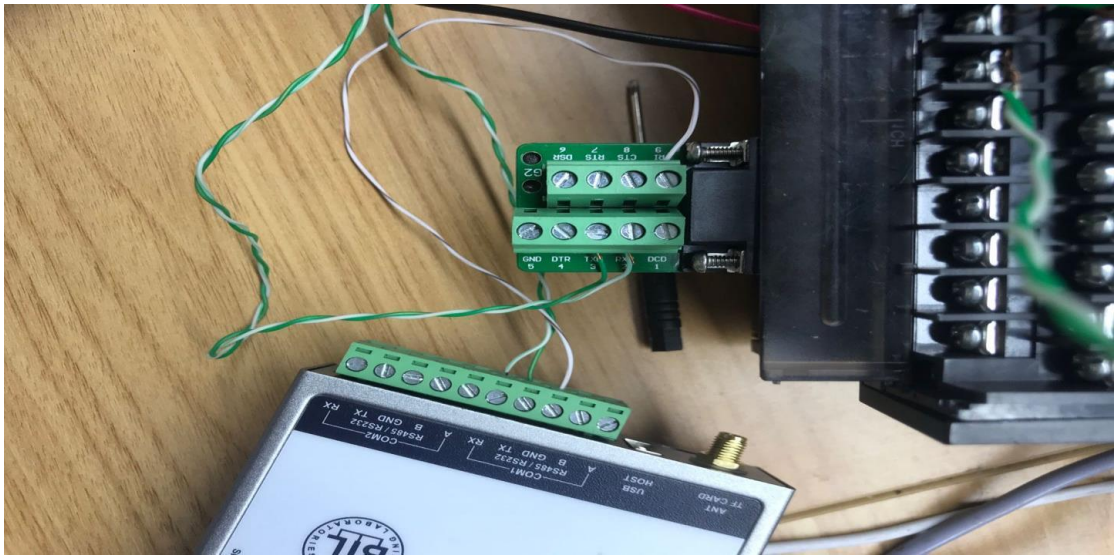

Figure 2-30-8 RS232 mode

The data types supported by the collection end include Boolean, Word, Short, Dword, Long, Float, and Double. The specific descriptions are shown in Table 2-30-1.

Data Type	Describe
Boolean	0、1 variables
Word	2Byte（0~65535）
Short	2Byte（-32768~32767）
Dword	4Byte（0~4294967295）
Long	4Byte（-2147483648~2147483647）
Float	4Byte
Double	8Byte

Table 2-30-1 Data types at the collection end

There are a total of 14 types of registers supported by the collection end, among which Word address is a commonly used type, data types can be selected such as Word, short, Dword, Long, Flaot, etc. Bit address is a Boolean, data type is selected as Boolean, and descriptions with Boolean indicate that the current type is a Boolean, and data type is selected as Boolean. The specific description is shown in Table 2-30-2.

Serial Number	Register type	Word address format	Bit address format	Describe
1	D/D_Bit	0~32767	0.0~32767.F	Read/Write
2	W/W_Bit	0~511	0.0~511.F	Read/Write
3	H/H_Bit	0~1535	0.0~1535.F	Read/Write
4	A/A_Bit	0~959	0.0~959.F	Read/Write
5	T/T_Bit	0~4095	0.0~~~~4095.F	Read/Write
6	C/C_Bit	0~4095	0.0~~~~4095.F	Read/Write
7	CIO/CIO_Bit	0~6143	0.0~6143.F	Read/Write

Table 2-30-2 Register Types at the Acquisition End

Add: 28SenangCrescent,#0511,Bizhub28,Singapore416601 Tel:+6580385403 URL:www.bacnetchina.com
milesgoiiot@gmail.com/sales@opcmaster.com

2.31 DDC2003_8600（DDC2003-8600）

2.31.1 NEW DRIVER

Select the "New Driver" option in the menu bar of the upper computer configuration interface, as shown in Figure 2-31-1.

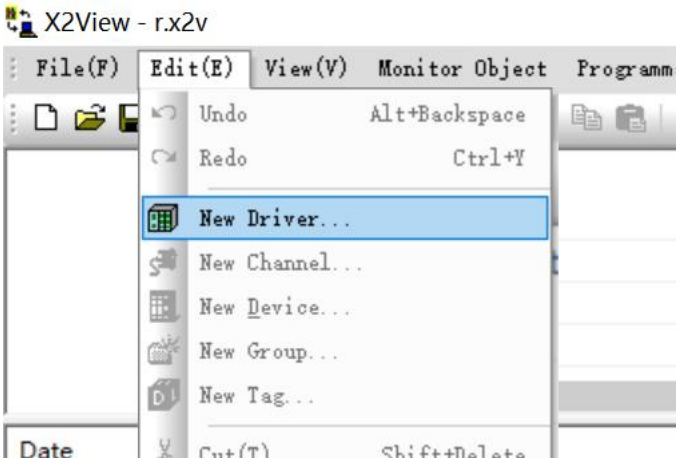

Figure 2-31-1 Selection of New Driver

Select "DDC2001_8600" in the pop-up window, as shown in Figure 2-31-2.

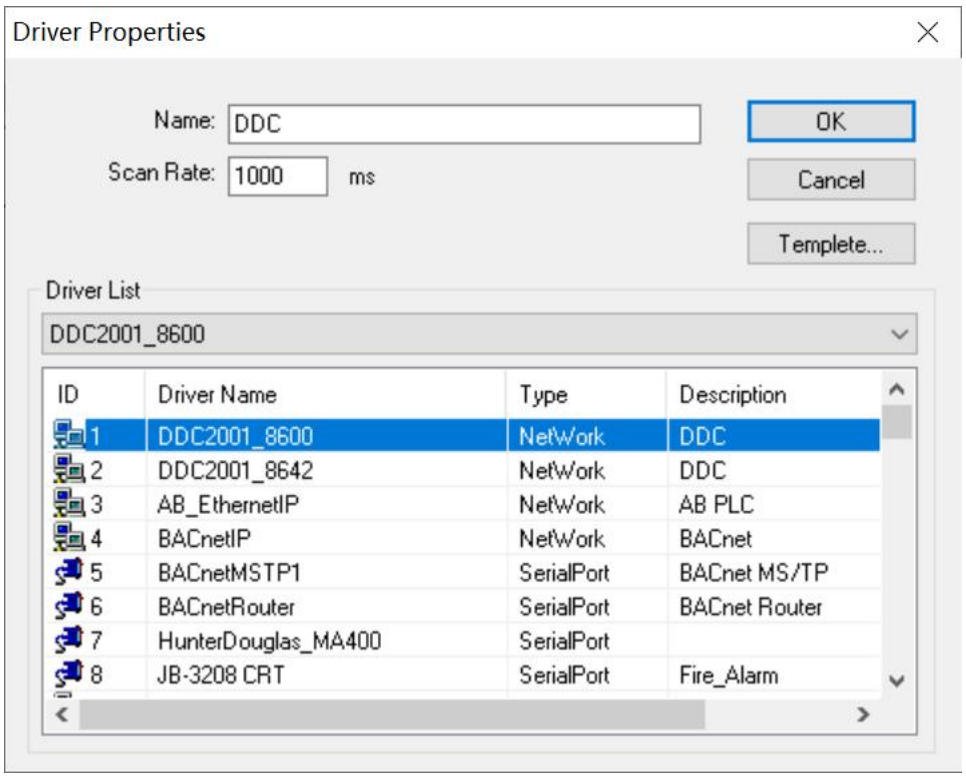

Figure 2-31-2 Selection Drive

2.31.2 NEW CHANNEL

Add: 28SenangCrescent,#0511,Bizhub28,Singapore416601 Tel:+6580385403 URL:www.bacnetchina.com
milesgoiiot@gmail.com/sales@opcmaster.com

After adding the driver, choose to create a new channel. DDC2001_8600 is a Sunfull DDC series 8DI and 6DO protocol driver, and the channel name can be specified by yourself. Communication parameters do not need to be modified, and both IP and port are invalid parameters. Default settings are sufficient, as shown in Figure 2-31-3. Note that the timeout refers to the waiting timeout of the request frame. The channel parameter layer does not need to be set, and default parameters can be used.

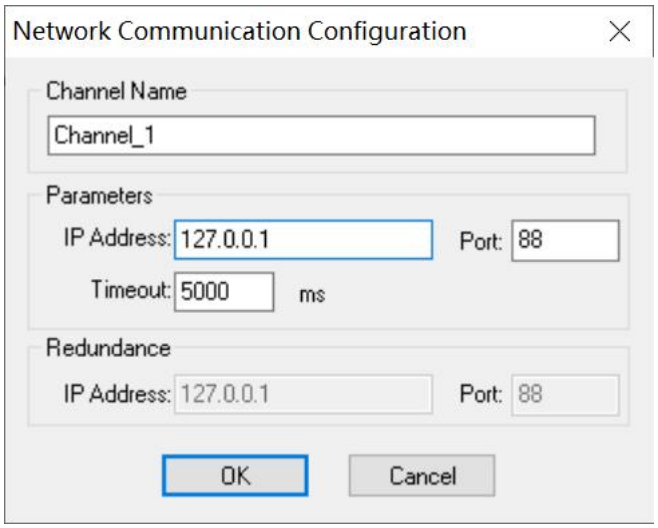

Figure 2-31-3 Channel Parameter Settings

2.31.3 NEW DEVICE

After establishing the channel, select New Device and set the device related properties in the pop-up dialog box. The default station number for the device is 1 (invalid parameter), and the request frame interval is 100 milliseconds. Other parameters can be set by default, as shown in Figure 2-31-4. Note that the request frame interval refers to the time interval between issuing the next frame request and receiving a response from the previous frame. The device layer parameters do not need to be set and can be kept as default.

Add: 28SenangCrescent,#0511,Bizhub28,Singapore416601 Tel:+6580385403 URL:www.bacnetchina.com
milesgoiiot@gmail.com/sales@opcmaster.com

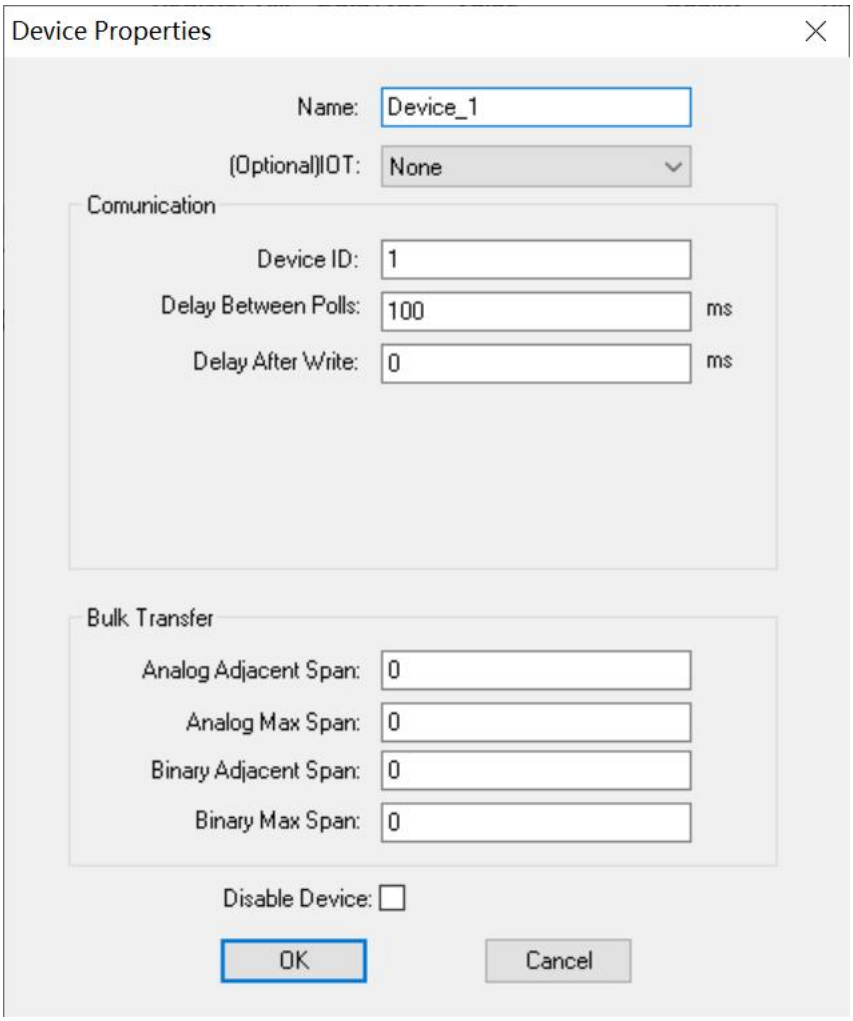

Figure 2-31-4 Equipment Parameter Settings

2.31.4 NEW TAG

After the device is newly created, choose to add a label (point), as shown in Figure 2-31-5. When establishing a point, the acquisition end register address starts from 1.

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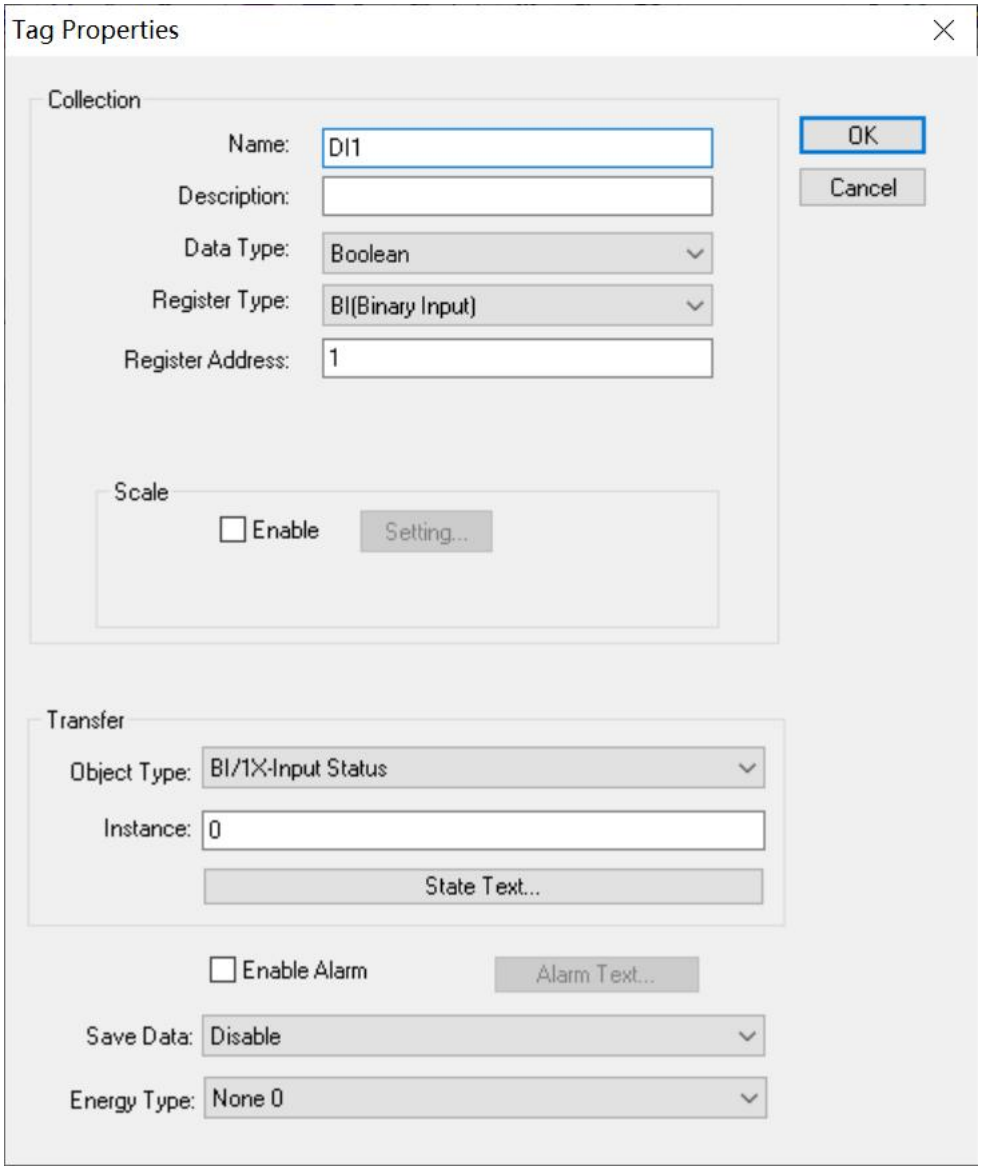

Figure 2-31-5 Label Parameter Settings

After the label is established, it is shown in Figure 2-31-6.

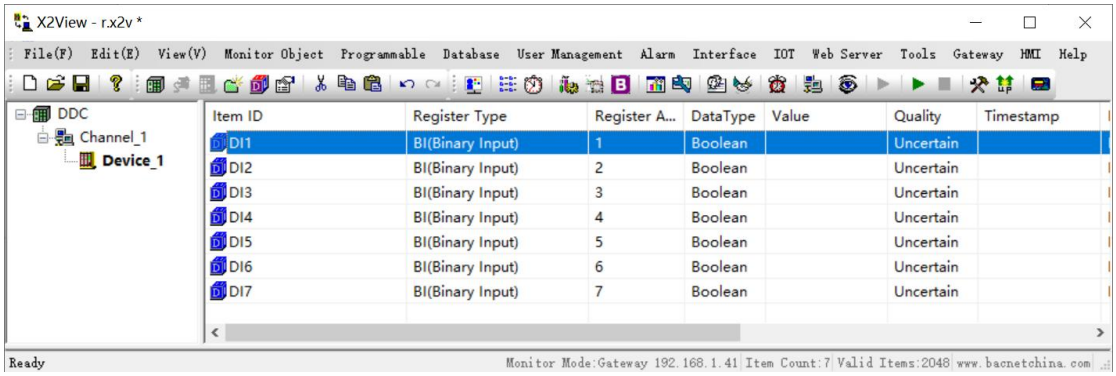

Figure 2-31-6 Adding labels completed

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milesgoiiot@gmail.com/sales@opcmaster.com

The data types supported by the collection end include: Boolean. The specific description is shown in Table 2-31-1.

Data Type	Describe
Boolean	0、 1 variables

Table 2-31-1 Data Types at the Collection End

The register types supported by the collection end include BI (Binary Input) and BO (Binary Output), as shown in Table 2-31-2. Please refer to the example project DDC2001_8600 in the X2View/Samples folder.

Serial Number	Register type	Address	Describe
1	BI(Binary Input)	1~8	Support dry contact input
2	BO(Binary Output)	1~6	Support dry contact output

Table 2-31-2 Register Types at the Acquisition End

2.32 EMERSON-LiebertUPS (Emerson UPS General Agreement)

2.32.1 NEW DRIVER

Select the "New Driver" option in the menu bar of the upper computer configuration interface, as shown in Figure 2-32-1.

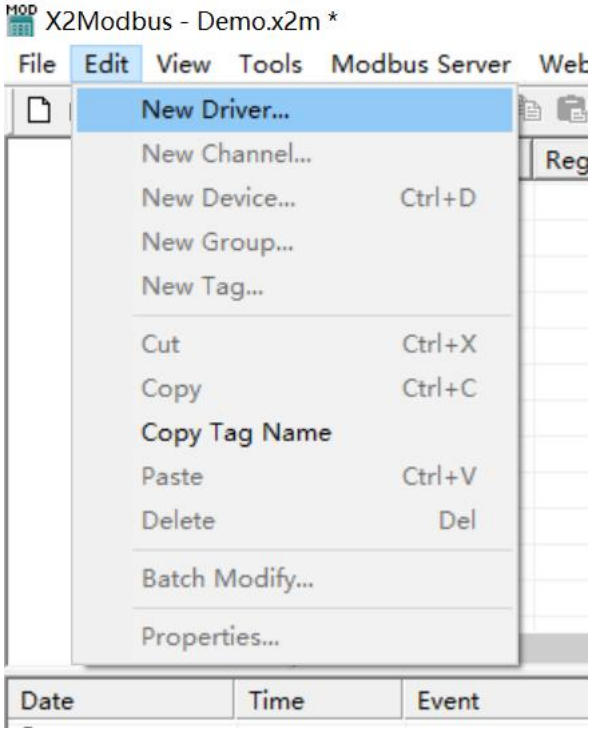

Figure 2-32-1 Selection of New Driver

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milesgoiiot@gmail.com/sales@opcmaster.com

Select "EMERSON-LiebertUPS" in the pop-up window, as shown in Figure 2-32-2.

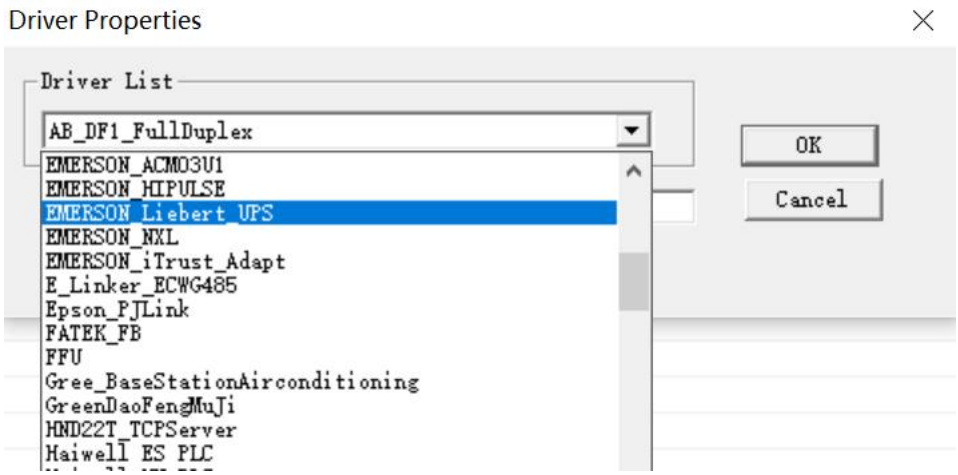

Figure 2-32-2 Selection Drive

2.32.2 NEW CHANNEL

After adding the driver, choose to create a new channel. EMERSON-LiebertUPS is the Emerson UPS communication protocol, mainly communicating through RS-232. The default channel is serial port 1, with default communication parameters of 4800bps, 8, no checksum, 1 stop bit, and a default timeout of 1500 milliseconds. When configuring, if the device responds slowly, try to set the timeout as long as possible, as shown in Figure 2-32-3. Note that the timeout time refers to the waiting timeout time for the main station to request frames.

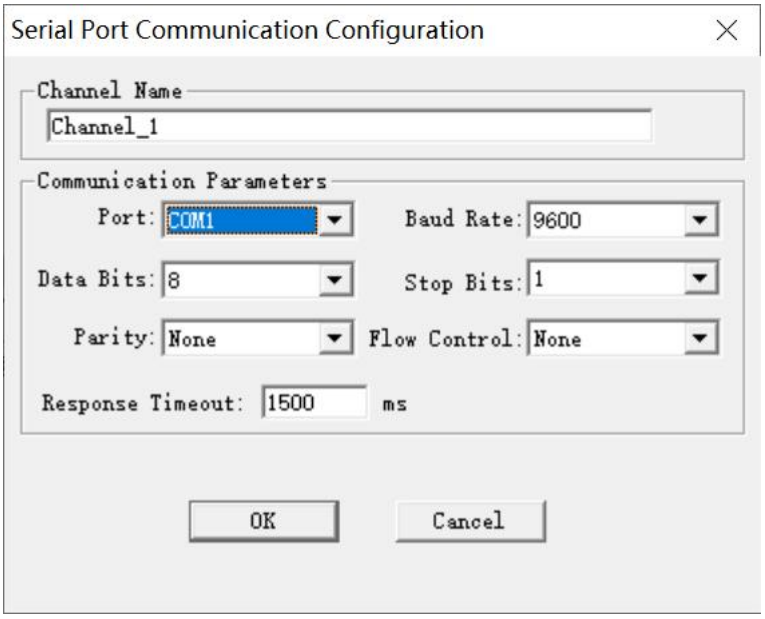

Figure 2-32-3 Channel Parameter Settings

2.32.3 NEW DEVICE

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After the channel is established, select the new device and set the device related properties in the pop-up dialog box. The default station number for the device is 1, which corresponds to the device number of the controller. The request frame interval is 50 milliseconds. If the device packaging parameter is set to 0, it is sufficient, as shown in Figure 2-32-4. Note that the request frame interval refers to the time interval between issuing the next frame request and the previous frame request.

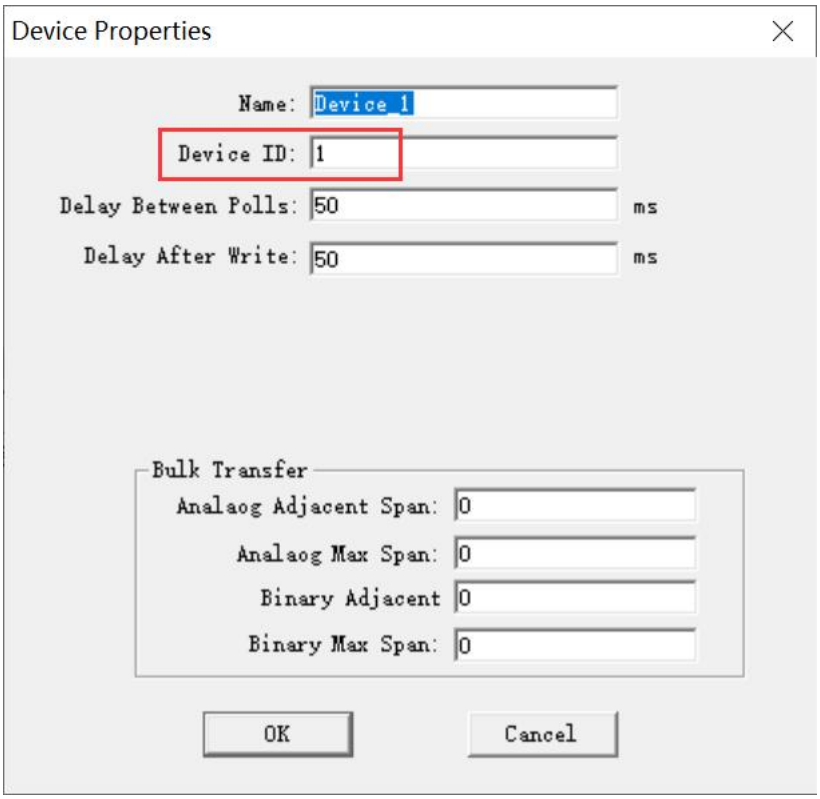

Figure 2-32-4 Equipment Parameter Settings

2.32.4 NEW TAG

After the device is established, choose to create a new label (point). When creating a point, the acquisition end register type corresponds to the command information encoding. Users can choose the register type according to the actual situation, and the register address refers to the address of the data to be read，As shown in Figure 2-32-5.

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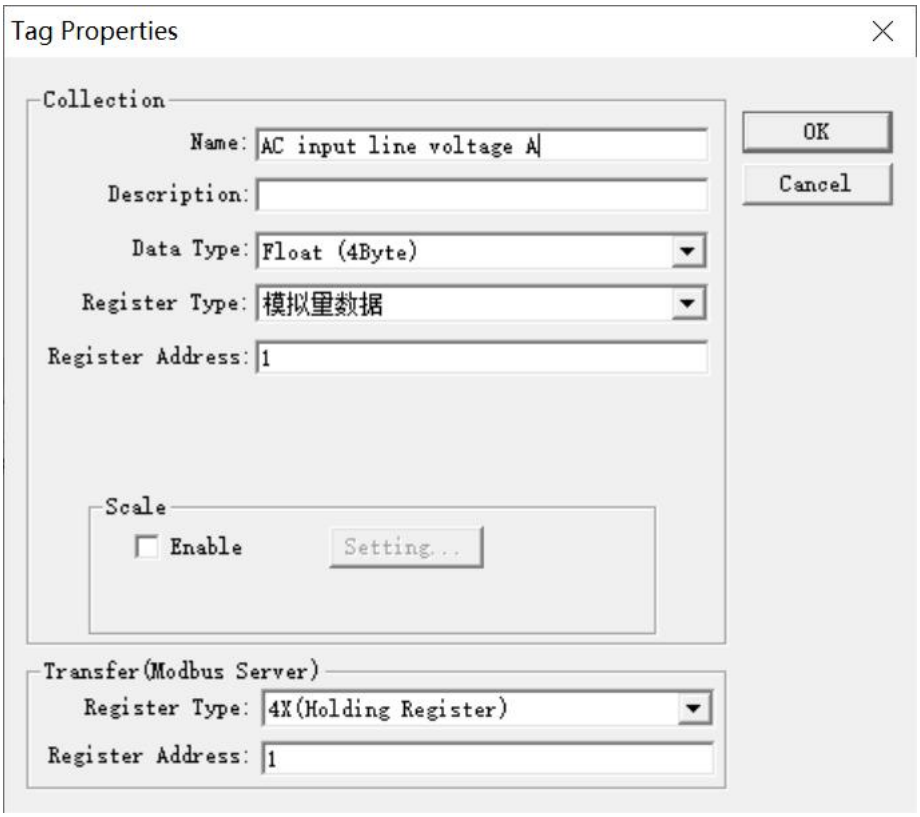

Figure 2-32-5 Label Parameter Settings

Note: In the above Tag properties, the base address of the Modbus slave register on the forwarding end can be allocated starting from 1. The label establishment is completed, as shown in Figure 2-32-6.

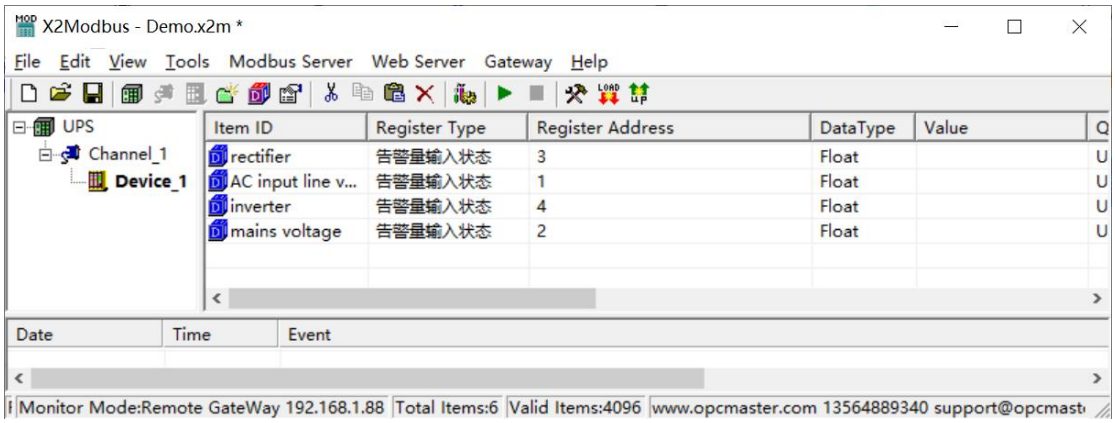

Figure 2-32-6 Adding labels completed

The data types supported by the collection end include Boolean, Word, and Float. The specific descriptions are shown in Table 2-32-1.

Data Type	Describe
Boolean	0、1 variable
Word	2Byte
Float	2By

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Table 2-32-1 Collection End Data Types

There are four types of registers supported by the collection end (detailed register address meanings can be explained in the corresponding protocol documentation), as shown in Table 2-32-2.

Serial Number	Register type	Addresses	Describe
1	Switch input status	1~6	read only
2	Alarm input status	1~14	read only
3	Analog data	1~18	read only
4	Remote control	1~6	Write only, not read

Table 2-32-2 Register Types at the Acquisition End

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