X2SNMP User Manual

Shanghai Sunfull Automation Co., LTD

Singapore Milesgo IIoT Pte Ltd

Content

1 Perforce

1.1 Statement

This user manual belongs to Shanghai Sunfull Automation Technology Co., Ltd and authorised Licensor all rights, retain all rights. Without the company's written permission, no unit and individual may unauthorized excerpt, copy the content of the book part or all. The contents of this manual may be changed due to product version upgrades or other reasons. This manual is used in conjunction with Sunfull hardware gateway, and we do our best to provide accurate information in this manual.

1.2 Technical Support

- Email：support@opcmaster.com
- TEL：+86 021-58776098
- website：http://www.opcmaster.com/english/

  http://www.bacnetchina.com/english/

1.3 Software Install and Uninstall

X2SNMP software is a green installation.

- No operation of the registry
- Do not operate the sensitive area of the system, including the root directory of the system starting area, the installation directory (Windows directory), the program directory (Program Files), and the account specific directory.
- Do not write anything to the directory outside my directory.
- Because the program itself does not have any effect on any file other than its directory, there is no installation and unloading problem at all.
- The deletion of the program, as long as the directory of the program and the corresponding shortcut are deleted (if you manually set a shortcut on the desktop or other position), the program is completely clean from your computer, without leaving any garbage.

Add: 28 Senang Crescent,#05-11,Bizhub 28,Singapore 416601 Tel: +65 80385403 URL: www.bacnetchina.com
milesgoiiot@gmail.com / sales@opcmaster.com

- No need to install, copy and copy at will.

2 Overview

2.1 Function Description

- X2SNMP is called SNMP gateway, which can convert any device protocol into SNMP interface, and then other SNMP clients such as computer room management system can access and monitor third-party device data through the SNMP interface of Sunfull.
- How it works: on-site devices are connected to the "X2SNMP" hardware gateway. The gateway collects data and provides the SNMP agent interface. SNMP clients can manage and monitor on-site devices by accessing the X2SNMP hardware gateway.

- Advantages：

1. Green installation free, strong configurability, simple operation, stable and reliable, convenient fault diagnosis.
2. Support JS scripts.
3. Support multi-language switching to facilitate user operation.
4. In PC monitoring mode, configure the software XSNMP, which can be used for PC simulation.
5. The gateway has a built-in WEB server. Users can view the real-time changing data and communication status through the browser, which is convenient for on-site debugging.You can also download configuration software X2SNMP and project files.
6. Support the simultaneous conversion of different protocols into SNMP protocols.
7. Gateway analog quantity supports linear conversion, bit-fetching function

Add: 28 Senang Crescent,#05-11,Bizhub 28,Singapore 416601 Tel: +65 80385403 URL: www.bacnetchina.com
milesgoiiot@gmail.com / sales@opcmaster.com

and high-low byte exchange function.

2.2 Operating Environment

- X2SNMP Configuration Software can support many kinds of OS, such as Windows XP/2000/2003/7/10/Vista.
- WEB supports IE9 and above, Opera, apple's Safari, Google Chrome, and firefox.

2.3 Hardware parameters

●Hardware Protocol Conversion Gateway

（SNMP1001-ARM,SNMP1002-ARM,SNMP2004-ARM,SNMP2004-A9 ）

3 Operating Steps

3.1 Select Operation Language

Firstly open and run the main program X2SNMP.exe. In the main program interface, click the view menu to select View->Language Settings, as shown in figure 3-1-1.

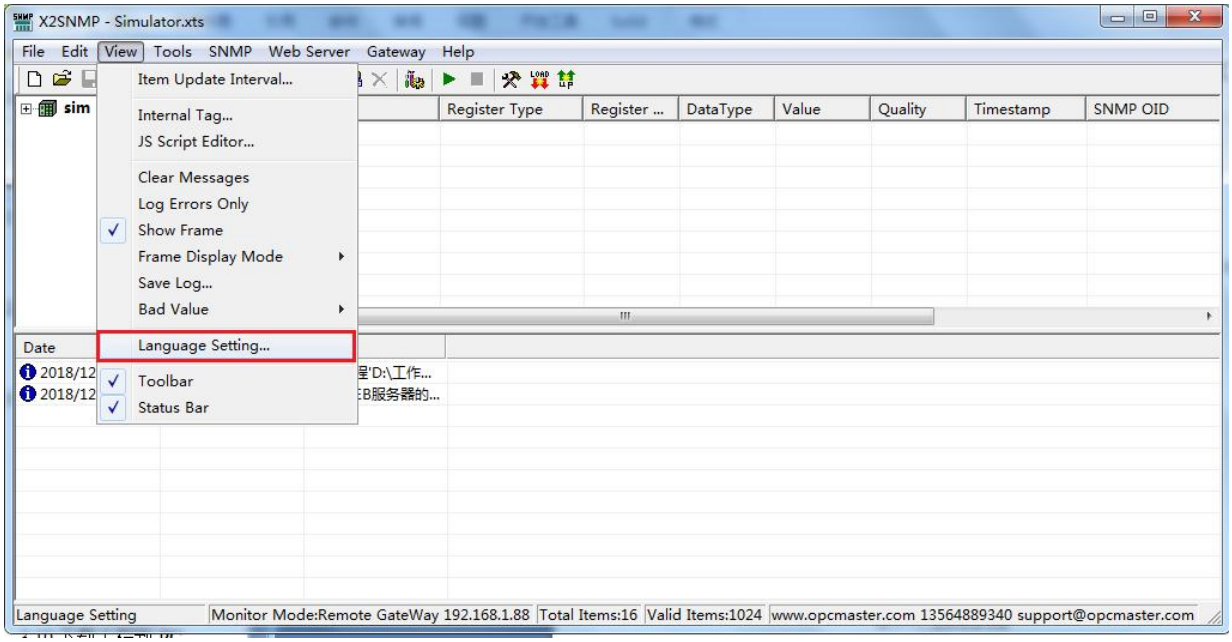


Figure 3-1-1 Select Operation Language

Add: 28 Senang Crescent,#05-11,Bizhub 28,Singapore 416601 Tel: +65 80385403 URL: www.bacnetchina.com
milesgoiiot@gmail.com / sales@opcmaster.com

Note: The upper computer configuration software X2SNMP and the uploaded project can be downloaded from the gateway.

Select the operating language in the pop-up dialog box, as shown in figure 3-1-2.

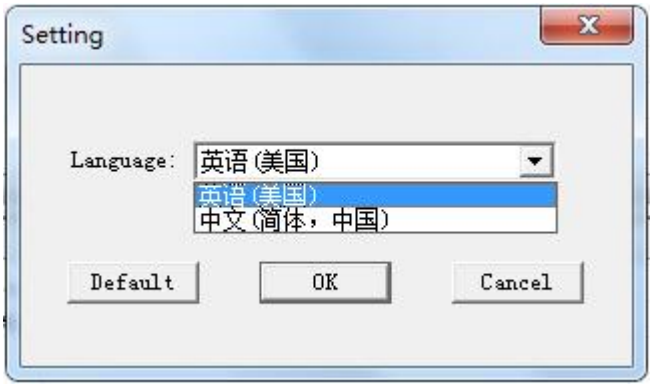
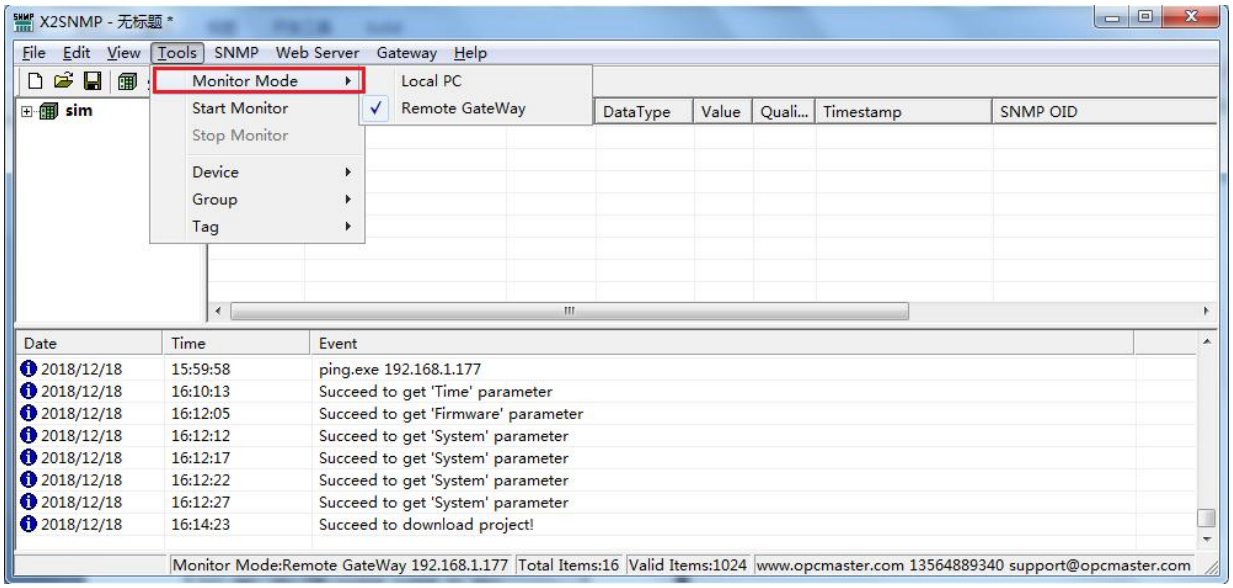


Figure 3-1-2 Select Operation Language

3.2 Select monitoring mode

The monitoring mode is divided into local mode and gateway mode. The local mode refers to running pure software gateway program x2snmpruntime. exe on PC and realizing protocol conversion function on PC.Gateway mode refers to the hardware gateway. Configuration engineering is uploaded to the hardware gateway on the PC to realize protocol conversion function in the hardware gateway and monitor the communication status of the hardware gateway on the PC.You can select the monitoring mode under the toolbar "monitoring mode", or double-click the "monitoring mode" in the bottom status bar to switch the mode, as shown in figure 3-2-1.



Add: 28 Senang Crescent,#05-11,Bizhub 28,Singapore 416601 Tel: +65 80385403 URL: www.bacnetchina.com
milesgoiiot@gmail.com / sales@opcmaster.com

Figure 3-2-1 Select Monitor Mode

3.3 New Driver

As one of the many protocols covered by X, Modbus RTU protocol is selected as the example.If you need to understand the configuration of other protocols, click "communication connection instructions" under the help menu to open CommunicationManual- ch.pdf.Click edit to select "add driver" or click the toolbar icon, as shown in figure 3-3-1.

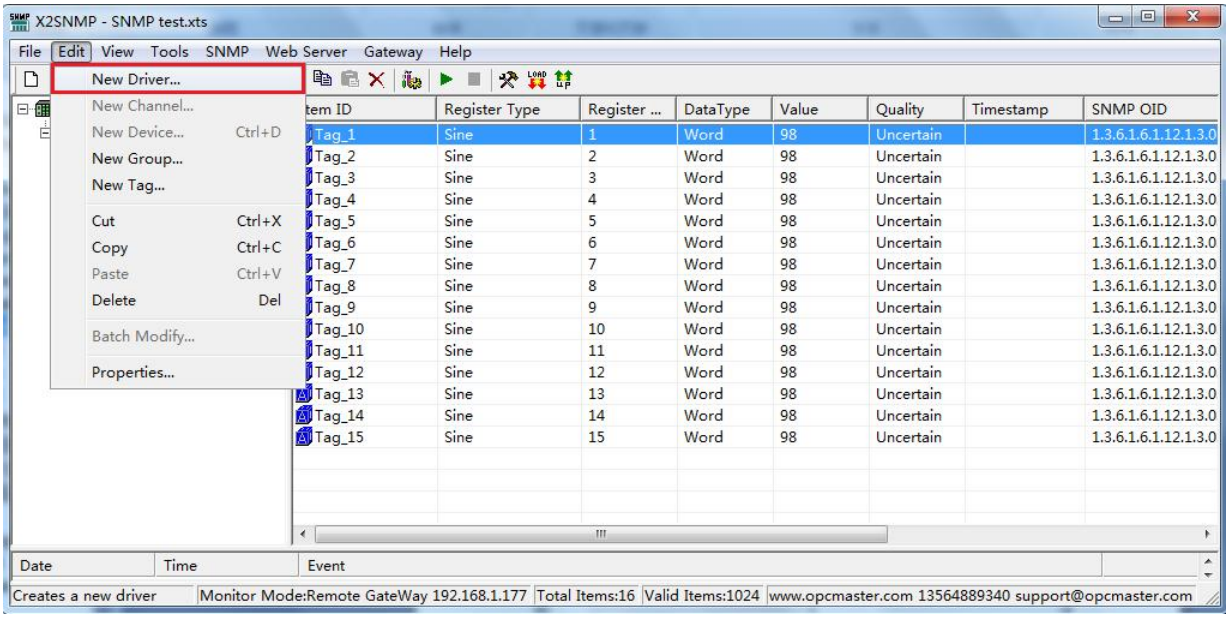


Figure 3-3-1 Select New Driver

Then select the driver in the popup window to add, as shown in figure 3-3-2 below.

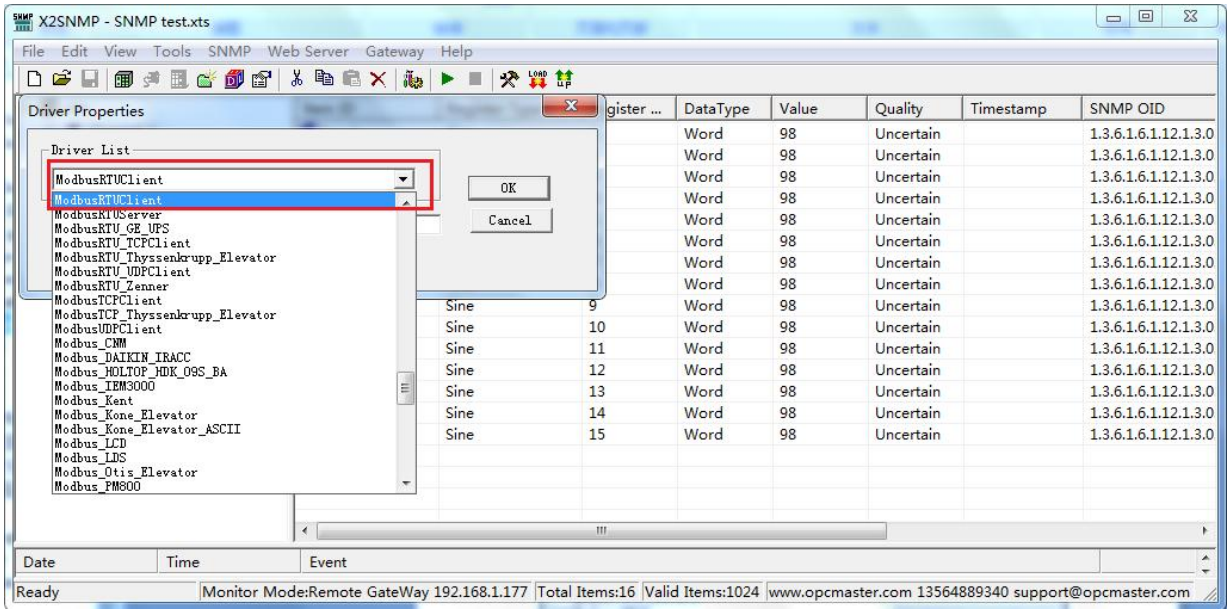


Figure 3-3-2 Select Driver

Add: 28 Senang Crescent,#05-11,Bizhub 28,Singapore 416601 Tel: +65 80385403 URL: www.bacnetchina.com
milesgoiiot@gmail.com / sales@opcmaster.com

You can enable custom driver names，As shown in figure 3-3-3。

Figure 3-3-3 Driver Properties

Input custom driver name in the name of the project, the default time is 1000 milliseconds, polling polling time can adjust the frequency of access to all equipment, if visiting all the equipment needed is greater than the set time, polling time, then this setting, on the other hand if visiting all the equipment needed time is less than set the polling time, you will need to wait time to set the polling time later, can be the next visit.Users can change the polling time as they see fit.ModbusRTU protocol is selected here and added as shown in figure 3-3-4.

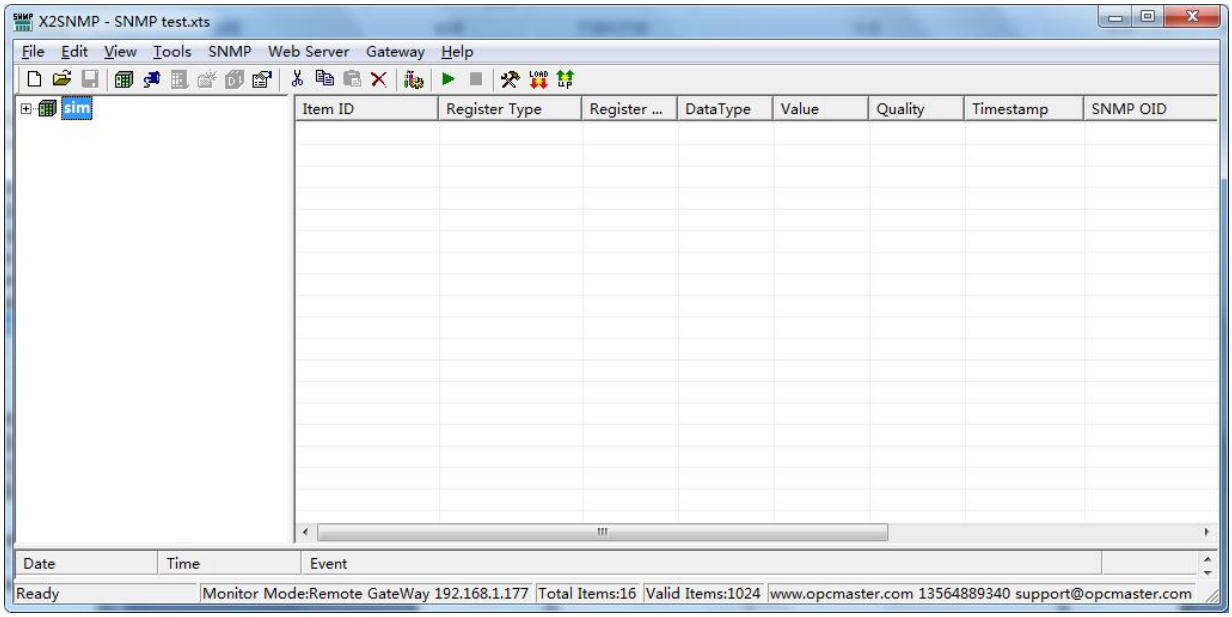


Figure 3-3-4 Complete add driver

3.4 New Channel

Select the current driver, right-click to select "new channel" or click  the toolbar,

Add: 28 Senang Crescent,#05-11,Bizhub 28,Singapore 416601 Tel: +65 80385403 URL: www.bacnetchina.com
milesgoiiot@gmail.com / sales@opcmaster.com

as shown in figure 3-4-1.

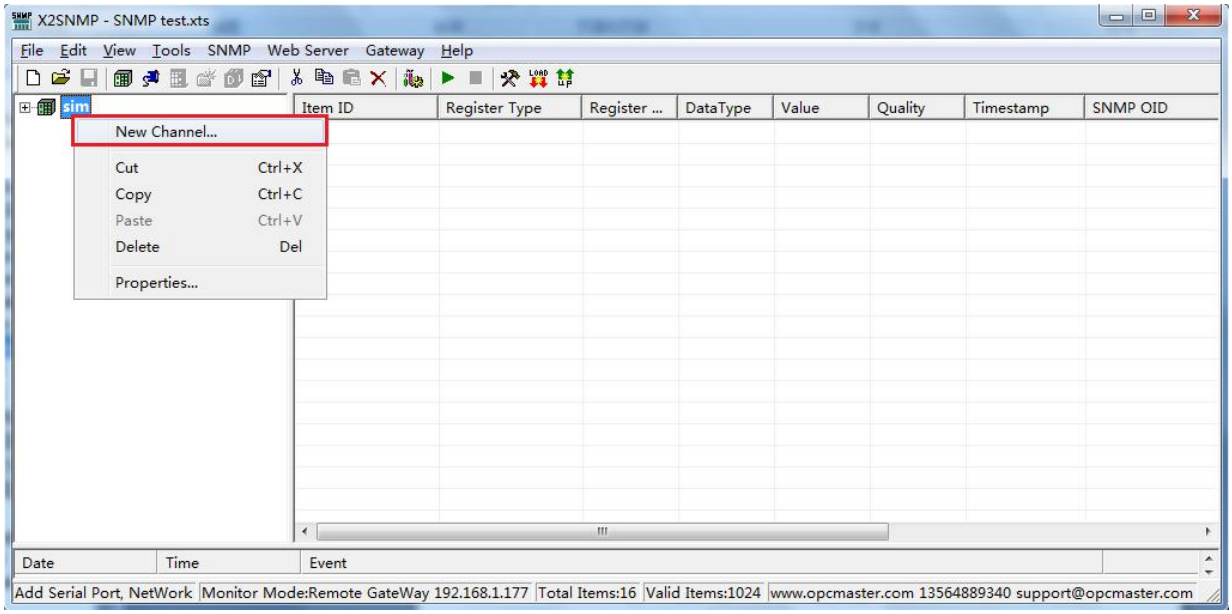


Figure 3-4-1 Select new chennel

In the popup window, the corresponding Settings are made according to the driver communication protocol, and the channel name can be freely named, but the serial communication parameters must be consistent with the communication parameters of the data acquisition end, as shown in figure 3-4-2.

Port: External device access SNMP gateway by COM1.

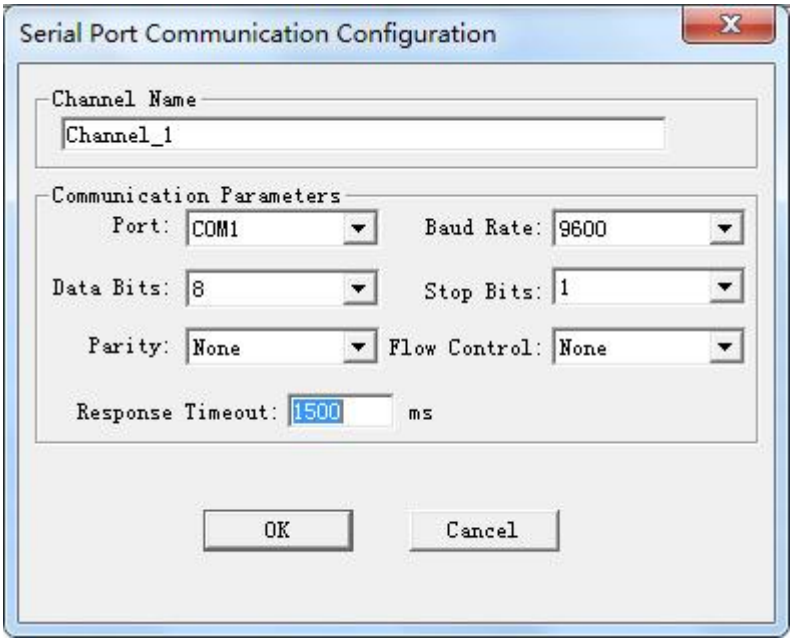


Figure 3-4-2 sets channel parameters

When the channel addition is complete, see figure 3-4-3.

Add: 28 Senang Crescent,#05-11,Bizhub 28,Singapore 416601 Tel: +65 80385403 URL: www.bacnetchina.com
milesgoiiot@gmail.com / sales@opcmaster.com

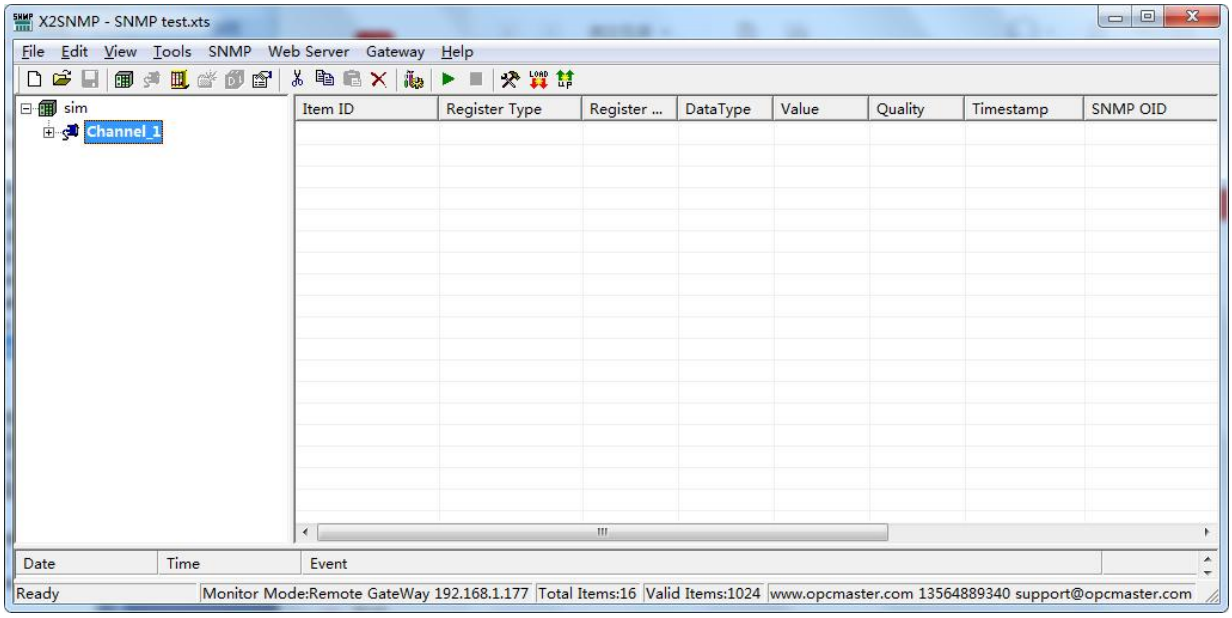


Figure3-4-3 Complete add channel

3.5 New Device

Select the current channel, right-click to select "new device" or click the toolbar, as shown in figure 3-5-1.

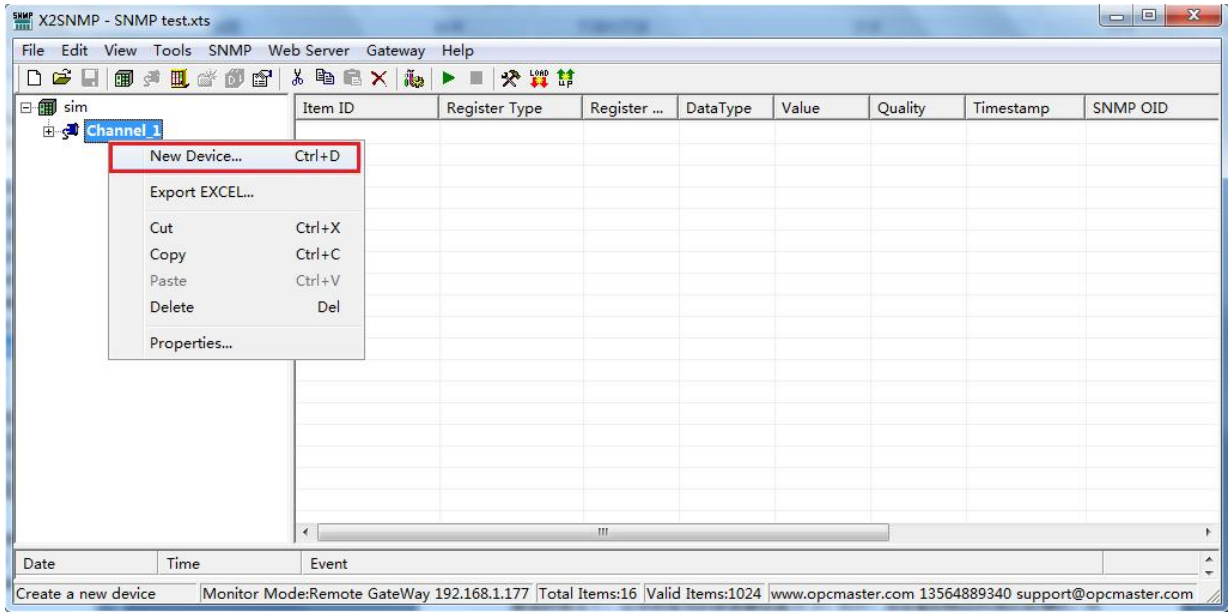


Figure 3-5-1 Select New Device

Set device-related properties in the pop-up dialog box.Under the communication protocol that supports group packet, in order to improve the communication speed, group packet communication can be realized under the continuous register address for the same register type.When the device does not support group packet communication,

Add: 28 Senang Crescent,#05-11,Bizhub 28,Singapore 416601 Tel: +65 80385403 URL: www.bacnetchina.com
milesgoiiot@gmail.com / sales@opcmaster.com

the group packet parameters should be set to 0.In addition, when the response time of the device is slow, the time interval between data frames can be set, with the default frame interval set to 25 milliseconds.Note that the order adjustment is based on the order in which the high and low byte transfers are made when the device data is transferred.See figure 3-5-2.

Device ID: The station number of corresponding equipment

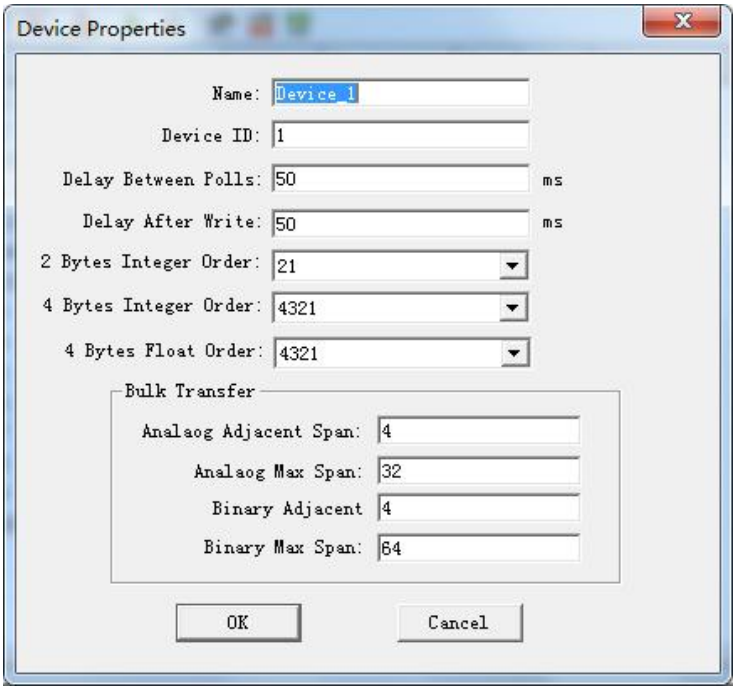


Figure 3-5-2 sets device properties

Click "ok" to complete adding the device, as shown in figure 3-5-3.

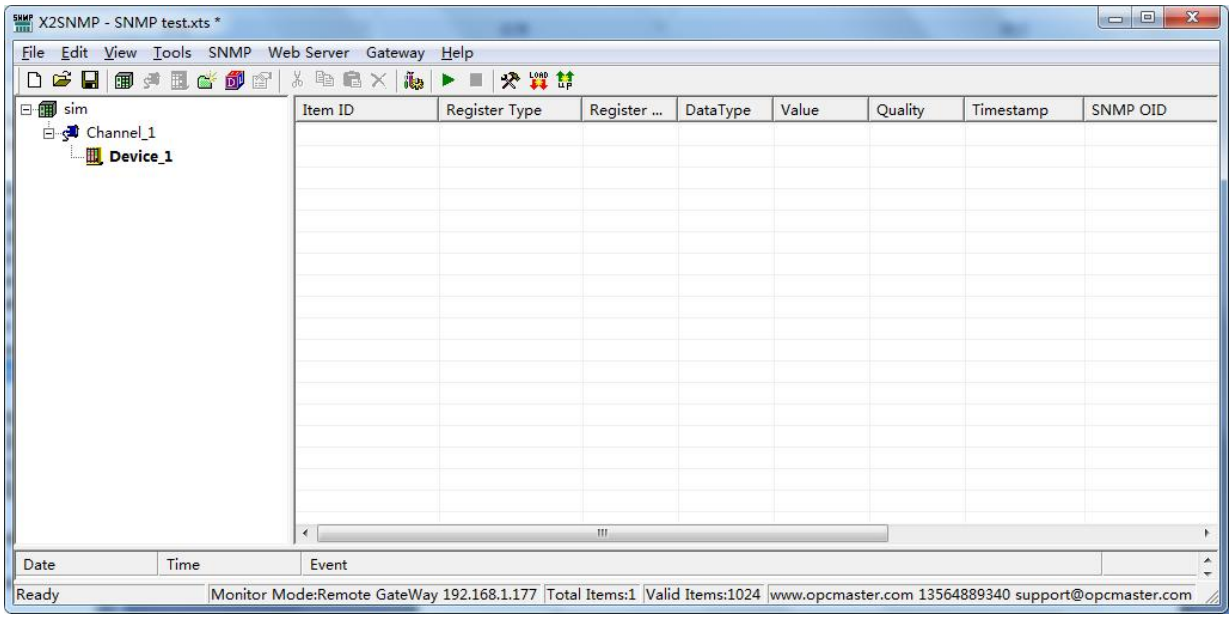


Figure 3-5-3 Complete New Device

Add: 28 Senang Crescent,#05-11,Bizhub 28,Singapore 416601 Tel: +65 80385403 URL: www.bacnetchina.com
milesgoiiot@gmail.com / sales@opcmaster.com

3.6 New Tag

You can directly create a new label under the device (you can also create a group first, and then create a new label in the group), select the device and right-click to select a new label or click the toolbar icon, as shown in figure 3-6-1.

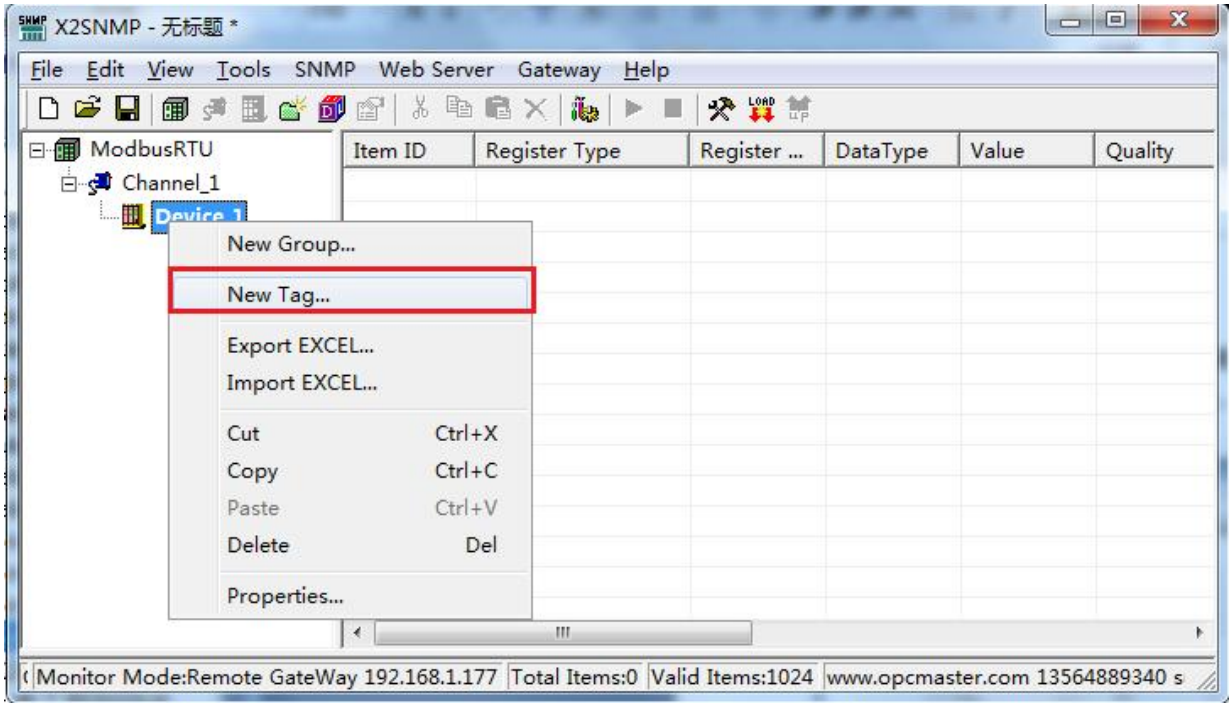


figure3-6-1 Select New Tag

The parameters of the acquisition end and the forwarding end are set in the pop-up dialog box, and the roll call, data type, register type and register address of the acquisition end are set in the label property.Figure 3-6-2 shows the collection end register address selected is 4X0001 and the data type is Word.In addition, when the data type is Short, Word, Long or DWord, it can be evaluated by the data bits of bytes.For some special data, linear conversion function can be enabled to realize linear amplification and reduction of data.

Turn began to SNMP Settings, the default scope for the SNMP OID. 1.3.6.1.4.1.319.1.2.0.0.0.1. Between 1.3.6.1.4.1.319.1.2.9.9.9.9 (OID) according to customer's specific needs configuration, turn to start the SNMP data types have Int32, UInt32, Counter64, a String four types.See figure 3-6-2.

Add: 28 Senang Crescent,#05-11,Bizhub 28,Singapore 416601 Tel: +65 80385403 URL: www.bacnetchina.com
milesgoiiot@gmail.com / sales@opcmaster.com

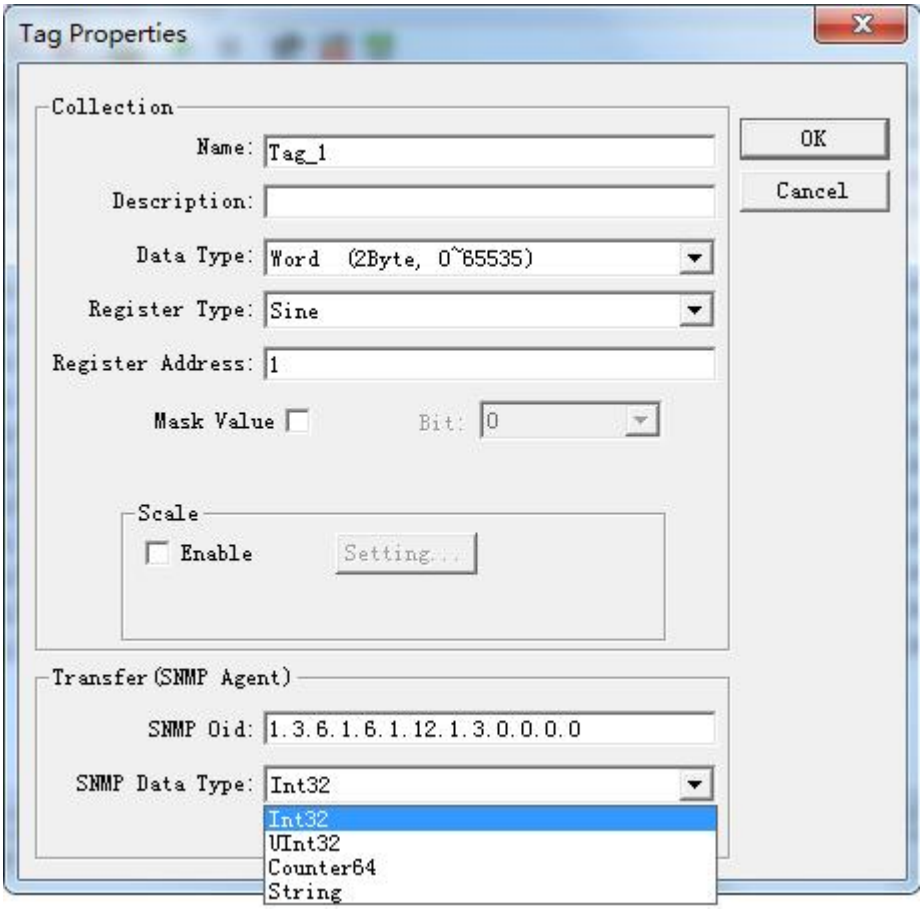


figure3-6-2 New Tag Properties

Click "ok" to complete adding the label, as shown in figure 3-6-3.

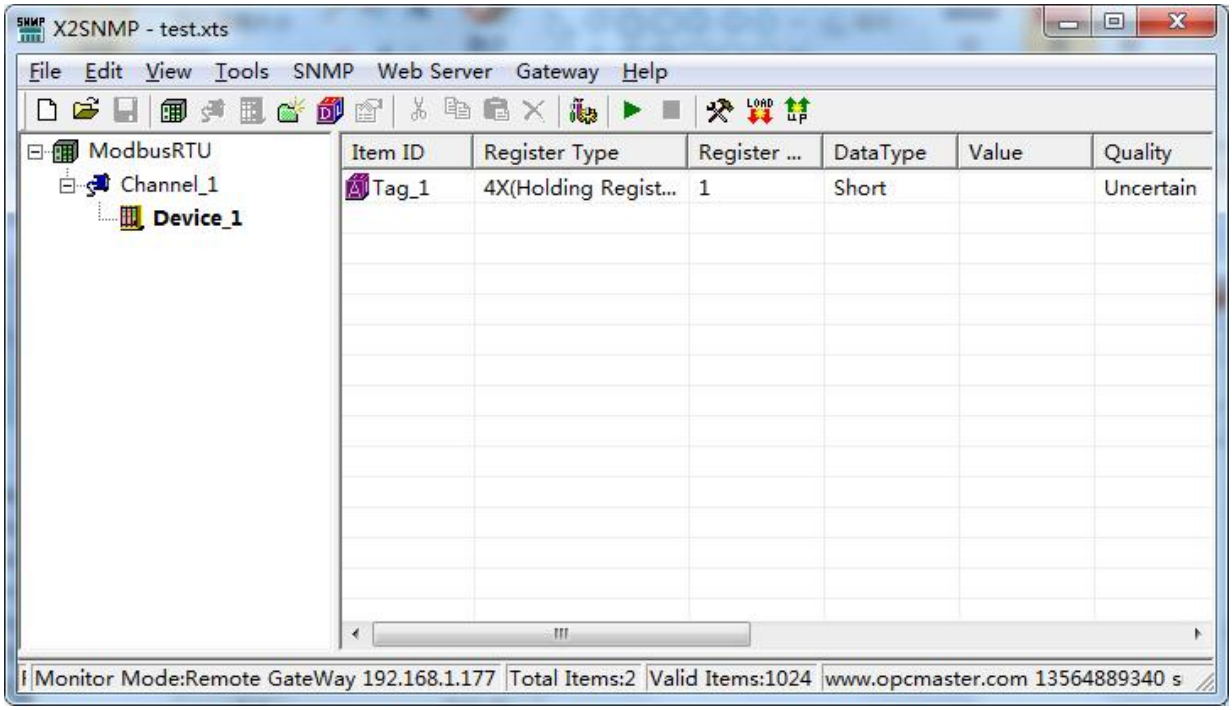


Figure 3-6-3. Adding labels is complete

Add: 28 Senang Crescent,#05-11,Bizhub 28,Singapore 416601 Tel: +65 80385403 URL: www.bacnetchina.com
milesgoiiot@gmail.com / sales@opcmaster.com

Multiple points can be added one by one according to the above steps. It is recommended to copy and paste the toolbar. The specific operations are as follows:

(1) select the label to be copied, click the copy button in the toolbar, or right-click and select "copy" as shown in figure 3-6-4.

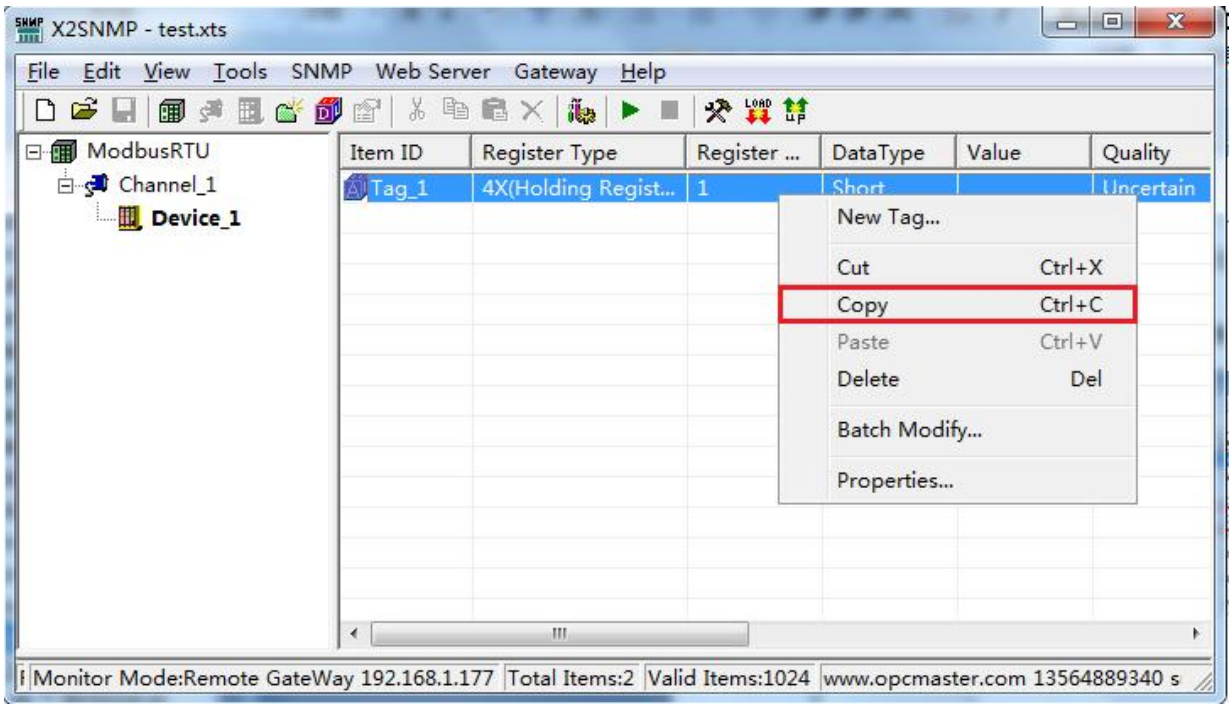
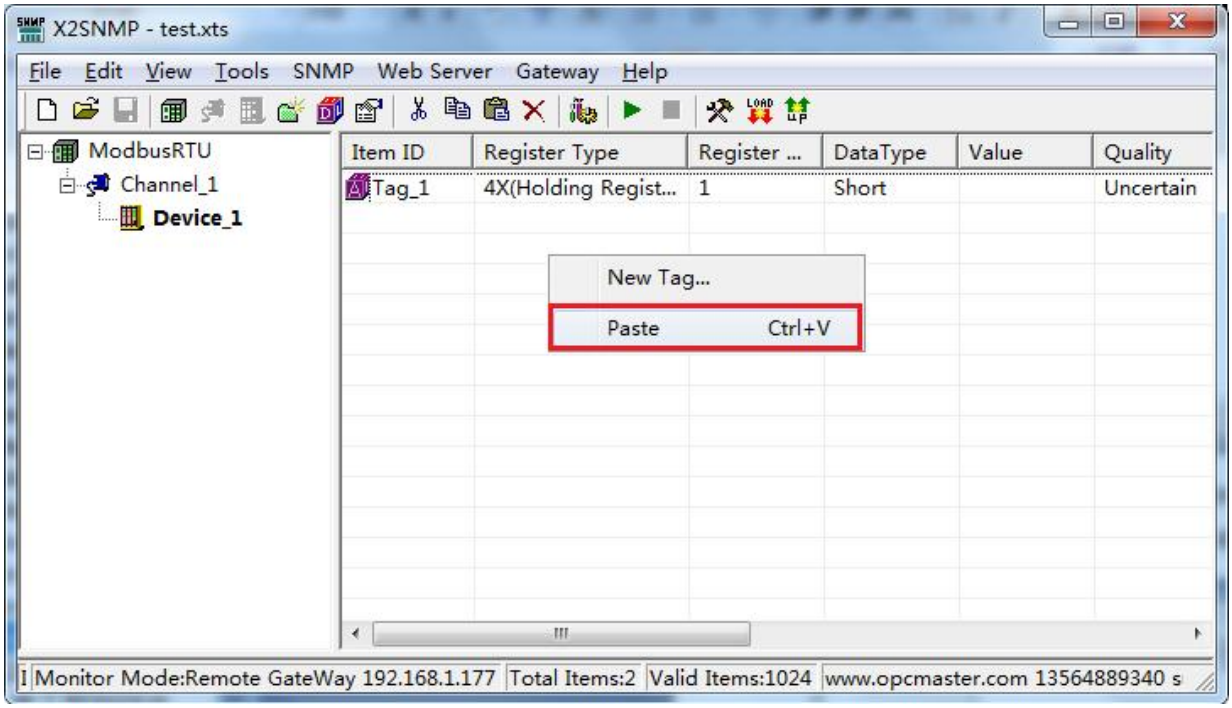


Figure 3-6-4 copies the current label

(2) right click on the blank and choose paste, as shown in figure 3-6-5.



Add: 28 Senang Crescent,#05-11,Bizhub 28,Singapore 416601 Tel: +65 80385403 URL: www.bacnetchina.com
milesgoiiot@gmail.com / sales@opcmaster.com

Figure 3-6-5 paste the label

Some parameters of the new tag (such as the address of Modbus register) will be generated automatically accordingly, which needs to be set according to the field situation, as shown in figure 3-6-6.

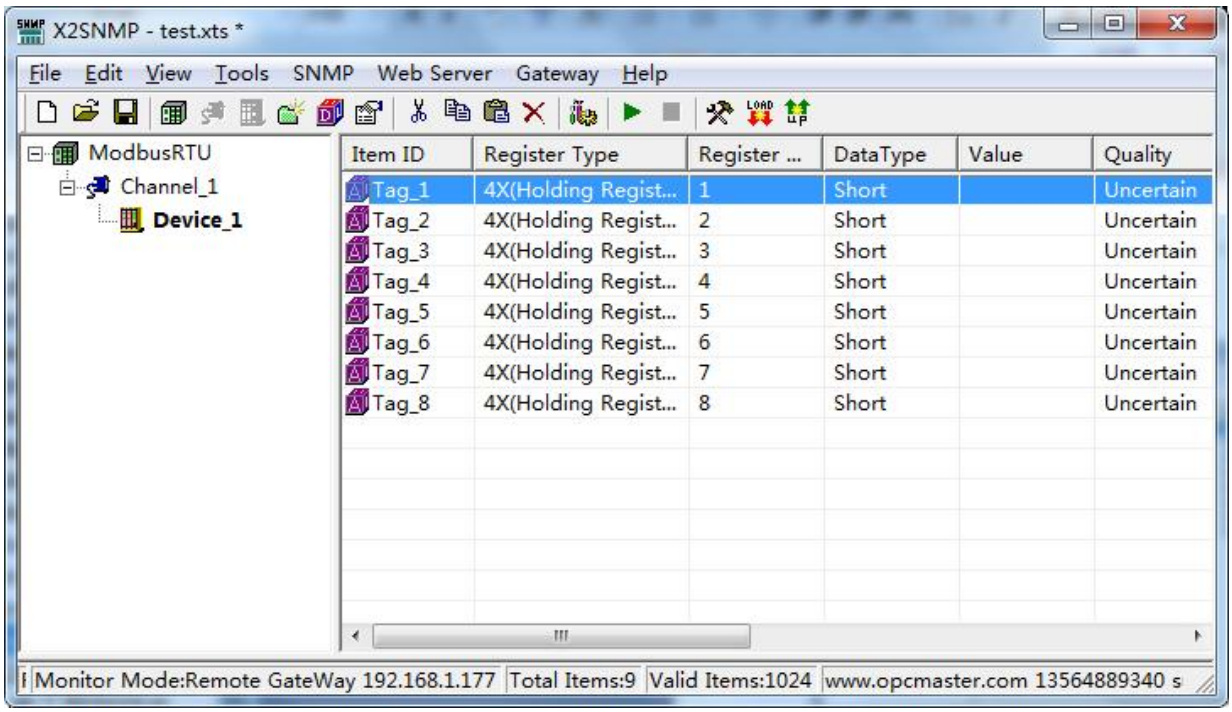


Figure 3-6-6 shows that the copy label is complete

The forwarding end corresponds to SNMP OID, and the SNMP data type is shown in figure 3-6-7 below.

Add: 28 Senang Crescent,#05-11,Bizhub 28,Singapore 416601 Tel: +65 80385403 URL: www.bacnetchina.com
milesgoiiot@gmail.com / sales@opcmaster.com

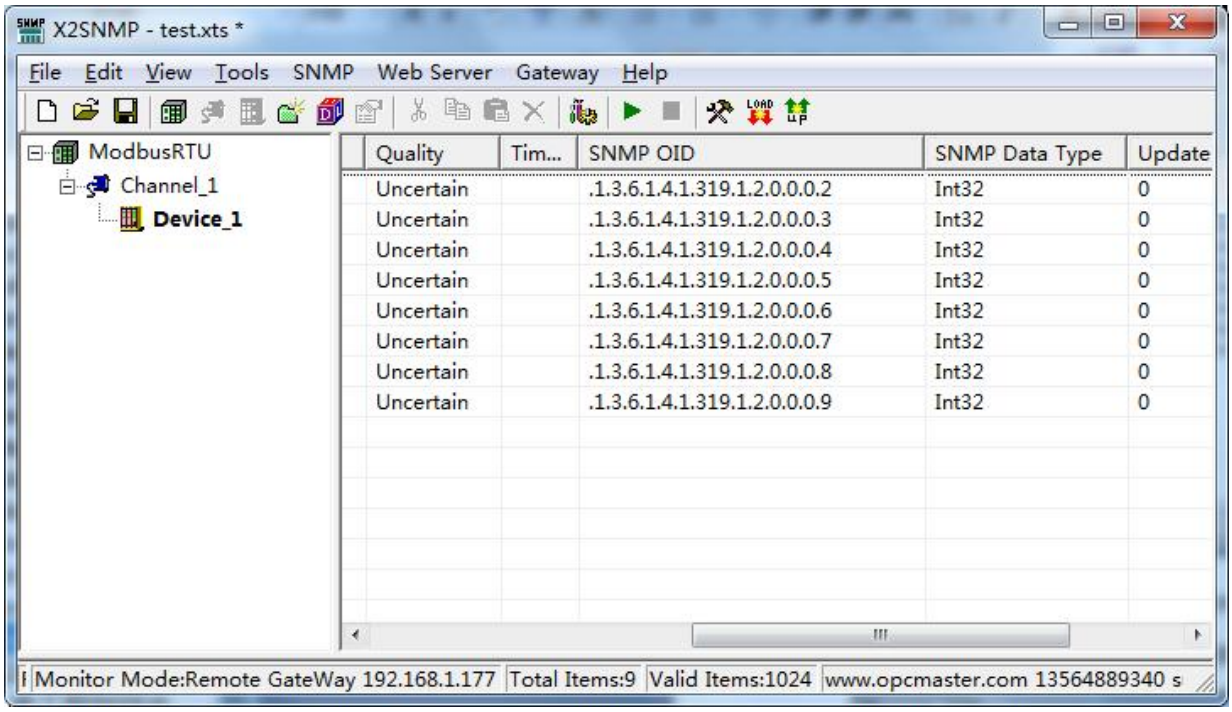
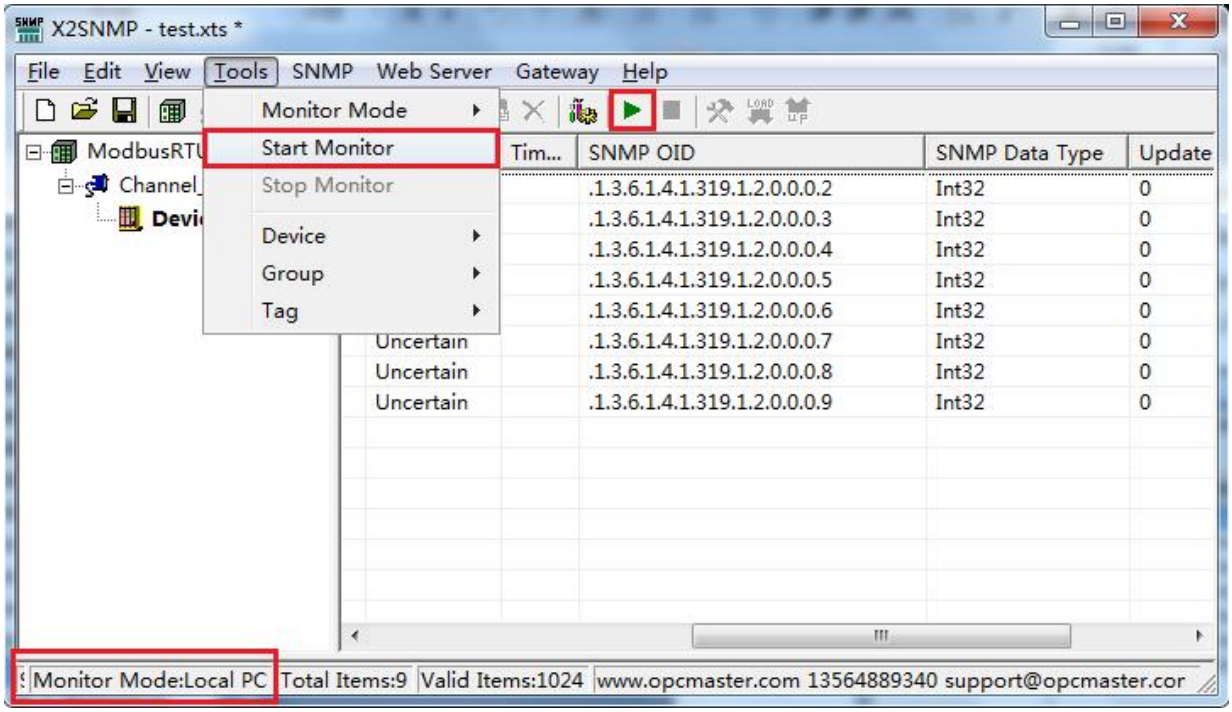


Figure 3-6-7 transfers the SNMP parameter of the originator

3.7 X2SNMPRunTime

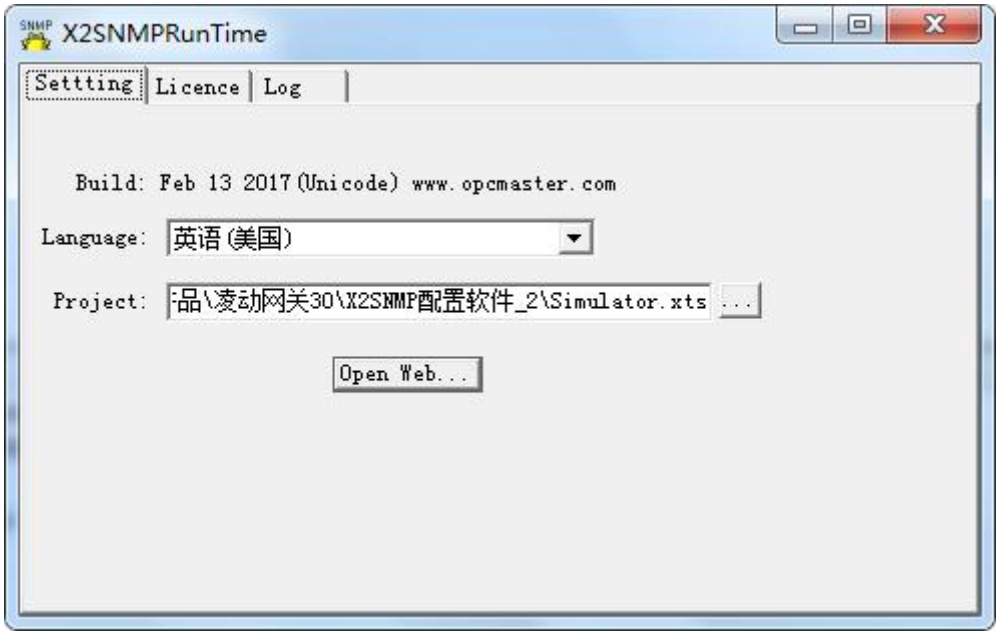
After the project configuration is completed, click the menu bar "tools" in local mode to select "start monitoring" or click the toolbar icon ▶ (note that the X2SNMPRuntime program is enabled only when the soft gateway is used on the PC or during simulation), as shown in figure 3-7-1.



Add: 28 Senang Crescent,#05-11,Bizhub 28,Singapore 416601 Tel: +65 80385403 URL: www.bacnetchina.com
milesgoiiot@gmail.com / sales@opcmaster.com

Figure 3-7-1 select start monitoring

X2SNMPRunTime running time program will then be started. In normal use, it only needs to be started in the background to realize the function of data collection on PC.Click the login page to browse the local WEB server. If some Internet explorer browser opens a blank page, you can refresh the page, as shown in figure 3-7-2.



In the X2SNMP software monitoring, you can see that some real-time data on the device is consistent with the data on the interface, as shown in figure 3-7-4.

Add: 28 Senang Crescent,#05-11,Bizhub 28,Singapore 416601 Tel: +65 80385403 URL: www.bacnetchina.com
milesgoiiot@gmail.com / sales@opcmaster.com

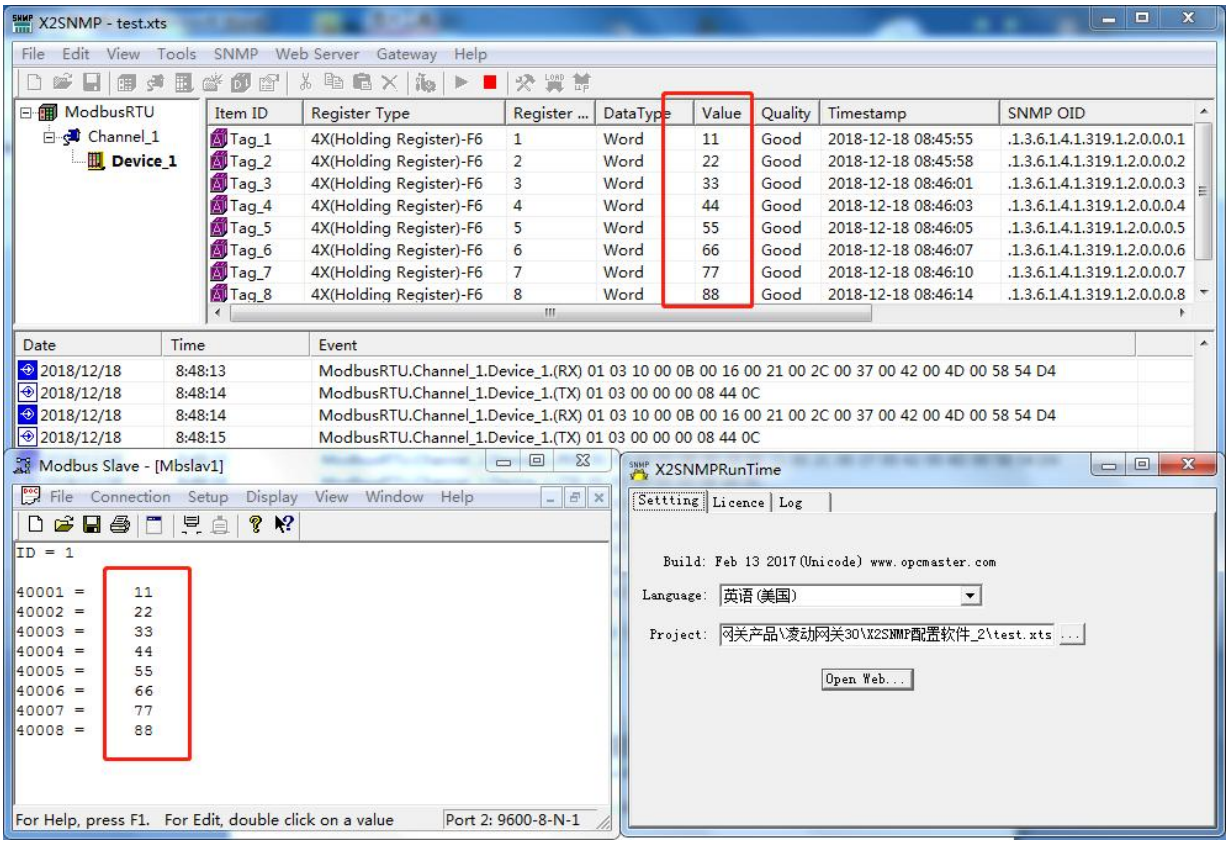


Figure 3-7-4 data collection was successful

3.8 Upload project to gateway

After the project is configured and the test on PC is ok, the project can be uploaded to the hardware gateway of the next computer (note: the upload engineering function is effective in gateway monitoring mode). In the gateway mode, click "gateway" in the menu bar to select upload or click the toolbar , as shown in figure 3-8-1.

Add: 28 Senang Crescent,#05-11,Bizhub 28,Singapore 416601 Tel: +65 80385403 URL: www.bacnetchina.com
milesgoiiot@gmail.com / sales@opcmaster.com

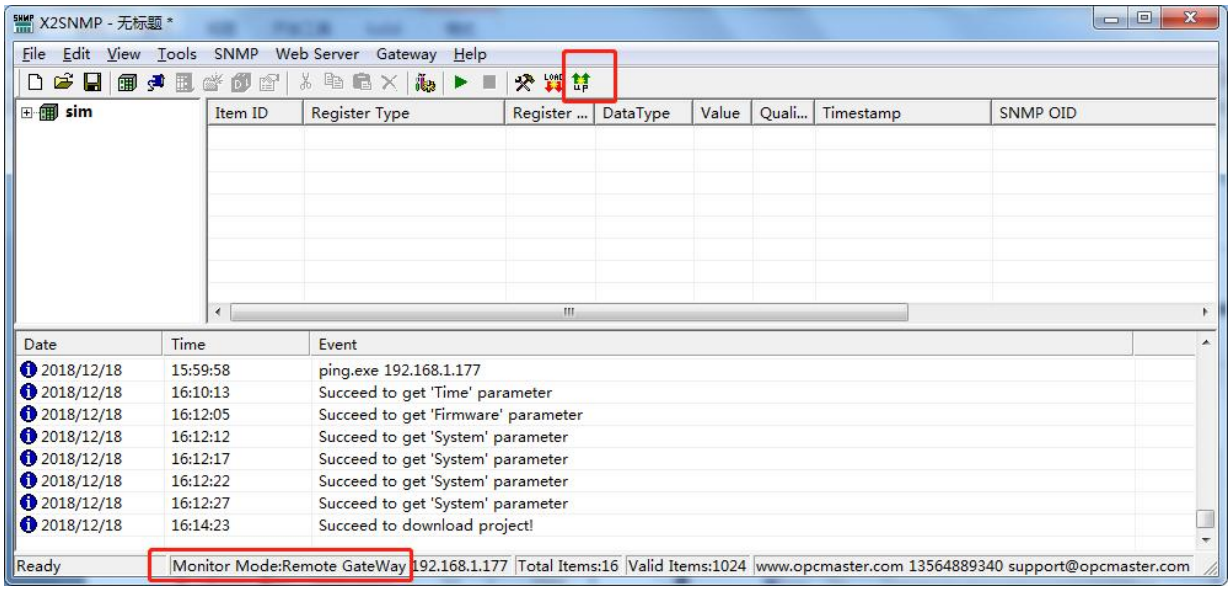


Figure 3-8-1 Select upload the project

Enter the gateway IP address in the popup dialog box (note: the IP address of the gateway must be correct, the default IP address of the gateway factory is 192.168.1.88, the IP address on the PC should be set to the same network segment, Ping can be uploaded after.), click "upload". After successful upload, a dialog box will pop up to indicate successful upload, as shown in figure 3-8-2.

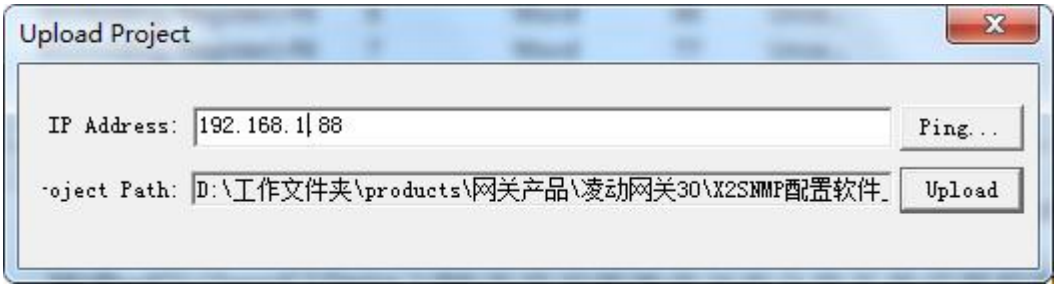


Figure 3-8-2 Upload project parameter Settings

3.9 Gateway Setting

In gateway monitoring mode, click "gateway" in the menu bar, select "parameter setting", and set hardware gateway configuration parameters in the pop-up dialog box, as shown in figure 3-9-1.

Add: 28 Senang Crescent,#05-11,Bizhub 28,Singapore 416601 Tel: +65 80385403 URL: www.bacnetchina.com
milesgoiiot@gmail.com / sales@opcmaster.com

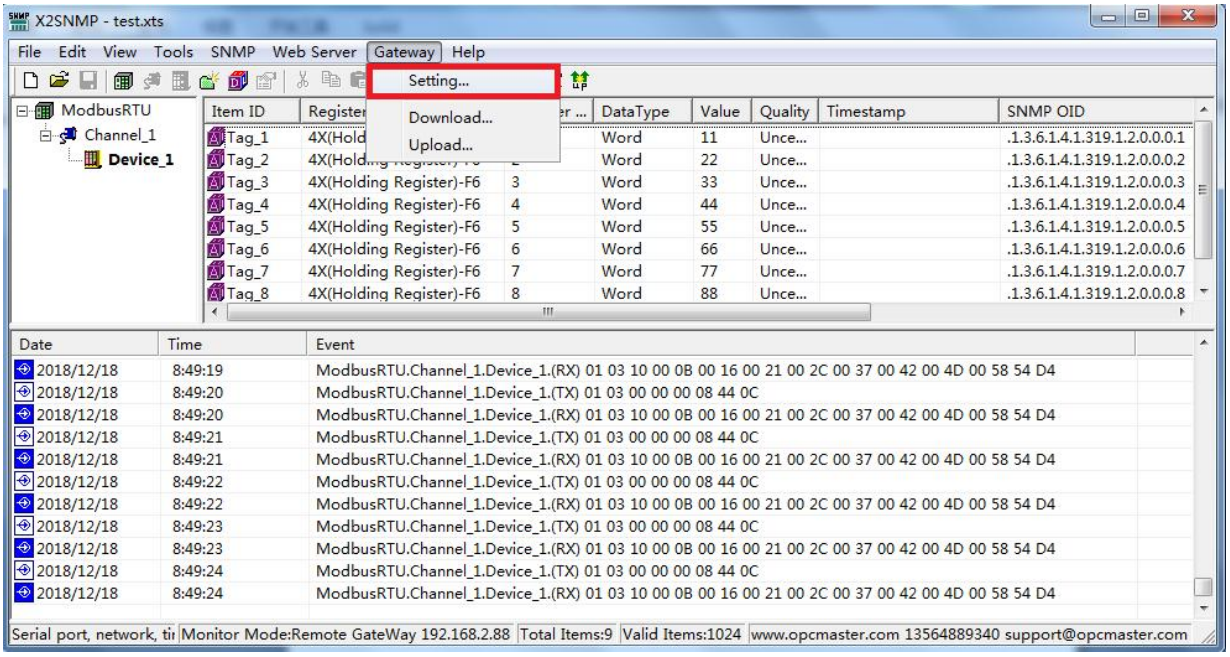


Figure 3-9-1 select Gateway setting

Enter the user name and password in the dialog box that pops up. The user name is fixed as "admin" and the password is fixed as "admin123456". After successful input, gateway related system parameters can be set, as shown in figure 3-9-2.

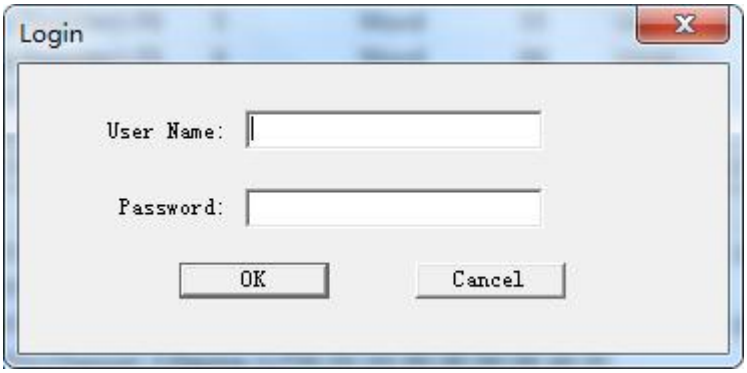


figure 3-9-2 Enter Username and Password

Ethernet Setting: You can change the hardware gateway IP address, the factory default gateway IP address for 192.168.1.88, the default as 255.255.255.0 subnet mask, default gateway 192.168.1.1, complete click ok to set (note: the factory default gateway IP address is 192.168.1.88, users if it is to change the IP address for the first time, users only need a cable (cross or direct) and gateways. It is necessary to set the PC and gateway as the same network segment, and then input the current IP address of the gateway 192.168.1.88 in the current IP address text box, and then click "apply"

Add: 28 Senang Crescent,#05-11,Bizhub 28,Singapore 416601 Tel: +65 80385403 URL: www.bacnetchina.com
milesgoiiot@gmail.com / sales@opcmaster.com

to make the gateway parameter setting operation corresponding to the current IP address, and then set the new IP address.)The "Ping" function tests whether the Ping of the current IP address is successful. The "login page function" can log in to the WEB server where the gateway is located, as shown in figure 3-9-3.

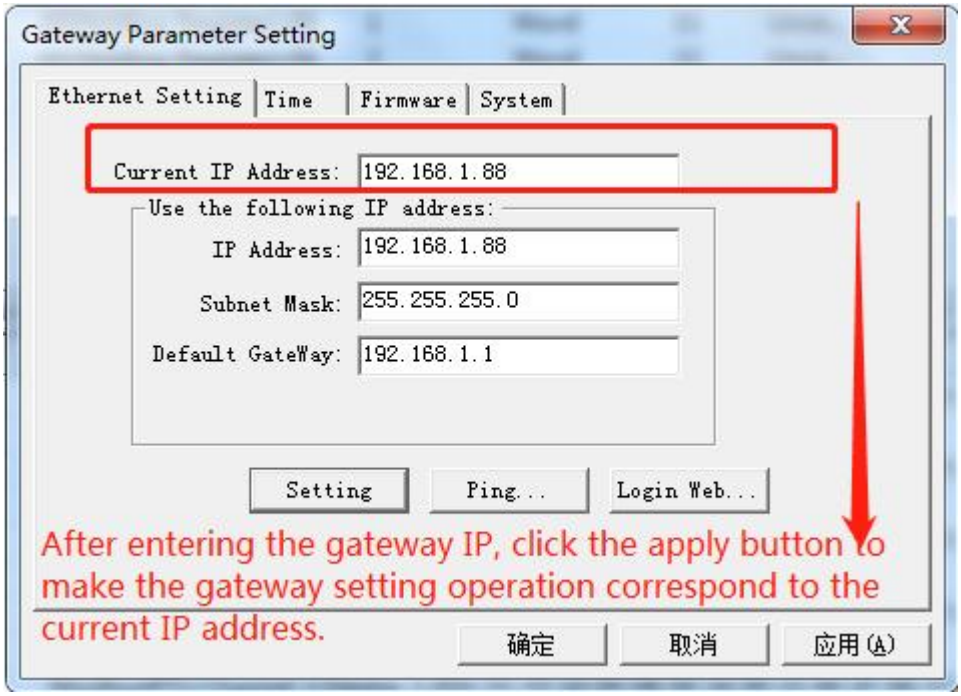


Figure 3-9-3 Ethernet Setting

System time: can read the current system time of the hardware gateway. If the time does not match the normal time, you can click "write" to refresh the system time of the hardware gateway. The automatic update cycle refers to the interval between the system time of the hardware gateway to the bottom end device, as shown in figure 3-9-4.

Add: 28 Senang Crescent,#05-11,Bizhub 28,Singapore 416601 Tel: +65 80385403 URL: www.bacnetchina.com
milesgoiiot@gmail.com / sales@opcmaster.com

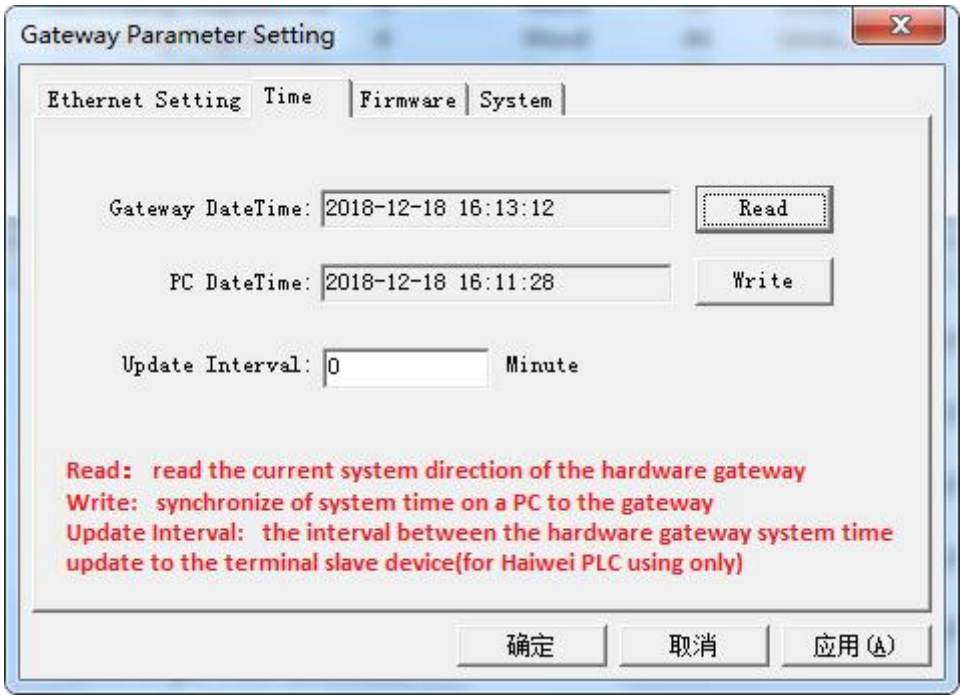


Figure 3-9-4 Time

Firmware information: you can view firmware information burned into the hardware gateway, as shown in figure 3-9-5.

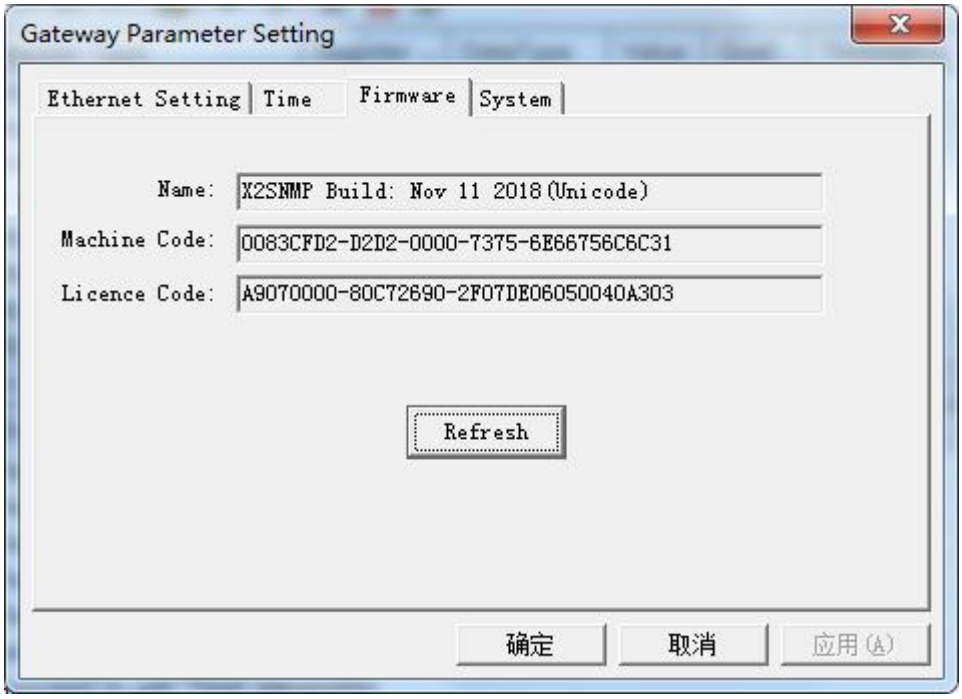


Figure 3-9-5 Firmware Information

System: you can view the current usage of hardware gateway memory in the system and restart the gateway remotely. Delete the configuration project is generally used when updating the gateway, the user is generally used less, it is recommended

Add: 28 Senang Crescent,#05-11,Bizhub 28,Singapore 416601 Tel: +65 80385403 URL: www.bacnetchina.com
milesgoiiot@gmail.com / sales@opcmaster.com

not to click casually, restore the configuration project can restore the user mistakenly deleted the gateway project, the above functions can also be accessed through the WEB server, on the WEB page Settings.The gateway parameter setting interface is shown in figure 3-9-6.

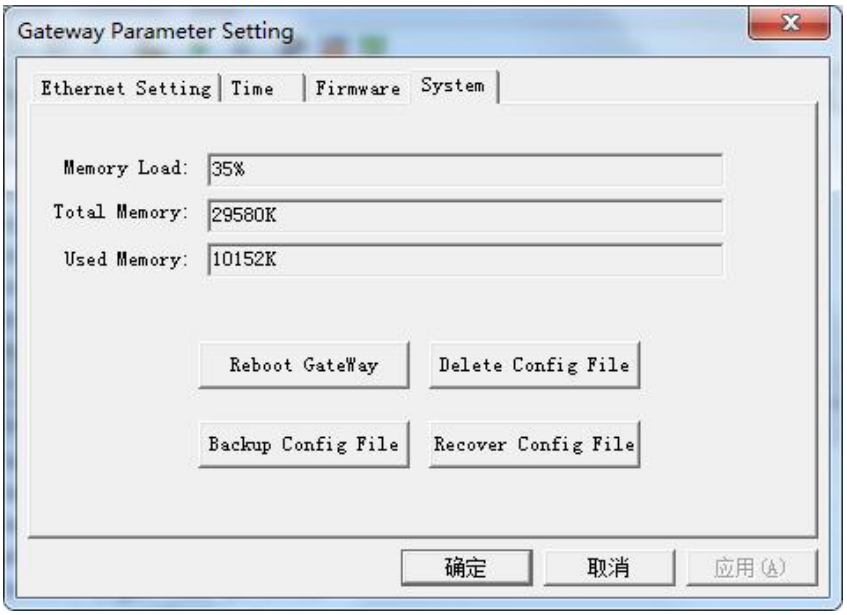


Figure 3-9-6 System Setting

3.10 Download Project to PC

Download project is to download the last configured project from the hardware gateway to the PC (note: the download project function is effective in gateway monitoring mode). On the PC, you can edit the project and view real-time data for debugging. Click "gateway" to select "download project", as shown in figure 3-10-1.

Add: 28 Senang Crescent,#05-11,Bizhub 28,Singapore 416601 Tel: +65 80385403 URL: www.bacnetchina.com
milesgoiiot@gmail.com / sales@opcmaster.com

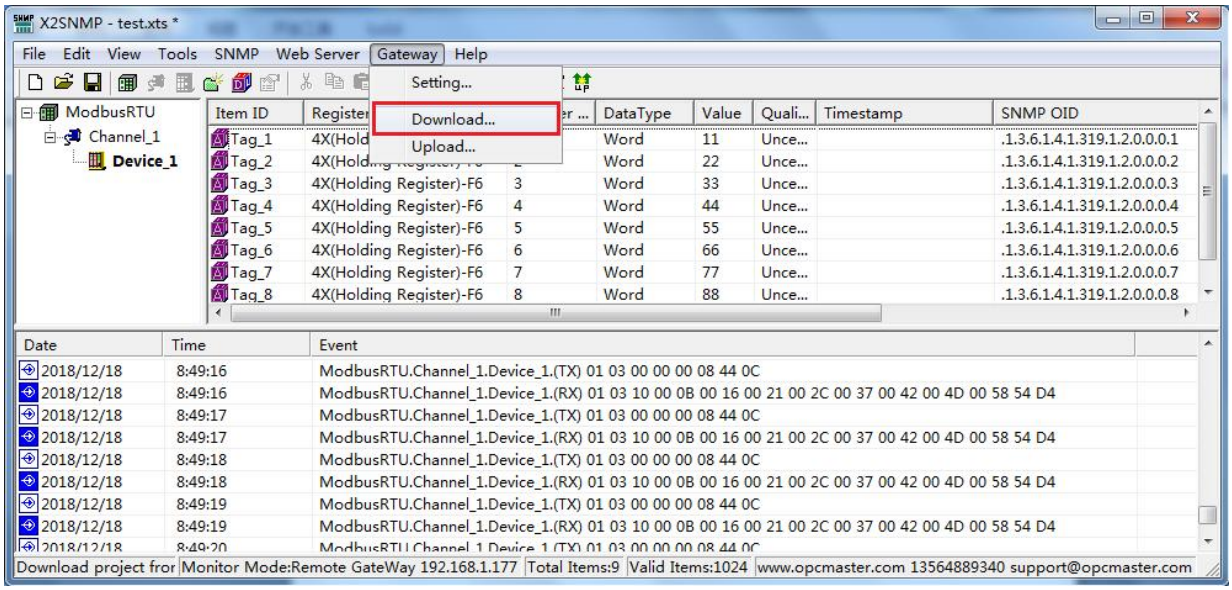


Figure 3-10-1 Download the Project

Enter the gateway IP address in the pop-up dialog box to download the current project from the gateway (users can also download the project by logging into the gateway's WEB server), as shown in figure 3-10-2.

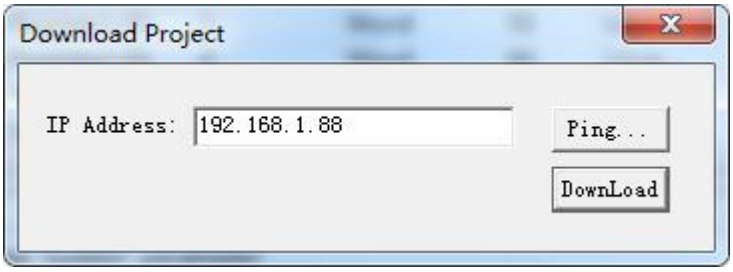


Figure 3-10-2 Download Project

Add: 28 Senang Crescent,#05-11,Bizhub 28,Singapore 416601 Tel: +65 80385403 URL: www.bacnetchina.com
milesgoiiot@gmail.com / sales@opcmaster.com

4 WEB Service

The gateway comes with a WEB server and the default port is fixed at 80.Users can log into the WEB server through the browser, modify the IP address of the hardware gateway, view real-time data, download X2SNMP configuration software and engineering files, etc.

4.1 Website login

Enter the IP address of the hardware gateway in the browser. The default IP address of the gateway is 192.168.1.88. If the user changes the IP address for the first time, the user only needs one network line (either cross or direct connection is ok) and the gateway is directly connected. It is necessary to set the PC and gateway as the same network segment, and then enter 192.168.1.88 in the browser to complete the modification of gateway IP address. As the figure 4-1-1.

Enter the user name and password in the pop-up window. Note that the factory default user name is "admin" and the password is "admin123456". Users can add personal accounts in user management after logging in successfully. As the figure 4-1-2.

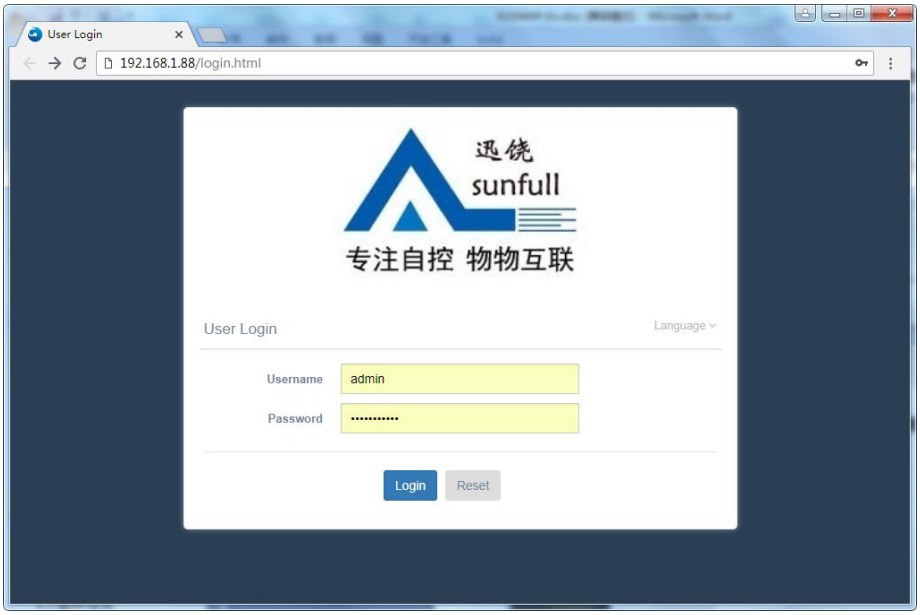


Figure4-1-2 User Login

Add: 28 Senang Crescent,#05-11,Bizhub 28,Singapore 416601 Tel: +65 80385403 URL: www.bacnetchina.com
milesgoiiot@gmail.com / sales@opcmaster.com

4.2 Download

Download：Download the configuration software used to complete the gateway, the current engineering file and the help document, as shown in figure 4-2-1.

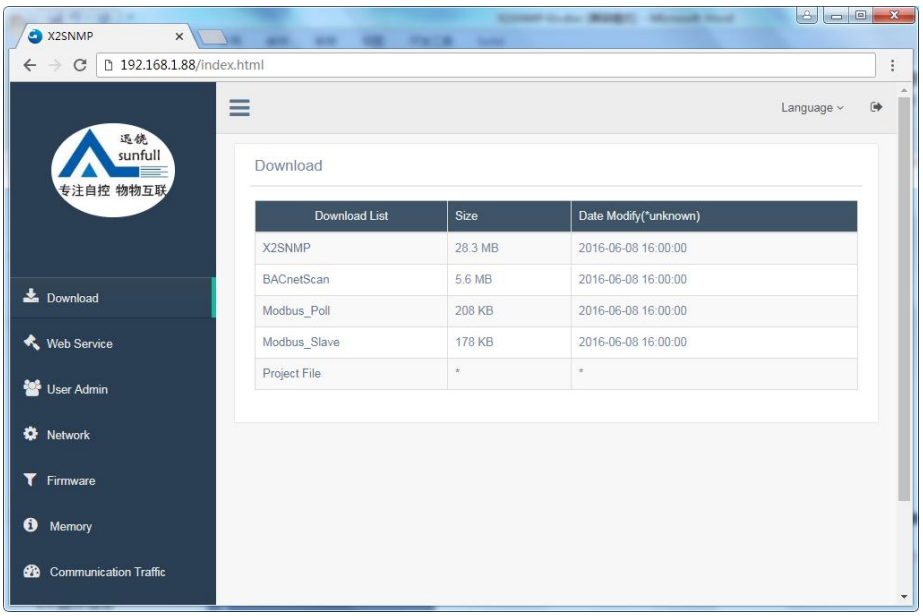


Figure 4-2-1 Download

4.3 User Admin

User Admin: users can manage their login accounts by adding, modifying and deleting, as shown in Figure 4-3-1.

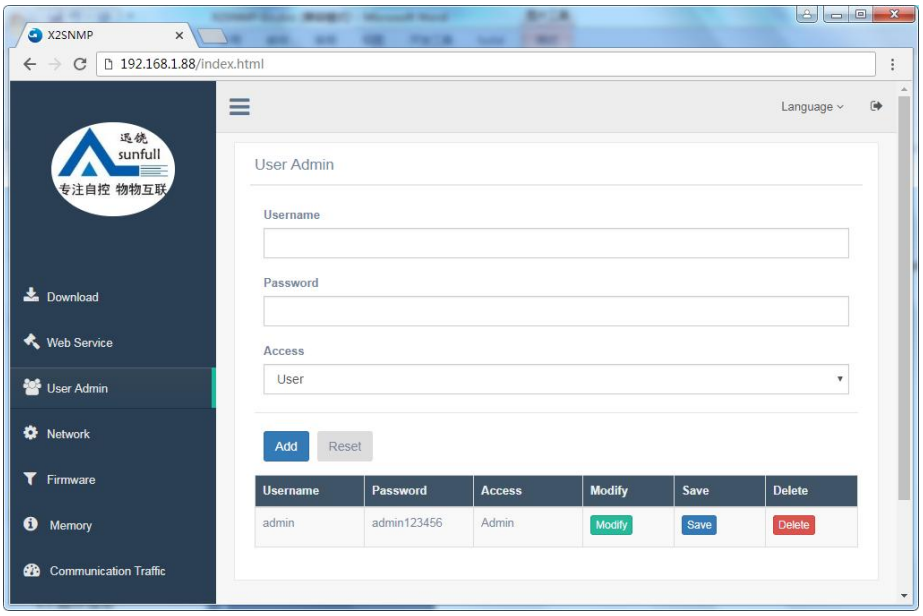


Figure 4-3-1 User Admin

Add: 28 Senang Crescent,#05-11,Bizhub 28,Singapore 416601 Tel: +65 80385403 URL: www.bacnetchina.com
milesgoiiot@gmail.com / sales@opcmaster.com

4.4 Network

Network：Set the IP address of the hardware gateway network port, as shown in figure 4-4-1 below.

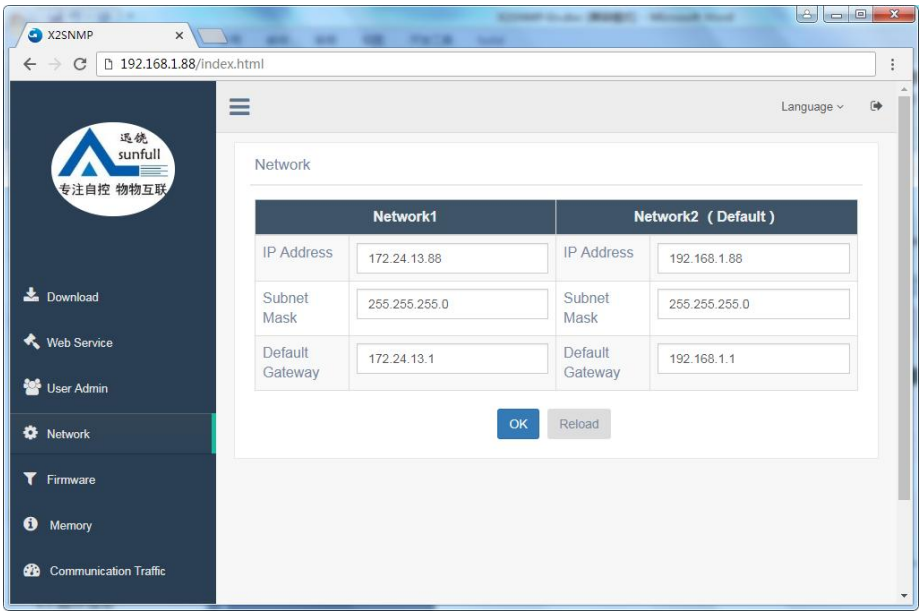


Figure 4-4-1 Network

4.5 Firmware

Firmware：Firmware information means that users can view the firmware version information, machine code and registration code currently burned, as shown in figure 4-5-1 below。

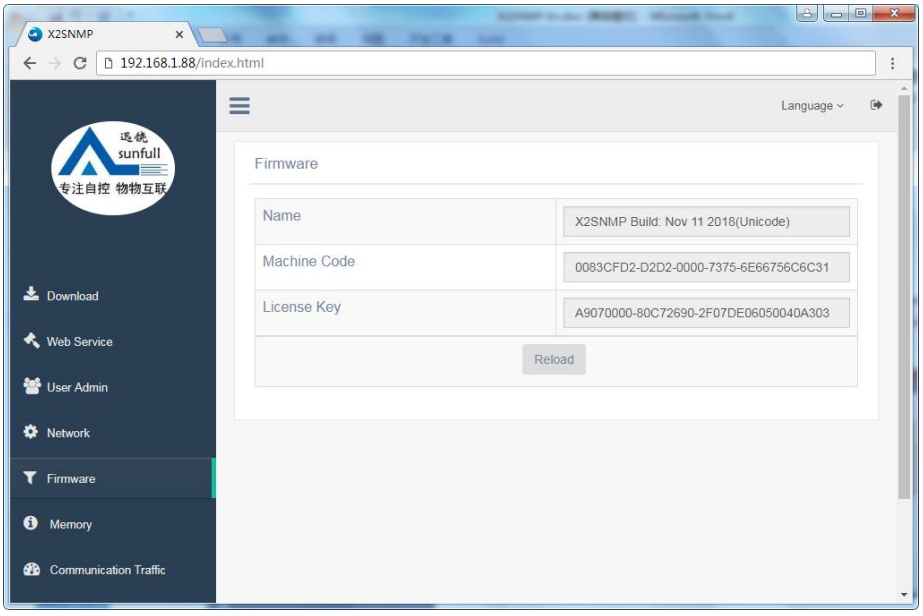


Figure 4-5-1 Fireware

Add: 28 Senang Crescent,#05-11,Bizhub 28,Singapore 416601 Tel: +65 80385403 URL: www.bacnetchina.com
milesgoiiot@gmail.com / sales@opcmaster.com

4.6 Memory

Memory： You can view the memory usage of the gateway, restart the gateway remotely, and so on.Delete project and restore configuration project are generally used when gateway is updated. In general, you do not need to click, as shown in figure 4-6-1 below.

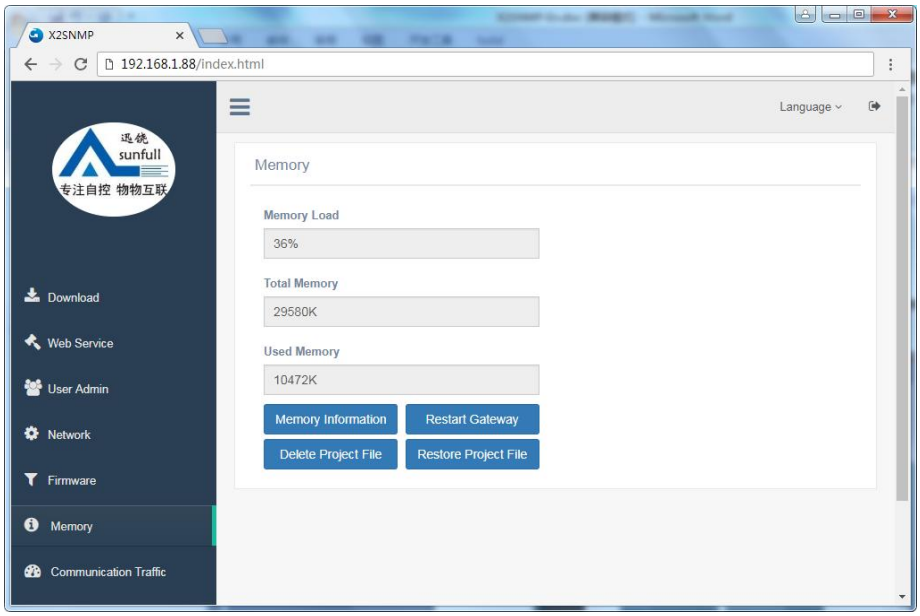


Figure 4-6-1 Memory

4.7 Communication Traffic

Communication Traffic： In addition, the real-time dynamic data frame can be viewed in the web page to facilitate users to intuitively understand the real-time communication status. Through the analysis of the data frame, the cause of fault can be found out, which brings great convenience to users, as shown in Figure 4-7-1.

Add: 28 Senang Crescent,#05-11,Bizhub 28,Singapore 416601 Tel: +65 80385403 URL: www.bacnetchina.com
milesgoiiot@gmail.com / sales@opcmaster.com

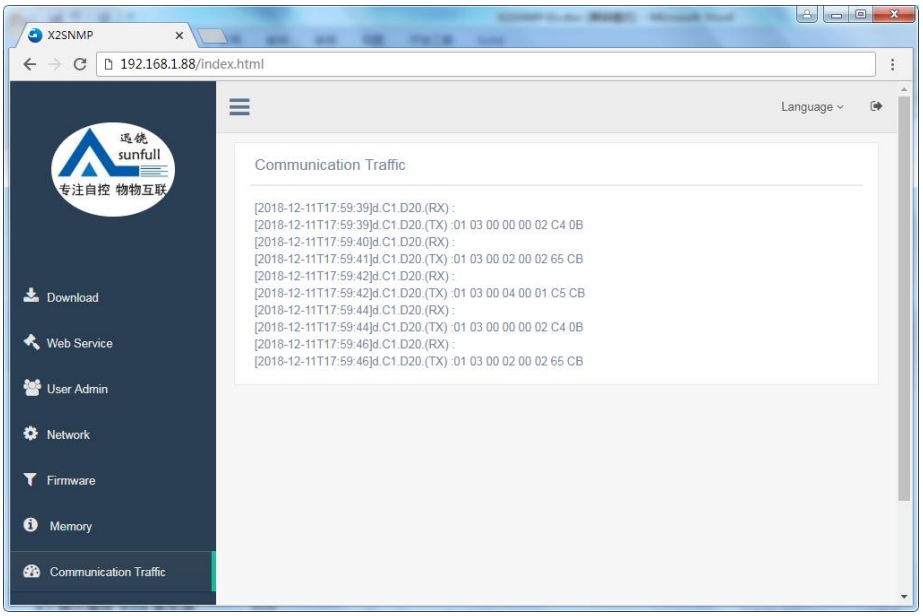


Figure 4-7-1 Communication Traffic

4.8 Internal Variable

Internal Variable：You can view the gateway's internal variables on the web page, as shown in figure 4-8-1.

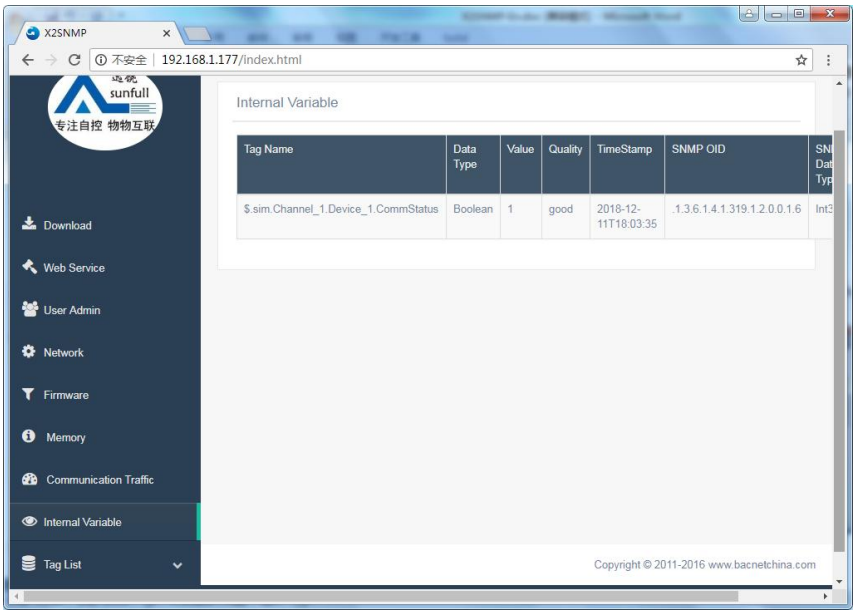


Figure 4-8-1 Internal Variable

4.9 Tag List

Tag List：You can view the gateway's tag list on the web page, as shown in figure 4-9-1.

Add: 28 Senang Crescent,#05-11,Bizhub 28,Singapore 416601 Tel: +65 80385403 URL: www.bacnetchina.com
milesgoiiot@gmail.com / sales@opcmaster.com

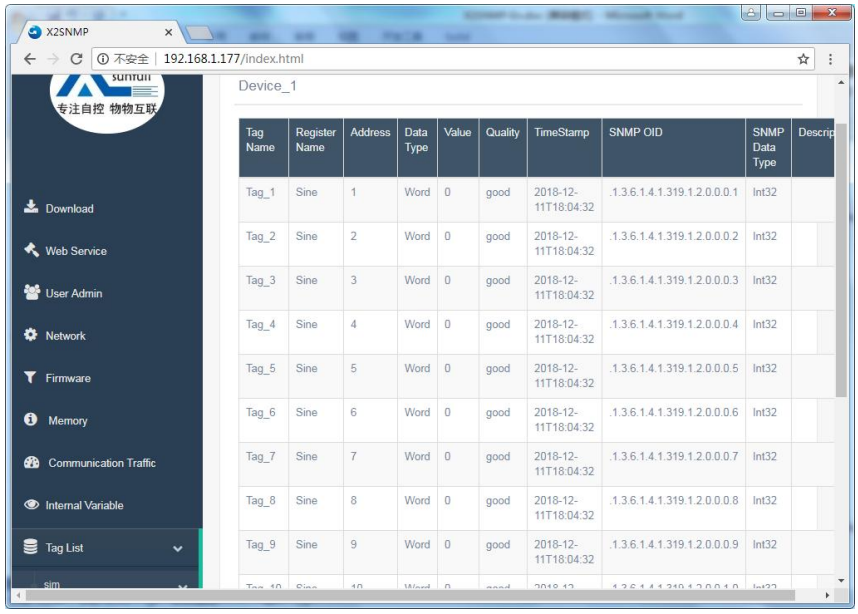


Figure 4-9-1 Internal Variable

You can also write values on a web page, as shown in figure 4-9-2.

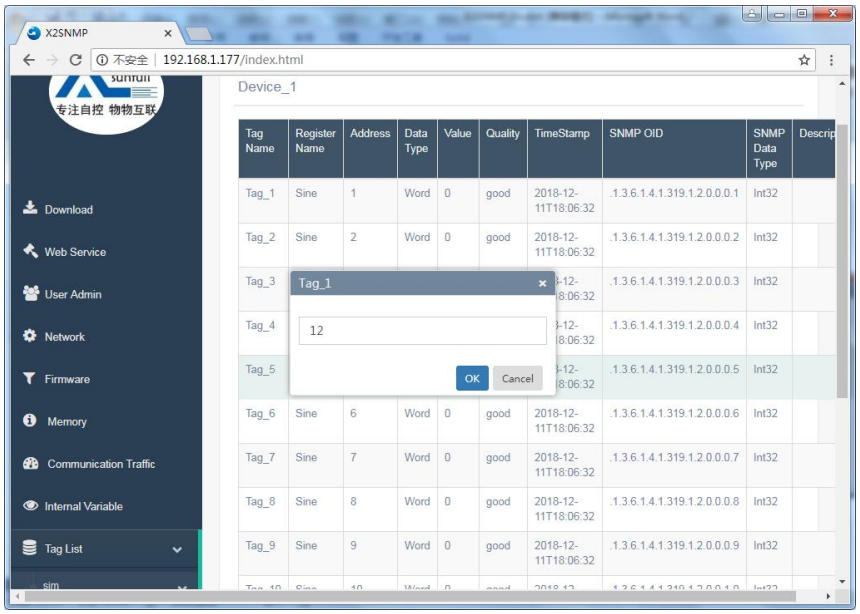


Figure 4-8-2 Write Value

Add: 28 Senang Crescent,#05-11,Bizhub 28,Singapore 416601 Tel: +65 80385403 URL: www.bacnetchina.com
milesgoiiot@gmail.com / sales@opcmaster.com

5 SNMP Agent

Click SNMP of the menu, select the SNMP Agent, as the below figure 5-1。

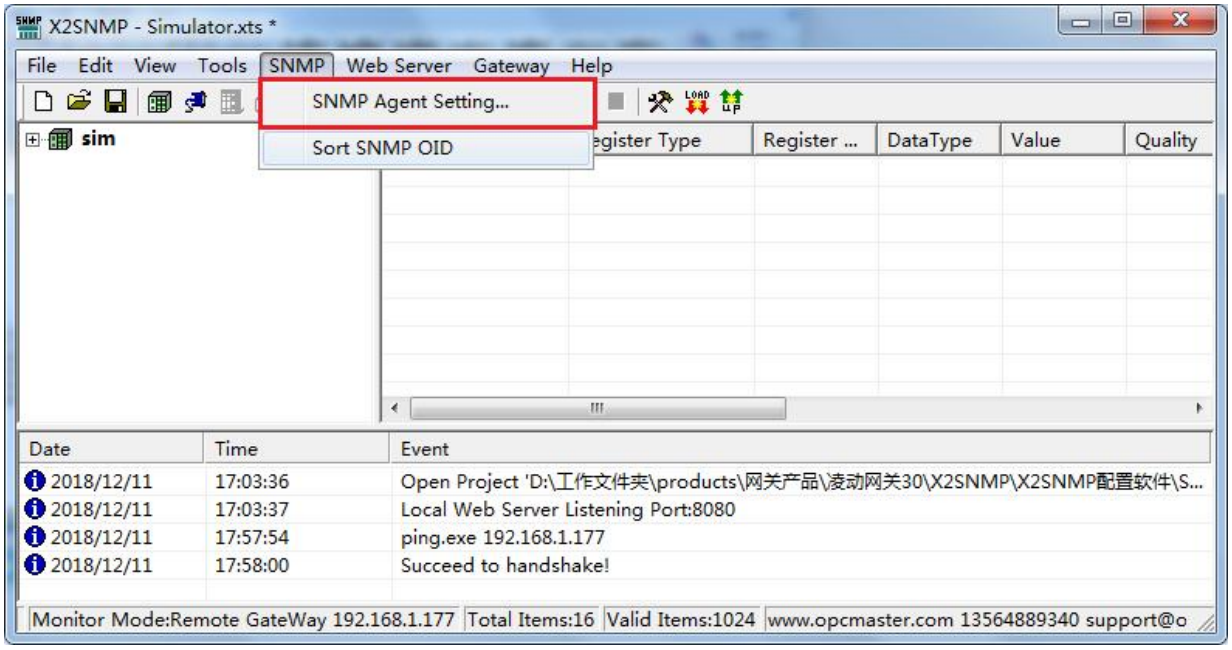


Figure 5-1 SNMP Agent Setting

The port number is fixed as 161, and the type is fixed as public. These two properties cannot be modified. As the below figure 5-2.

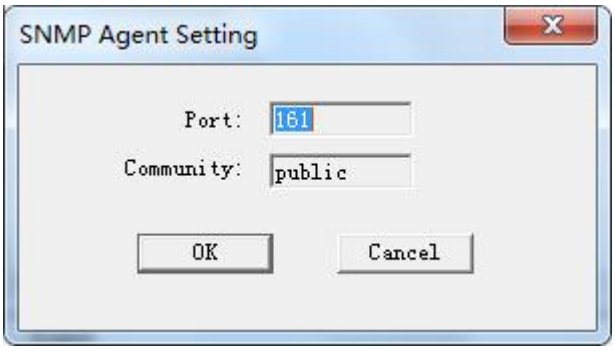


Figure 5-2 SNMP Agent Setting

6 SNMP Client Access

The gateway can provide an SNMP interface after data collection, so that users of other SNMP management client platforms can indirectly access third-party devices by accessing the gateway.

You can test it by our X2OPC Server. Open X2OPC and choose the driver

Add: 28 Senang Crescent,#05-11,Bizhub 28,Singapore 416601 Tel: +65 80385403 URL: www.bacnetchina.com
milesgoiiot@gmail.com / sales@opcmaster.com

SNMPClient, as shown in figure 6-1.

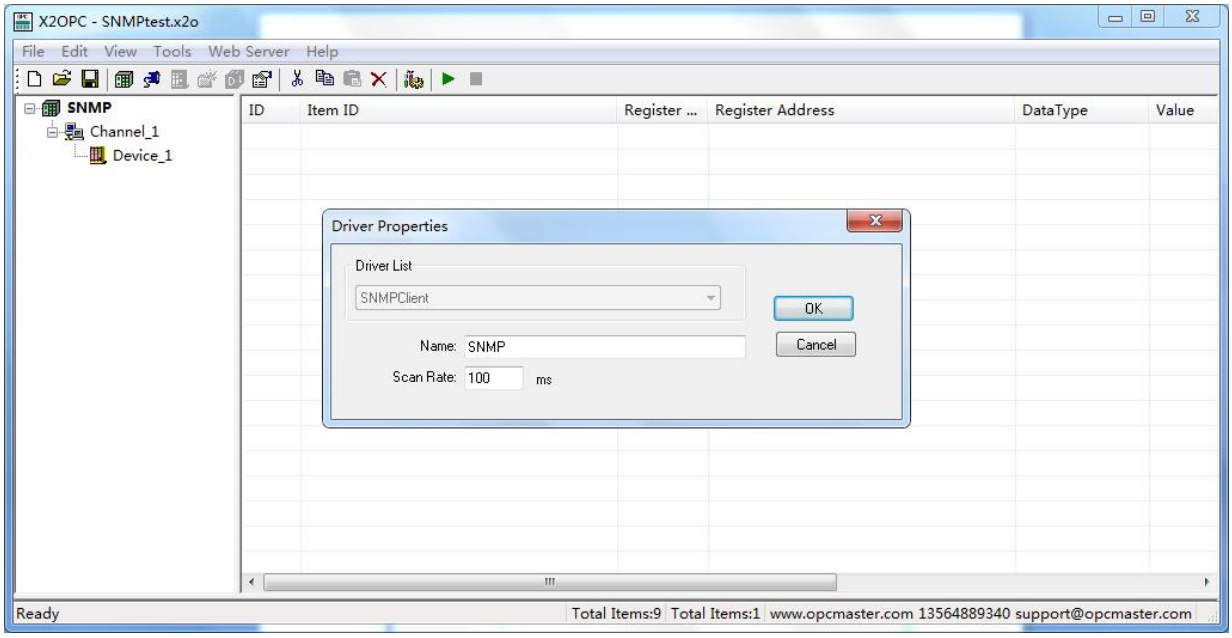


Figure 6-1 Select driver

Click"OK", to add the driver to complete, as shown in figure6-2.

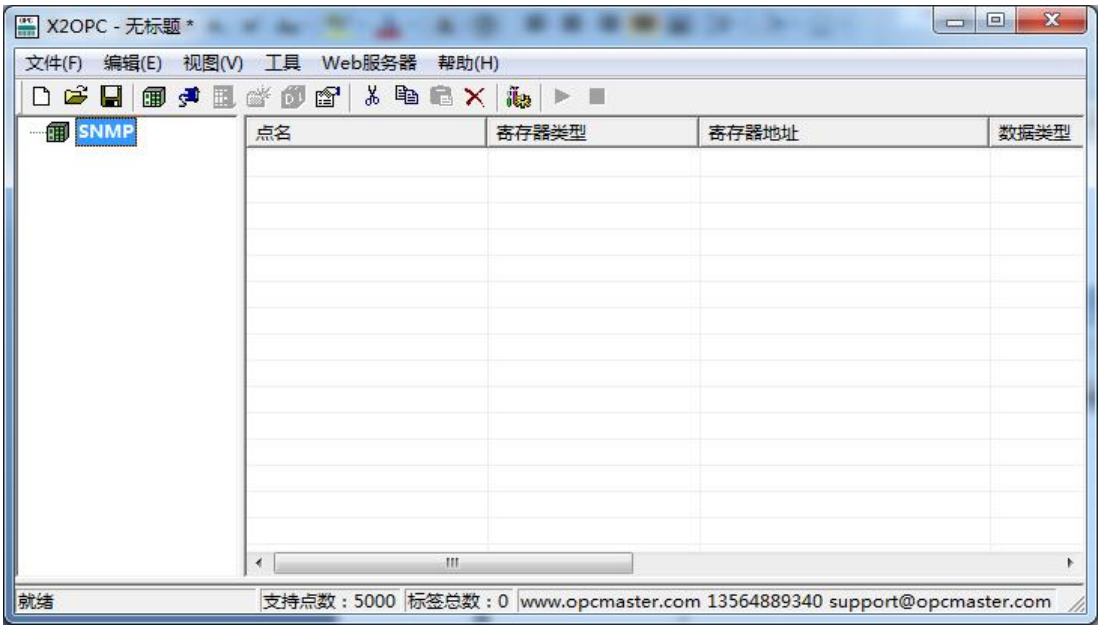


Figure 6-2 Complete add driver

Right click 

,select "New Channel" or select the icon  of toolbar to add channel.

You can input the IP （e.g. 192.168.1.88）of SNMP gateway in IP Address，port

Add: 28 Senang Crescent,#05-11,Bizhub 28,Singapore 416601 Tel: +65 80385403 URL: www.bacnetchina.com
milesgoiiot@gmail.com / sales@opcmaster.com

number is 161 by default. As shown in figure 6-3。

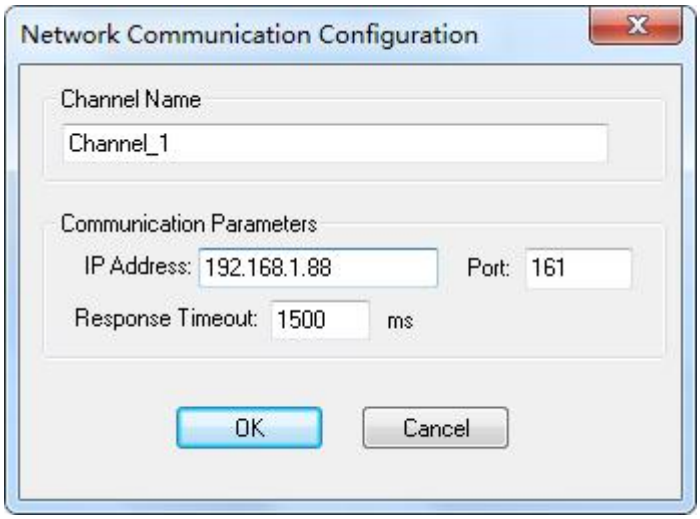


Figure 6-3 select channel

After the new channel is completed, right-click 

to select the new device or click the icon  of toolbar, and select the default property of the device property, as shown in figure 6-4.

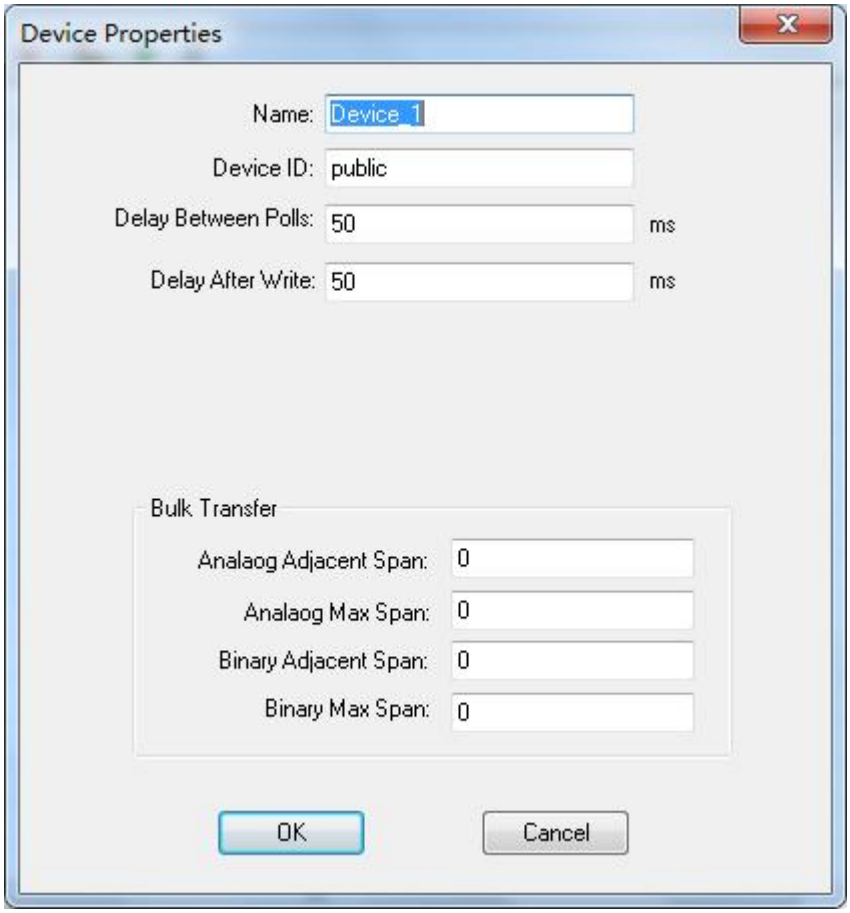


Figure 6-4 Select device

Add: 28 Senang Crescent,#05-11,Bizhub 28,Singapore 416601 Tel: +65 80385403 URL: www.bacnetchina.com
milesgoiiot@gmail.com / sales@opcmaster.com

Click "ok" and the device is added, as shown in figure 6-5.

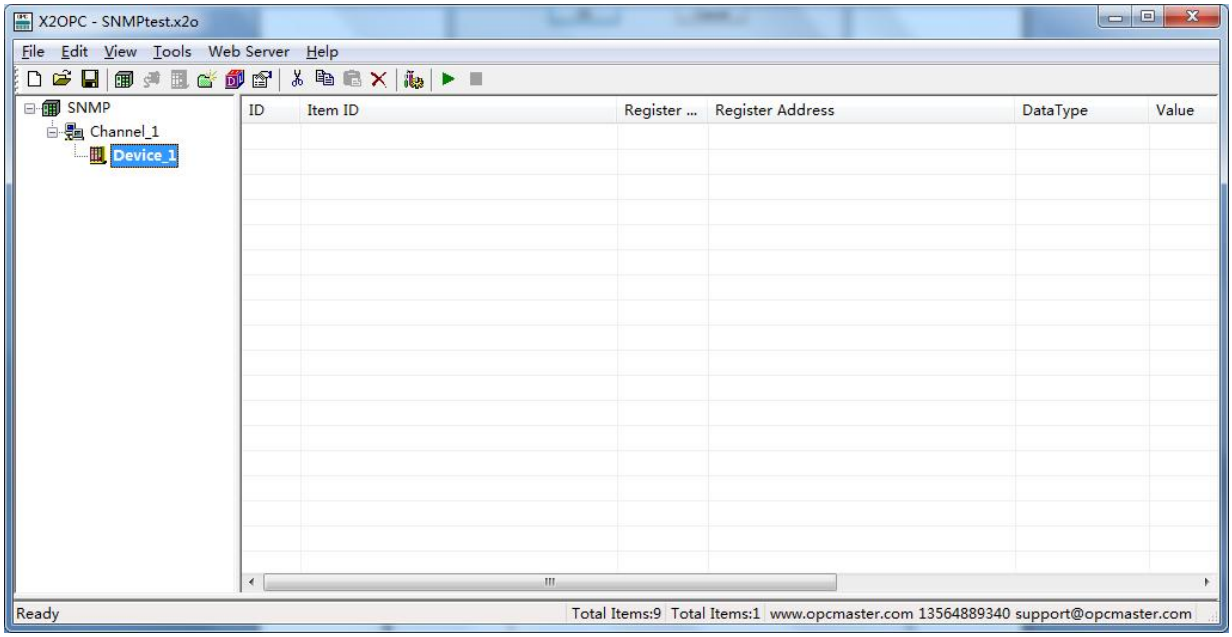


Figure6-5 Complete add device

Right click 

or right click on the blank area on the right to create a new label, as shown in figure 6-6.

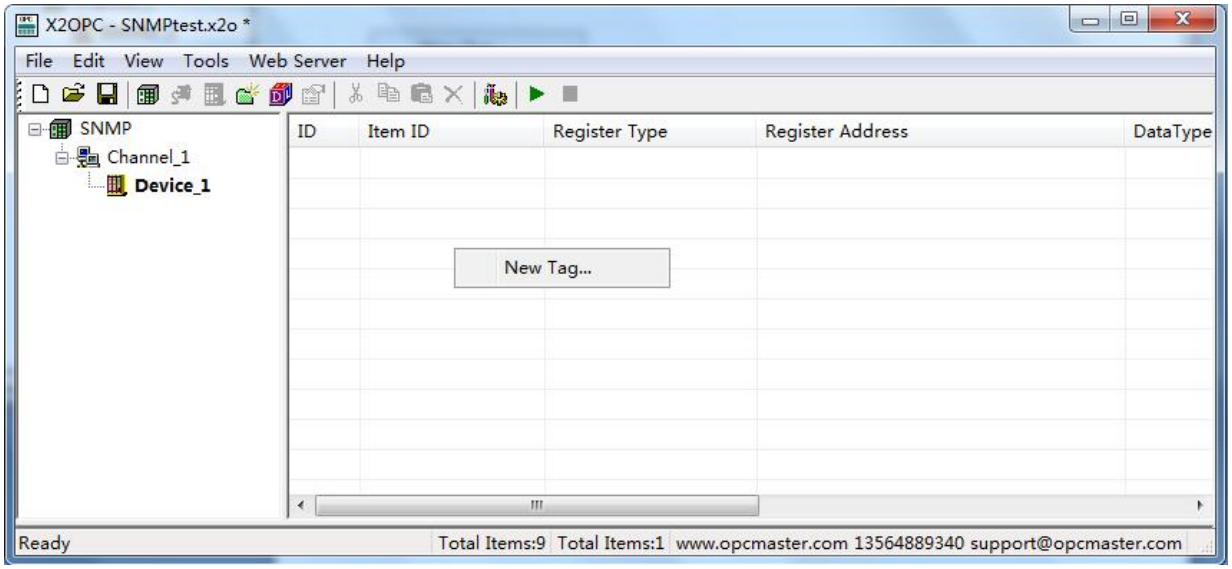


Figure 6-6 New Tag

Click "ok", input OID 1.3.6.1.6.1.12.1.3.0.0.0.1, pay attention to in front of the OID order a point, to select the correct data type, reproducing label batch operation, as shown in figure 6-7.

Add: 28 Senang Crescent,#05-11,Bizhub 28,Singapore 416601 Tel: +65 80385403 URL: www.bacnetchina.com
milesgoiiot@gmail.com / sales@opcmaster.com

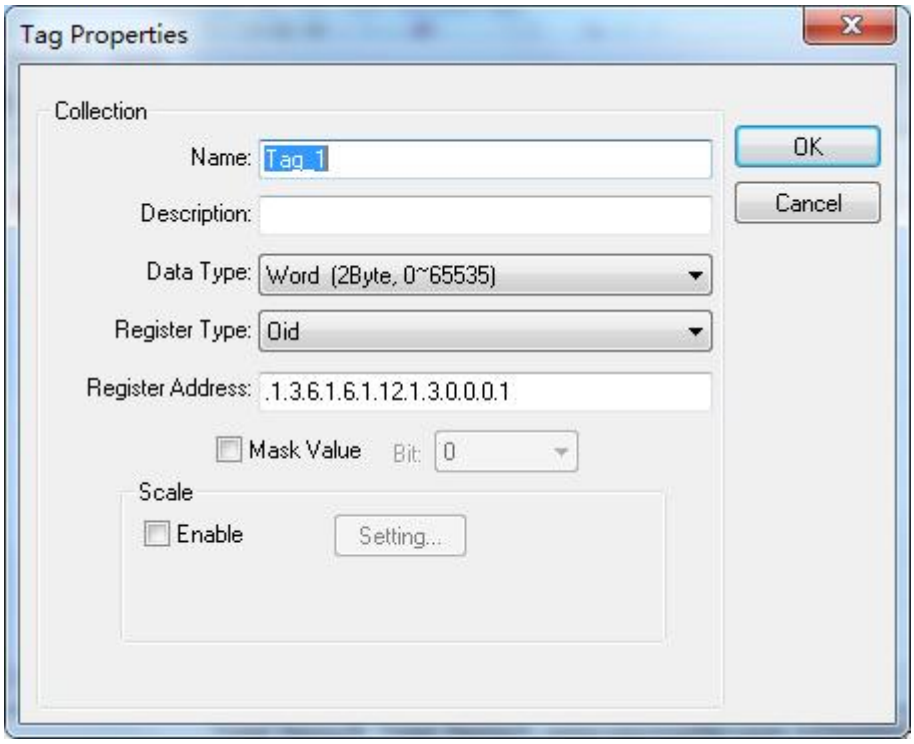


Figure 6-7 Scanned point

After completing the establishment of the label, click the start monitoring under the toolbar, or click the shortcut key to start monitoring, and we can see that the data has been read, as shown in figure 6-8.

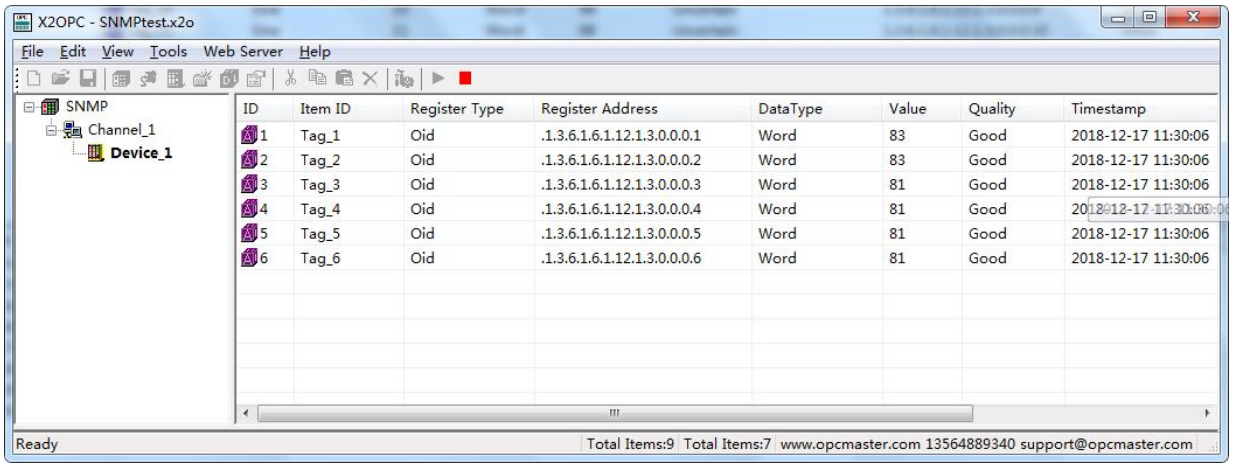
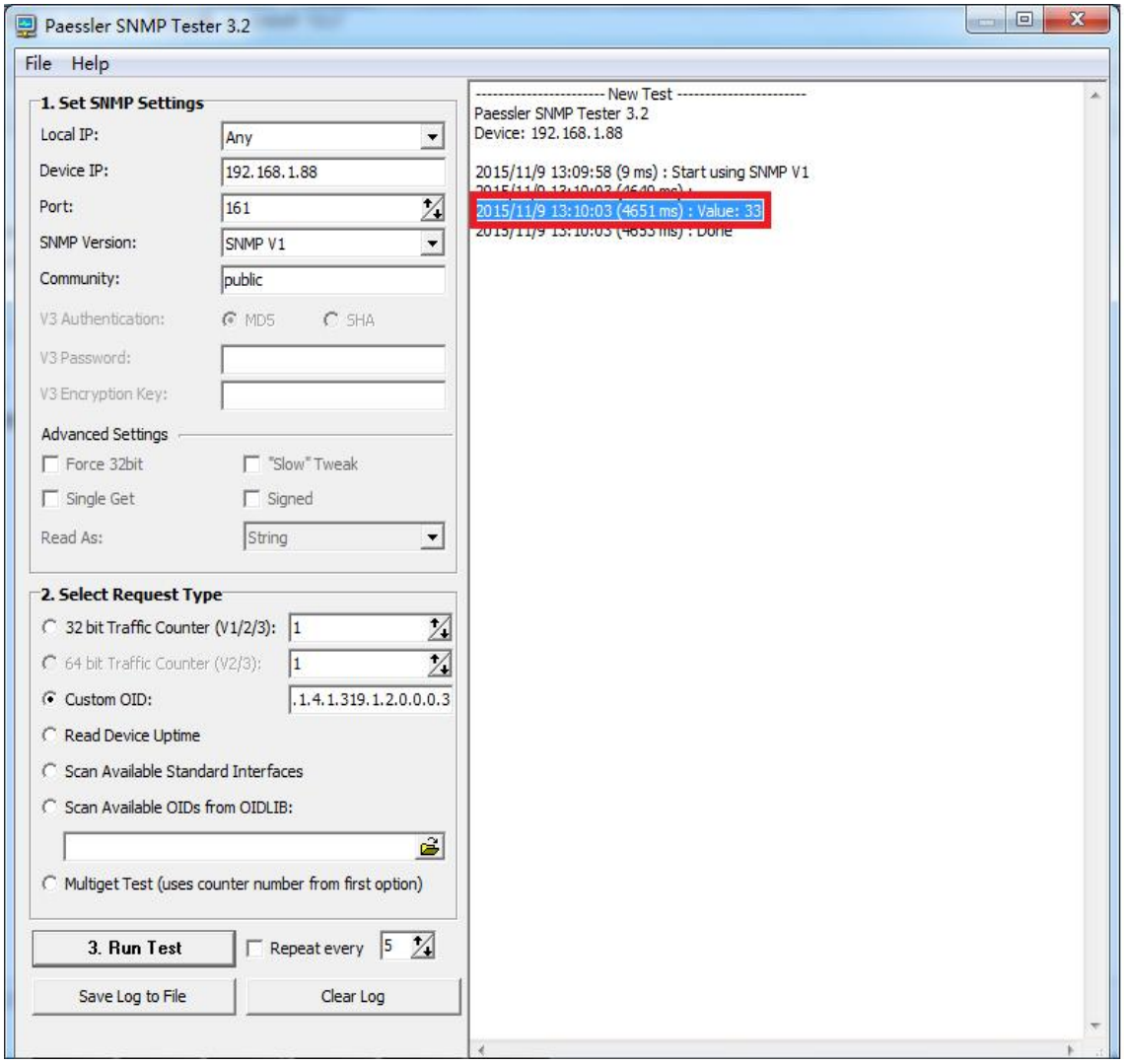


Figure 4-8 Start monitoring

Third-party software, in third-party SNMP software related parameters Settings, input OID. After 1.3.6.1.6.1.12.1.3.0.0.0.3, we see the third-party SNMP client successful visit to the our X2SNMP gateway, and values is consistent, as shown in figure 6-9.

Add: 28 Senang Crescent,#05-11,Bizhub 28,Singapore 416601 Tel: +65 80385403 URL: www.bacnetchina.com
milesgoiiot@gmail.com / sales@opcmaster.com



Figurre 6-9 The third-party software was successfully accessed

Add: 28 Senang Crescent,#05-11,Bizhub 28,Singapore 416601 Tel: +65 80385403 URL: www.bacnetchina.com
milesgoiiot@gmail.com / sales@opcmaster.com

7 Common Problems

7.1 Hint ” Failed to call ‘http://192.168.1.88/soap’ WEB server!”

When starting monitor in the Local PC monitor mode, the error message is constantly prompted in the print message bar ” Failed to call ‘http://192.168.1.88/soap’ WEB server!”. There are three main reasons for this situation:

- The first possibility is that the current monitoring mode is gateway mode, which needs to be adjusted to Local PC monitor mode.
- The second possibility is that the port number of the current WEB server is occupied by other applications on the local computer.
- The third possibility is that the X2SNMPRuntime program is closed, and only needs to restart the monitor.

7.2 Pay attention to the difference of “Upload” and “Download”

It is particularly reminded that after the completion of the project configuration on PC, the project will be uploaded to the gateway through the button "Upload project". When you look at the project in the gateway, you download the project inside the gateway to the configuration software through the button "download project" .

Add: 28 Senang Crescent,#05-11,Bizhub 28,Singapore 416601 Tel: +65 80385403 URL: www.bacnetchina.com
milesgoiiot@gmail.com / sales@opcmaster.com