Moxa EDS-SNMP OPC Server Pro
User's Manual

www.moxa.com/product

Second Edition, June 2008

MOXA®

Moxa EDS-SNMP OPC Server Pro
User's Manual

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Introduction

Welcome to Moxa EDS-SNMP OPC Server Pro, which can be integrated seamlessly with the leading HMI/SCADA software to create a comprehensive Ethernet Network Management Solution for all SNMP compatible devices. Moxa EDS-SNMP OPC Server Pro, which supports OPC Data Access 2.0 and ranks as a new generation of industrial software applications, was implemented using advanced programming concepts from the latest OPC specifications.
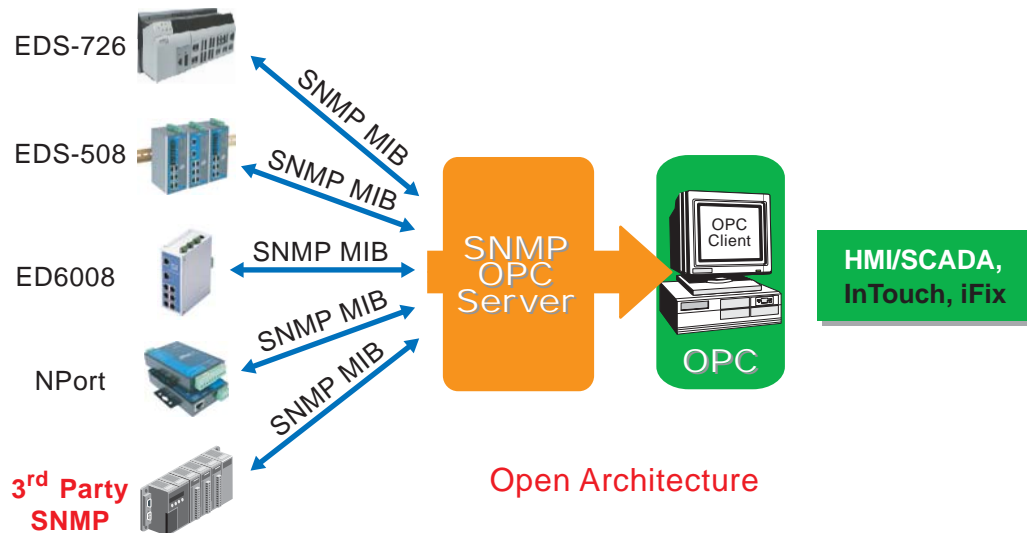
The following topics are covered in this chapter:

❑ **Features**
❑ **Package Checklist**
❑ **System Requirements**
  ➢ Minimum Hardware Requirements
  ➢ Minimum Software Requirements

Features

- Easy to Network Search for ED6008/EDS-508/EDS-726, and any SNMP compatible device
- Easy to create and edit the configurations of connected devices in advance
- Easy to create and edit the MIB Template for a dedicated tag file of any SNMP compatible device
- User-definable tag file meets the requirements of many different applications
- Ensure correct configuration with on-line monitoring ability
- Test in advance with the simple test client test program that is bundled with OPC Pro

NOTE	In this manual, we often use "OPC Pro" in place of "EDS-SNMP OPC Server Pro."

Package Checklist

OPC Pro is shipped with the following items:

- CD Cover
- Software CD
- Quick Installation Guide

If any of these items is missing or damaged, please contact your customer service representative for assistance.

System Requirements

Minimum Hardware Requirements

- Memory: at least 128 MB
- Computer/Processor: 266 MHz or higher Pentium-compatible CPU
- Disk space: 20 MB for basic installation and system usage.

Minimum Software Requirements

- Operating System: NT`4.0 SP4, Windows XP (32 bit), Windows 2000 (Professional or Server version), Windows 2008 Server (32/64 bit), Windows 7 (32/64 bit)
- Supported Products: Moxa EDS managed series switches, such as ED6008, EDS-508, EDS-726, and other SNMP compatible devices

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How to use EDS-SNMP OPC Server Pro

This chapter describes how to install and use Moxa EDS-SNMP OPC Server Pro. Refer to the "Operation Flowchart" section for a good overview of how to use OPC Pro with Moxa EDS switches or any other SNMP compatible device. Read this chapter thoroughly to gain a full understanding of Moxa EDS-SNMP OPC Server Pro's management functions.

The following topics are covered in this chapter:

❑ **Installation**

❑ **Starting EDS-SNMP OPC Server Pro**

❑ **Operation Flowchart**

Installing the Software

Follow the instructions given here to install the OPC Pro software.

1. Insert the Moxa EDS-SNMP OPC Server Pro CD into your computer's CD drive and wait for the installation program to start running. If the installation program does not start running automatically, run the setup program by double clicking on the s**etup.exe** icon.

2. When the Setup window opens, Click on **Next** to start the **Setup Wizard**.
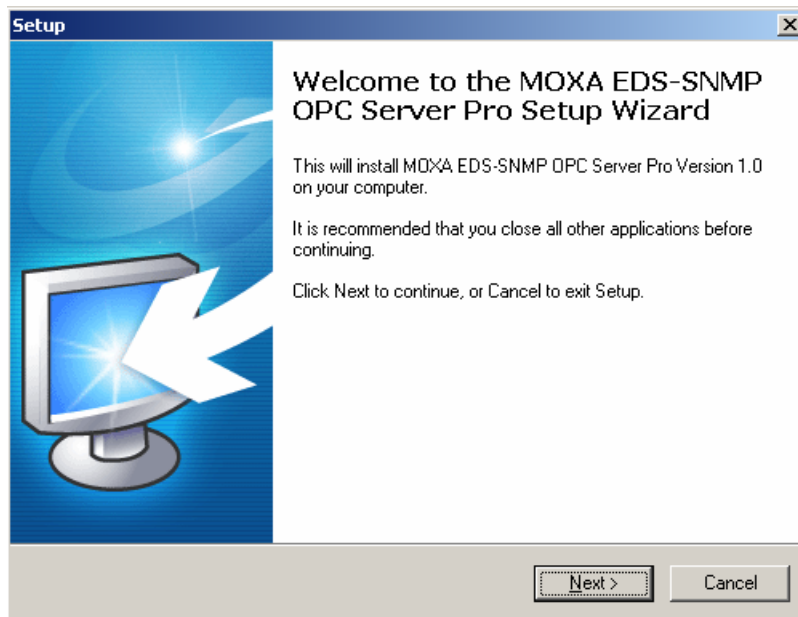
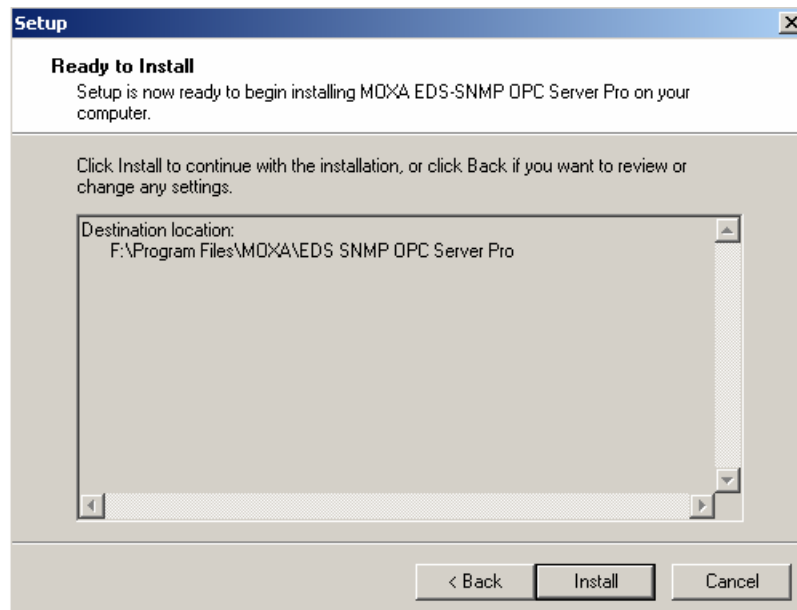3. Read through the license agreement, select **I accept the agreement**, and then click on **Next**.
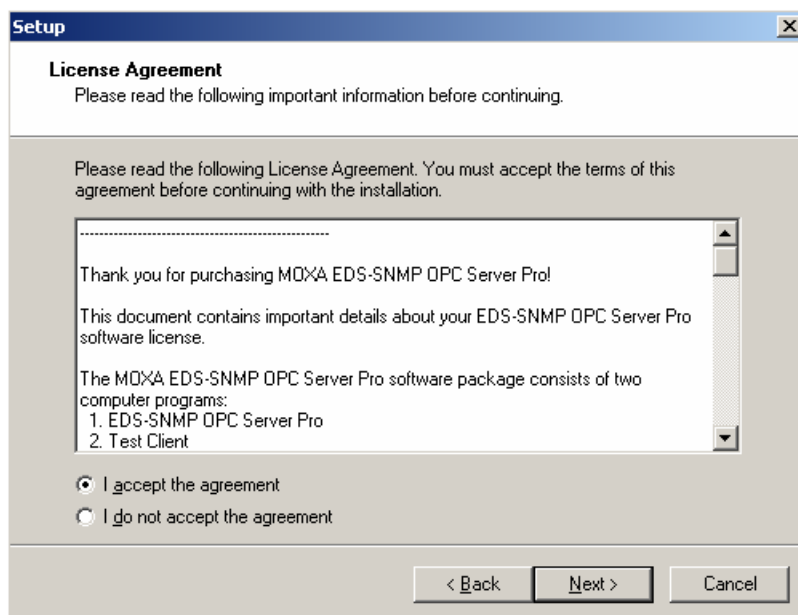
4. The setup program will select a default folder for program files. Modify as needed, and then click on **Next** to continue.
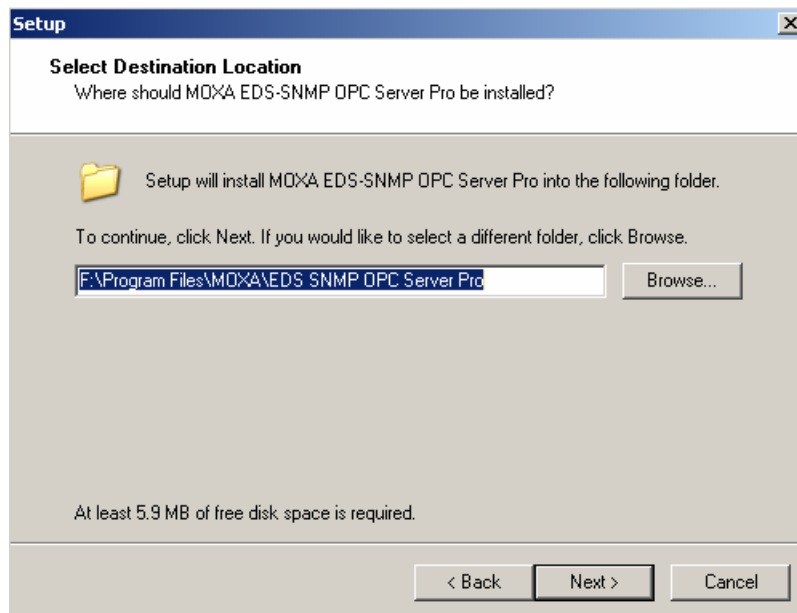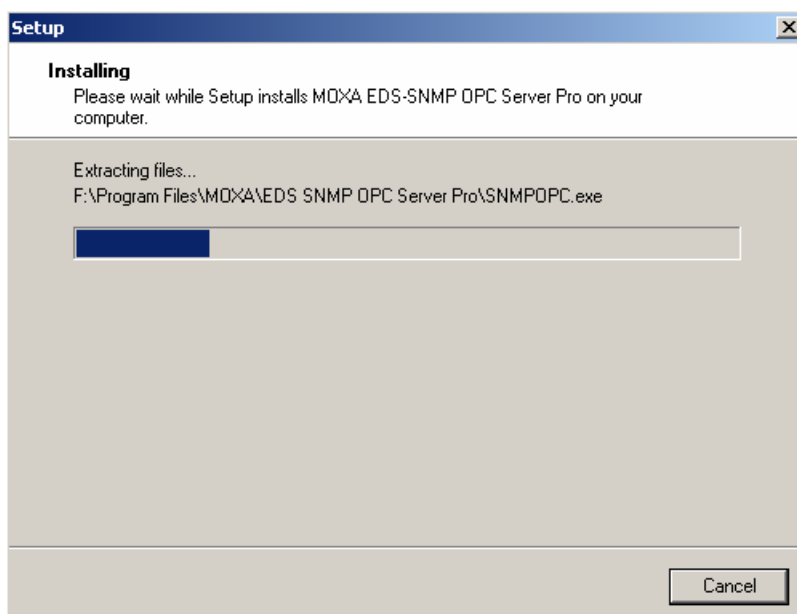

5. Verify that the folder is correct, and then click on **Install** to continue.

6. Wait while the software is installed.

7. Click on **Finish** to exit the setup program.
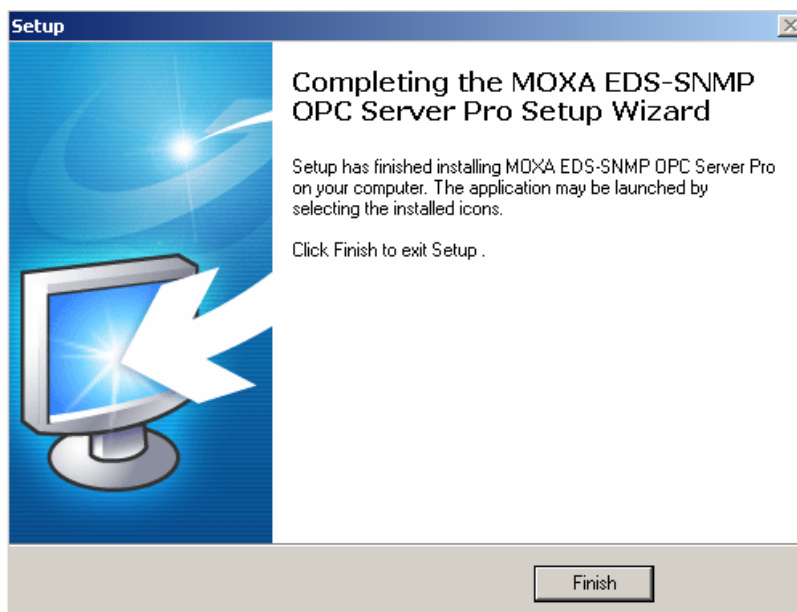
Starting EDS-SNMP OPC Server Pro

1. To start using EDS-SNMP OPC Server Pro, click on **Start → Programs → Moxa EDS-SNMP OPC Server Pro→ OPC Server Pro**.
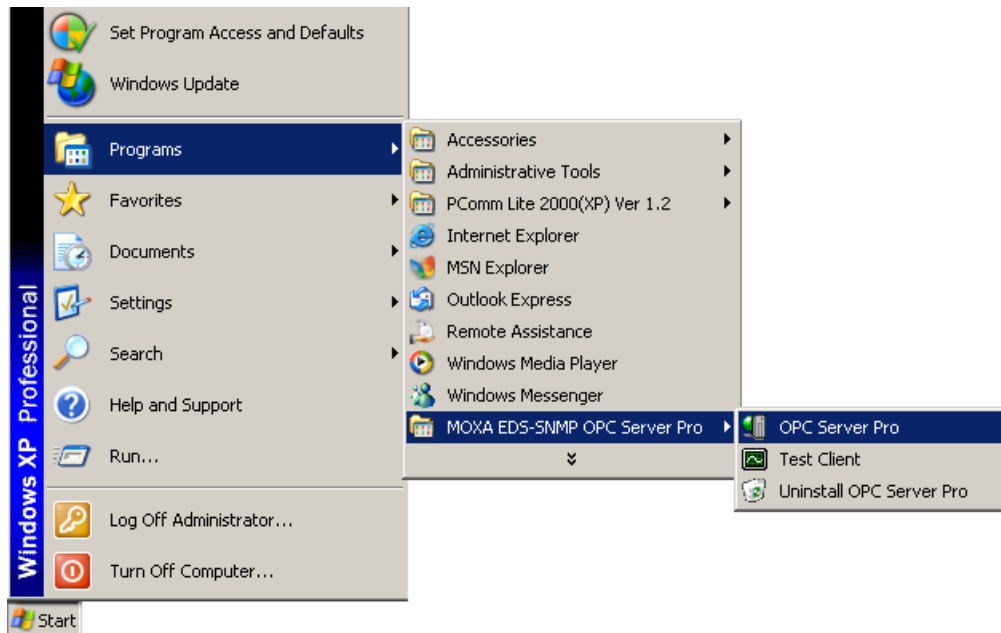
2. If this is the first time you've used this copy of the software, a Registration Code window will open as shown below. **Enter the Registration Code shown on the CD's sticker** and then click on **OK**. Note that the registration code is case sensitive.

3. If you enter an incorrect Registration Code, an error message will appear.

4. Click on **OK** to stop the program. You will need to start over from step 1 above.

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5. After entering the correct Registration Code, the Moxa EDS-SNMP OPC Server Pro will open.

Operation Flowchart

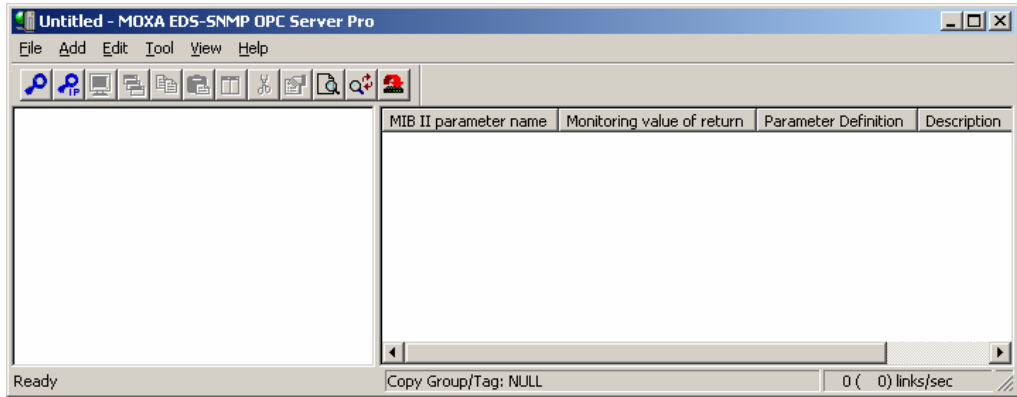EDS-SNMP OPC Server Pro provides a user-editable Tag file for any SNMP compatible device. Use the default MIB file, or create and edit a standard or private MIB to generate a dedicated Tag file. This powerful function lets operators use an existing HMI software environment to create a customized, real time view of the integrity of any Ethernet network device, the overall Ethernet network traffic volume, and overall Ethernet network status.

The following operation flowchart gives you a good overview of how to use OPC Pro with Moxa EDS series products and any SNMP compatible device. Refer to the sections from Chapter 3 for detailed information about using each function.

Run OPC
Server Pro.

Communicate
with Moxa EDS
series

No

MIB Compiler
Generate an OPC Pro
MIB module from
any SNMP compatile
devices' MIB file.

Yes

Dedicated IP
Designate Device
Name, Description,
and Device Type
related factors for
connected EDS units
or SNMP compatile
devices in advance.

No

Network Search
for EDS or SNMP
compatible devices

Device Type Define
Define a specific
"Device Type" with
its OPC Pro MIB
module and OIDs.

Yes

Add New Group
Designate specific tag
group name for
connected EDS or
SNMP compatile
devices.

Add New Tag
Designate specific
monitored tags for
connected EDS units
or SNMP compatile
devices.

Ready to
Montor

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Featured Functions

In this chapter, we give detailed information about using each of EDS-SNMP OPC Server Pro's functions.

The following topics are covered in this chapter:

❑ **MIB Compiler**
❑ **Device Type Define**
❑ **Network Search**
❑ **Dedicated IP**
❑ **Add New Group**
❑ **Add New TAG**
❑ **Monitor**
❑ **New Configuration**
❑ **Import Configuration**
❑ **Export Configuration**
❑ **Exit**

MIB Compiler

This function generates a specific MIB module for an SNMP compatible device. Click on **MIB Compiler** under the Tool menu bar item, or click on the toolbar **MIB Compiler** icon [icon]. You may also type the shortcut **<Alt>-<T>** to activate the MIB Compiler function.
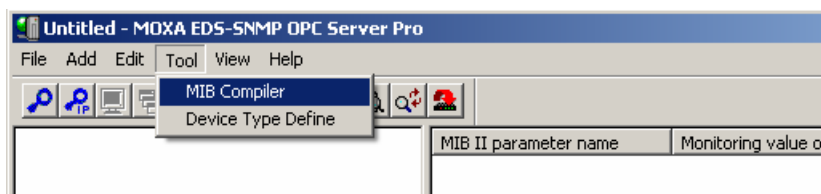
Use MIB compiler to generate a customize MIB module for OPC Pro. The OPC Pro MIB module can generate three kinds of MIB file format.

Compiler MIB File:

1. Select **Compiler MIB File** to generate a specific OPC Pro MIB module from a MIB file (standard MIB text file format).
2. Browse the MIB text file (*.my, *.mib, *.txt) that is to be transferred.
3. Click on **Open** to generate the OPC Pro MIB Module.
4. The MIB will be compiled automatically into the OPC Pro MIB Module.
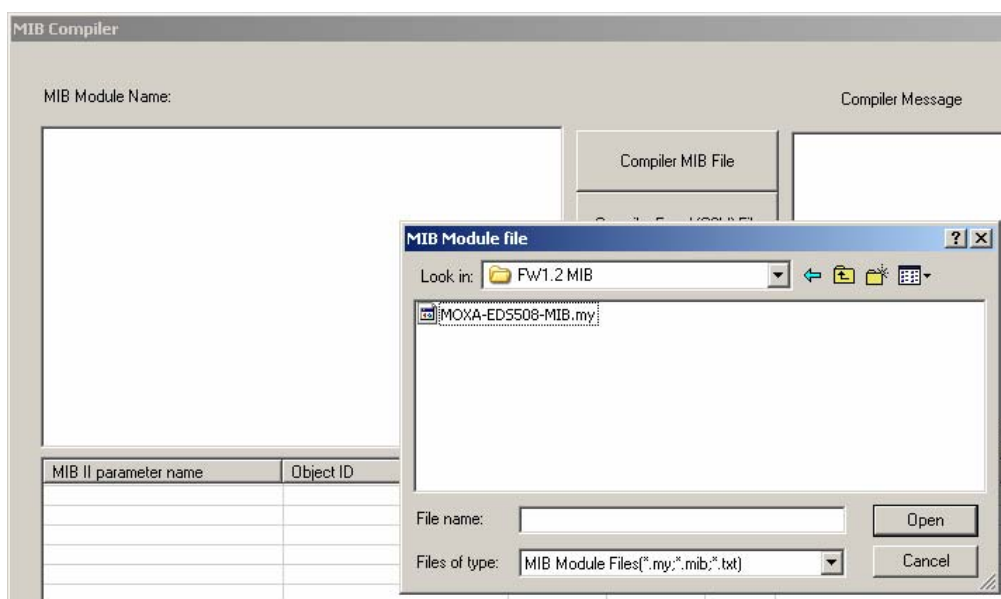
Compiler Excel (CSV) File:

1. Select **Compiler Excel (CSV) File** to generate a specific OPC Pro MIB module from an Excel (CSV) File.
2. Browse the MIB Excel (CSV) file that is to be transferred.
3. Click on **Open** to generate the OPC Pro MIB Module.
4. The MIB will be compiled automatically into the OPC Pro MIB Module.

Compiler Excel (TAB) File:

1. Select **Compiler Excel (TAB) File** to generate a specific OPC Pro MIB module from a Compiler Excel (TAB) file.
2. Browse the MIB Excel (TAB) file that is to be transferred.
3. Click on **Open** to generate the OPC Pro MIB Module.
4. The MIB will be compiled automatically into OPC Pro MIB Module.

The Excel file below is an example of a file that is to be transferred to an OPC Pro MIB module.

Setting	Description	Criteria
First row	Name of each parameter. The first and second rows will not be transferred into an OPC Pro MIB module.	None
Object ID	SNMP TAG Object ID	Max. 80 bytes
Tag Name	SNMP TAG Name	Max 80 bytes
Read/Write	SNMP access right. Must be 'read-only" or "read-write"—any other string will cause a compile error	read-only, read-write
Data Type	Date type defined for SNMP Tag. Must be "String," "Integer," "Counter," "Gauge," "TimeTicks," or "IpAddress." Any other string will cause a compile error.	String, Integer, Counter, Gauge, TimeTicks, IpAddress
Defined Value	Defined value for SNMP Tag	Max. of 500 bytes
Description	Descriptive value for the SNMP Tag	Max. of 500 bytes

1. Start Excel and then build the table described above.
2. Save the file using format CSV or TAB.

- The CSV file format uses a comma (,) to separate columns. So, do not use commas in this Excel file.
- The TAB file format uses the Tab keystroke to separate columns. So, do not use "tab" in this Excel file.

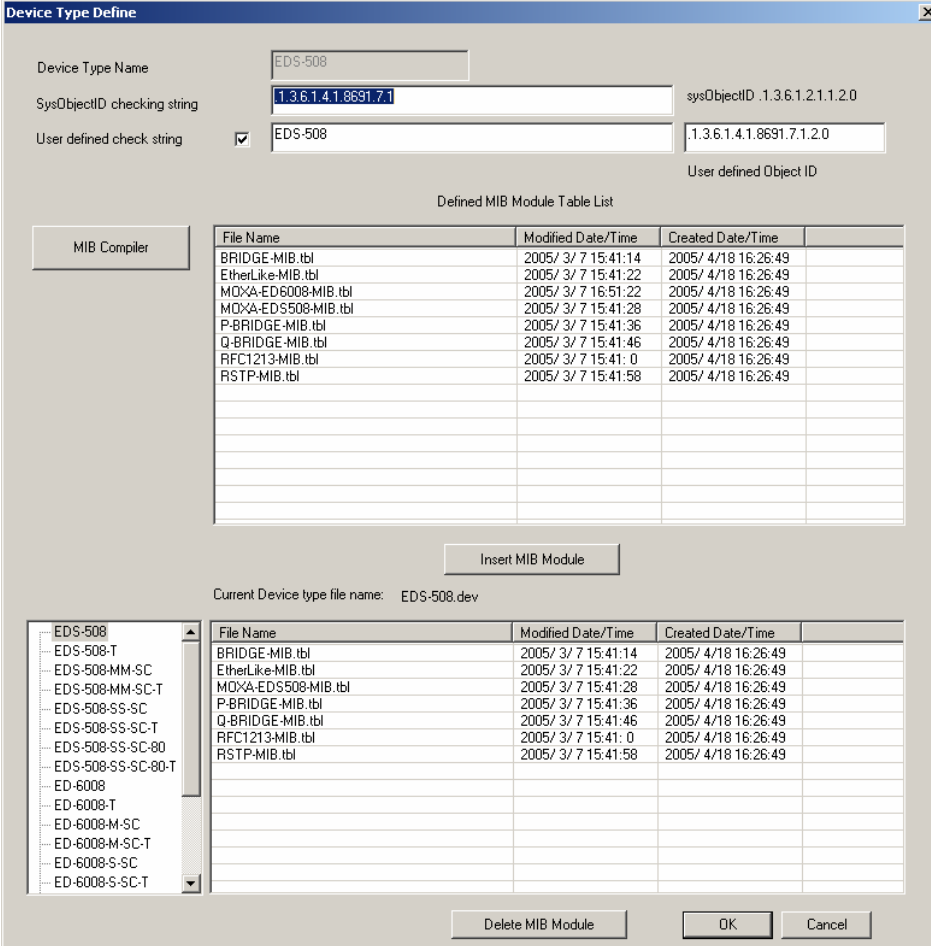|	A	B	C	D	E	F	G	H
1	Object ID	TAG Name	Read/Write	Data Type	Defined value	Description		
2								
3	1.3.6.1.2.1.1.1.0	SysDescr	read-only	STRING	Display String	A textual description of the entity		
4	1.3.6.1.2.1.1.2.0	SysObjectID	read-only	OBjectID	Object identife:	The private SNMP Object ID of Moxa Eth		
5	1.3.6.1.2.1.1.3.0	SysUpTime	read-only	TimeTicks	[10ms]	The time since the {in hundredths of a seco		
6	1.3.6.1.2.1.1.4.0	SysContact	read-only	STRING	Display String	The textual identification of the contact pe		
7	1.3.6.1.2.1.1.5.0	SysName	read-only	STRING	Display String	An administratively-assigned name for this		
8	1.3.6.1.2.1.1.6.0	SysLocation	read-only	STRING	Display String	The physical location of this node		
9	1.3.6.1.2.1.1.7.0	SysServices	read-only	INTEGER	Calculated valu	A value which indicates the set of services		
10	1.3.6.1.2.1.1.8.0	SysORLastChan	read-only	COUNTER	N/A	The value of sysUpTime at the time of the		
11	1.3.6.1.2.1.1.9.1.2.0	SysORID	read-only	OBjectID	Object identife:	An authoritative identification of a capabil		
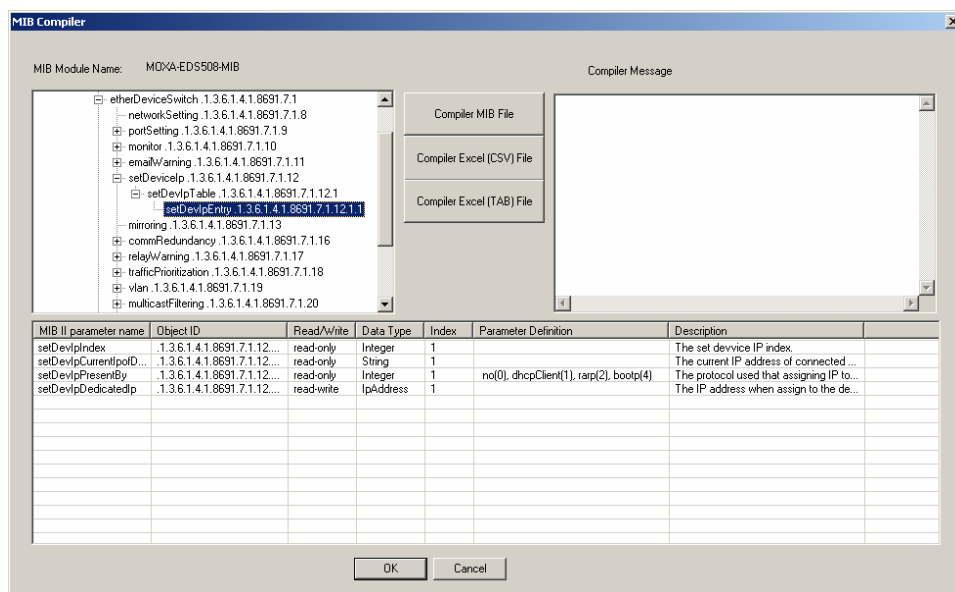
The **MIB Compiler** window is shown above. The MIB Module Name is shown in the top-left part of the window. The Tree View shows all MIB Identifier Names and corresponding ObjectID. The top-right **Compiler Message** section is reserved for error statements. Detailed information is shown in the bottom half of the window. Items displayed in the bottom half of the window are described below:

Item	Description	Criteria
MIB II parameter name	SNMP MIB Name	Max 1000
ObjectID	SNMP Object ID	Max 256 ID
Read/Write	read-only, read-write, read-create, and not-accessible	4 options
Data Type	String, Integer, Counter, Gauge, TimeTicks, and IpAddress	6 options; Max. of 100 new data types
Index	Sequence Index; 0 means no index, number means index level	Max. of 10 index levels; Max. of 100 sequence index TAGs
Parameter Definition	SNMP TAG Parameter Definition	No limit
Description	SNMP TAG Description	No limit

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Device Type Define

The **Device Type Define** page makes it easier to insert specific MIB files into any SNMP compatible device. Click on **Device Type Define** under the Tool menu bar item, or click on the toolbar **Device Type Define** icon [icon]. You may also type the shortcut **<Alt>-<T>** to activate the Device Type Define function.

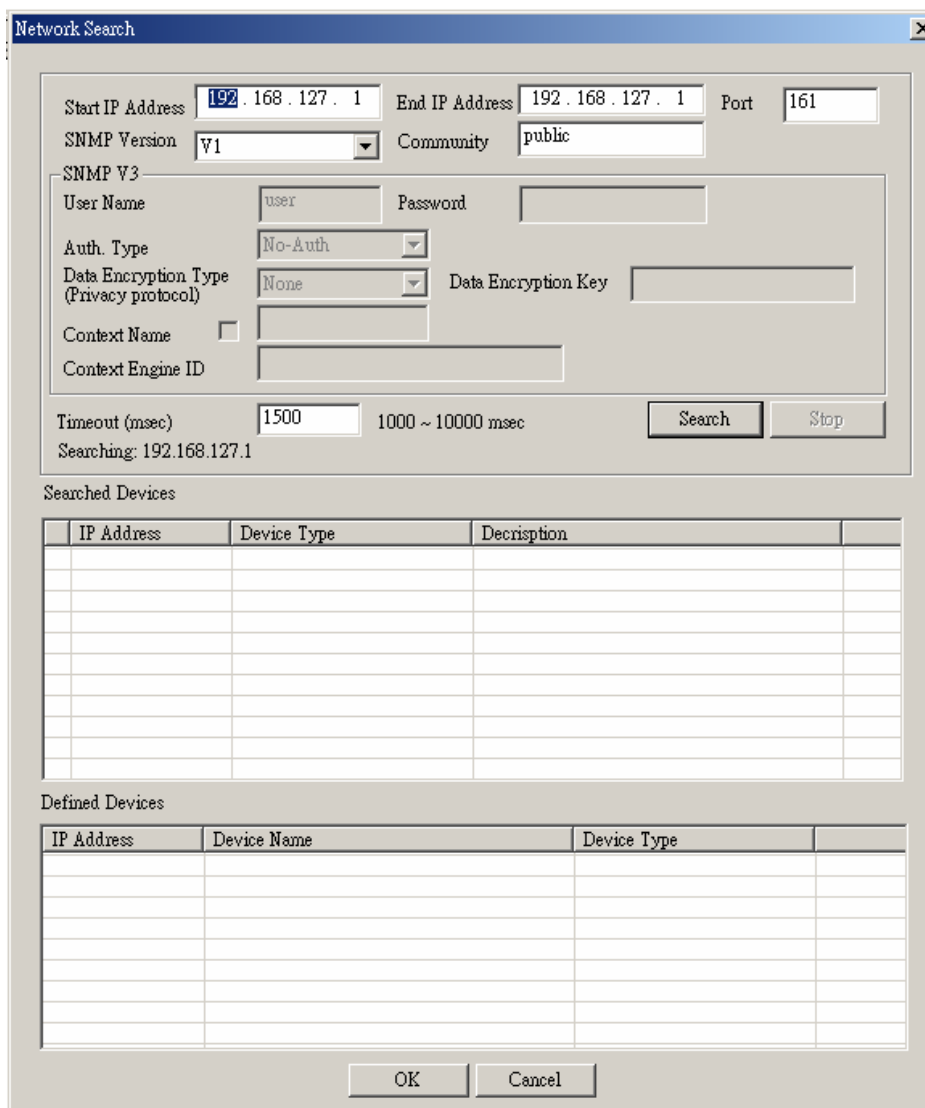| Setting	Description
Device Type Name	Define the type name for SNMP compatible device Max. of 256 bytes
sysObjectID checking string	Customer-defined string used to verify the device type while running a network search.
User defined check string (checkbox)	Enable/disable user define ObjectID string to verify the device type while running a network search.
User defined ObjectID	Designate a specific ObjectID to get the string for device type verification while running a network search. Max. of 128 bytes

These options will appear in the pop-up menu when right clicking in the lower left section of the "Device Type Define" window.	New	Add a new device
	Rename	Rename a device
	Copy	Copies selected device
	Delete	Delete a device
Insert MIB Module	Uni/multi select MIB module and insert into specific device type	
Delete MIB Module	Uni/multi select MIB module from specific device type	
File Name	MIB module file name	
Modified Date/Time	date/time the MIB module was last modified	
Created Date/Time	date/time the MIB module file was created	

Network Search

The **Network Search** function is used to search for Moxa EDS and other SNMP compatible devices on the current LAN. Click on **Network Search** under the **Add** menu bar item, or click on the toolbar **Network Search** icon . You may also type the shortcut **<Alt>-<A>** to activate the Network Search function.
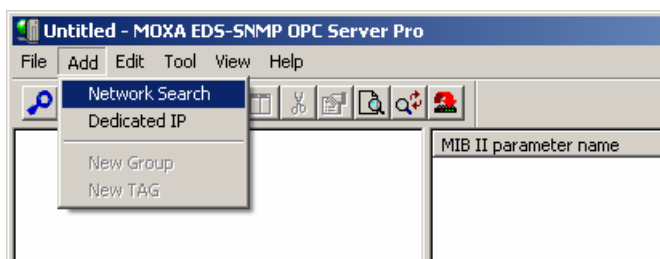
After searching automatically for devices on the LAN, the **Broadcast Network Devices** window shown below will open. Moxa EDS or SNMP compatible devices that are currently online will be listed in the window.

Network Search

Setting	Description	Factory Default
Start IP Address	Network Search will start searching with this IP address	192.168.127.1
End IP Address	Network Search will stop searching with this IP address	192.168.127.1
Port	Remote SNMP compatible device UDP Port No.	161 (ranges from 1 to 10000)
SNMP Version	Select an SNMP version of V1, V2c, or V3 for network search	V1
Community	String of SNMP V1 and V2c for network search	public Max. of 30 Characters

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Example 1: Start IP Address: 192.168.127.2

End IP Address: 192.168.127.253

Network Search will search a total of 252 IP addresses.

Example 2: Start IP Address: 192.168.125.2

End IP Address: 192.168.127.5

192.168.125.2 to 192.168.125.254: 253 IP addresses.

192.168.126.1 to 192.168.126.254: 254 IP addresses

192.168.127.1 to 192.168.127.5: 5 IP addresses

→ Network Search will search a total of 512 = 253+254+5 IP addresses.

NOTE	A buffer that holds a maximum of 512 IP addresses is reserved for each network search.

SNMP V3

Setting	Descriptions	Factory Default
User Name	User name for network search of SNMP V3	"user" if select SNMP V3 for network search Min. of 8 characters Max. of 16 characters
Password	Password for network search of SNMP V3	Empty if select SNMP V3 for network search Min. of 8 characters Max. of 16 characters
Auth. Type	Provides authentication based on the No-Auth, MD5, SHA	No-Auh if select SNMP V3 for network search
Data Encryption Type (Privacy Protocol)	Provides data encryption type based on None, CBC-DES and CFB-AES-128	None if select SNMP V3 for network search
Data Encryption Key	String for designated data encryption	None if enable CBC-DES or CFB-AES-128 Min. 8 characters Max. 30 Characters
Context Name	Context Name for SNMP V3	None Max. 16 Characters
Context Engine ID	Context Engine ID for SNMP V3	None Max. 30 Characters
Timeout (msec)	Time out period for each network search.	1500 ranges from 1000 to 10000 ms
Search	Press "Search" button to begin Network Search	None
Stop	Press "Stop" button to stop Network Search	None
Searching	Display current IP address searching	None

Searched Devices

- All searched devices will list in this table
- Double click the mouse to enter Device Type Define page to designate a device type or for details related to parameter settings

Setting	Description	Factory Default
Asterisk	An asterisk is used to mark devices that have a defined device type.	None
IP Address	IP Address of searched device	None
Device Type	Device type of searched device	Moxa EDS managed switch
Description	Description of searched device	Moxa EDS managed switch
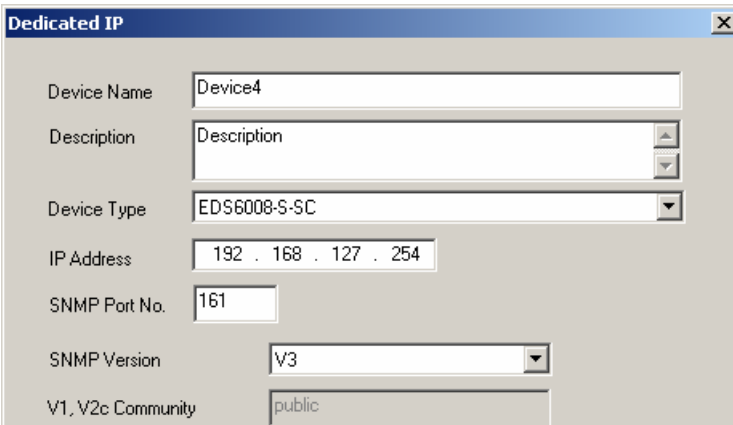
Defined Devices

- Lists searched devices with Device Type Defined
- Double click the left mouse button to enter the Device Type Define page to edit related parameter settings

Setting	Description	Factory Default
IP Address	IP Address for searched device	None
Device Name	Each searched device with dedicated device name	None
Device Type	Device type for searched device	Moxa EDS managed switch

Dedicated IP

Use a dedicated IP address, to ease network planning, by configuring the connected Moxa EDS or SNMP compatible device in advance. Click on **Dedicated IP** under the Tool menu bar item, or

click on the toolbar **Dedicated IP** icon ![icon]. You may also type the shortcut **<Alt>-<T>** to activate the Dedicated IP.

Setting	Descriptions	Factory Default
Device name	Each defined EDS or SNMP compatible device has its own name.	DeviceX, Max 80 characters
Description	Description of defined EDS or SNMP compatible device	Max 256 characters
Device Type	Select suitable device type for defined EDS or SNMP compatible device	Unknown
IP Address	IP Address Device type for defined EDS or SNMP compatible device	192.168.127.253
SNMP Port No.	Remote SNMP compatible device UDP Port No. for defined EDS or SNMP compatible device.	161 Ranges from 1 to 10000
SNMP Version	Select SNMP version of V1, V2c or V3 for defined EDS or SNMP compatible device	V2c
Community	String of SNMP V1 and V2c for defined EDS or SNMP compatible device	public Max. of 30 characters

NOTE   Click a heading on the tool bar (IP Address, Device Type, or Device Name) to sort the list in an increasing or decreasing sequence using the items in that column.

SNMP V3

Setting	Description	Factory Default
Current User	Select user account for current communicating account of defined EDS or SNMP compatible device	None Admin and user if select Moxa EDS as device type Max. of 10 accounts; each account length from 8 to 16 characters.
User Name	Display current communicating account for defined EDS or SNMP compatible device	None Min. of 8 characters Max. of 16 characters
Password	Display current password for defined EDS or SNMP compatible device	None Min. of 8 characters Max. of 16 characters
Auth. Type	Display current authentication algorithm for defined EDS or SNMP compatible device	No-Auth if select SNMP V3 for network search No-Auth, MD5 andSHA
Data Encryption Type (Privacy Protocol)	Display current data encryption type for defined EDS or SNMP compatible device	None if select SNMP V3 for network search None, CBC-DES and CFB-AES-128
Data Encryption Key	Display string for data encryption for defined EDS or SNMP compatible device	None if enable CBC-DES or CFB-AES-128 Min. of 8 characters Max. of 30 Characters
Context Name	Display current context name for defined EDS or SNMP compatible device	None Max. of 16 Characters
Context Engine ID	Display current context engine ID for defined EDS or SNMP compatible device	None Max. of 30 Characters
Add User	Press Add User button to add SNMP V3 communicating account	Admin and user if select Moxa EDS as device type Max. of 10 accounts
Edit User	Select which current account needs to be edited and press Add User button to edit the current SNMP V3 communicating account	Admin and user if select Moxa EDS as device type Max. of 10 accounts
Delete User	Select which current account needs to be deleted and press Delete User button	None
Change password	Type old password, New password, and retype password	Min. of 8 characters Max. of 16 characters

Setting	Descriptions	Factory Default
Timeout (m sec)	Amount of time allowed to complete an SNMP get. In situations where there might be a lot of traffic on the network, a longer timeout setting might be helpful.	1500 ranges from 1000 to 10000 ms
Retry Count	After an attempt to get data has timed out, the retry count value is the number of times the SNMP manager will attempt to retrieve the data before failing.	2 ranges from 1 to 10
Skip Count	The time that the manager will wait before attempting another GET from a device that has failed. The time unit is defined in the Device timeout setting. Skip count is an efficient way to reduce network traffic. (E.g., 1500 ms device timeout with 80 skip count =12000 ms before new attempt)	80 ranges from 10 to 500

Add New Group

Add a new tag group for a dedicated device. Click on **New Group** under the **Add** menu bar item, click on the toolbar New Group icon , or move the courser to a dedicated device and click the right mouse button and select New Group. You may also type the shortcut **<Alt>-<A>** to activate the New Group function.
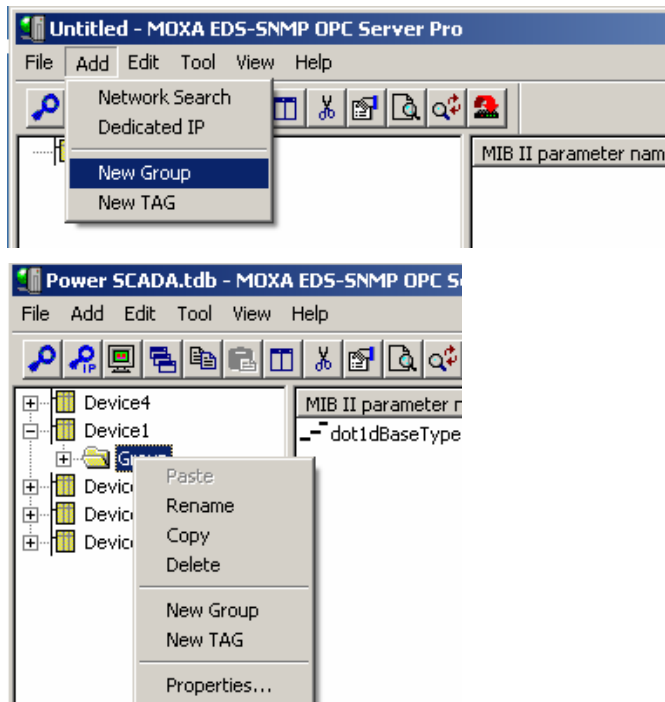
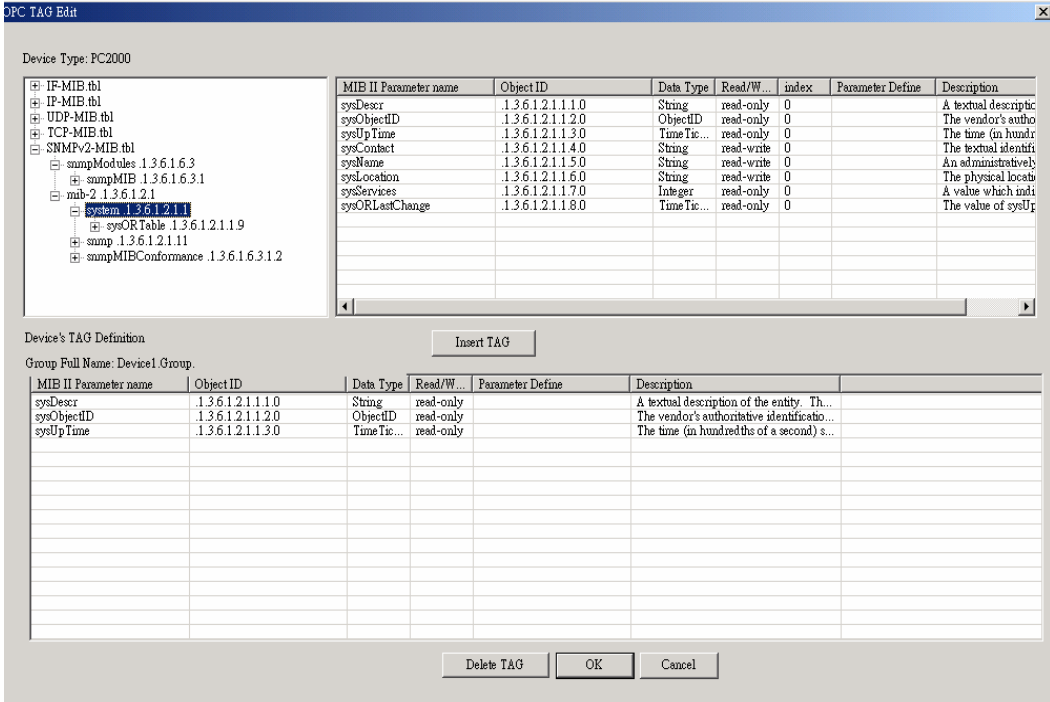Select **Rename** to edit, and then click on **OK** to activate the setting.
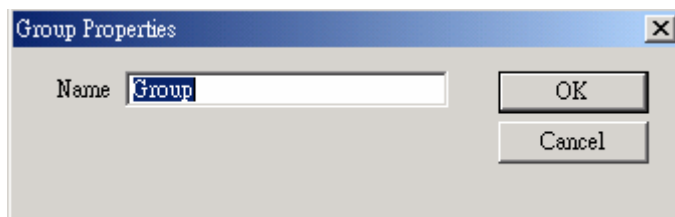
Add New TAG

Create OPC TAGs for a dedicated device or group. Click on **New TAG** under the **Add** menu bar item, click on the toolbar **New TAG** icon [icon], or click the right mouse button and select New Tag. You may also type the shortcut <**Alt**>-<**A**> to activate the New Tag function.

OPC TAG Edit

Setting	Description
Insert TAG	Uni/multi select and insert OPC TAGs for dedicated device
Delete TAG	Uni/multi select and delete OPC TAGs for dedicated device
ok	Activate the setting
cancel	Ignore the setting

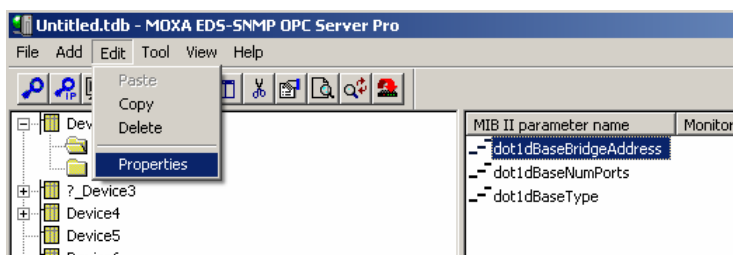Insert the OPC TAG with sequence index, and then enter proper number in the index box.
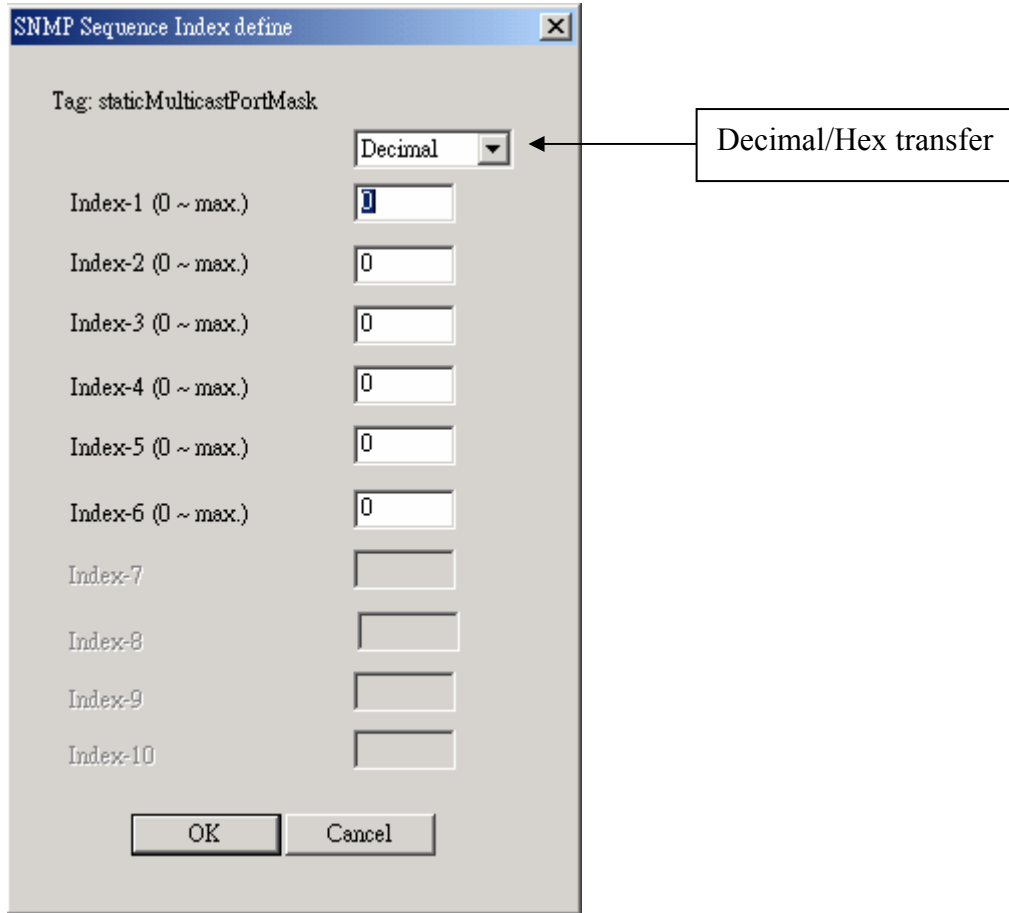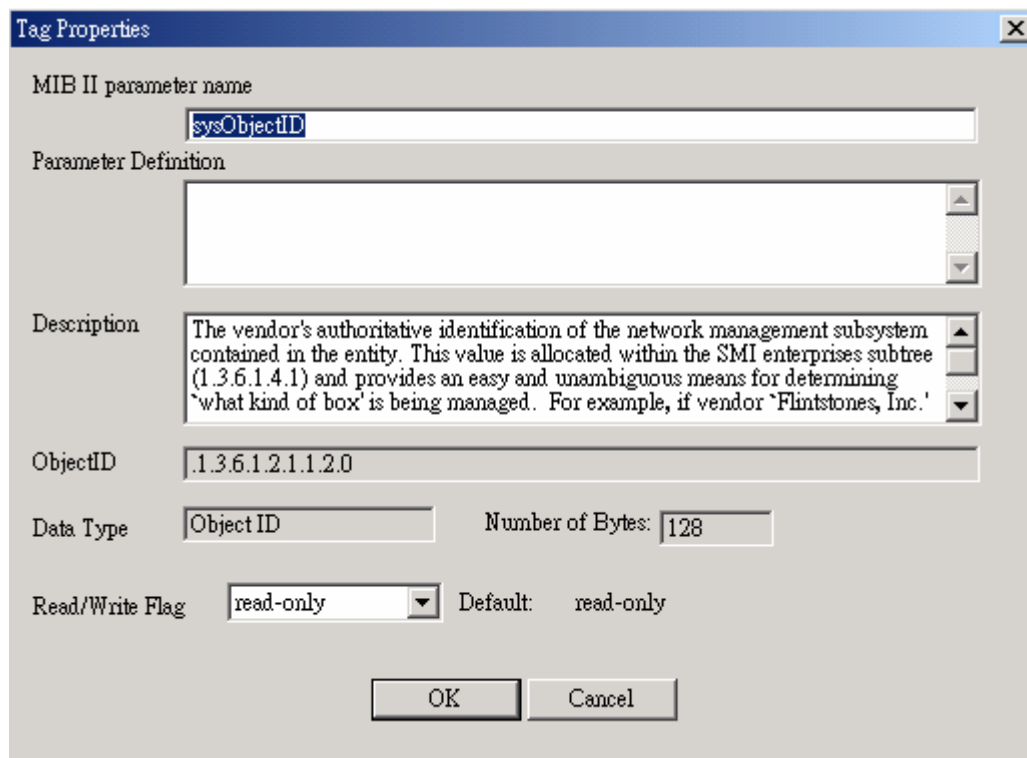
Tag Properties

Move the cursor over any MIB II parameter in the right side of the window and click the right mouse button.
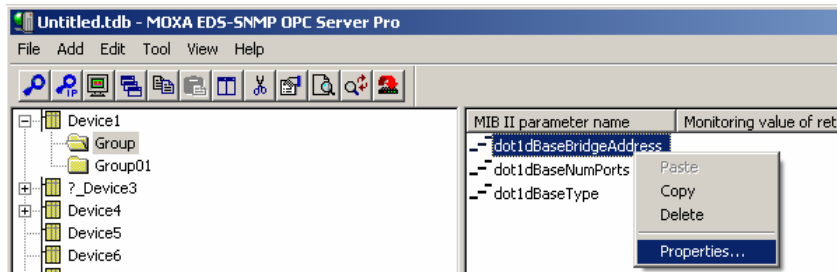
Or, select **Properties** under the **Configuration** menu.

You will see the detailed tag properties. E.g., MIB II parameter name, Monitoring value of return, Parameter Definition, and Description.

NOTE

MIB II Parameter Name: the mapping OPC TAG name
Parameter Definition: MIB II Parameter type
Description: Describes how this parameter works
Object ID: SNMP TAG Object ID
Data Type: Converted from SNMP TAG Data type within OPC Data Type v2.0
Number of Bytes: Length of OPC TAG, consistent with SNMP

TIPS

Changing Items in the Tree Browser

After modifying devices, groups, or tags in the OPC Server Tool, changes will take effect immediately on the I/O Server and will be displayed automatically in the Tree Browser.

Collapsing and Expanding the Tree Browser

You can collapse or expand the tree by double-clicking.

Navigating in the Tree Browser

You may use the mouse or keyboard to navigate through the Tree Browser, in the left side of the window. Use the up or left arrow keys to move up, and use the down or right arrow keys to move down in the Tree Browser. You can also press a letter key to jump to the nearest item that begins with that letter.

Additional Tree Browser Features

Connection lines show the relationship between devices, groups, and tags by displaying which devices are on a channel and which tags belong to a device. The plus and minus buttons indicate whether items are fully expanded or collapsed. The plus button shows the item is collapsed and the minus button indicates that the item is expanded. For example, a device with a plus sign next to it means that there are groups and possibly tags configured on that device.

Copy, Paste, Delete, Rename
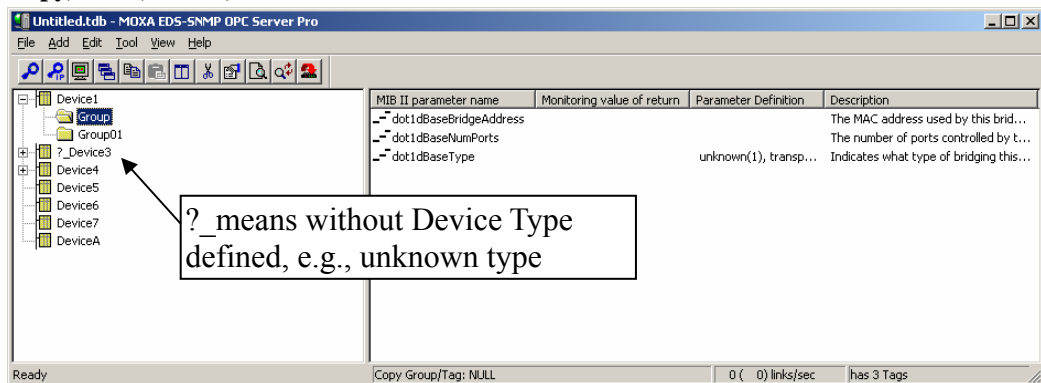
Copy
Click the right mouse button to copy Device, Group, and TAG

Paste
Click the right mouse button to paste Device, Group, and TAG

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Delete

Click the right mouse button to delete Device, Group and TAG

Rename

Click the right mouse button to rename Device, Group and TAG

TAG Definition

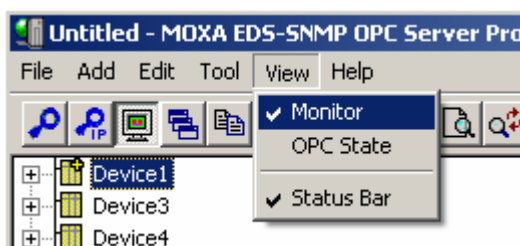**SNMP Data Type / OPC TAG Data Type Table**

SNMP Data Type	OPC TAG Data Type
String	Max String 128 bytes
Integer	32 bits, Integer
Counter	32 bits, unsigned integer
Gauge	32 bits, unsigned integer
IP Address	Max String 16 bytes
TimeTicks	32 bits, unsigned integer
ObjectID	Max String 128 bytes

Monitor

This section describes how to monitor all communication between EDS-SNMP OPC Server Pro and devices. Click on **Monitor** under the **View** menu bar item, or click on the toolbar Monitor icon

. You may also type the shortcut <**Alt**>-<**V**> to activate the Monitor function.

After updating, the following window will appear.

When you use the monitor function, you can see the data returned by the device that is connected to EDS through Moxa EDS-SNMP OPC Server Pro. There are four kinds of information shown in the right pane of the window. If the communication fails, the message **Bad** will be shown in **Monitoring value of return**. Otherwise, you will see the numbers that were returned, as shown above.

| NOTE	The **Status Bar** is used for disabling or enabling the status bar on the bottom of the screen. The **Help Menu** shows the Moxa EDS-SNMP OPC Server Pro version, copyright, and related information.

OPC Stat

The log file for OPC Pro
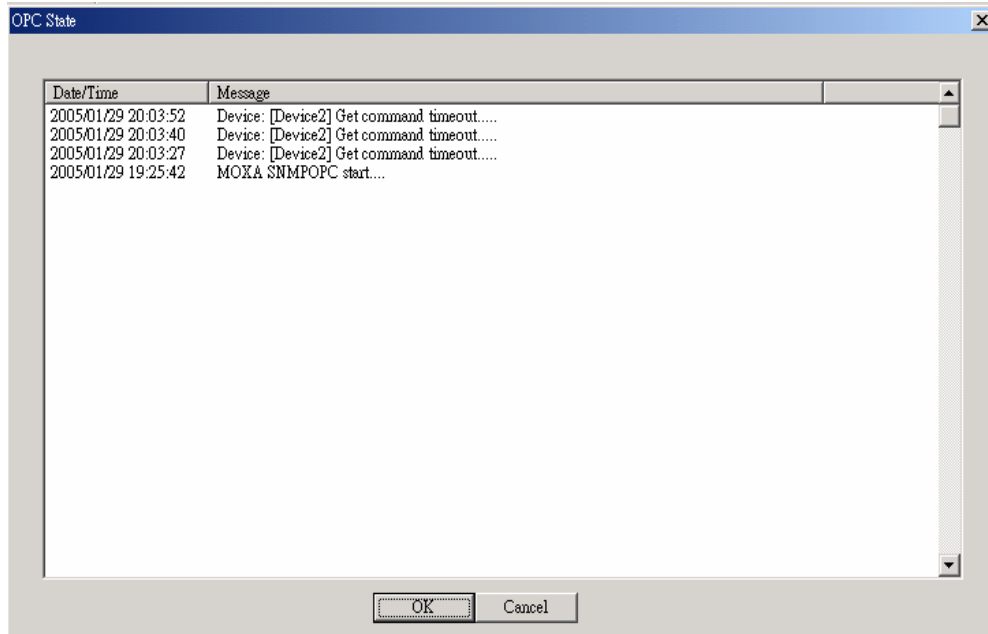
New Configuration

When you start OPC Server, you can create a new configuration file by clicking on the **File** menu bar item, and then selecting **New**.
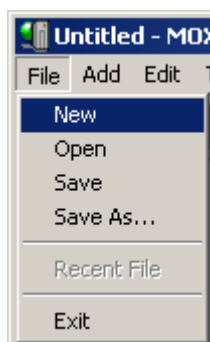
A system window will open as shown below. You can now start a new configuration.
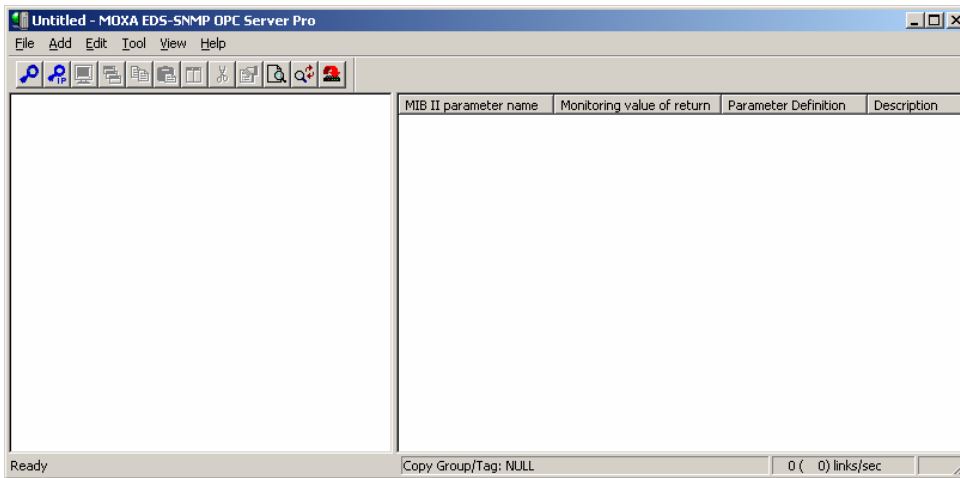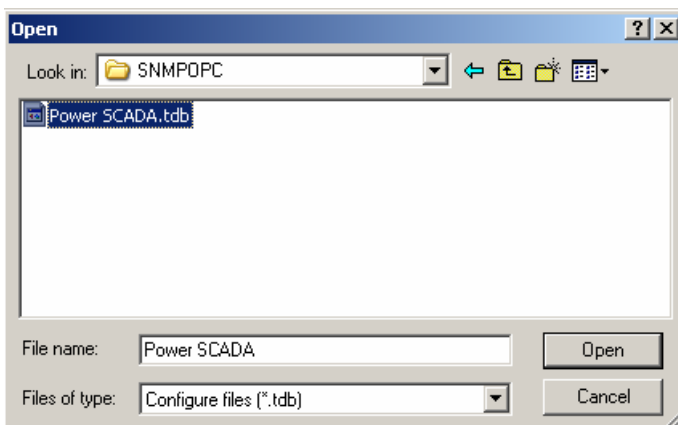
NOTE	The latest configuration will be imported. automatically when you start OPC Pro.

Import Configuration

When you want to modify an existing configuration with TDB file type, select **Open** under the **File** menu bar, and then select **Open** to begin.
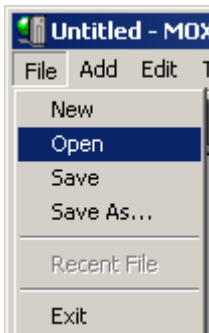
A window will open. Select the desired configuration file and click **Open.**

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The following window indicates that the configuration was imported successfully.
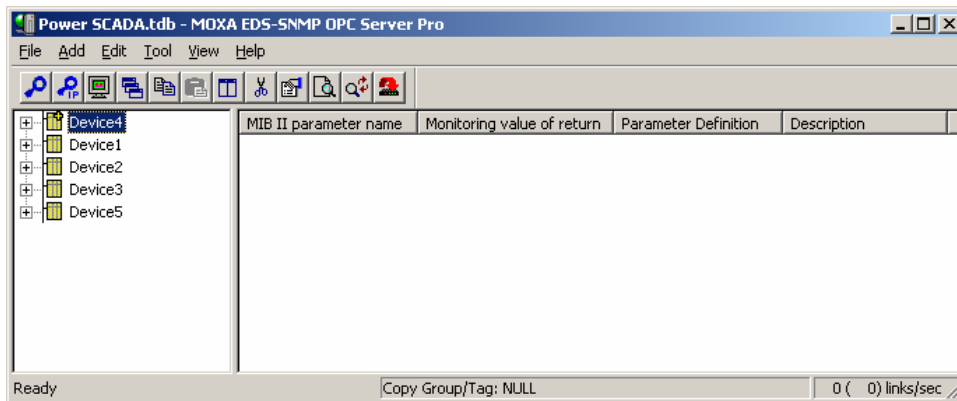
Export Configuration

After creating a new configuration or modifying an existing configuration, you need to export revised files by selecting **Save** or **Save As** under the **File** menu.
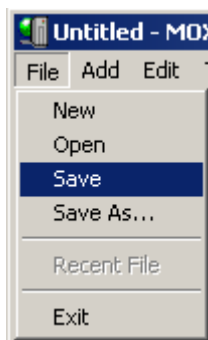
When the following window opens, enter a configuration file name, and click **Save**.

Exit

To quit the program, select **Exit** under the **File** menu.

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4

How to use Test Client

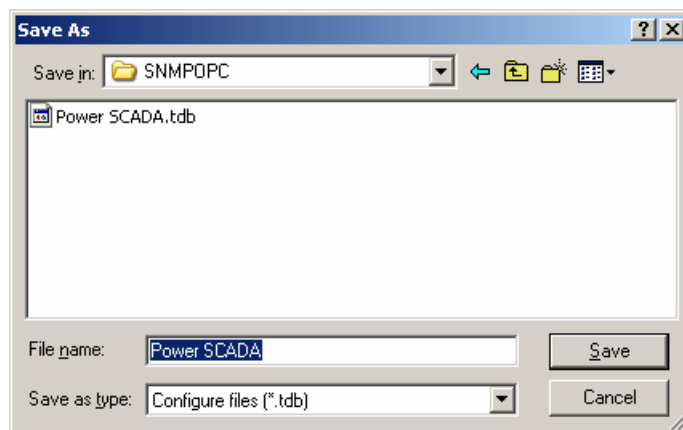This chapter describes **Test Client**, provided by the Moxa EDS-SNMP OPC Server Pro, with a quick connection to OPC Server. The Test Client is able to browse the registered OPC Servers in the same server hardware. It also provides real live data feedback and OPC Server browsing capabilities.

The Test Client is also helpful for connecting and testing other 3rd party OPC applications located on the same server hardware.

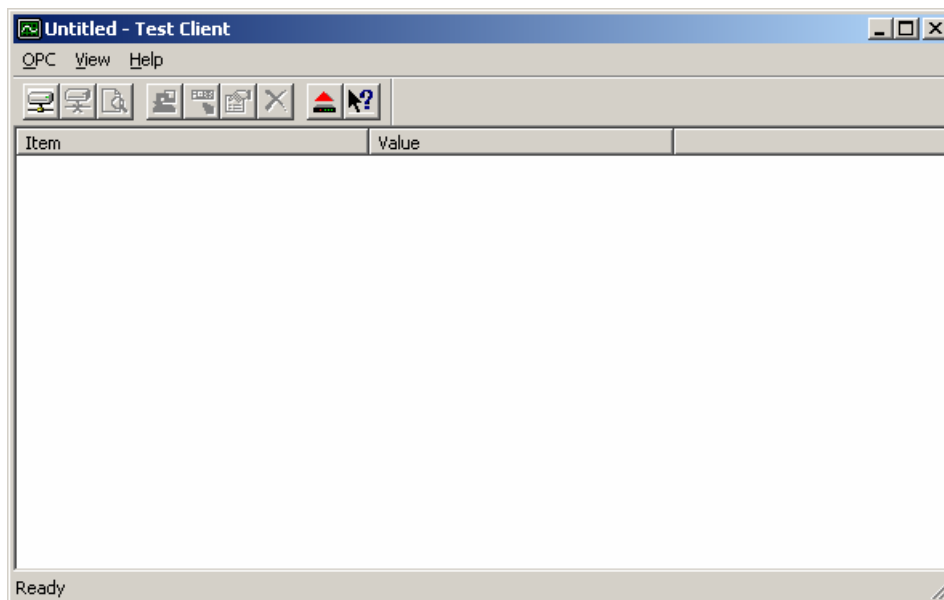The following topics are covered in this chapter:

❑ **Starting Test Client**

❑ **Connection**

❑ **Modifying the Configuration**

❑ **Exit**

Starting Test Client

To start Test Client, click on **Start → Program → Moxa EDS-SNMP OPC Server Pro → Test Client**.
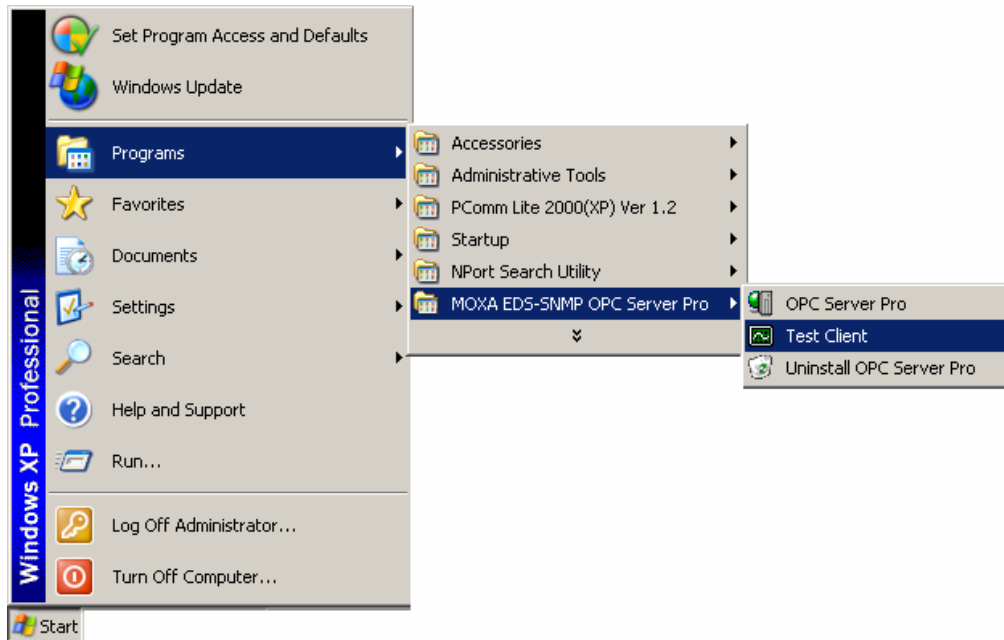
Start Test client to check the connection.

Connection

To connect Test Client to Moxa EDS-SNMP OPC Server Pro, select **Connect** under the **OPC**
menu, or click on 🖥️, the Connect toolbar icon.
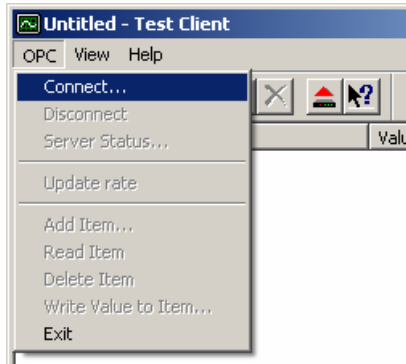
A window listing all OPC Servers located on the same server hardware will open. E.g.,
Moxa.SNMPOPC.
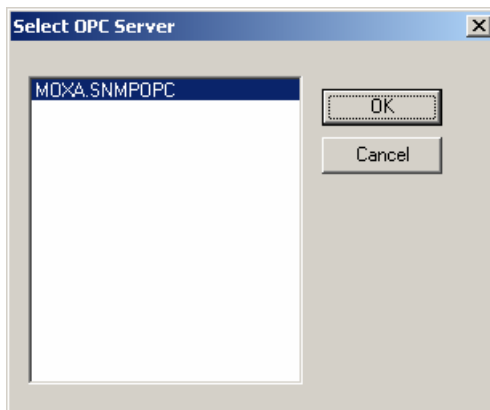
NOTE	When your Test client connects to Moxa EDS-SNMP OPC Server Pro, it will execute automatically. You may disconnect the selected server by selecting **Disconnect** from the menu. This command will un-register the device interface, and release the Group object and Server object. Releasing an object means that the client has nothing to do with the object, and the object can be deleted from the server by the system.

Modifying the Configuration

Server Status

To see the status of the Server, select **Server Status** under the **OPC** menu.
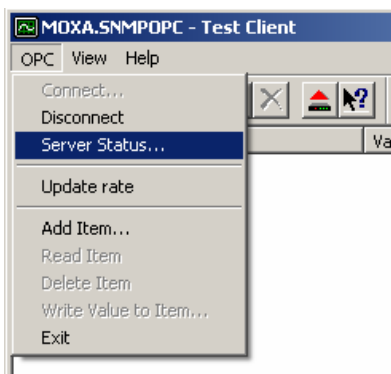
The **Server Status** window looks like this:
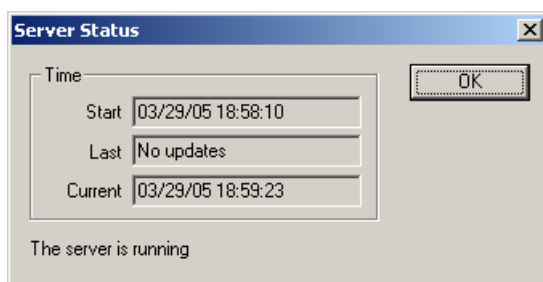
NOTE	**Start Time:**	the time the server starts running
	Last Time:	the last update time from the server
	Current Time:	the current time from the server

The Server Status window queries the Server object periodically for the status, and displays the results. When the OPC TAG is updated, the OPC Server will advise the connected clients, so that 'Last' in client shows the updated time.

Update rate

To modify the update rate, select **Update rate** under the **OPC** menu.
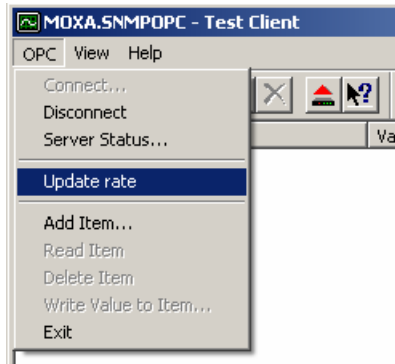
Modify the **Update Rate** as needed, and then click on **OK.**

To be able to read the item, set the **Update Rate** to a number.
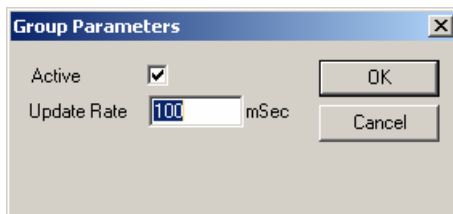
NOTE   Active: active state for OPCGroups

Update Rate: the update rate (in millisecond) for OPCGroups is 10 ms minimum.
Default value is 100 ms. This is the time interval that Test client uses to access OPC Server.

The **Group Parameters** window queries the group state and displays the results. When you click the **OK** button in this window, the system will write the parameters from the window to the Group object and send the parameters back. This function helps to control scanning and updating of data. The Update Rate in the **Group Parameters** dialog box specifies the rate at which data notifications should be sent back to the client if the data has been changed. This is also the rate by which items are scanned in this client. Once a group is inactive, it will not send data notifications to the client and scan items.

Add Item

Select **Add Item** under the **OPC** menu or click on the Add Item toolbar icon [icon].
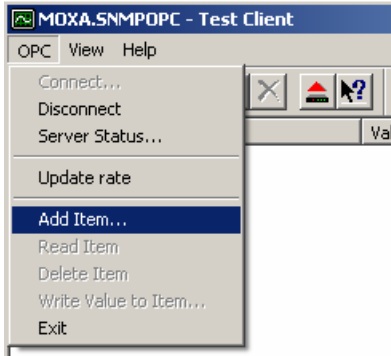
Test Client will open the **Add Item** window. Expand the list in the left window, and click any group name, such as Configuration, Traffic, or System. Select the tags shown in the right pane that you wish to monitor, and then click **OK**.
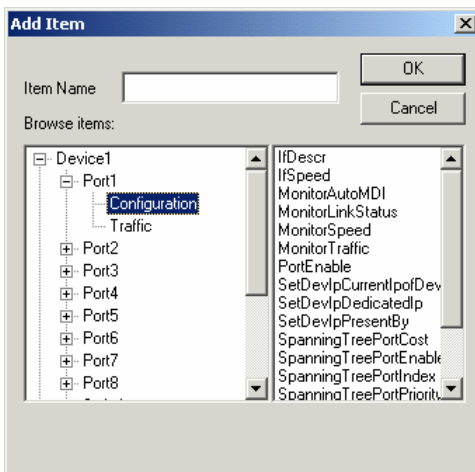
You will now be able to see the connection and monitor the return value from OPC Server.

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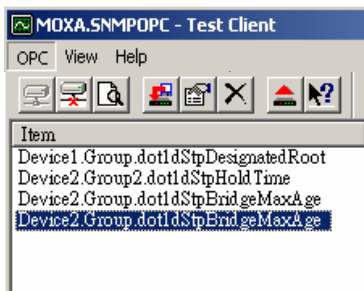
Read Item

To see the OPC Server TAG value, select **Read Item** under the **OPC** menu, or click on the Read Item toolbar icon [icon]. It is recommended that you perform this function after modifying a longer Update Rate.
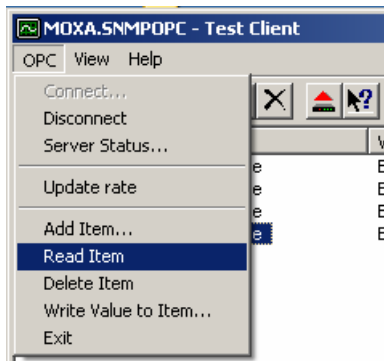
Delete Item

To delete the TAG you are monitoring, select **Delete Item** under the **OPC** menu, or click on the Delete Item icon [icon].
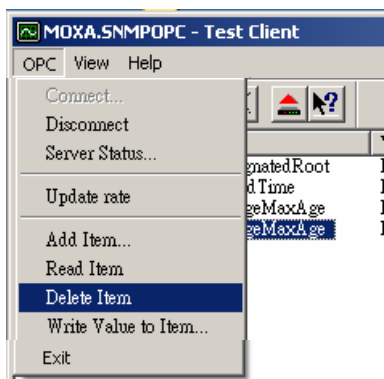
Write Value to Item

To write value to the Tag, select **Write Value to Item** under the **OPC** menu.

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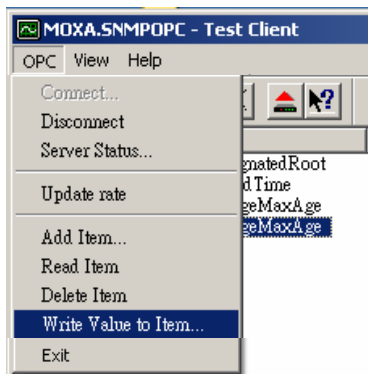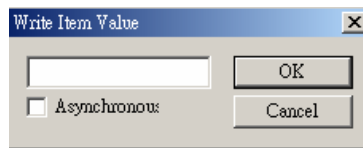
Exit

To exit the program, select **Exit** under the **OPC** menu.

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5

How to use File Conversion

This chapter describes EDS-SNMP OPC Server File Conversion, provided by the Moxa EDS-SNMP OPC Server Pro, with this file conversion that will ease your file migration from current EDS-SNMP OPC Server to EDS-SNMP OPC Server Pro.

The following topics are covered in this chapter:

❑ **Starting EDS-SNMP OPC Server File Conversion**

❑ **Clear Configuration**

❑ **Open Old Version**

❑ **Save New Version**

❑ **Exit**

Starting EDS-SNMP OPC Server File Conversion

When upgrading from EDS-SNMP OPC Server to EDS-SNMP OPC Server Pro, you must uninstall EDS-SNMP OPC Server first. Before uninstalling EDS-SNMP OPC Server, remember to save the old configuration file (.tdb). You will use the EDS-SNMP OPC Server File Conversion to convert the old OPC file to an OPC Pro file. EDS-SNMP OPC Server Pro supports several new functions, such as SNMP V2C/V3 read/write, MIB compile, and Tag editable, which are different from EDS-SNMP OPC Server. That's why the file name of the old OPC file and OPC Pro file are the same, but the formats are different. You cannot use EDS-SNMP OPC Server to open EDS-SNMP OPC Server Pro the configuration file (.tdb), and vice verse.

Clear Configuration

To clear the current configuration, select **Clear configuration** under the **File** menu.
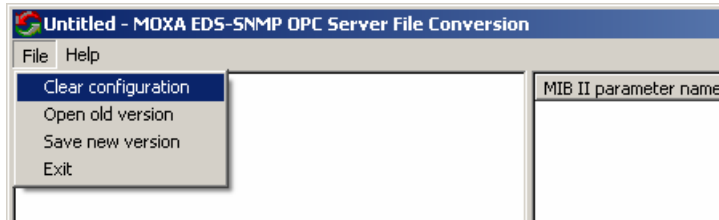
Open Old Version

To open a configuration for the old version, EDS-SNMP OPC Server, select **Open old version** under the **File** menu.

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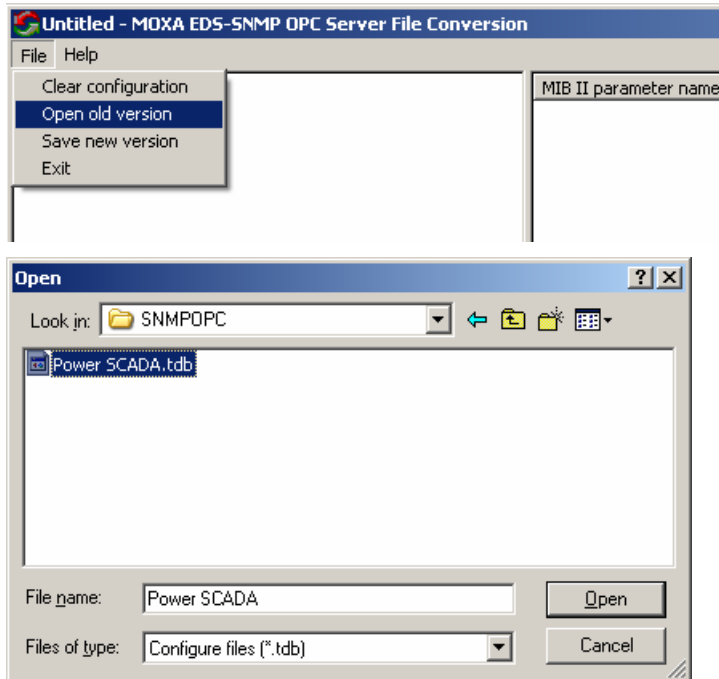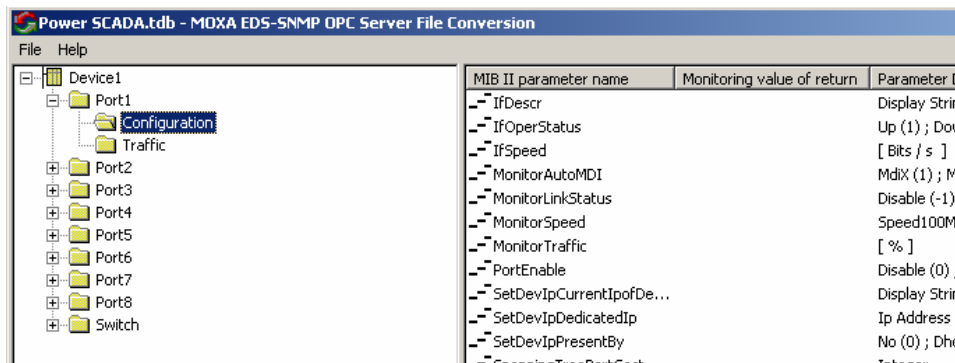
Save New Version

To save a configuration of a new version, EDS-SNMP OPC Server Pro, select **Save new version** under the **File** menu.

Exit

To exit the program, select **Exit** under the **File** menu.

1. Message Box:

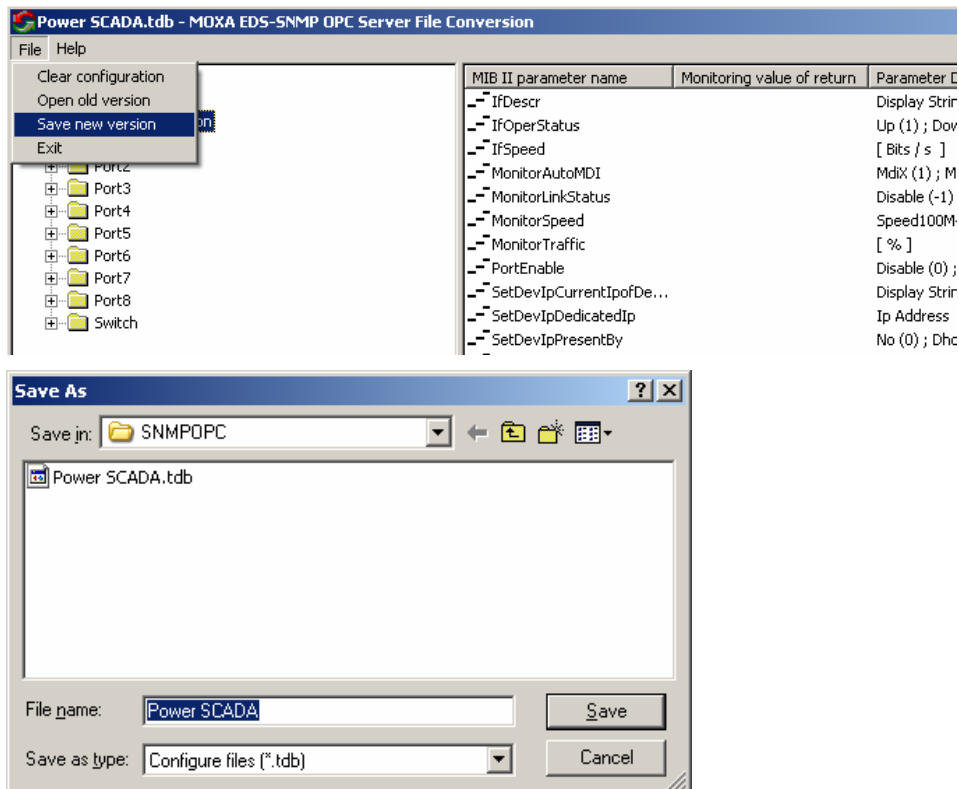| Message	Description
Error: End IP Address is less than Start IP Address	An error occurred while Broadcast Search was searching for all of the IP Addresses in the range that was entered
Invalid IP Address !!!	IP Address has the wrong format
Search device number: [xxx] is over 255	Broadcast Search cannot search more than 256 IP Addresses
[File Name]: read file error….	Unable to read a file
[File Name]: open file error….	Unable to open a file
[File Name] does not exist….	The file cannot be found
[File Name]: get file time error….	The imported date/time was incorrect for some files
[File Name]: already exists….	File with that name already exists
[File Name]: create file error….	File could not be created
[File Name] is not MIB table type…..	The file is not a MIB Module File
[File Name] is not Device Type file…..	The file is not a Device Type File
[File Name] does not exist; change device type to unknown type	When entering OPC Device Define, if on inspection the Device Type File does not exist, it is stored as unknown type
Select a device type first	In Device Type Define, deleting, changing the name, etc., you must first select the Device Type Define File
Delete device type: [Device Type File name]	Will warn the user before deleting the file.
Select a device type or insert a new device type first	In Device Type Define, enter a new MIB Module first
Old Password Error…..	The old password that was entered is incorrect
New Password Error…..	The new password that was entered is incorrect
The length of New Password is less than 8 char.	The new password must be at least 8 characters
The length of Read Encryption key is less than 8 char.	The Read Encryption key must be at least 8 char
The length of Write Encryption key is less than 8 char.	The Write Encryption key must be at least 8 char

Message	Description
The length of file name is over 256	File Name cannot exceed 256 bytes
Index-1 is over range [%d to %d]	When adding Sequence Index TAG, the Index was out of range
This Tag is not a read-write type !!!	Tag is not read-write type, and cannot be changed to read-write type.
Tag: [xxx] is a "not-accessible" type	When adding an OPC Tag, if the Tag Data Type in the MIB Module File is "not-accessible," then the tag cannot be added.
Duplicated device names are not permitted	OPC device names cannot be duplicated
Duplicated group name is not permitted	OPC group names cannot be duplicated
Device: [xxx] Already Exists	The OPC Device name already exists
Group: [xxx] Already Exist!	The OPC Group name already exists
Tag: [xxx] Already Exist!	The OPC Tag name already exists
Device's Name does not accept Dots!	The "dot" character cannot be used as part of an OPC device name
Group's Name does not accept Dots!	The "dot" character cannot be used as part of an OPC group name
Tag Name does not Accept Dots!	The "dot" character cannot be used as part of an OPC Tag name
Cannot change files while OPC Clients are connected to this server.	You cannot change to a different Configure File while connected to an OPC Client. Doing so will cause the OPC to become disconnected from the TAG.
The Device type is unknown type, please set a device type first…	If the Device Type is an unknown type, you will not be able to open the OPC TAG Edit window (from the [New TAG] menu).
Can't paste the same group….	When pasting an OPC Group, you cannot paste over an existing group, since doing so would allow the system to create an unlimited number of groups.
Ole Initialization failed	When OPC is unable to start the OLE configuration procedure, you can assume that Windows has encountered an unrecoverable problem. At this point, it is advisable to reinstall the OS.
Failed Register!!! System error code: xxx= REG_E_CLASSNOTREG Please contact support@moxanet.com	OPC is unable to register with the OS automatically. This problem usually occurs with Windows NT. A detailed explanation follows.
Create SNMPOPC Register Key error	Unable to establish an OPC software serial number Key in the Windows Register. You can assume that Windows has encountered an unrecoverable problem. At this point, it is advisable to reinstall the OS.
Set SNMPOPC Register key error	Unable to establish an OPC software serial number Key in the Windows Register. You can assume that Windows has encountered an unrecoverable problem. At this point, it is

Message	Description
	advisable to reinstall the OS.
Registration Code error !!!!!	The user has entered an incorrect OPC software serial number. The program has terminated.

2. MIB Compiler Error Messages

Message	Description
MIB File	
Record=xxx IDENTIFIER: xxx is not found	The Identifier Name being searched for cannot be found on line xxx of the MIB file.
Record=xxx can't find data type: xxx	The Data Type definition being searched for cannot be found on line xxx of the MIB file.
Record=xxx TAG[xxx] has syntax error…	The last Tag that was tested on line xxx of the MIB file has a syntax error.
Record=xxx TAG[xxx]: xxx is not found	The TAG in line xxx of the MIB file accepted the previous definition, but the Identifier Name that was referred to.
Record=xxx lost TEXTUAL_CONVENTION definition	In line xxx of the MIB file, cannot find the definition of the last result
Error: [End] string is not found…….	Cannot find the END character in the MIB file
Error: MIB file has syntax error……	When the following error occurs, the last bit of data that shows up in the Compiler result will not be saved to the file.
Excel File (CSV, TAB)	
Record=xxx, it is not 4 to 6 column parameters	The field definition in line xxx in the Excel file must be 4 to 6 characters
Record=xxx, The size of TAG name is over, it must be 1 – 80 bytes\	The TAG length in line xxx of the Excel file cannot exceed 80 bytes
Record=xxx, The char. Of TAG Name can not include '.'	The TAG in line xxx of the Excel file cannot contain a dot
Record=xxx, The size of Object ID is over, it must be 1 - %d bytes	The length of the Object ID in line xxx of the Excel file cannot exceed 80 bytes
Record=xxx, The char. Of Object ID must be '0 – '9' or '.'	The Object ID in line xxx of the Excel file can only contain alphanumeric characters or a dot.
Record=xxx, The R/W Flag must define as [read-only] or [read-write]	Line xxx of the Excel file can only be 1 of 2 types: read-only or read-write
Record=xxx, The Data type must define as [Integer], [String], [IPAddress], [Counter], [Gauge], [TimeTicks], [ObejctID]	The Data type of line xxx in the Excel file can only be [Integer], [String], [IPAddress], [Counter], [Gauge], [TimeTicks], [ObjectID], etc.
Record=xxx, The size of defined value string is over, it must be 1 – 500 bytes	The "define value" in line xxx of the Excel file cannot exceed 500 bytes.
Record=xxx, The size of description string is over, it must be 1 – 500 bytes	The description length in line xxx of the Excel file cannot exceed 500 bytes

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3. OPC State shows a communication error

Message	Description
Device: [xxx] V3 Auth. Security password error.	Error computing Auth. Security
Device: [xxx] V3 Privacy security password error	Error computing Privacy Security
Device: [xxx] snmp open error	Open snmp session error
Device: [xxx] TAG Type:0x81 error	Received SNMP TAG response, but the Object ID probably does not exist
Device: [xxx] Get command error	Error sending Get command (Read TAG value)
Device: [xxx] Get command timeout	Get command was sent, but the reply is overdue
Device: [xxx] Set command error	Error send Set command (Write TAG Value)
Device: [xxx] Set command timeout	Set command was sent, but the reply is overdue
Device: [%s] comm. suspension	After 3 signal timeouts, the system will pause
Device: [%s] comm. release, try again	The system will attempt to transmit again after surpassing the pause time